

# The KEYSTONE

*The ORGAN of the JEWELRY & OPTICAL TRADES*



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BY B. THORPE PUBLISHER  
19<sup>TH</sup> & BROWN STS PHILA.

Vol. 25

June, 1904

No. 6



*Time  
O my friend  
is money!*

—BULWER-LYTTON.

And in this money making age there is an enormous and increasing demand for accurate timekeepers. This means that time is money for the dealer who carries a stock of

# ELGIN Watches

See Jobbers' list for prices or write the Company.

Every dealer is invited to send for the Elgin Art Booklet, "Timemakers and Timekeepers," illustrating the history and development of the watch.

## ELGIN NATIONAL WATCH COMPANY

Factories, ELGIN, Illinois, U. S. A.

General Offices, 131 Wabash Ave., Chicago.

NEW YORK OFFICE, 11 John Street.

SAN FRANCISCO OFFICE, 206 Kearny St.



# F&B. Theodore W. Foster & Bro. Co.

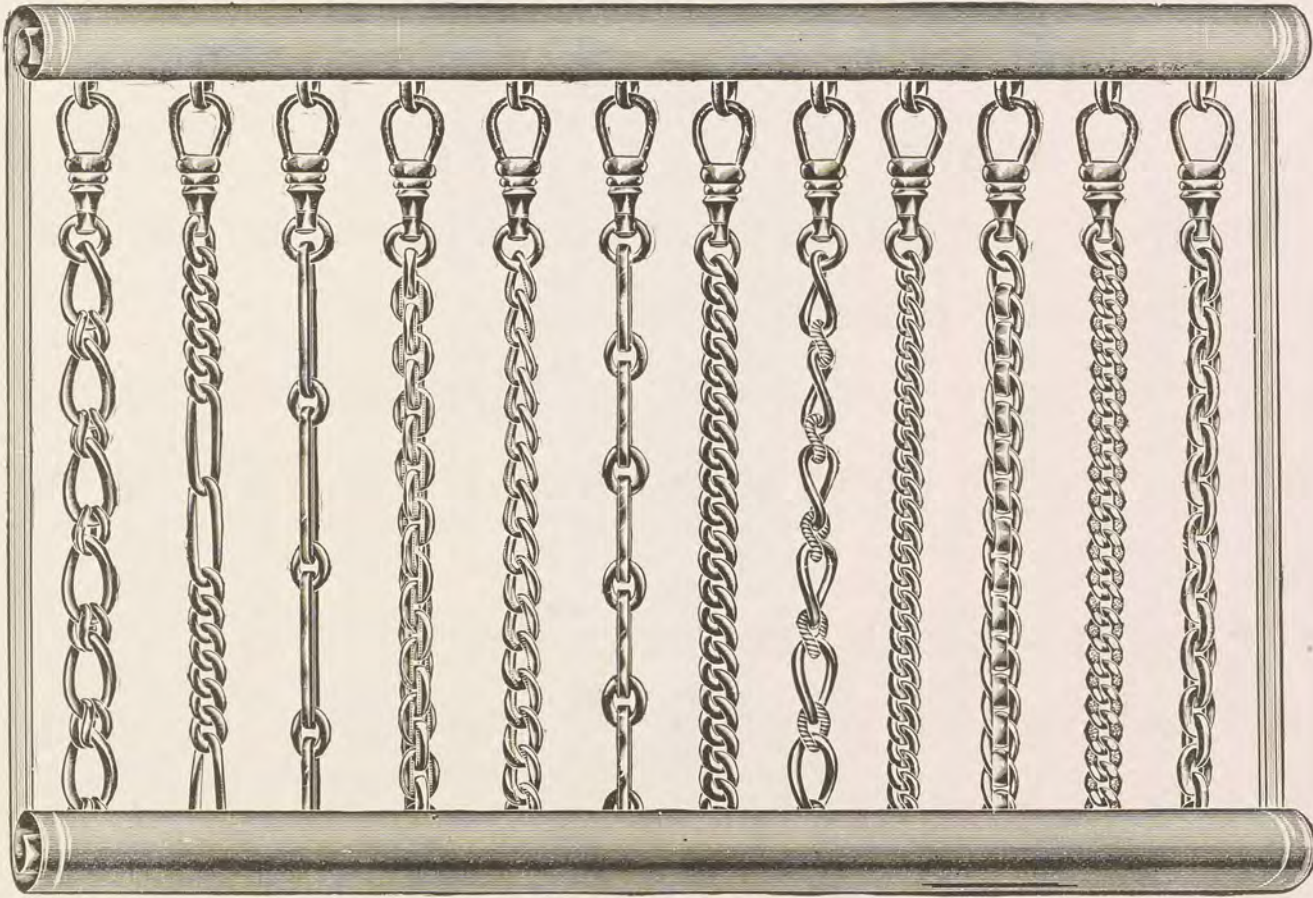


Established 1873.

Manufacturing Jewelers and Silversmiths,  
100 Richmond St., Providence, R. I.

MAKERS OF FINE GOODS AT MODERATE PRICES.

Seamless Gold Filled Vest and Dickens Chains, Fobs and Lorgnette Chains, Neck Chains and Bracelets, Ribbon Chains and Hair Chain Mountings, Bead Necks and Crosses.  
Locketts and Charms, Link Buttons and Scarf Pins, Waist Sets and Belt Pins, Brooches and Earrings.



Chain Combination No. 116 C. Fully guaranteed.

## Gold Filled Locketts.



2248. Rose finish.  
2290. Antique finish.  
2250. Sterling gray.



2390. Polished.  
2394. Roman.



2456. Polished.  
2463. Satin.  
2470. Roman.  
White stones.



2150. Rose.  
12 Brilliants.



1876. Rose.  
1877. Antique.

Sterling Silver { Toilet Sets, Desk Sets, Shaving Sets,  
Manicure Sets, Sewing Sets, Smoking Sets,

and all the various single pieces for the Toilet and Manicure, and useful Silver Novelties.



Flat Belcher ring as received with claws badly worn.



How the same ring looks when stone is reset without new claws. Stone is not secure and point is below inside of ring.



How we splice settings and solder in new claws; seams do not show and rings are as perfect as when originally made.



How ring looks with new claws and stone securely reset. Entire ring is finished like new.

When we tell you that we have received as many as 75 diamond rings in one day for new claws and settings, you will not think us extravagant for using a full page in **THE KEYSTONE** to give publicity to this feature of our business, but will wonder if you are getting your share of claw work.

99 out of every 100 owners of diamond rings willingly pay \$1.50 to \$3 for new claws or settings on their rings, but would not buy a new mounting for \$5 to \$15.

It is worth while to familiarize yourself and your employees with this work as it is one of the important little things that help make your business profitable.

## WENDELL & COMPANY,

The firm that did much to change the repair end of the Retail Jewelry Business from a source of worry and dissatisfaction to one of pleasure and profit.

93-95-97 William Street,  
New York.

TWO WONDERFUL SHOPS.

57 Washington Street,  
Chicago.



Tiffany ring as received with worn off claws. Stone cannot be reset, as it would be too low to look well and the point would come below the inner circle of ring.  
(See cut No. 2 of flat belcher.)



How same ring looks with new claws and stone securely reset. Entire ring is finished like new.



Oval Belcher ring as received with claws badly worn. Stone cannot be reset, as it would be too low to look well and the point would come below the inner circle of ring.  
(See cut No. 2 of flat belcher.)



How same ring looks with new claws and stone securely reset. Entire ring is finished like new.

THE PRICES QUOTED ABOVE FOR NEW CLAWS AND SETTINGS ARE SUBJECT TO OUR CATALOGUE DISCOUNT.

ALL THE BEST  
NEW THINGS,  
ALWAYS,  
IN WATCHES AND CHAINS,  
AND ALWAYS  
AT PRICES THAT  
SELL THEM.

The Non-Retailing Co.,  
 Jobbers in Watches and Chains,  
 Lancaster, Pa.

2 Tulpstraat,  
 AMSTERDAM.

ESTABLISHED 1866.

12 MAIDEN LANE (one flight up),  
 P. O. Box 1625. NEW YORK.

*Lissauer & Company*

LOOSE and MOUNTED

DIAMONDS.

Gold and Filled Watch Cases.



Elgin and Waltham Movements.  
 Gold and Plated Jewelry.

Our imports of DIAMONDS are *direct* from the cutters at Amsterdam,  
 and we can therefore offer you *substantial inducements*.

Selection packages sent to responsible jewelers.  
 Our goods are insured while in transit.

ORDERS ARE SOLICITED EITHER DIRECT OR THROUGH OUR TRAVELERS.

**REMOVAL NOTICE:** We are now located at our new offices, 12 Maiden Lane, "one flight up,"  
 directly over the store occupied by us for many years.

The change gives us more commodious offices, better light and such facilities as are required to insure prompt and  
 satisfactory service to our customers.

Jewelers visiting New York are cordially invited to call.



## Reliable Material Most Profitable.

Good, high-grade materials save time in adjusting, fitting or adapting—save money. They give satisfaction. A trial order will convince you that we handle the best materials that can be bought.



### Garnet Mainsprings.

Our latest—one of the best mainsprings used. Coiled, very fine finish, ends and arbor holes being ready for immediate use. All staple sizes and styles for American watches.

Price—Per dozen, \$1.00.  
Per gross, 10.50.



### E. & J. S. American-Made Balance Staffs.

Absolutely true and correctly gaged as to measurements. For all sizes and grades of American watches.

Price—E. & J. S. Brand, all sizes, per doz., \$1.00  
Eagle .75



### E. & J. S. American-Made Balance Jewels.

Made with greatest care and accuracy to insure true settings and proper gage for the grade for which each is intended. Get sample order, assorted dozen, and inspect the perfect finish and excellent grade of jewels.

Price—E. & J. S. Grade, all sizes, per doz., \$1.50  
Eagle Brand, all sizes, per doz., .75

All Prices  
Less  
6%  
For Cash.



### Hercules Mainsprings.

A spring that fills the demand for a reliable moderate-priced mainspring, for the cheaper grades of American watches. They give excellent satisfaction—best value obtainable, for the price. All styles for the staple sizes of American watches.

Price—Per doz., \$.75.  
Per gross, 8.75.



### E. & J. S. Mainsprings.

They have stood the test of time. We have sold these springs for many years; their popularity has increased constantly. They possess the life and snap necessary in a good mainspring—temper is uniformly good. Each spring is wrapped in anti-rust paper, put up in half-dozen lots. All styles and sizes for American watches.

Price—Per doz., \$1.25.  
Per gross, 14.25.

We have a complete stock of Genuine Factory Materials for all American-made watches; also a general assortment of Odd and Discontinued Parts not generally found in material stocks.

Illustrated Tool and Material Catalogue sent free upon request.

**E. & J. SWIGART, Cincinnati, Ohio.**



“New Money for Old Gold and Silver.”

# A MODERN STORY of ALADDIN

## HOW IT IS DONE.

We pay the very highest prices for old gold and silver immediately upon receipt of your shipment. Returns for sweepings within five days of receipt. All shipments are kept intact, and if our offer is not thoroughly satisfactory, the consignment will be returned at once, and we bear all the expense. Could anything be fairer?



**Goldsmith Bros.,**  
Office 63-65 Washington St  
Works 58<sup>TH</sup> & Throop St  
**CHICAGO.**



Lebolt & Co., West 23d Street, New York City.

## ONE OF OUR STORES.

WE MAKE A SPECIALTY OF JEWELRY STORES.

If you are thinking of either Fixtures or Show Cases, we make the best that money and brains can produce. We have our own architect and will furnish designs and estimates, or estimates from your own architect's designs and specifications.

### JOHN HOFMAN CO.,

SEND FOR OUR CATALOGUE.

Rochester, N. Y., U.S.A.

#### REFERENCES:

T. & E. Dickinson, Buffalo, N. Y.  
Tilden & Thurber Co., Providence, R. I.  
Saks & Co. (jewelry department), New York City.  
W. H. Mortimer, Pottsville, Pa.  
G. A. Schlechter, Reading, Pa.  
E. Keller & Sons, Allentown, Pa.  
C. Willis Bixler, Easton, Pa.

Henry Oemisch, Rochester, N. Y.  
E. J. Scheer, Rochester, N. Y.  
Ettenheimer & Co., Rochester, N. Y.  
Fred F. Mead & Co., Syracuse, N. Y.  
F. A. Robbins, Springfield, Mass.  
L. Lewis & Co., New London, Conn.  
Henry Kohn & Sons, Hartford, Conn.



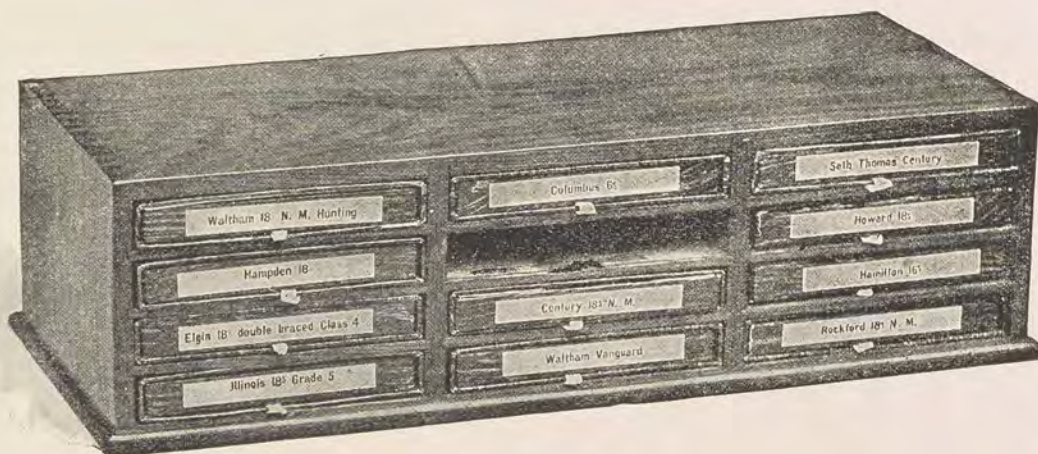
HAVE YOU TRIED

# The "Longeval" Mainspring

FOR AMERICAN WATCHES?

This handsome Oak Cabinet furnished gratis with every order for 1 gross of

"Longeval" mainsprings. The cabinets are constructed on the principle of the sectional bookcase—you can build them to any required size.



IF NOT, we want you to send for a sample dozen to your jobber. The "LONGEVAL," as its name implies, has long life; it is made with unsparing pains, it is impossible to conceive of any methods which produce greater and better safeguards and protection for mainsprings, than have been adopted in putting this spring on the market.

BRIEFLY, the chief features are: The springs are manufactured by the best maker in Europe, with years of successful reputation, and an experience handed down from ancestors of mainspring makers, all of whom excelled in the manufacture of springs. The "Longeval" springs are protected against all climatic changes; each spring is wrapped in anti-rust paper, then packed in an individual paper box, which is in turn wrapped in lead foil, as shown in the above illustration, which excludes all possibility of dampness reaching the springs. Twelve boxes, each containing a spring are placed in a strong sliding box, bearing a label describing the watch for which the springs are intended.

The advantages are: No springs exposed to the air and endangered by moisture or climatic changes; only one spring has to be handled at a time, and not a full dozen, as heretofore; a guarantee accompanies every dozen springs; the "Longeval" spring is made of highest grade steel, fine in grain, high in carbon, and carefully finished down by hand, the only method that will ensure a spring to stand up well after years of daily use in a watch. Nothing has been left undone to make the "Longeval" mainspring the finest possible.

## Get the Best—The "Longeval."

Order a sample dozen from your jobber; if you cannot obtain them there, write direct to the importers, **HAMMEL, RIGLANDER & CO., 35 Maiden Lane, New York**, who will inform you of the nearest jobber who will supply you.

### NOTICE.

The importers of these mainsprings are the first to have employed the idea of putting each spring in a separate box, thus protecting them against rust and climatic changes, and to place a number of these small boxes in a box or case.

They have taken expert advice as to their sole and exclusive right to this manner of "dressing" mainsprings, and have been advised that they have a proprietary right thereto.

The trade is hereby notified that any infringement of this manner of "dressing" mainsprings for the market will be vigorously prosecuted.



**"THE CHAINS THAT SELL"**

BY  
THIS  
MARK

**L. S. & CO.**

YOU  
KNOW  
THEM

**LOUIS STERN & CO.**  
Chainmakers and Silversmiths. Providence, R.I., U.S.A.



BEWARE  
OF  
IMITATIONS.

FULL NICKEL PLATE.

IN COMPARING PRICES WITH  
OTHER LATHES, LEARN THE  
DIFFERENCE IN SIZE,  
QUALITY AND DETAILS  
OF CONSTRUCTION.

Lathe, including Taper and Screw Chuck,  
6 Cement Chucks and belting . . . \$29.00  
Extra Wire and Wheel Chucks . . . .75 each.

A CHUCK MAY LOOK ALL RIGHT, YET BE ALL WRONG.  
Our Chucks are made of the very best steel and absolute concentricity of  
cone, thread and hole is obtained by the most improved methods based upon  
years of experience. We use no Dies for the threads, but CUT THEM ON A  
LATHE; nor do we file and polish the cone, body or hole, but GRIND them to  
a standard on special grinding machinery and guarantee perfection in every part.  
WE CAUTION YOU AGAINST THE IMPERFECTIONS OF THE IMITATION.

**FOR SALE BY ALL JOBBERS  
IN THE UNITED STATES AND CANADA.**

<sup>857</sup>  
**PERFECT  
CONSTRUCTION**

IN EVERY DETAIL.

HARD SPINDLES RUNNING IN  
HARDENED  
STEEL  
BUSHINGS.



This guarantee is backed  
by our experience of 32 years  
in building Lathes and the perfect  
methods used in their construction.

Ask your jobber for  
this label—



Note the



and  
beware of  
imitations.



The *True Blue*  
*Beaded Label*  
*French*  
*Watch*  
*Glass*

Ask Your  
Jobber  
For Them

**SUSSFELD,  
LORSCH & Co.**

Wholesale Agents

NEW YORK: 37 Maiden Lane  
PARIS: 21 Rue de l'Echiquier

*Satisfied Customers Are  
The Best Advertisement*

We will furnish upon request a list of satisfied customers that will be most convincing. Give us a chance to add your name to our satisfied list.

**THE BROWN & DEAN COMPANY,**  
*Gold and Silver Refiners.*

*102 and 104 Richmond Street,  
Providence, R. I.*



You see them wherever you go,  
They go wherever you see them.

This graceful vehicle is a familiar sight in every city street. It is more economical than a horse and will cover more territory, never getting tired and always ready when wanted.

**The Oldsmobile**  
**Light Delivery Wagon,**  
**Price \$850.00,**

is built for service. It has a carrying capacity of 500 pounds in a carrying space of about 30 cubic feet. It will run 100 miles on one filling of gasoline.

For full information regarding the Oldsmobile line, see our nearest sales agent, or write direct to Dept. 66.

**OLDS MOTOR WORKS, Detroit, Mich., U.S.A.**

Member of the Association of Licensed Automobile Manufacturers.



4258 E.  
Pat. May 27, '90.



4202 E.  
Pat. May 27, '90.

Genuine  
Elk's



4203 E.  
Pat. May 27, '90.



4185 E.  
Pat. May 27, '90.

WE CARRY CHARMS IN STOCK from \$5.50 list to \$200.00 list, in solid 14 K. gold only.



4187 E.  
Pat. May 27, '90.



4190 E.  
Pat. May 27, '90.

Tooth  
Charms  
Hand-Chased Mountings.



4191 E.  
Pat. May 27, '90.



4180 E.  
Pat. May 27, '90.

Manufactured by the Best Emblem House on Earth.

**THE GUSTAVE FOX CO.,** BOYLAN BUILDING, CINCINNATI, OHIO.

We make a specialty of Emblem Goods—Elks, Eagles and Masonic. If your jobber does not carry our lines, write us and we shall either send you a fine selection through him or direct. The above illustrations are from The Gustave Fox Co.'s Catalogue of Emblem Goods. If you haven't one, be sure and write. It'll interest you.



**Prices and Quality Right.**

- ★ "STAR" Brand American Mainsprings. Extra quality, fine crocus finish, correctly gaged; made of the finest special steel; the tips are fitted perfectly. Price per dozen, 85c. net cash; price per gross, \$9.50 net cash.
- SPECIAL. We will give an elegant Solid Oak Mainspring Cabinet, with (20) drawers, worth \$6.00, with your first order for 1 gross of "Star" American Mainsprings, assorted to suit, for \$10.50 net cash.
- ★ "STAR" Brand American Balance Staffs, extra fine, made by the latest improved automatic machinery, correctly gaged special 7 Jewel grades.
- 90c. 15 Jewel grades, polished, \$1.15. 17 Jewel grades, polished, \$1.35 per dozen, net cash.
- ★ "STAR" Brand American Balance Hole Cock and Foot Jewels in settings, made by automatic machinery correctly gaged, special, per dozen, 90c. net cash.
- ★ "STAR" Brand American Roller Jewels that will fit properly, 25c. per dozen; special, \$2.50 per gross net cash, including Oak Cabinet with 12 bottles.
- ★ "STAR" Brand American Long Case Screws that will fit properly, 20c. per dozen; special, \$2.00 per gross net cash, including Oak Cabinet with 12 bottles.

All the above prices are strictly NET CASH. Orders filled in rotation as received.

**H. B. Peters & Co.,** 177-179 Broadway, New York

Discontinue the Use of Charcoal Soldering Blocks and use instead the neat and cleanly



**No. 124 Prepared Magnesium Soldering Block.**

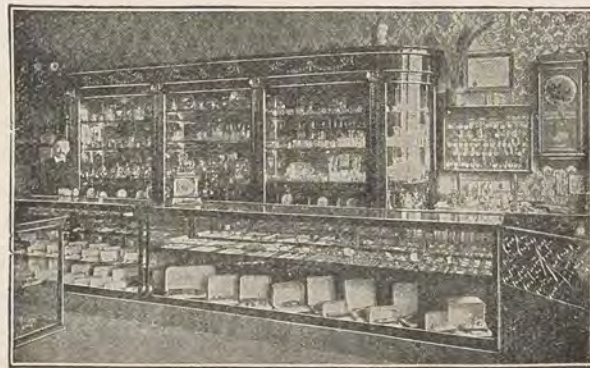
Prepared Magnesium Soldering Blocks are composed of 85 per cent. Carbonate of Magnesium with asbestos fibre. Especially advantageous for delicate soldering, as the composition reflects heat better than the ordinary Soldering Block, and is loose enough to admit of work being pinned to it. No. 124 Soldering Blocks are properly coated on all but the fire surface to prevent flaking and to make them cleanly to handle.

Size, 3" x 2 1/4" x 1" thick.

By mail, 15 cents.

**Buffalo Dental Manufacturing Co., Buffalo, N.Y., U.S.A.**

Want Catalogue B. K. of Blowpipes and Furnaces?



WINTER MADE IT, WHICH SIGNIFIES IT IS RIGHT.

"Winter" is not the cheapest, but "Winter" goods are right. If you want the best at prices that are right, write "Winter" for



The Finest and Most Complete Book of its Kind Ever Issued.

Plans, interior views, new suggestions, separate fixtures, cases, counters, floor cases, soda fountain fixtures, tables, chairs, desks, specialties, etc. Illustrated fully, described and listed in so plain a manner that you can make your own plans and estimate the cost of your fixtures.

Sent postpaid on receipt of 25 cents.

We do not claim to be the largest in the world, but we are proud of our factory, our reputation and our line. We do claim to make the best, at prices that are right. Not how much, not how cheap, but how good. Ask our customers. If you want good, practical, substantial, ahead-of-the-times fixtures, write us

**M. WINTER LUMBER COMPANY,** SHEBOYGAN, WIS.

Established 1865.

SALES AGENTS.

- Finlay-Dicks & Co., New Orleans, La., Sales Agents for Mississippi, Louisiana and Alabama.
- C. D. Smith Drug Co., St. Joseph, Mo., Sales Agents for Missouri, Kansas, Nebraska, Oklahoma Ter. and Ind. Ter.
- R. H. Birdsall, 42 Front Street, Portland, Oregon, Sales Agent for Oregon and Washington.
- Texas Drug Co., Dallas, Texas, Sales Agent for Texas.



## Announcement by The Canadian Horological Institute.

### The Fifteenth Year and Opening of the New Term

begins on September first, 1904,

when all students should be present. Write for circulars and make application as early as possible.

**The Demand** on us for students has sometimes been greater than the supply by twenty-five to one. The following advertisements taken from different daily papers a short time ago show the kind of standing **our** graduates enjoy:

WATCHMAKER WANTED—PREFER-  
ABLY with references from Canadian  
Horological Institute. Apply to PATEN-  
AUDE BROS., Nelson, B.C. k

WATCHMAKER WANTED—AT ONCE  
—Canadian Horological Institute man  
preferred; state experience, tools, and salary  
expected. GEO. E. GENDRON, Pentan-  
guishene. r

They speak volumes for the success of the school, its graduates, their preferment, the eagerness with which they are sought, the value and satisfaction of their services. We know of no school of any kind whatsoever for whose graduates there is so public and convincing a demand.

Send for circulars to-day.

### CANADIAN HOROLOGICAL INSTITUTE,

H. R. PLAYTNER, Director.

115 to 121 EAST KING ST., Toronto, Ont.

## LIQUID AMBER

THE JEWELERS CEMENT



**The Strongest Cement**  
yet discovered—much superior to Shellac or other gum or gelatine cements.

It has no equal for fixing Pallet Stones and Roller Pins, making a much stronger and cleaner job than shellac. It is quite transparent, and will successfully repair Broken Cut Glass, China, etc. The same properties make it invaluable for setting fine Pearls. It will fix a slack Watch Glass so that dirt cannot work through the bezel, and do any other job where a strong, clean cement is required.

Sold by every material dealer in America.  
Price, 25c.

SUSSFELD, LORSCH & CO.,  
Wholesale Distributing Agents,  
37 Maiden Lane, New York.

ESTABLISHED 1867

## SMITH BROS.

DESIGNING AND ENGRAVING



WOOD AND PHOTO-ENGRAVING  
ZINC ETCHING  
HALF TONE AND FINE COLOR WORK  
JEWELRY CUTS  
A SPECIALTY

FORREST BUILDING  
119 So. FOURTH ST.  
PHILADELPHIA.

TELEPHONE CONNECTION

## L. LELONG & BROTHER

Gold and Silver REFINERS, ASSAYERS and  
**SWEEP SMELTERS**



BULLION SOLICITED

SMELTING FOR  
THE TRADE

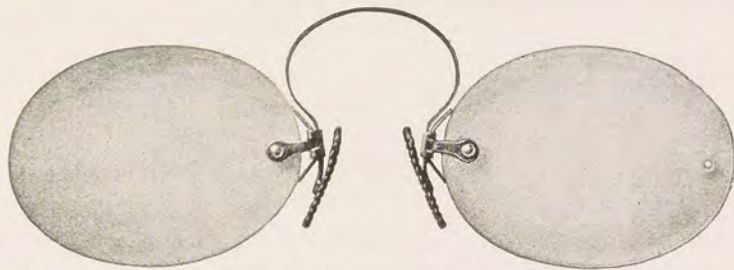
SWEEPINGS  
OUR SPECIALTY

Prompt attention given to  
Old Gold and Silver forwarded to us  
by mail or express

Southwest Corner  
Halsey and Marshall Sts.  
**Newark, N. J.**

# Our New Line of Rimless Eyeglasses with Offset Guard.

(Patented May 3, 1904)



Mounted with our "Albex" lenses, "O" size. All focus numbers.

No. 950. Nickel-plated Mounting.

No. 955. Alloy Mounting.



Mounted with Mi-coquille lenses, "OO" size.

No. 960. Nickel-plated Mounting.

No. 965. Alloy Mounting.

---

## Description.

**MOUNTING.** Our patented construction, light and strong. Lenses cannot work loose.

**GUARD.** Neatly finished offset guard, comfortable and cleanly. Designed on best principles. Perfectly adjustable.

**LENSES.** Our "Albex" and Mi-coquille lenses. Smooth, flat edges.

**COST.** Notwithstanding the exceptional merit of our new styles, prices will be less than any other line of rimless eyeglasses on the market.

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*Ask your Jobber to quote prices.*

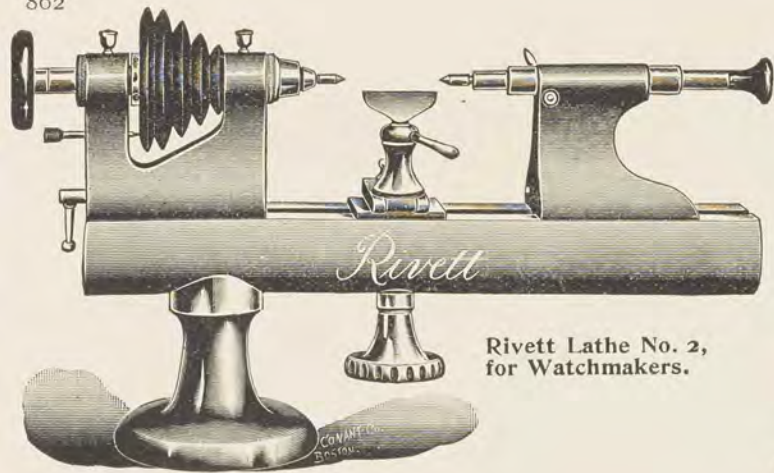
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**T. A. WILLSON & CO.**

*Manufacturing Opticians*

Established 1870.

READING, PA., U.S.A.



# Rivett Lathes

Made in 2 Styles.

**The Rivett Lathe,** steel bed as usual.  
 “ “ “ with bed of Cast Iron, same as other makers use, at a lower price.

**Ask Your Dealer for it.**

**SEND FOR CATALOG.**

Extract from one of several letters of the same kind that we are continually receiving:

In all my traveling from one country to another I have nowhere found a tool which was so useful, so handy, and on which a mechanic could do such good work in so short a time as on your lathe.

If I could have got your lathe in a few days at the time I was in Boston, I could have bought several of them during the last five years, but your prices seem high to people who do not know a good tool, especially when you turn dollars into marks.

I enclose a list of the lathe with attachments I have picked out for the present; later on I will order the rest. I have only the power to spend 1500 marks on this now, which I am sending through a Boston bank. Please get the lathe ready and let me know by return mail when it will be shipped.

Very truly yours,

BERRENBURG ELEKTRICITÄTWERKE,  
 Wipperfurth, Germany.

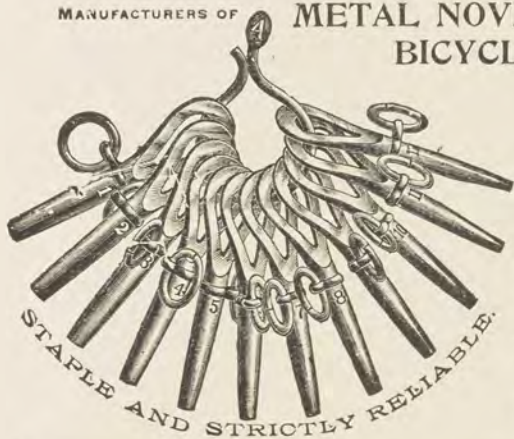
## Faneuil Watch Tool Co.

Brighton,

Boston, Mass., U.S.A.

### A. N. CLARK & SON, Plainville, Conn.

MANUFACTURERS OF METAL NOVELTIES,  
 BICYCLE SUNDRIES and  
 CLARK'S  
 CELEBRATED  
 LOOP  
 WATCH KEYS.



Order Keys through your jobber, who will furnish them at our price.

J. H. Walbridge & Co., 337 Broadway, New York City, agents for Tweezers, Manicures, Key Rings, etc.

Stevens & Co., 99 Chambers St., New York, agents for Bicycle Sundries.

ELKS' BUTTON.  
 (Front.) Pat'd.  
 Sterling Silver and Gold-Plated.

ELKS' BUTTON.  
 (Side.) Pat'd.

TIGER CLAW RING.  
 Side View.

TIGER CLAW RING.  
 (Front.) Pat'd.  
 Sterling Silver and Gold-Plated.

MONKEY RING.  
 Solid Silver, Oxidized.

I do all kinds of work for the trade. Workmanship the very best, and satisfaction guaranteed.

**Ikko Matsumoto,**  
 Rooms 1, 2 and 3, 17½ S. Meridian St.  
 Manufacturing Jeweler,  
 Indianapolis, Ind.

WE MAKE A SPECIALTY OF

# CLOCK MATERIAL

and of WHEEL CUTTING and MAKING PARTS TO ORDER.

MAIL ORDERS Filled Promptly.

We keep in stock

English  
 German  
 Seth Thomas } Hall Clock  
 Movements

## G. S. LOVELL CLOCK CO.

MANUFACTURERS' AGENTS,

18 South Tenth Street, Philadelphia.



No Well-Informed Jeweler

Doubts the desirability of



as a prominent part of his stock. They are always of standard quality and desirable styles at a price that affords the Retailer a good profit.

Don't wait for our travelers but order, for selection or otherwise, direct from

M. B. BRYANT & CO.,

7 Maiden Lane, NEW YORK.



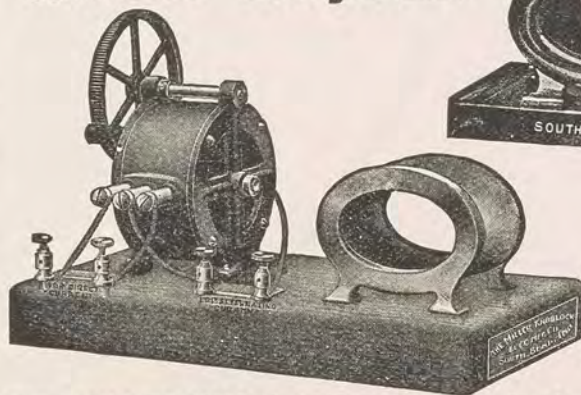
Portable 10-in. Electric Sensitive Bench Drill.

For 110 or 220 volt direct current. Five speed changes—500, 750, 1000, 1350, 2000 R. P. M. Can be plugged direct into lamp socket. Drill capacity, 1/4-inch. Weight, 100 pounds. YOU NEED IT.

\$50. With Chuck Fitted, \$5.00 Extra.

Bartz, Wygant & Brown, Hornellsville, New York.

"South Bend" Demagnetizers



ORDER FROM YOUR JOBBER.

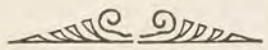
PRICES: For Direct Current, \$15.00 For Alternating " 5.00

Agents for England, GRIMSHAW & BAXTER, 29 Goswell Road, London, carry stock.

THE MILLER-KNOBLOCK ELECTRIC MFG. CO., South Bend, Ind.

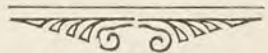
20th Century Food For Thought

is the privilege, which our customers enjoy, of exchanging any of our Rings for new styles at any time. WRITE FOR A MEMORANDUM PACKAGE. We carry 1000 different styles of 10 K. Solid Gold Stone-Set Rings. We pay express charges both ways and give you January 1st, 1905, terms on all goods selected.



1—We size our Rings and replace all stones except diamonds, whether lost or broken, for two years after you have sold them.

2—We exchange any of our Rings for any styles of gents' or ladies' stone-set Rings at any time.



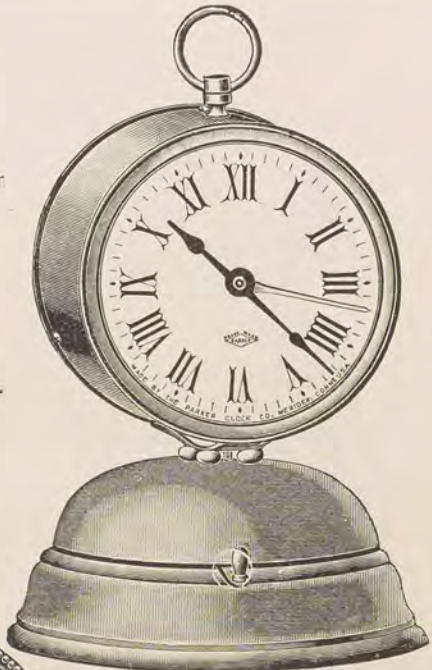
The Queen City Ring Mfg. Co. Buffalo, N. Y.

Ellicott and South Division Streets,

SPECIAL ANNOUNCEMENT TO THE TRADE.

We sell an assortment of 12 Parker Clocks at prices stated below:

1	Parker No. 43	@	\$ .75	\$ .75
1	" " 61	"	1.00	1.00
1	" " 63	"	.90	.90
1	" " 98	"	1.25	1.25
1	" " 101	"	.70	.70
1	" " 102	"	.75	.75
2	" " 103	"	.60	1.20
2	" " 105	"	.58	1.16
2	" " 106	"	.55 1/2	1.11
				\$8.82 total, net.



PARKER No. 61.

We also sell 4 in. 30 hour Time Alarm America for 50c. net, in case lots.

Aisenstein & Woronock,

Jobbers in

DIAMONDS, WATCHES AND JEWELRY,

22 Eldridge St., New York.



AMERICA No. 121.

## Experience

has given us the "know how" of Assaying and Refining, and the up-to-date Refining plant in America backs up our knowledge. But you must look for something more than experience and knowledge, in your Refiner, to get the best returns from your Old Gold and Silver. You must take into consideration the

## intention

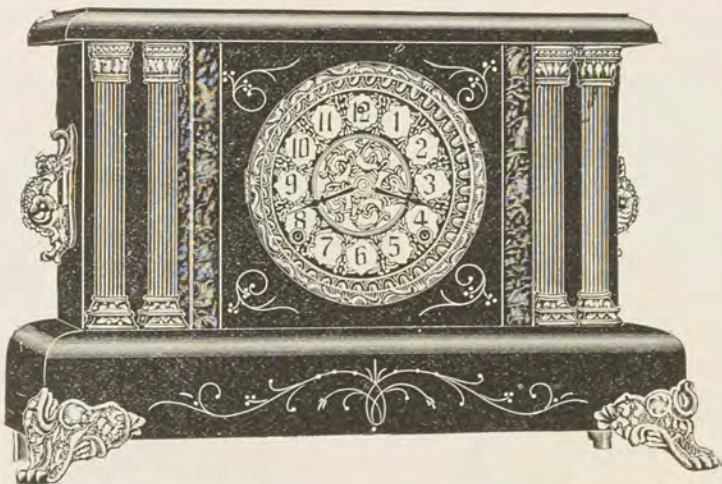
of the Refiner to give you all you should get. A great number of pleased Jewelers have proved their faith in us by "tying" to us after their first trial. They *know* that we are doing the Assaying and Refining business *squarely*.

*T. B. Hagstoz Co., Ltd.*

Smelters, Assayers and Refiners,

709 Sansom St., Phila.

(Works at Riverside, N. J.)



## SESSIONS CLOCKS

Superior Finish. Reasonable Prices.  
Substantial Movements. Excellent Timekeepers.

We have made EXTENSIVE ADDITIONS to our factories and largely increased our facilities.

We call your attention to the extra QUALITY and to the VARIETY of DESIGNS in our MARBLEIZED CLOCKS which we believe are the BEST on the MARKET. Write for Catalogue.

**The Sessions Clock Co.,**

Successors to E. N. WELCH MFG. CO.,

Manufacturers of

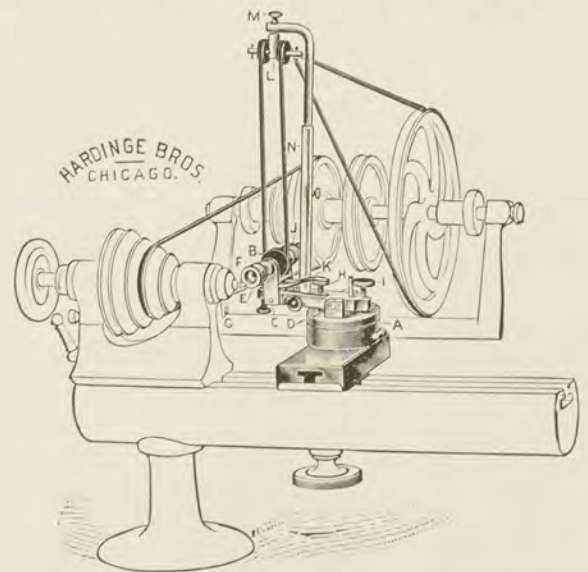
Marbleized Wood, Oak Mantel and Office Clocks,

Main Office and Factories,

FORESTVILLE, CONNECTICUT, U.S.A.

New York Salesrooms, 37 Maiden Lane.

## A NEW IDEA

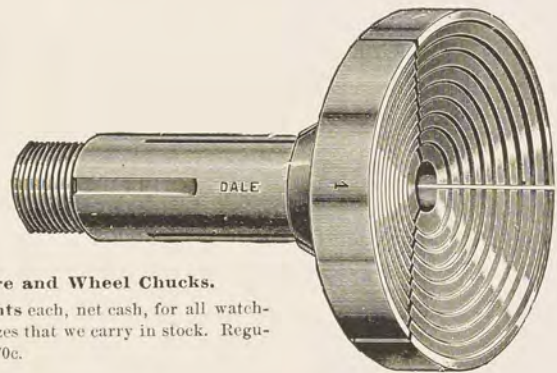


Is often suggested by observation. Look at this **Pivot Polisher** in position for pivoting and we are convinced you will at once begin to think. We are satisfied we will hear of your decision. Price, fitted to any lathe, **\$30.00**. Write for further information and Catalog No. 5 to

**Hardinge Bros.,** 1034 & 1036 Lincoln Ave.,  
CHICAGO.

# SPECIAL JUNE <sup>AND</sup> JULY SALE

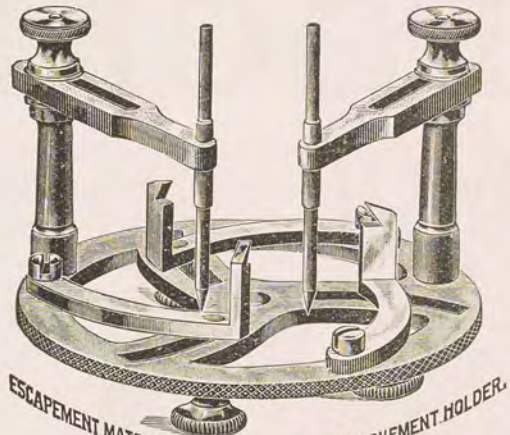
## To Reduce Our Stock.



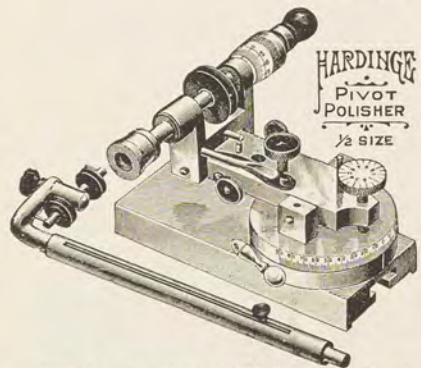
**Wire and Wheel Chucks.**  
50 cents each, net cash, for all watch-makers' sizes that we carry in stock. Regular price, 70c.



**Hardinge Balance Chuck.** Price, \$3.75. Regular price, \$5.00.



	Sale Price.	Regular Price.
2 Arms . . . . .	\$2.00 net.	\$2.50.
3 " . . . . .	2.50 "	3.25.



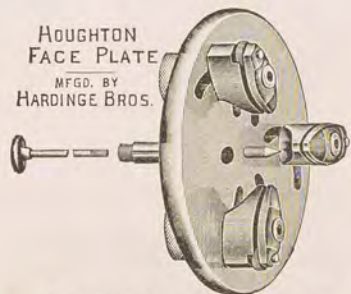
Fitted to any lathe, \$25.00 net. Regular price, \$30.00. Send shoe of lathe to insure fit.



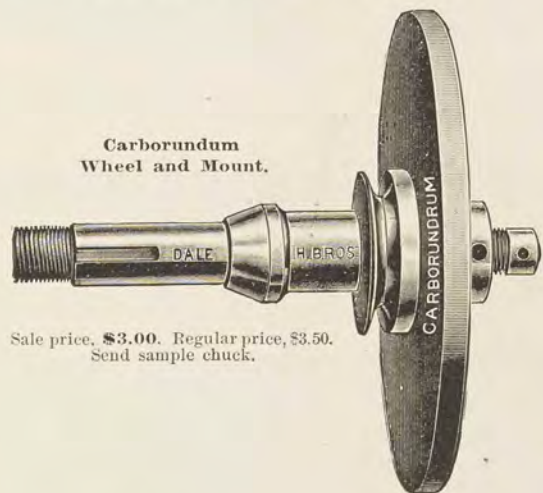
**Roller Remover, Complete.**  
Sale price, \$1.75. Regular price, \$2.00.



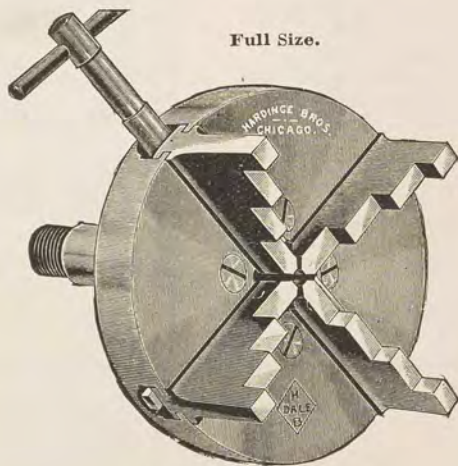
**Roller Remover, Plain.**  
Sale price, \$1.40. Regular price, \$1.75.



New style face plate. Sale price, \$6.75. Regular price, \$8.00.



**Carborundum Wheel and Mount.**  
Sale price, \$3.00. Regular price, \$3.50. Send sample chuck.



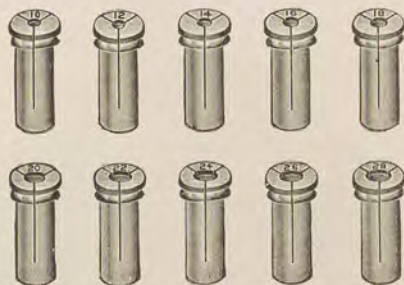
**Four-Jawed Chuck.**  
Full Size.  
Sale price. Regular price.  
2-inch Chuck . . . . . \$ 8.00. \$10.00.  
2 1/2-inch " . . . . . 10.00. 12.00.



**Cylinder Wire Chuck.**  
Six in set.  
Sale price, \$4.00. Regular price, \$5.00.



**Roller Chuck.**  
Six in set.  
Sale price, \$4.00. Regular price, \$5.00.



**Brass and Steel Jewelry Chucks.**  
Made to fit No. 38 or 50 wire chuck.  
Sale price. Regular price.  
Brass . . . . . \$1.25 net. \$1.50.  
Steel . . . . . 1.75 " 2.50.

We reserve the right at these prices to reject orders at any time during this sale.

TERMS, NET CASH.

**HARDINGE BROS.**  
1034-36 Lincoln Ave., CHICAGO.

866

# WIGHTMAN & HOUGH Co.

Established 48 Years.

PROVIDENCE. R. I.

MANUFACTURERS OF EVERY STYLE OF

# LOCKETS



None genuine without trade-mark stamped inside.

Ask your jobber for our beautiful new and original styles of white-stone and fancy colored locket, now ready for fall trade.



SEND FOR ILLUSTRATED BOOKLET.

## C. T. CUNY AND COMPANY,

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MANUFACTURING JEWELERS AND ENGRAVERS.

**REASONS** why we are the **BEST FIRM** to do the Country Jewelers' Work.

Because—All jobs go back the same day.

Because—Every job is done right.

Because—Every price is low.

Because—Every job is guaranteed.



BEFORE.

Established 38 Years.

## Watch Case Making, Repairing, Remodeling and Reconstructing.

Old English and Swiss Cases Changed to Fit American Stem-Wind Movements.

Engraving and Engine-Turning. Gold and Silver Plating. Satin-Finishing and Polishing.

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### THE GOODS ARE JUDGED BY THE CASES.



A sample of our handsome Chests, with one drawer. Made in a variety of hard woods, highly polished; metal trimmings, lined with satin or chamois.

Mean cases or trays make the best goods look mean; handsome cases give a semblance of richness to even the poorest goods. We are the leading manufacturers of **Boxes, Cases, Trays, Chests,** for watches, jewelry and silverware. Our cases, etc., are known to be the greatest help in the sale of goods. We have qualities and grades to suit all jewelers. Write or call.

**L. WEIL & SON,**

Manufacturers of Cases, Trays and Chests for Jewelry and Silverware,

32 Maiden Lane, NEW YORK.

Send for Catalogue.

ANTI-OXIDIZING **FLUID** HARD SOLDERING

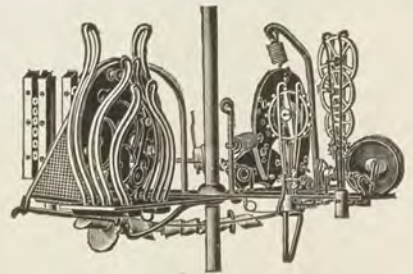
50 cents

**9/10 LABOR SAVING**

By Mail.

TRY a bottle and you will not do without it, and if you do not find it a labor saver will refund your money.

**A. Levytansky, Victoria, Texas.**



Pat'd Feb. 4, 1903.

## The Higgins Watch-Cleaning Machine.

Saves watches, saves time, Makes money, makes reputation.

**J. J. HIGGINS,**  
Du Quoin, Ill.

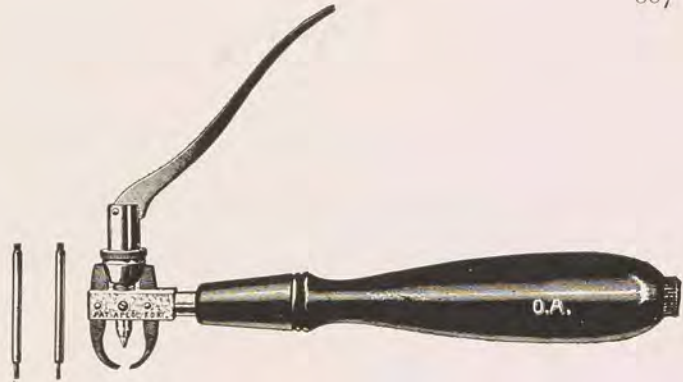
# To the Jobbing Trade



## Caution to Watchmakers.

Our "U. S." MAINSPRINGS are acknowledged by watchmakers throughout the United States to be the best springs in point of finish and quality, for the money, ever placed on the market. We desire to maintain this reputation for the "U. S." springs, and would therefore call your attention to the fact that an imitation spring resembling the "U. S." has been offered for sale, and in some instances, we are informed, has even been placed in "U. S." boxes. To guard against this deception we would suggest that you exercise the utmost caution in making your purchases, and insist that the trademark "U. S." appear engraved upon each spring.

ASK YOUR JOBBER FOR THEM.



## New Patent Roller and Hand Remover.

This combination tool will remove all sizes of single and double rollers from balance staffs with safety and certainty, and will remove all sizes of watch hands without injury to dials. Expert watchmakers have pronounced it the most perfect tool of its kind in the market.

**Instructions.**—The jaws can be adjusted for small or large opening, just by turning thumb nut. It has two extra plungers for hand removing and one extra plunger for roller remover, which are kept inside of handle when not in use; the handle has a thumb screw in the back with a steel sleeve to fit over plungers. When changing plungers, open the jaws, hold the lever down, then unscrew plunger and put another in for hand removing, and keep the others in handle.

## PERFECTION HAT-PIN STEM.



This Patent Solderless Hat-Pin Stem is the most perfect and best in the market, the construction of it being such that it will neither slip or break. A trial will convince you of these facts. To be had at all the leading Jobbing Houses.

# HENRY ZIMMERN & CO., INC.

Importers of Watch Material,

60 John Street, NEW YORK.

Solid Nickel and White Metal Chains a Specialty.

## We do RELIABLE Silver-Plating and Silverware Repairing



Can this be Repaired?

Yes!

We Repair any article in the Silverware line, making new parts to match the old ones, broken or melted off, the same as new. We Replate any article you want in Gold, Silver, Nickel, Bronze, Brass, Oxidized Silver, Old Bronze, Statuary Bronze, and all the Antique or Old Finishes, etc.

Silverware Repaired and Replated. **Sercomb Company** 1429 Wabash Ave., CHICAGO. A. N. SPERRY, Manager.



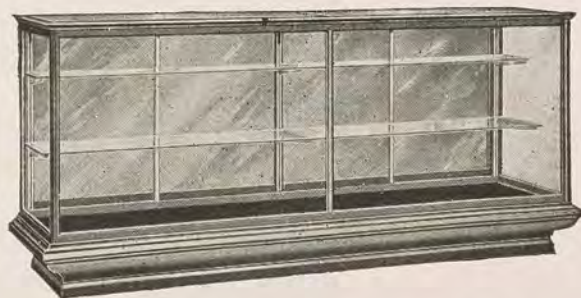
Partial View of the Main Room.

## WILL YOU VISIT THE WORLD'S FAIR?

If so, pay us a visit, and we will show you how we are teaching our students to become successful Watchmakers. Our mode of instructing is a system original with us. It comprises science, accuracy, a saving of time and money to the students.

**Results are:** Efficient mechanics, good positions, greater pay. Our course is made so comprehensive by expert artisans as instructors that any live young man can thoroughly master it in from 6 to 12 months' time. Write for our new Catalogue.

**ST. LOUIS WATCHMAKING SCHOOL, 5815 Easton Ave., ST. LOUIS, MO.**



## FREIGHT SAVING

# Silent Salesman Show Cases

For forty years we have made the strongest and most artistic show cases on this continent. We have shipped them everywhere, buyers not hesitating to pay high cost of freight from our factory to distant points of destination, the greater value of "Silent Salesman" over other makes being considered full return for the money invested. In order, however, to meet the wishes of many others who would buy of us were the freight obstacle removed, we are now making a handsome Knock Down show case which is in all respects the same as our regular line and which makes an actual saving in freight of from 60 to 75 per cent.; no trouble to set them up, and, when set up, their rigidity is perfect.

"Silent Salesman" Show Cases are made in all shapes and sizes, with or without illumination, and possess many points of excellence distinctly their own. They are acknowledged to be in beauty and effectiveness the highest type of the show case maker's art.

Write us for designs and prices.

**5, 6, 8 and 10-ft. K. D. Cases, Antique Oak finish, carried in stock.**

## JOHN PHILLIPS & CO., Ltd.,

Detroit, Mich.

(Address Detroit Office.)

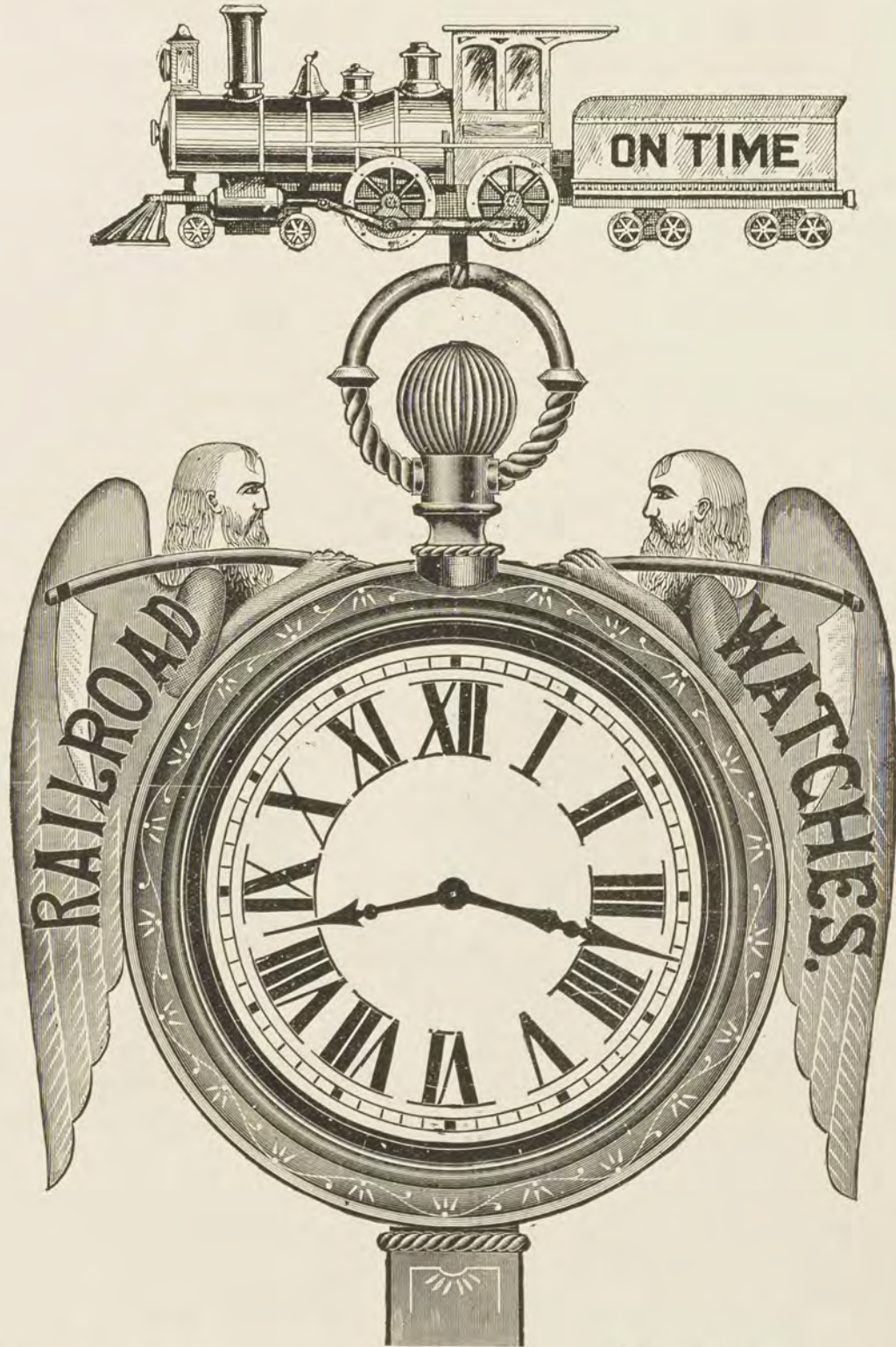
Windsor, Ont.

# UP-TO-DATE WATCH SIGN.

## The Electric Railroad and Engine Post Sign.

Lighted up brilliantly with electric lights. Width, 38 inches diameter; is made of the best iron, gilded with XXX gold leaf. Warranted to stand in any climate. Watch has swell dials, 30 inches diameter.

Complete with Wires to "LIGHT UP." Sign Post is not included.



No. 125. Price, \$45.00, Less 6 per cent. Cash. **\$42.30**, Net Cash.

The most attractive sign on the market—puts you in the front rank.

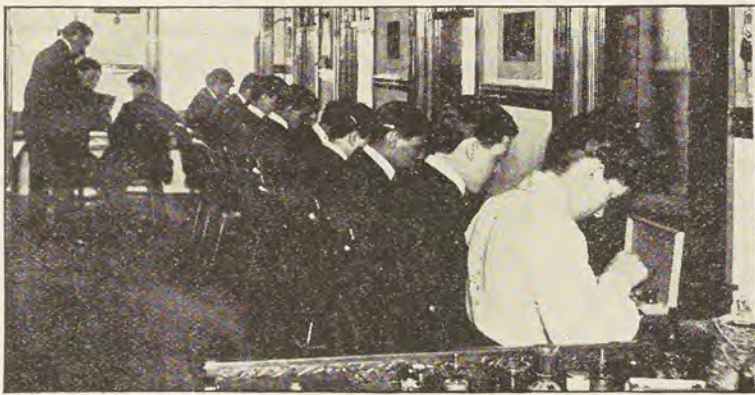
Boxed  
F.O.B. Chicago.

### NORRIS, ALISTER & Co.,

134 to 138 Wabash Ave., Chicago, Ill.

Jewelers'  
Building.

LANDIS SCHOOL OF ENGRAVING.



OUR NEW SCHOOL ROOM. Full Class of Twelve Pupils.

WRITE US. Some of our pupils are just finishing their Course and we will have room for others. Now is the best time to enter. Correspondence solicited.

M. L. LANDIS, 119 Koch Ave., DETROIT, MICH.

Are you looking for a firm that will do your **Repairs** and your **Special Order Work** QUICK and at RIGHT PRICES?

WE ARE THE PEOPLE. Try us. **Cohen, Nickell & Weinman,** MANUFACTURING JEWELERS and DIAMOND SETTERS Exclusively for the Trade. Write for our New Price-List on Repairs. **Champlain Building, 126 State Street, CHICAGO.**



Stop and Think.

Very often a man is tempted to use profanity just because his cuff button is troublesome to attach.

We have the **PATENT SNAP BUTTONS** that will avoid all this—easy to adjust, will not soil or spoil your cuff, are strong and durable and look neat. ASK YOUR JOBBER FOR THEM. Made in 10 and 14 K. gold and in silver. We also manufacture an improved Necklace Snap. Patented in five countries.

E. P. HAPPICH, 833 Arch Street, PHILADELPHIA, PA.



EDWARD E. GNICHTEL BRUSHES

12 GREEN STREET NEWARK, N. J.  
POLISHING SET COMPLETE, \$2.00, PREPAID

COTTON, BRISTLE AND FELT WATCH CASE BUFFS  
FELT AND COTTON RING BUFFS  
BRISTLE WASH AND END BRUSHES  
FELT AND COTTON BUFFS  
BRISTLE POLISHING BRUSHES

SATISFACTION GUARANTEED OR MONEY REFUNDED

Tortoise Shell. The Genuine.



869  
Wm. K. Potter, Providence, R. I. Manufacturer.

New style Combs and Hair Ornaments are continually being made under the dictation of fashion. Shell Combs repaired and repolished and made practically new. Special Work made to order.

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Importers of PRECIOUS and IMITATION STONES  
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WATCH REPAIRING for the Trade.

We are not looking for the one order We want you for a regular customer.

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Established in 1892.

James H. Dederick's Sons, ASSAYERS AND BULLION DEALERS.

ALL QUALITIES OF GOLD AND SILVER, in Plate, Square and Round Wire, Rolled to Any Gage.

BUYERS OF ALL QUALITIES OF GOLD AND SILVER SOLDER. 16 Maiden Lane, NEW YORK.

Foot-Power Lathes.

High-grade tools { Correct in principle. Elegant in design. Superior in construction.

The Best Foot-Power Lathes Made.

This cut represents our No. 4 Lathe, which is admirably adapted for the heavier work of watch-makers and jewelers. Send for our Catalogue.

We also make a line of Screw-Cutting Lathes for Bicycle Repairing.

W. F. & John Barnes Co., 660 Ruby Street, Rockford, Ill.



8085 3023 3040 3014  
3063 3098 3008 3073  
3018

The above rings weigh 3 dwts. each, are set with genuine doublets (any color desired), plain or chased and finished in polished or Roman gold. 10 Karat, at \$2.25 each. We manufacture and SELL DIRECT to the RETAIL TRADE. It will be to your interest to send us a trial order. Selection package sent to rated dealers.

S. FRACKMAN, Manufacturing Jeweler, 51 Maiden Lane, New York.

WE MAKE A SPECIALTY

of Repairing New England Watches for the trade. Our workmen are experts from the factory and we do this work promptly and at reasonable prices. Send us your orders for New England material.

WM. WEIDLICH & BROTHER,

Southwestern Selling Agents for the New England Watch Co.

614 Locust Street, ST. LOUIS, MO.



We have selected the word **BURNO** as the Trade-Mark for our new Crucible and Soldering Blocks, which lead all others in quality and durability. Our crucibles may be used from seventy-five to a hundred times in melting gold, and the gold may be melted quicker and with less gas than in any furnace. The borax is absorbed in the crucible. We make crucibles of the following sizes: No. 1, holding 100 dwt. or under, and tongs, 75c.; No. 2, 50 dwt. or under, and tongs, 50c.; No. 3, 25 dwt. or under, and tongs, 35c. One of our soldering blocks will outlast dozens of charcoal pads. We make soldering blocks of the following sizes, each block encased, bottom and sides, by a metal holder: No. 1, 7x7, 50c.; No. 2, 4 1/4 x 3, 25c.; No. 3, 3 1/4 x 2 1/4, 15c. Our blocks remain level and do not crack.

### FINGER RINGS.

At the request of many would-be purchasers we have decided to sell our outfits for making seamless, plain or wedding rings of the best quality for \$25.00. Our outfit will enable you to make any finger size of any of 50 styles. Some of our customers have said that the cost of extra charcoal crucibles for melting was objectionable, and to overcome this we have invented a new crucible (see our ad. **BURNO**), and we furnish one of these crucibles with our outfit. We have reduced price of uncut mold blocks to \$6.00 a gross. We furnish at 2c. an alloy without zinc that will combine with any gold and produce a ring free from pin holes. We make stone ring molds—tiffanies, belchers, etc.—in great variety; price \$1.00 per dozen. Catalogues on application will tell you how to handle our outfit and molds. We make the best blowpipe, \$2.00; ring-stamping machine, \$10.00; tool for instantly cutting bearings in cramps, \$6.00. Our rings cannot be distinguished from machine-made rings, and are better because seamless.

Ringset Company, Boston, Mass.

### Soft Soldering with Acids, Pastes and Fluids a Thing of the Past!!!

Practically as good as hard soldering and without effort or expense.

For All Trades and Purposes.

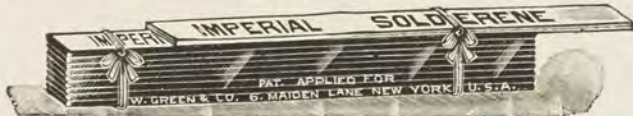
Is Rapid, Clean, Economical, Practical, Convenient, Always Ready, Easy to Use. Requires no acids of any description.

IMPERIAL SOLDERENE, No. 1, in thick sticks. Price, 20c. per stick. Sample by mail, 24c.



One bundle or stick is sufficient for 200 to 400 joints, connections or repairs.

IMPERIAL SOLDERENE, No. 2, in thin strips. Price, 20c. per bundle. Sample by mail, 24c.



For sale by All Reliable Wholesale and Jobbing Trade.

Showing Motor with Buffing, Grinding and Turning Attachments.



### THE W. GREEN & CO. "IMPROVED" COMBINATION ELECTRIC LATHE MOTORS.

(Four Lathes in One, at Price of One.) Made from 1-5 to 1 Horse-Power. "Nothing better can be made; absolutely dust-proof, air and water tight, and fully warranted." With reasonable care these motors will last, in constant use, for 20 years. (Speed, 1200 to 3000 revolutions per minute, as desired.)

FOR ALL TRADES AND PURPOSES. Send for list of reliable unsolicited testimonials.

W. GREEN & CO., Manufacturers, 6 Maiden Lane, NEW YORK, U.S.A.

We solicit correspondence for price-list, testimonials and particulars.



Designed and engraved by Mr. V. E. Lurchin, after ten weeks' instruction at

### The Rees Engraving School.

Hundreds of others have done as well, so can you, by our method. Learn a good trade. Learn it right by attending the largest and best-equipped school in the country. Write to-day for particulars. Personal Instructions by F. H. Rees, author of "The Art of Engraving," "Modern Letter Engraving," etc. Fourteen Years this school has been known to the trade as strictly high-class. We have special advantages. Write us.

Rees Engraving School, Steele Memorial Building, Elmira, N. Y.



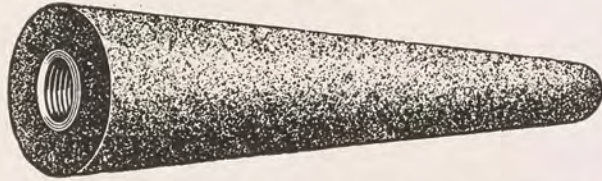


Price, \$ 1.00 Dozen.  
" 10.50 Gross.



A Regent Mainspring Cabinet  
is given FREE with your first order for 1 gross  
Regent American Mainsprings.

### Lathe Cone for Rings. OF SOLID GRIT.



A desirable article for repairing. Is made of solid grit and will outwear thousands of paper shells. Has a metal taper cone to fit on brush arbor.

In two grades—one to cut down solder, the other to finish next to rouge.

Refuse metal can be removed in a few seconds with ammonia and gold saved if desired.

Price per pair, 75 cents.

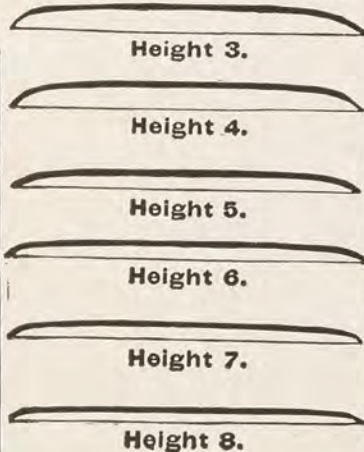


Price, \$ .15 Dozen.  
" 1.50 Gross.

A FULL STOCK OF WATCHMAKERS' TOOLS OF EVERY DESCRIPTION.  
ORDERS FILLED FROM ANY CATALOGUE.



Price, \$ .75 Dozen.  
" 7.50 Gross.



Fac-Simile of Our Label.



PRICE-LIST	{	Genevas, . . . . . \$2.00 per gross.	Patent Genevas, . . . . . \$4.50 per gross.
		Thick Mi-Concaves, . . . . . 2.75 " "	Extra Thick Mi-Concaves, . . . . . 5.50 " "
		Parallels, . . . . . 4.50 " "	Lentilles, . . . . . 7.50 " "
		Flat Lunettes, . . . . . 1.50 " "	High Lunettes, . . . . . 1.50 " "

Orders for less than 1/2 gross will be charged at dozen price. BLANK ORDER SHEETS SENT UPON APPLICATION.

CASH DISCOUNT, 6 PER CENT.



Price, \$ .75 Dozen.  
" 7.50 Gross.

**Cross & Beguelin,**

Importers, Exporters and Manufacturers,  
Watches, Diamonds, Jewelry,  
Silver-Plated Ware, Etc.,

**17 Maiden Lane, New York.**



WATCH and CLOCK

## OIL

# EZRA KELLEY'S OIL

for **Watches, Clocks and Chronometers** has been used by the master horologists of the world for nearly a century. The best workmen use no other. If you pride yourself on your repair work or the timepieces you sell, tie to it. It's best for the timepieces, for your reputation and for your business.



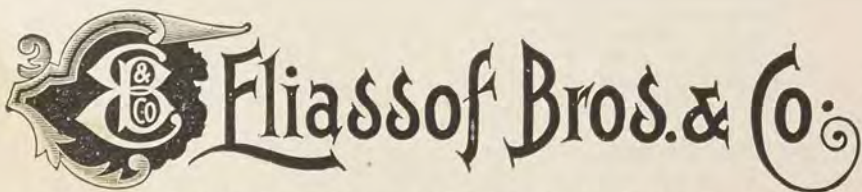
THE STANDARD  
OF THE  
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FOR  
EIGHTY YEARS.

**Henry Ginnel & Co.,**

Agents for the United States, Canada and South America,  
31 Maiden Lane, N. Y.

**Grimshaw & Baxter,**

Sole European Agents,  
35 Goswell Street, London.



IMPORTERS  
AND  
JOBBER OF

**Diamonds  
Watches  
Jewelry**

9-11-13 Maiden Lane  
NEW YORK

100 State St.  
ALBANY, N. Y.

A LARGE ASSORTMENT OF DIAMOND-MOUNTED JEWELRY CARRIED IN STOCK.



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to our Warerooms, 9, 11, 13 and 15 Maiden Lane, New York,  
to inspect the largest and most complete line in

### Choice Sterling Silver, Fine Silver Plate and Rich Cut Glass

ever displayed. We are also showing our usual new assortment of our Cut Glass with Sterling Silver Mountings.

We shall be pleased to have you make our offices your headquarters while in New York, whether you purchase largely or not—that is your privilege and our wish—and we offer you the freedom of our establishment.

Our facilities for producing in the best possible manner anything that can be made in Sterling Silver, Silver Plate or Cut Glass, which have been largely increased the past few months are unsurpassed, and our combined force of several thousand experienced silver and cut glass workers are at your service.

# INTERNATIONAL SILVER CO.

Warerooms,  
9, 11, 13 and 15 Maiden Lane, New York.

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THE HOLMES & EDWARDS SILVER CO.  
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THE MERIDEN CUT GLASS CO.  
1847 ROGERS BROS.  
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THE WM. ROGERS MFG. CO.  
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THE WATROUS MFG. CO.

GENERAL OFFICE, MERIDEN, CONN.

# THE KEYSTONE

Vol. 25

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## THE KEYSTONE

A Monthly Journal Devoted to the Interests of the Jewelry and Optical Trades.

**Subscription**—One Dollar per year, postpaid, to all parts of the United States, Hawaii, Porto Rico, Philippines, Guam, U. S. Island of Samoa, Cuba, Mexico and Canada (except Newfoundland); single copies, regular issues, 15 cents; special issues, 25 cents. To Foreign Countries 10 shillings (\$2.44) per year; single copies, 1 Shilling (25 cents).

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**Change of Address**—Subscribers desiring their address changed, should give the old as well as the new address.

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**To Advertisers**—Copy for advertisements must reach us by the 25th of each month to insure insertion in the issue of the following month. Notices of changes in advertisements should reach us not later than the 20th of the previous month.

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## Beware of Fraudulent Subscription Solicitors

NOTWITHSTANDING the fact that we have repeatedly warned the trade against persons soliciting subscriptions for this journal without authority from us, we still find that jewelers are occasionally imposed on by these swindlers. To every reader of THE KEYSTONE we repeat:

*Do not pay your subscription to any person purporting to represent any subscription agency, as no such person or agency has any authority from us to collect subscriptions.*

*Do not pay your subscription to any one not personally known to you or of whose identity and trustworthiness you are not positively assured.*

Every person authorized to receive subscriptions for THE KEYSTONE is provided with credentials signed by the publisher and business manager, and jewelers who are not thoroughly satisfied as to the *bona fides* of the solicitor should insist on seeing these credentials.

## Art in Jewelry Work

THE tendency of contemporary taste towards art jewelry, properly so called, affords an excellent opportunity to our young men who combine artistic instincts with mechanical skill. The achievements and glory of such marvelous artificers as Rene Lalique, Philippe Wolfers and others are an inspiration and stimulus to all jewelry workers who aspire to something beyond the merely mechanical. In former times the only stipulation made in ordering a set of jewelry was that it should be valuable by reason of the gems it contained, the goldsmith's work proper being a secondary detail. But a radical change has come over our public taste in this regard, and the change marks a new and greater epoch in the goldsmith's craft. A world-famed artist well expresses the new condition as follows: "One must acknowledge the gold and silversmith's craft as an important artistic factor, entirely distinct and apart from the subsidiary task of stone-setting. The recognition of the art of the metal worker, as worthy and capable in

itself of providing beautiful ornaments without the adventitious attraction of costly gems, is a decided point gained. Mere glitter and the vulgar display of affluence are gradually yielding before the higher consideration of beauty of form and color."

IT would be well if our cultured young men of mechanical bent would take a lesson in this matter from France and Belgium, where the "new art" school is achieving so much. In this country, with its freedom from conventionality, its liberality and its opulence, there should be an excellent field for such talent as could fashion beautiful gemless jewelry or, at least, jewelry in which the gems would not be the sole attraction. One great want, no doubt, is the lack of technical institutions to detect such genius in our youth and intelligently develop it. It is pleasant to note that the Rhode Island School of Design, Providence, R. I., is doing a good work in this direction, and it is equally pleasant to make record of the help now being afforded the institution by the New England Manufacturing Jewelers' and Silversmiths' Association. The School of Design gives a special training in drawing, modeling, die cutting and jewelry designing, etc. The manufacturers' association has aided the institution in the past by offering prizes for jewelry designing and in other ways. Later, as is announced on another page by our Providence correspondent, the association took steps to establish a number of scholarships, and the endowment thus afforded will be a very material benefit to the school and later to the jewelry-making industry. The liberality of the manufacturers is well directed in this case, and we trust that the new scholarships will unearth some budding Laliques and Wolfers to help along the artistic side of jewelry making in this country. The field is an inviting one, both for the glory and remuneration that it promises. The exquisite jewelry creations of the world-famed European masters of the "new art" have elevated these artificers to the high intellectual and social plane of the painter and sculptor, and afford an ideal worthy of the ambition of the most aspiring young American.

### Financial Statements to Wholesale Houses

A LEGAL decision of interest to all retail merchants was recently handed down by one of the federal courts. It appears that a certain retail firm made a financial statement to a wholesale house as a basis for credit, which was signed, and stated that it was "a true and accurate statement of our assets and liabilities," and should stand as to all subsequent purchases unless notice was given of a change, and they bound themselves to give such notice in case of any material change. In the itemized statement of liabilities was a question asking for the amount "due relatives," which was unanswered, although they at the time owed \$3500 to a relative. It was held by the Bankrupt Court that it was a general representation and the omission to answer was a concealment which was equivalent to a fraudulent representation, and entitled the creditor to reclaim the goods shipped on credit in reliance on such statement, although several months had passed without inquiry, but without further notice of any change.

This decision should impress on all jewelers not only the wisdom, but necessity, of furnishing absolutely truthful statements, when such statements are offered as a basis of credit.

### Some Lessons of the War

ON two wrapped copies of THE KEYSTONE now before us is the stamped injunction, "Return to the Sender—communication interrupted." These two copies were intended for jewelers in Port Arthur, and in view of the momentous happenings in and around that harbor for some weeks past, it was no surprise to us that they did not reach their destination. We only hope that our subscribers in the beleaguered city will come safely through the tragic conflict now raging in their vicinity.

There is one thing to be said for the war between Japan and Russia—it is the genuine 24-karat variety. No military holiday is this conflict with its thrilling deeds of endurance and daring. The fearless Japs who in hundreds braved the hell-fire of the Russian forts and ships to block the mouth of the harbor, the equally brave Russians who engineered the ammunition train to Port Arthur, defying death at every moment, the journeying across the blizzard-swept ice sea of Baikal, the armies of both belligerents, now frozen to numbness, now stalled in the mire of the roadless country, privation, suffering, death—all the factors that make war the unthinkable thing it is, are present in all their glory and repulsiveness in this great

conflict. General Sherman's laconic definition of war fits admirably the bitter clash of Christian and pagan in the far East.

THE Russo-Japanese conflict has proved for the millionth time that experience is the best and only reliable teacher. The wreck of reputations and explosion of theories that characterized the Boer war are not unlikely to find a counterpart in the struggle in the Orient. The ponderous battleship, that fighting fortress of the irresistible force and immovable body type, has suffered a sad shock to its prestige since the conflict began. If one of these awesome warships is liable to be summarily destroyed at any time by a hidden wire or insignificant improvised torpedo boat—not to mention the new submarine—it is a question whether the expensive concentration of strength is any longer justified. In the accidental destruction of the battleship *Hatsuse* by an invisible agent Japan is said to have lost at one blow one-sixth of her offensive sea power! Our own Captain Mahan, the greatest living authority on such matters, while advising against a hasty condemnation of the battleship, admits that the place for such a ship is in the open sea and that her sphere is not harbor reconnoitering. But this limitation of her availability is also a blow to her prestige, for the time-honored "stand-and-fight" policy is not so highly regarded in face of modern science, invention and skill.

Since last writing the brave Japs have met with a chastening portion of ill-luck, but adversity has its uses, and the lesson may not be without its compensation in playing the great war game with so accomplished and resourceful a foe.

### Marvelous Clock Novelties

ON page 955 of this issue, a well-known traveling salesman facetiously calls attention to yet another perpetual-motion clock, this latest being credited to a Keokuk, Iowa, genius. Last month also the news reached us from London, England, that one Harrison Martindale had succeeded in making a radium clock which "will keep time indefinitely." How near perpetual motion the new clock will come is thus expressed by the enthusiastic Harrison: "Empires may come and empires may go, but my little clock will keep time in two-minute beats as long as the radium lasts, or, roughly speaking, for 30,000 years. This is always supposing it is carefully kept out of the way of cyclones, people with dusters and other inconsiderate phenomena."

So much has been claimed for radium that we had a fear that it would solve, in

imagination at least, a few horological problems. When it "made the blind see" our optical readers got interested, and now that it has summarily retired the escapement, the pendulum and even the time-honored tick-tock the jeweler, too, will, no doubt, become a victim of radiumitis. The secret of the radium clock is thus imparted to us:

Scientifically stated, the function of the radium clock is to exhibit the dissipation of negatively-charged Alpha and Beta rays by radium. A small tube containing a minute portion of radium is supported in an exhausted glass vessel by a quartz rod. To the lower end of the tube (which is colored violet by the action of the radium), an electroscope, formed by two long "leaves" or strips of silver, is attached.

A charge of electricity, in which there are not Beta rays, passes down by means of the activity of the radium into the leaves. Like repels like, so the leaves expand till they touch the sides of the vessel, connected to earth by wires, which instantly conduct the electric charge, and the leaves fall together. This operation is repeated every two minutes till the radium is exhausted.

One drawback to this discovery is that the radium is so nearly exhausted now that a pinch of it would cost as much as a presidential campaign, but there has been no exhaustion of the imagination of the radium enthusiasts. Such is the alleged potency of the magical powder that, in its penetrative luminosity it may yet reveal the identity of the mysterious personage who struck one William Patterson.

### New York Gold-Stamping Law Vetoed

LAST month the New York trade were congratulating themselves on the passage through both houses at Albany of the gold-stamping bill which was printed in full in our last issue. The measure was so manifestly fair in its provisions and surrounded by such safeguards to the honest retailer that the governor's approval was confidently expected. In fact the bill had been so amended and emasculated in deference to the opposition that not a few considered that, as a law, it would prove powerless for the purpose intended. Nevertheless Governor Odell maintained that it was too stringent and offered insufficient protection to honest merchants who might innocently violate its provisions. The plea that 90 per cent. of the jewelry trade of New York favored the measure seemed to have little weight with the State executive who justified his veto thus: "I would not want to subject innocent merchants by any such proceedings. Why, under the provision of this measure, a merchant who shows spurious gold in good faith, could be brought into court and seriously embarrassed." The amended measure as passed by both houses and printed in our last issue, would scarcely seem to sustain this gubernatorial view, but argument availed not.

The veto gives the quietus to gold-stamping legislation in the Empire State at least for a time.

**I**N connection with the above it is interesting to note that the New York Legislature passed and that Governor Odell signed a measure of a really stringent character which, should it prove effective, would greatly purify business methods in that State much to the benefit of the jeweler. This law is aimed at deceptive advertising and greatly resembles in its terms a law with a similar purpose in force in Germany. It provides that:

Any person, firm, corporation or association, or any employee thereof, who, in a newspaper, circular or other publication published in this State, knowingly makes or disseminates any statement or assertion of fact concerning the quantity, the quality, the value, the method of production or manufacture, or the reason for the price of his or their merchandise, or the manner or source of purchase of such merchandise, or the possession of rewards, prizes or distinctions conferred on account of such merchandise or the motive or purpose of a sale, intended to give the appearance of an offer advantageous to the purchaser which is untrue or calculated to mislead, shall be guilty of a misdemeanor.

As the jewelers, whose advertisements as a rule are truthful and dignified, have suffered much from the advertising exaggerations of unscrupulous dealers, the enactment of this law is a step in the right direction. The public are certainly entitled to some protection against systematized falsehood, though the people who purchase dollar "diamonds" and ten-cent "gold" rings merit little sympathy. Any check on reckless statement, however, is to be welcomed. Riotous exaggeration in some advertising casts a certain amount of discredit on all.

#### Chicago and New York Jewelers' Associations Join Hands

**A** CONSOLIDATION of interests, to which no objection can be taken, but which on the contrary will necessarily inure to the benefit of the trade at large, is the recent combination of the mercantile agency business of the Chicago Jewelers' Association with the Jewelers' Association and Board of Trade of New York. On May 2d Mr. Safford, secretary of the New York organization, met a committee appointed by the Chicago Jewelers' Association, who stated that if proper arrangements could be made they considered it would be for the best interest of all parties to combine the business end of the Chicago association with the New York body. With this Mr. Safford fully agreed, and after several conferences a plan was devised by which the Chicago Jewelers' Association agreed to turn over their reports, fixtures, etc., and consolidate the association reports with those

of the Jewelers' Association and Board of Trade.

This plan was ratified by the board of directors of the Jewelers' Association and Board of Trade at its regular meeting on May 12th, and by the Chicago Jewelers' Association on May 17th, and will go into effect as soon as the details can be carried out. The consolidation is a natural and admirable one, and the unification of forces, effort and system which it implies must needs be beneficial to the interests alike of wholesaler and retailer.

#### Patent Office Methods Criticised

**A**LL Americans are proud of the Patent Office at Washington, and for very excellent reasons. Our patent system is admitted to be the best in the world, as is evidenced in its partial or complete adoption by many other countries, and to the adaptability of the system to our needs is attributed much of the marvelous progress of our country. It is with surprise, therefore, that the public have learned of the recent criticisms of the office and of charges of irregularity in its administration. Chief among the critics at this time is Thomas A. Edison, and his criticisms have naturally attracted more attention than would be vouchsafed to less eminent inventors. Mr. Edison's specific charge is that while his application for a patent on a device to be used in connection with a motor-carriage storage battery was pending, the examiner in the case permitted a rival inventor to withdraw his own application and to insert in the specifications claims covered by the Edison patent. We have heard of such charges as this being made in the past, but nonchalantly considered them unfounded. Was there really some reason for them? The forthcoming investigation of the Edison charges will, no doubt, settle this question.

**M**R. EDISON says that the Patent Office is not well managed, that examinations are conducted by incompetents, that loose methods prevail, and that violation of the law is tolerated in permitting applicants to take back their papers and add devices of other men's inventions. These are serious charges, if true, and it must be said that such laxity and incompetency are not inconceivable when appointments are so largely political. When the late Lord Russell, the eminent British jurist, was in the United States he said he could not understand why we could have such fine judges under the system of political selection, and it is to be hoped that the Patent Office is another case in point. So, indeed, we would infer from

an appreciation of the office and its force which appeared over the name of Nikola Tesla in the New York *Sun*. Said Mr. Tesla:

It is to be regretted that statements discrediting the Patent Office should be given publicity, all the more as there is scarcely another institution reflecting such honor on the United States. Considering the vast amount and exquisite character of their work, the performance of the officials is really remarkable. In long personal experience I have found the examination to be far more satisfactory than I would have ever thought possible. Many times I have noted with astonishment the thorough grasp of ideas, the keenness of the criticisms and the exhaustiveness of the search for anticipations, and invariably I have obtained valuable knowledge through the references cited and suggestions made.

**S**UCH are the conflicting opinions of two noted inventors, and the actuality probably lies somewhere between. Two things are certain, however. The business of the office has developed beyond the facilities for handling it, and the salaries for efficient employees are too low. An examiner starts with \$1200 a year as fourth assistant, and may manage to get up to \$1800 as first assistant. The examiner-in-chief, whose decisions are so far reaching, draws the noble salary of \$2500 a year. This annual remuneration might easily be twice as much and still be well earned. If the Edison investigation directs attention to the needs as well as the merits or otherwise of the institution a good purpose will be served.

Admirable, however, as is our patent system, it has one serious defect. The system makes easy enough the granting of a patent, but unfortunately leaves the beneficiary to the law if any aggressor attacks his right in his own property afterward. A patent or a copyright should be as absolute as a marriage certificate, and attempts at fraud should be opposed, not at his own expense by the victim, but by the United States Government, for the seal of that Government ought to be a protection that will be respected. When the Edison investigation shall have riveted attention on the patent laws, the remedying of this serious defect should be given some consideration.

It is to be hoped that the Patent Office will be able to clear itself of the serious charges made by Mr. Edison. As Mr. Tesla says:

The office is so vital to the interests of this country that any expressions capable of creating a doubt in the minds of people as to the faithful performance of duties and competency of its organs must be deemed unfortunate. Almost all the technical arts, industries and undertakings are more or less founded on patent protection, and if the belief should gain ground that the men called upon to render important decisions are incapable, public confidence in the value of these properties might be destroyed.

It would, indeed, be little less than a calamity if the great body of American inventors should lose faith in the noble institution which has done so much for the country.

## *Seamless Plain Gold Rings*

In the uniformity of their quality the Wheeler line of Seamless Rings has no competitor. Records show that for years these rings have assayed as well and frequently better than stamped.

With the guarantee that they will give a full money value and the very best of style and finish—have no other line of wedding rings than the ones bearing these, our registered trade-marks:

2200K

1800K

1400K



*Hayden W. Wheeler & Co.*

*2 Maiden Lane, New York. Telephone, 8 Cortlandt.*

Show a 1903 Howard movement to the customer who is looking for a fine watch. The reputation of its makers will need little discussion, and the movement itself will convince him that its mechanism is that of the most perfect of modern watches. Instead of putting the watch in some regular 16-size case, which it fits, supply one of our hand-made cases, which its value warrants.

If you do not want to carry a stock of these cases, let us send you a Howard booklet, which accurately shows the beauties of our designs.

## *E. Howard & Co. Watches*

### To the Young Smarty, Concerning the Old Foggy

DON'T be too everlastingly sorry for the Old Foggy. He knows a thing or two, although you *do* know it all; and he knows things that are really worth while. Now, you know a good many things that the Old Foggy has forgotten; but he forgot them because he found they were not worth remembering. There is no "style" about him, of course; his clothes do not fit, there are no creases in his trousers and he parts his hair on the side; but neither are there creases in his reputation, and he parts his mind exactly in the middle.

You are not a brand new thing in the world's experience—there have been smart young fellows ever since creation, and the world has been so crowded with them at times that there was scarcely enough breath to go around. They criticised the awkward speech of the superintendent of the pyramid-building in Egypt; they poked fun at Diogenes in Athens, and were convulsed with mirth over the shabby clothes of the gray-heads in the Roman Senate. They died, one by one, and the old earth continued to revolve without perceptible wobble and seemed not to mind very much.

Don't lay awake nights worrying lest things go hopelessly wrong unless you can soon get on a hill and make yourself heard. Somehow the old earth managed fairly well before you ever came upon it with your doubts or your cocksureness; and it may be depended upon to keep up its comfortable gait, even without you to drive it. The old folks seem to have managed pretty well. They have made it a right decent place to live in. It can be made a better living-place; and while you really are not the absolute last hope of humanity, you can help, in an humble way, towards this betterment. Maybe in time you will direct the other helpers; but just now, right now, you had probably best stay with the gang and bear a hand.

The world will call you to command in good time, if there is in you the stuff that goes into commanders. Don't fear that you are going to die unnoticed, if you deserve notice. Your rare endowments will come before the observation of the knowing ones, never fear. Don't wrap your intellect in cotton in the meantime, for fear it may get bruised and soiled. Maybe you *could* "run" Wanamaker's store better than J. W.; maybe Tiffany's capacity compared to yours is as a tallow dip to an arc light; but bide your time. The world can't lose you if you are worth keeping in view.

But don't be sorry for the Old Foggy. He is not sorry for himself, when he thinks of you. Of course, he may not know a good

thing when he sees it; but he really does know some things that are worth while. So will you, after while—after you have forgotten a good deal that you now know too much of; and then you'll begin to count for something. "Bide a wee, and dinna fret."

### The Obligations Due to Reputation

WHEN the "aesthetic" craze was at its height in England, some years ago, *Punch* presented a clever cartoon by Du Maurier, representing the duty of "living up to one's blue china." The aesthete was reminded that he must conform his life to his furniture and fixtures, since *they* were the expression of the faith of the cult. So Lord Chesterfield, in an earlier day, instructed his son that "a gentleman must *look* his station."

The blue china of the aesthetes exercised a real tyranny over the *half-baked* disciples of the cult—those who preached what they had not the comprehension to practice understandingly. There was many a heartburning and doubt in that long-haired lot!

The same sort of tyranny is exercised by an accidental reputation. It may be what it will—a reputation for cleverness, for wit, for repairing, for advertising, for truthfulness, for honesty: the obligation follows. It puts upon the victim the necessity for constantly maintaining the high-water mark of that one flood; it requires that he never fall below the plane of that achievement.

But the result is wholly good. There is no doubt that the reputation for doing successful things, or saying right things, or acting fittingly in emergencies, has saved many a man *from himself*. A sense of pride calls upon him to sustain the reputation gained by a fortuitous circumstance; and though his soul be scrumpy and his instincts base and mean, he will be held to high accomplishment in order that he may justify the reputation unfairly or capriciously gained. There is no measuring the good which has been wrought in the world through the tyranny of these reputations which have held men true through pride of the opinion of their fellow-men.

A man makes a reputation and in turn *is made* by that reputation. He creates, and then is himself created by his creature. He makes, that he may be made—a Frankenstein in the ego. There is food for thought as to whether a good reputation is not one of the very strongest moral forces in the world, in the results upon the individual *himself*; not necessarily (or indeed likely) a *spiritual* force, but one that makes for personal morality, for good conduct, and for effort in continuance of the established order of things.

### Overdoing "Display," in Jewelers' Advertising

THERE are two principal methods in general advertising—that which convinces by argument and that which compels attention to through "display." Each kind is right when it fits its line of goods; but each kind will not suit the same line of goods.

"Jim Dumps" sells "Force"; why would not "Jim Dumps" sell watches? Let us see.

"Force" requires no argument to sell it. There cannot be much said about its purity, flavor, digestibility and convenience that could not be said of some other of the forty different breakfast foods. Besides, it costs little—the cost doesn't count, even with the frugal-minded—readers would not bother to read much argument concerning something that represents so small an outlay of money. Therefore, the one thing for the "Force" advertiser to do is to compel the public to think of "Force" when they think of breakfast food—to think of "Force" when they think of eating at all. Consequently, "Jim Dumps," and big display, and tremendous hurrah generally—anything to compel notice of the *name* "Force."

But in selling watches the advertiser must change his method radically. Here is no simple commodity which everyone can understand at sight of it; no cheap commodity which merely requires persistent mention of its name to convince the buyer that *that* is what he wants, when he wants something of that kind. The whole Dumps family could never induce a man to think seriously about buying a full-jeweled watch. The expenditure is too large to run the risk of disappointment. The watch must last many years—it is not bolted and done with, as is a breakfast food. It is necessary, therefore, for the watch advertiser to *argue out* his proposition.

And big black type, pictures and flashy borders are not argument. Forcible "display" is not forcible argument. The advertisement that bellows and shrieks in half-inch type may stun the reader but it will not get his watch-money. It appears to be trying to get his cash under false pretenses.

The quiet "pica old-style" type, with plenty of white space around it—little words of big meaning—has the air of truth and sincerity. It will sell watches when *mere* "display" would fail.

And remember: To design an advertisement that will attract attention is much; but to write an advertisement that will convince is more. And this is far from impossible of accomplishment. Effort and common sense are the main essentials.

# COMMUNITY SILVER



We have every reason to repeat the statement made at the bottom of this column, concerning the increasing success of our ware. Every month shows a growing strength in public appreciation.

We are determined that these goods shall be at the top. If you have not yet added them to your line, we feel sure that you will do so.

The designs are not originated in the pattern-shop, but are the creations of artists, and each piece has its own individuality. The effect upon the mind is pleasing—not only once, but always.

The workmanship is exquisite. The "Triple-Plus" plating is heavier than triple plate. Each piece is guaranteed for five-and-twenty years.

Nearly every jobber now has this ware. It is being strongly advertised in the magazines and other publications, and public confidence has been perfectly established.

We are spending many thousand of dollars in telling people about Community Silver—its beauty, its guaranteed wearing quality, its simple strength and dignity of design. To the trade we offer a generous margin of profit, and to the retailer especially we are giving freedom from the many little troubles he has had with faulty table-silver.

He is a wise merchant who will write for more news of such an opportunity.

**1904 will be the banner year.**

ONEIDA COMMUNITY, LTD.

NIAGARA FALLS, N. Y.

ONEIDA, N. Y.



### The Trading-Stamp System

"I HAVE read several articles in your journal regarding trading stamps, but we in this town know nothing of them. What are they, anyhow, and how is the scheme worked?" The many queries of this character received call for a general reply. The trading stamp is so called because of its resemblance to a postage stamp in size and superficial appearance, and because, like the postage stamp, it is supposed to be worth a certain amount. The store using trading stamps gives a blank book to the customer, and on the occasion of every purchase of sufficient magnitude, stamps are given and pasted in the book. When the book is filled, the stamps are redeemable in goods of all kinds at the trading-stamp store.

Now, as to how the trading-stamp scheme is worked. In starting it a contract is made between the retailer and the agency supplying the stamps, in which the agency promises to give a certain territory to the retailer and not allow a rival merchant to start the scheme within that area. Of course, there is always a danger of a rival stamp agency starting a competitor in the territory. Then the stamps are sold to the retailer at the rate of \$5 per thousand, on consignment, or with a discount of 5 per cent. for cash. Larger quantities are sold about as follows, according to our informant: 15,000 with 15 per cent. discount, and 50,000 at 20 per cent. Thus, by purchasing in large quantities for cash, the cost is reduced considerably. Then the agency sends its solicitors throughout the territory assigned the retailer to make a house-to-house canvass, telling the people that goods can be purchased at the old price, with the advantage that the stamps given at that store will insure the receipt of a useful present at the stamp agency headquarters.

It depends largely, we understand, upon circumstances how much percentage or "rake-off" the stamp man asks. Some instances as high as 5 per cent. is paid. The average, perhaps, is 2½ per cent. But if the rate is 2 per cent., the business man is paying the stamp man \$2 on every \$100 worth of goods he sells. And for what? The stamp man has on exhibition an assortment of premiums—goods of inferior quality—which are to be given away to customers of business men who have fallen into his trap.

If the scheme appears to take well in the town, a rival (?) stamp concern quickly appears and organizes all business men not in the original game. This rival concern often is directed by the same people who are back of the original,

and without any one knowing it, the stamp schemers are often able to enjoy an income on practically the total business of the town. Say that a business man is doing \$20,000 a year, and goes into the stamp scheme: If he signs a 5 per cent. stamp contract, and the stamp man can get books into the hands of all his customers, he is paying \$1000 per year to the stamp schemer for the privilege of doing business with his own old customers. But say, for instance, that through the use of stamps he should increase the volume of business to \$25,000. What has it cost him? Just 20 per cent. You must charge the expense against the new business, because he had the original \$20,000 doing nicely before the stamp man struck town.

The big-paying part of the business to the stamp people is the "lapses." Hundreds of people start out with a stamp book and never more than half fill it. They become weary of the matter; they lose their book; they move away—but the merchant has paid his percentage to the stamp man just the same. It is said that more than 60 per cent. of the stamps given out are never presented for redemption—all of which means a big profit for the stamp man.

As to the trading-stamp system in its relation to the retail merchant, it can be safely said that it is a most demoralizing factor and an unqualified evil. Of course, when the fad is new, it has undoubtedly an advertising value; inasmuch as "something for nothing" always attracts a certain amount of trade. But it must needs act as a boomerang, and the stamp man is really the only one benefited in the end. Ex-Governor Griggs, of New Jersey, who is counsel for the Merchants' Association of New York, denounces the stamp evil as follows:

The business is of recent invention and development. Its development is not yet finished, but is still going on. That the business has proved to be demoralizing to the community, has abundantly appeared. It is not necessary to show anything of the practical injury that these trading-stamp corporations have exercised over retail merchants, compelling them practically to assume the practice of giving out trading stamps in order to protect themselves against injury and loss of trade, by reason of the fact that inducements of that kind were being afforded by competitors. The harmful effects of the stamp business are universally recognized by merchants as a deadly parasite on trade, whose abolition is earnestly sought, not only by those who have not adopted the system, but by those who have been deluded into believing it a benefit and have made use of it.

Aware of the profitable results to the stamp men, many retailers are using a stamp system of their own—some giving checks which are redeemable in premium goods of various kinds. This system is, of course, no less demoralizing

than the other. Great efforts are now being made to suppress the trading-stamp system, but repressive legislation does not seem to be very effective, owing to the difficulty of drafting a law that will stand the constitutional test. An anti-trading stamp law has just been passed in New York State, however, which eminent lawyers claim to be strictly constitutional. Probability is lent to this claim by the fact that the measure was most bitterly contested by the trading-stamp companies. A number of hearings on the bill were held before the legislative committees and before the Governor, at which hearings representatives from the commercial organizations and merchants in all lines of trade in all parts of the State appeared in favor of the bill. The Merchants' Association of New York conducted a campaign to promote the passage of the measure, by making a direct canvass of the merchants throughout the State. The bill was signed by Governor Odell on May 9th and went into effect on June 1st. Its main provisions are:

That trading stamps must bear on their face the redeemable value, expressed in cents or fractions thereof.

That all concerns issuing trading stamps must redeem them at their full face value, either in cash or in merchandise, at the option of the holder, whenever presented in quantities amounting to five cents or over.

As the new law may interest many of our readers, it is published in full on page 891 of this issue.

An anti-trading stamp law has also passed the lower house of the General Assembly in the State of Ohio, but its provisions are so sweeping that its constitutionality is questionable. Thus far the most effective plan of campaign against trading stamps has been by organization and agreement among the local trade. In Harrisburg, Pa., Danville, Ill., and many other towns and cities the stamp nuisance has been suppressed in this way.

The Danville merchants, to the number of one hundred and twenty, published the following signed circular in the local newspapers over their names:

The undersigned merchants, many of whom have had experience with trading stamps and premium schemes, and believing that the principle is wrong and if continued will be the means of increasing the price or decreasing the quality of merchandise to cover the cost of such stamps, hereby announce that on and after April 1st we will discontinue the use of trading stamps and premium schemes of all kinds.

The merchants of Danville are following the example of other cities where the trading stamps have been extensively used, and have been found to benefit neither the customer nor the merchant—the trading-stamp companies reaping the benefits and accumulating thousands of dollars. Our patrons are led to believe that they are getting something for nothing; but the fact remains, that articles given away must be paid for by someone.

### Make-Believe Rival Concerns

If the scheme appears to take well in the town, a rival (?) stamp concern quickly appears and organizes all business men not in the original game. This rival concern often is directed by the same people who are back of the original,

### Individual Stamp Systems

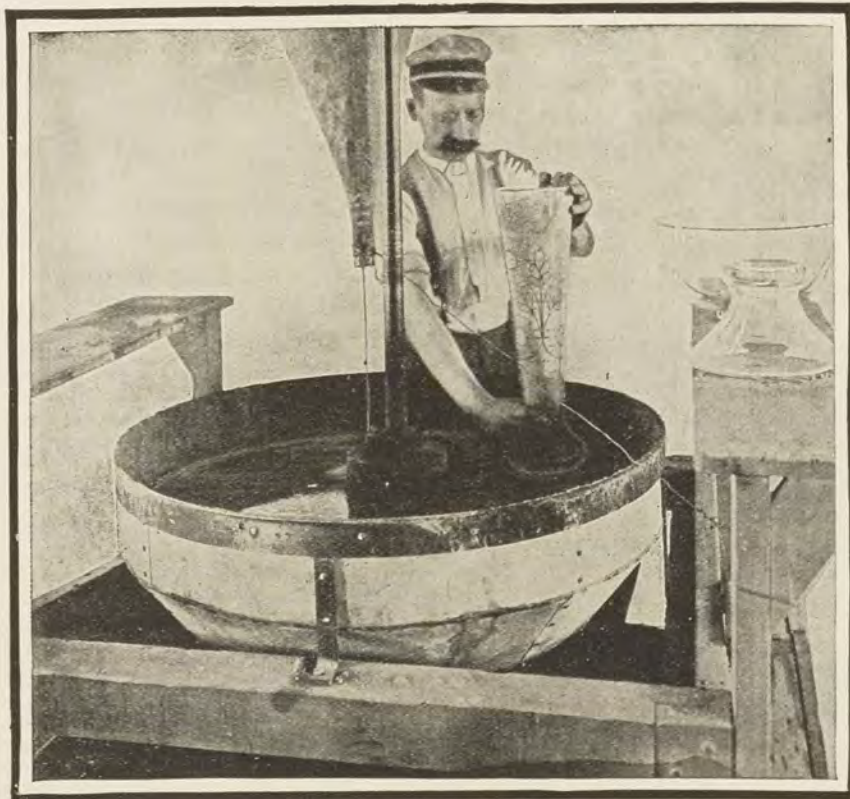
Aware of the profitable results to the stamp men, many retailers are using a stamp system of their own—some giving checks which are redeemable in premium goods of various kinds. This system is, of course, no less demoralizing

## The Manufacture of Cut Glass

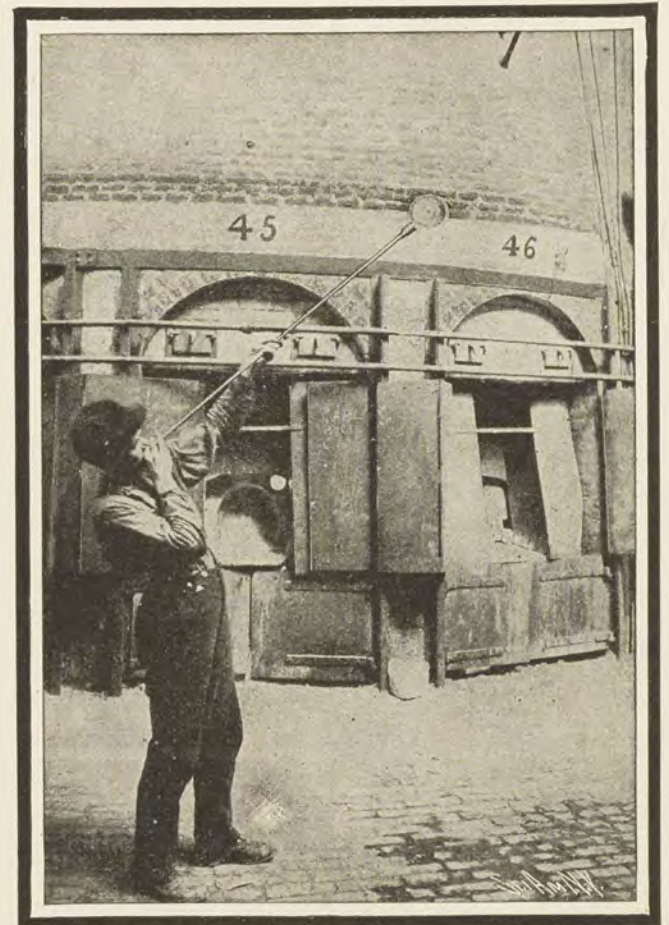
**S**INCE cut-glass ware has become installed as a permanent and profitable part of the staple stock of a large proportion of the retail jewelers, accurate information of the methods of manufacture is timely and useful. Our previous illustrated articles on this subject are admirably supplemented by the following, for which we are indebted to the *Scientific American*:

### Glass as Raw Material

Glass is a singularly-versatile material, at once refractory and yielding, yet lending itself to use in thousands of ways. It is as a means of artistic expression that it is chiefly interesting, for its utility is beyond all question. The iridescent chatoyant colors of antique glass—Nature's destructive action—do not distract us from the charm of perfect form. Venetian glass, the beautiful product of the lagoon island of Murano, is so very impracticably fragile that even its possession is a care. Probably glass would have remained in a rather humble position if it had not been that a Bohemian glass worker more than two hundred years ago conceived the idea of a new invention which was destined to change the glass product of the world. He thought of making the heavy "flint" or "lead" glass larger as regards the dimensions of the walls of the article in order that he might have more stock to work on, so that he could deeply incise or cut the glass to form patterns, the sides of the rough cut being in turn polished to give the effect of a many-faceted jewel. The success of the *objet d'art* was not immediate, and it was only when the crude designs and imperfect workmanship of the earlier cutters gave way to the labors of highly-skilled artisans, directed by talented designers, that cut glass, or "art glass," as we might term it, took the place to which its great beauty entitles it. It is to America that we must look for the perfection and the superiority of design and skillful workmanship of this branch of the industry. There is



Grinding the Foot of a Vase



Blowing a Glass Blank

no such thing as absolute interchangeability in the glass-cutting establishment, and the artistic bent of the various cutters is encouraged.

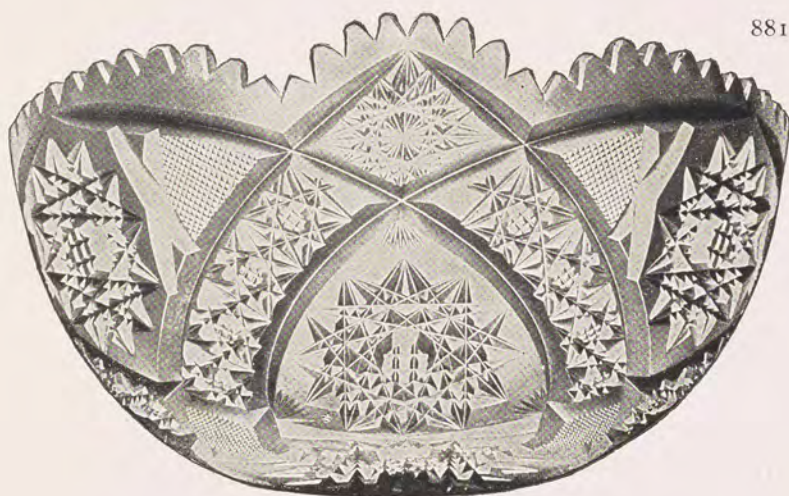
### Composition of Glass

Glass is a peculiar product, having as a base silica, which is fused with alkalis and metallic oxides to form a hard transparent substance which we all know as "glass." It can be wrought in various ways, and is susceptible of a high and, when properly cut, a lasting finish. There are a number of varieties of glass, composed of varying ingredients, but we need only concern ourselves with lead glass, used for decoration by incision, or the cutting away of portions of the reinforced wall so as to form an ornate pattern. The raw materials consist of a sand, so called, of exceptional quality as regards sharpness and color. It is not a sand in the ordinary sense of the word, but is a quarried rock which has been crushed. This accounts for the uniformity of its color, which is so necessary in producing a steely-blue white glass, which is to be used for giving the prismatic colors caused by the cutting process. The red lead, saltpeter and sodium carbonate are accurately mixed with the sand, and a small percentage of white arsenic or manganese is added to bleach or clarify it. The proportion is varied according to the nature of the finished product. A glass furnace is a large round or oval fire-brick oven, capable of holding an aggregation of melting pots, which rest on a floor in common under a dome called a crown. These pots are made of unbaked fire-clay. A mouth gives entrance for the raw material and the workmen's blowpipes, to which the molten glass adheres. A furnace may contain as many as sixteen pots arranged radially on the floor of the furnace. They are heated before setting, and are

(Continued on page 889)

Character,  
Quality,  
Selling Power.

Good Profits for the Retailer.



881

"RENWICK" 7, 8, 9 and 10-inch Bowls.

Old favorites retained; with them the finest things in new shapes,  
new cuttings and new ideas ever offered.

# Bergén Popular-Priced Cut Glass.

Advance sheets of our 1904 Catalogues  
for the asking.

Electrotypes for local advertising free  
to customers.



"GOLDENROD" 3-pint Pitcher.

A week's accommodation  
in St. Louis FREE to our  
customers.

Booklet gives full particulars.

The  
J. D. Bergén Co.

Main Office and Showrooms,

38 Murray Street,

Chicago:

Silversmiths' Building.

New York.

Pitkin & Brooks Makers of  
Rich Cut Glass, Chicago, Ill.



P & B Grade is Best - None Better - Absolutely.

# GLASSMAKING

WHERE · THE · ART · ATTAINS · PERFECTION.

**C**LEAR AS PURE WATER from a sparkling spring is the Cut Glass made by us. No other glass approaches it in "color"—that's an open secret of the trade.



**I**TS DIAMOND-LIKE BRILLIANCY is a silent appeal that commands sales. Tempered to afford a maximum of strength, it has all virtues of Perfect Glass.

## C. DORFLINGER & SONS,

ESTABLISHED  
1852.

36 MURRAY STREET,  
NEW YORK.

# T. B. Clark & Co., Inc.

"Look through the world,  
'Tis ne'er met with elsewhere."

## Rich Cut Glass

It is during bad weather and dull business that the calamity howler has his happy days; but he who keeps everlastingly at it sees neither, but finds his pleasure in keeping pace with the demand of his growing trade, and he sells Clark's Glass.



No. 366. Bon-Bon, "Genoa."

REPRESENTED

NEW YORK—J. D. Dithridge, 25 West Broadway.  
SAN FRANCISCO—J. A. Young, 115 Kearny St.  
BOSTON—H. T. Edwards, 146 Franklin St.

## T. B. CLARK & CO., Inc.

Honesdale, Pa.

# THE PAIRPOINT

Rich Cut Glass.



No. B4704. Berry. Design pat'd.  
Deco. No. 741.

BRANCHES

38 Murray St., New York City.  
220 Sutter St., San Francisco, Cal.  
Temple Bldg., Montreal, P. Q.  
Factories, Etc., New Bedford, Mass.



No. 1036. Vase—"ORCHID."

# CORPORATION.

Superior Silver Plate.



No. 380. Swing Kettle. Pat. appl'd for.

Photograph Books of our Complete Lines  
loaned to the trade for inspection.

# Manning, Bowman & Company, Meriden, Connecticut.

## Nickel and Silver Plate.

New York.  
Chicago.  
San Francisco.



No. 1993.

### "METEOR" CIRCULATING COFFEE PERCOLATOR.

By this French process of percolation, or distilling, coffee of the most delicious flavor and of any strength desired, can be made on the table in a few minutes. (Also used for tea.)

Made in over fifty assorted styles and sizes.

Send for circular No. 87K, illustrating complete line.

Chafing Dishes (With Patent "Ivory" Enameled Food Pan.)      Prize Trophies, Tankards, Etc.  
"Meteor" Circulating Coffee Percolators,  
Baking Dishes, Table Kettles, Etc.

### M. & B. "ALPINE" WATER COOLERS.

Illustrated in Circular 86 K.

### Ivory Enameled Food Pan.

Patented May 23, 1899.



CAN BE USED IN ANY OF OUR CHAFING DISHES.

The greatest improvement ever made in a Chafing Dish. Pure, clean, durable. It is so constructed that food can only come in contact with the Porcelain-Lined Dish. The top rim being plated, the complete Chafing Dish has the same appearance as when made entirely of metal.



No. 1158.

### PRIZE CUP.

SOLID COPPER, English Pewter Mountings. Catalogue No. 38 shows complete line.

## Rich American Cut Glass.

Price, \$40.00, according to Keystone Key.



Price \$7.00 according to Keystone Key.

Our recognized leadership in Watches is sufficient earnest of a like thoroughness in our Cut Glass Department. We are now showing large assortments of beautiful new patterns, rich in material, artistic in design and perfect in execution. The patterns embody the COLONIAL EDGE and other new and fashionable improvements in finish. You will find our Cut Glass stock the best to select from—exclusive ware at big-profit prices.

**H. O. HURLBURT & SONS,**  
14 South Tenth Street, Philadelphia, Pa.  
**OLDEST WATCH HOUSE IN AMERICA.**

## THE A. L. BLACKMER CO.

(Established 1892.)

New Bedford, Mass.

NEW YORK OFFICE,  
32 Park Place,  
Rooms 15 and 16.



No. 125 Bowl, Iris.

## Rich Cut Glass.

Our Claims

New and Original Patterns,  
Superior Finish, Moderate Prices,  
Promptness in Shipping.

A large and well conceived line particularly adapted for your trade. **TRY IT.**



No. 271. 3 pt. Jug, Portia.

# THE "VELVET" ADJUSTABLE BRACELET.

Patented May 19th, 1903.

## FITS ANY SIZE OF WRIST.

A simple arrangement of springs makes this bracelet adjustable to any wrist, whatever its size or conformation. It is thus the extreme of

## Comfort, Comeliness and Security

Simple in its parts and strong in construction, it is durable and not liable to get out of order.

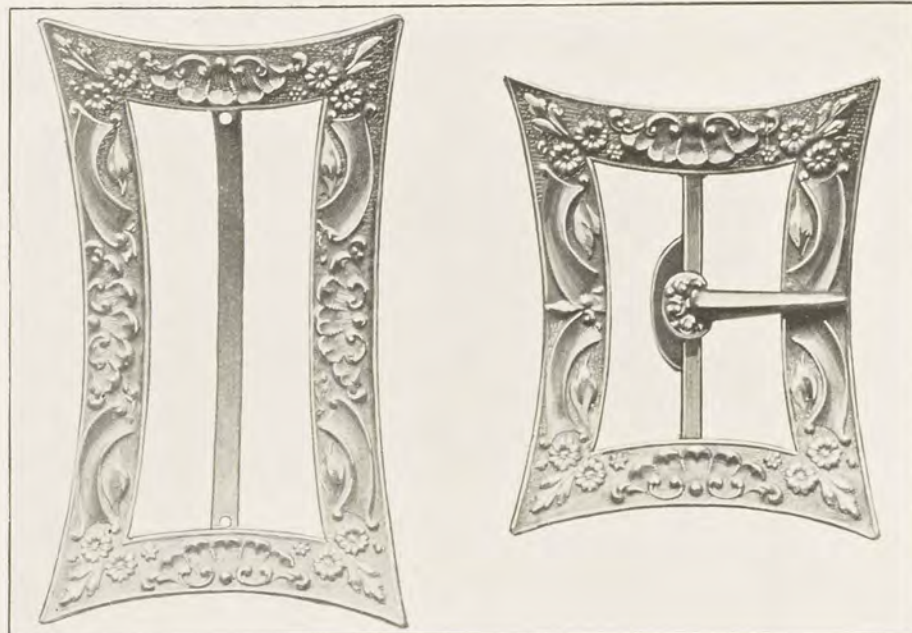
Made in rolled-gold plate and sterling silver. Plain or with signet or locket top.

## Mason, Howard & Co.

MANUFACTURERS.

New York Office:  
180 Broadway.

Factory:  
Attleboro, Mass.



## Codding & Heilborn Co. Attleboro, Mass.

NEW YORK:  
C. VAN NESS,  
11 Maiden Lane.

CHICAGO:  
C. H. BRADY,  
88 Monroe Street.

SAN FRANCISCO:  
H. C. VAN NESS,  
115 Kearny Street.

## The Buckle Season is at hand.

Send to us for samples of our **BUCKLE SETS** in new designs and finishes—Plated and Sterling Silver.

Large line of **HAT PINS, SASH PINS, WAIST SETS, BROOCHES, Etc.** All low-priced, when quality is considered.

**BRACELETS AND BEAD NECKS**—Sterling and Gold Plate.

**BACK AND SIDE COMBS**—Sterling, Gilt Trimmings.

**CIGARETTE AND CARD CASES, MATCH BOXES, COIN HOLDERS, Etc.** Sterling Silver and Plated.

Headquarters for **SOUVENIR SPOONS**, in Tea and Coffee Sizes.



# To Retail Jewelers.

We have a fine assortment of Loving Cups for prizes, etc.

Drawings for special prize pieces submitted with estimates upon request.

Jewelers visiting the East during the summer months are cordially invited to visit our factory or New York salesroom. We will be prepared to show you choice lines of Hollowware, Toiletware and Spoon Work for your fine and commercial trade for the fall season.



## Roger Williams Silver Co.

STERLING SILVER ONLY.

Salesroom,  
860 Broadway,  
New York.

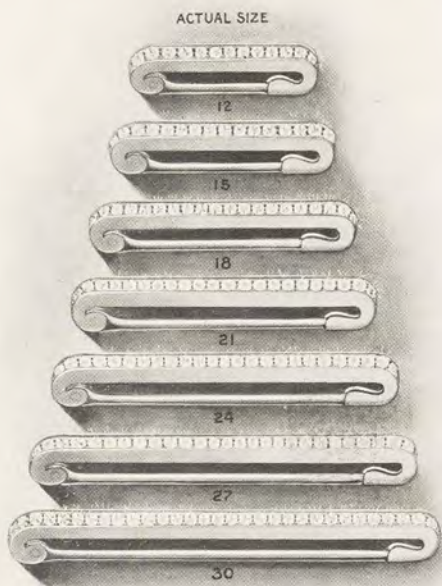


Factory,  
101 Sabin Street,  
Providence, R. I.

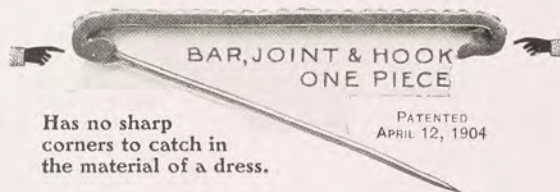
# The "Breakless" Bar Pin.

14 K. GOLD ON STERLING SILVER.

Hard to distinguish from the genuine diamond platinum-set bar pin.



When the most exclusive jewelers take up an imitation diamond pin and enthusiastically push it—it means that the pin has unusual merit.



Many of the high-class establishments which will not usually consider imitation goods at all, order our "BREAKLESS" Bar Pins on sight, and what is more significant, **Repeat Their Orders.**

*Samples mailed on request.*

**It adds much to a smart attire.**

### WARNING.

We hereby notify the trade in general that a patent has been granted on our "BREAKLESS BAR PIN"—No. 757,032, under date of April 12, 1904—which gives us the exclusive right to manufacture and market this invention. We have learned that an imitation of this pin is now on the market, and we are taking measures to put a stop to this infringement, as we intend to protect our patent rights, and to this end have instructed our attorneys (Messrs. Dickerson, Brown, Raegen & Binney) to proceed against all who refuse to respect the validity of our patent. Sellers and users of pins, not our make, are equally as liable as manufacturers.

No. 12, \$12.00 doz.	No. 15, \$15.00 doz.	No. 18, \$18.00 doz.	No. 21, \$21.00 doz.
No. 24, \$24.00 doz.	No. 27, \$27.00 doz.	No. 30, \$30.00 doz.	

## FISHEL, NESSLER & COMPANY,

SILVERSMITHS AND JEWELERS,

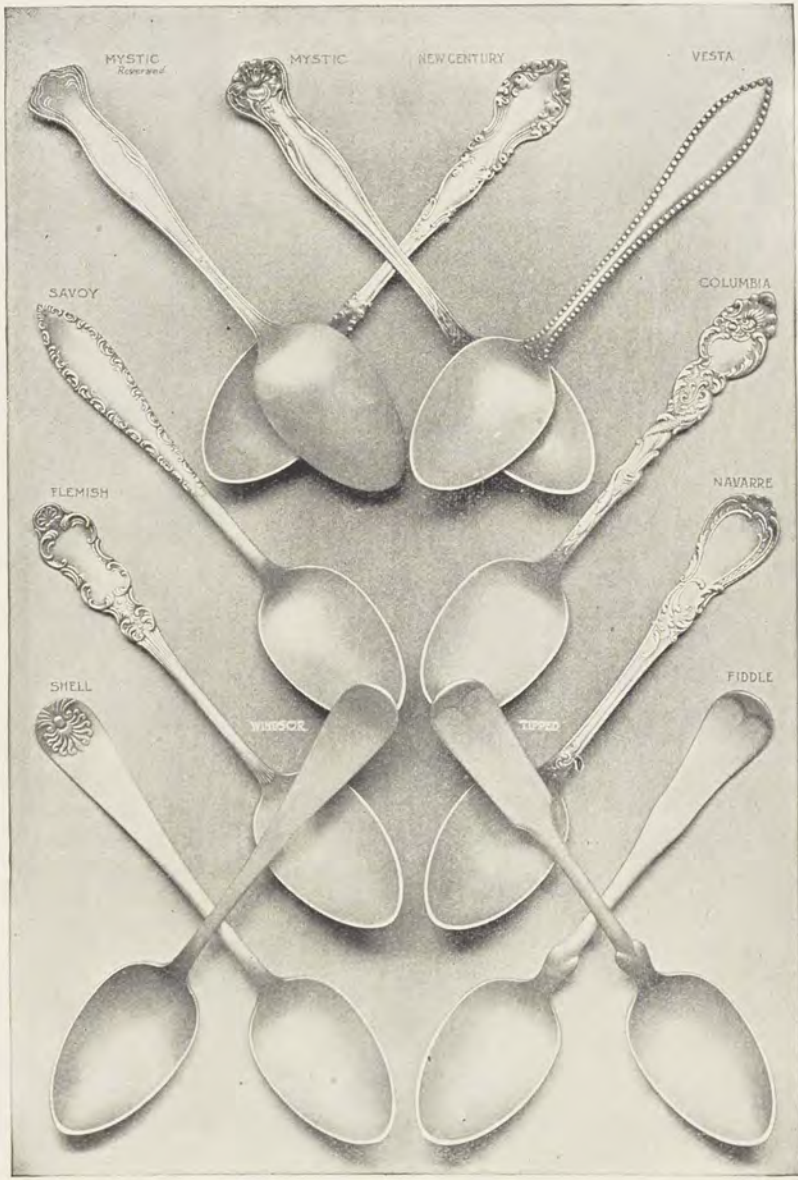
**New York.**

Office and Works,  
79-85 Crosby Street.

Salesroom,  
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★ ROGERS & BRO. A-1.  
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STAR  
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ALL THESE SALABLE PATTERNS,

including the new floral design, "The Mystic,"  
are fully illustrated in

THE NEW ★ ROGERS & BRO. A-1. CATALOGUE,

which is now ready for distribution. The trade are invited to send for a copy.

INTERNATIONAL SILVER CO.,  
SUCCESSOR TO

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WATERBURY,  
CONN.

NEW YORK WAREROOMS: 9-11-13 Maiden Lane.

## The Manufacture of Cut Glass

(Continued from page 880)

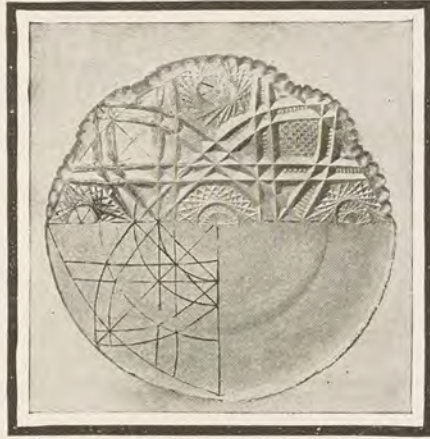
subsequently filled with about 1600 pounds of raw material, which soon melts at a temperature of 2500° F., caused by the intense flame of gas and air, which is deflected from the dome downward, the products of combustion passing out through a stack.

### Progress of Manufacture

The glass gatherer receives his order for a specified size and shape for his article, and after obtaining a sample to guide his memory, takes his iron blowing-tube, and collecting sufficient of the molten glass from the pot in the furnace, rolls it to and fro on a metal plate to produce a uniformity of distribution of the mass, which is then reheated in a furnace called a "glory-hole." He then turns it over to a glass blower, who takes the pipe and blows the article to approximately its final shape. It is then reheated and given definite form and finish by the most expert workman of all three. The tender glass must now be annealed or tempered to equalize the strains, otherwise the piece would break. It is then placed in kilns or tempering ovens, where it is first reheated and then gradually cooled.

The heavy uncut articles are then ready for the cutting operation, by which they lose considerable weight. In some cases the loss is one-third. The cutting operation really consists of three stages. The article is first roughed with sand and a steel grinding wheel. It is then smoothed by a stone cutting wheel, and is lastly finished by a wooden polishing wheel. A workman holds the article against the conical edge of a steel wheel secured to a shaft driven by belts and pulleys. Fine sharp clean sand and water are allowed to drip on the wheel from a cone-shaped bucket. The article is pressed against the rapidly-rotating wheel, and is deeply scored or cut. The heaviest and principal lines in the pattern are roughened-in by these steel wheels and the sand. In order that all articles may stand level, the bottoms are ground on a horizontal grinding wheel, sand and water still being used. The roughened article is now ready for the wet smoothing stones, which resemble steel wheels both as to size and edge, but no sand is used; these wheels follow the cuts that the steel wheels have made, and also cut in the finer lines of the pattern. The practically-finished piece is now ready for the polisher,

Design Roughed In      Design Polished



The Pattern      The Blank  
A Cut Glass Plate

whose rouge-charged wheels are of wood, their size and edge being the same as those of the steel and stone wheels, and therefore adapted to follow every line with almost mathematical accuracy. We have now the finished piece, which may grace a table or which may adorn the buffet of the White House

While cut glass is made abroad, the examples lack shape and depth and uniformity of cut. For this reason American cut glass forms an object of export, and the examples of art in this glass which will be exhibited at the St. Louis Exposition will be a revelation to most visitors. The Romans and Orientals were fond of both the cameo and intaglio processes

### American Cut Glass Superior

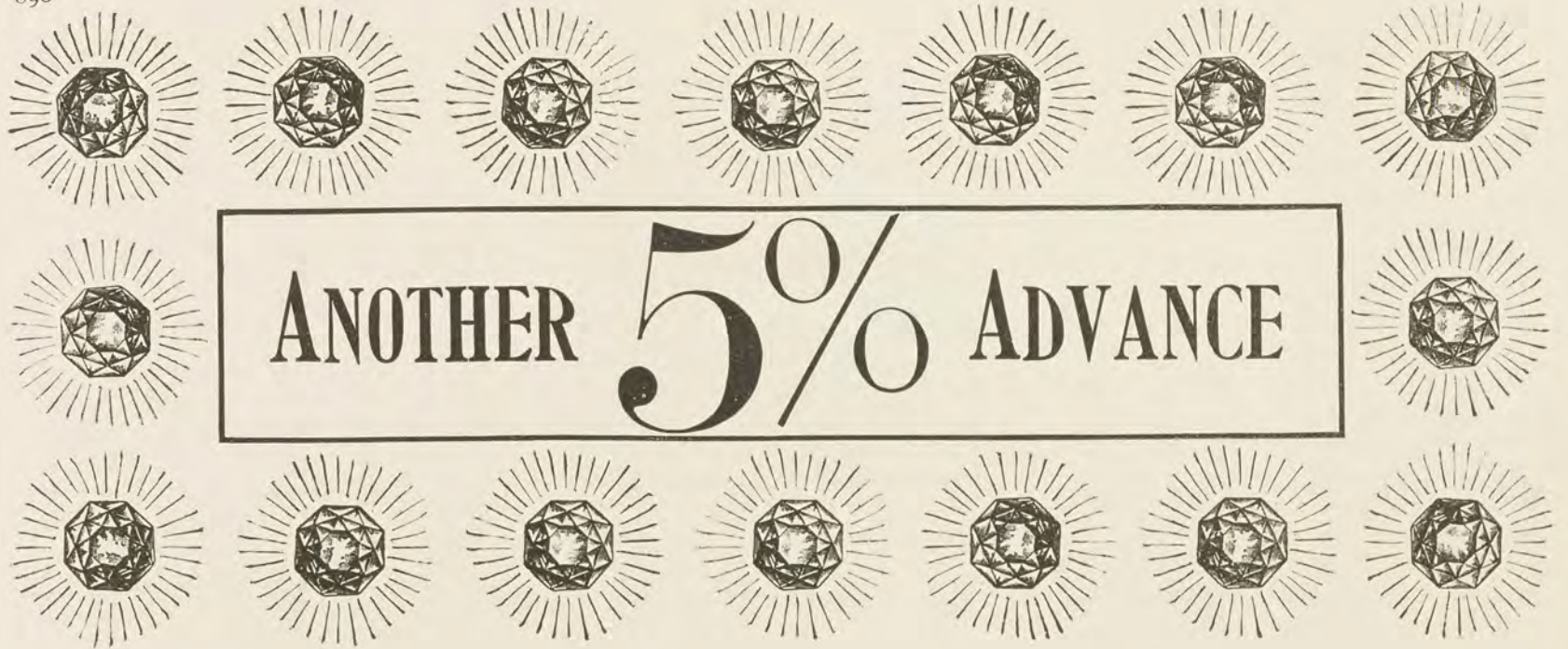
of engraving, and they had a peculiar combination of both which we now designate as "rock-crystal engraving." This is a long and expensive process, but the superb and highly artistic results fully warrant the expenditure of labor. The somewhat formal and mathematical lines give way to floriated designs, or free rein is given to the plastic fancy by the possibility if not the ease of modeling. The sculptor in his studio adds clay while he is working at his bust or group, while the marble-worker cuts off the marble to attain the same effect, in one case addition and in the other subtraction—the glass engraver does both. The engravers use copper disks of various diameters and thicknesses. The steel spindles carrying the disks are secured to a rapidly-rotating polishing head, the copper being charged with olive oil and emery powder. The tools are changed as often as necessary to obtain the desired effect. Both smooth and matt surfaces may be produced, or delightful combinations can be made of them. The cut-glass industry certainly has a bright future in this country.

The inventive genius, freedom from the trammels of convention

and feverish enterprise of the Americans are responsible for the wonderful progress made in recent years and for the present status of the industry. The jewelers have found in this beautiful ware a most profitable line which harmonizes admirably with their other stock and gives them a potent lever for creating additional business. Cut-glass ware has become the favorite gift of the time, and the jeweler who does not keep an attractive assortment is certainly losing an excellent money-making opportunity. The ware is now sufficiently popular-priced to ensure a ready sale, and for display purposes it is the equal of jewelry itself.



Engraving Glass



ANOTHER **5%** ADVANCE

## OUR PRICES UNCHANGED

In our advertisement of last month we said:

“Every few months a cablegram announces an advance in the price of Diamonds, and we have it on reliable

authority that a still further advance is even now in contemplation.” A few days later an advance of 5 per cent. was announced—the fifth since February, 1903! *And more to come.*

Many of our patrons, acting on our advice, purchased to advantage by buying promptly. As we have still some of the large stock purchased previous to and in anticipation of the several latest advances we can even yet give you advantageous prices if orders are sent in immediately. The diamonds are the finest quality and in sizes to suit.

**OUR WATCH STOCK** is the most complete and tempting ever shown. In Waltham, Elgin and New England Watches, it is all-embracing and affords the rarest purchasing opportunity of the present year. Our tips are reliable and mean money-saving.

# N. H. WHITE & Co.,

21 Maiden Lane, New York.



## New York Letter

### The Era of Removals

May 1st, or "Moving Day," as it has come to be called, met with its time-honored recognition among local jewelry firms this year. Nor was there any diminution from former years in the chaos and confusion that are inseparable from the general evacuation. Notwithstanding the comparatively centralized character geographically, of the trade in this city, the desire for change seems to be as great among jewelers as it is among dealers in other lines. This, however, is a sign of growth, for the desire betokens a necessity for more adequate space facilities and the necessity betokens a spirit of progress. Indeed, in view of the disorder and dislocation that moving entails, the need for larger quarters must be generally pressing since so many firms willingly undergo the ordeal, some of them quite frequently. But the changes and the bustle incident to the making of them, are well calculated to break even for a brief period the monotony of the daily routine. Moreover, the work of removal and re-establishment is usually done in the best of good humor, and at most it requires only a day or two for firms to get their machinery again working with wonted smoothness. Of course, all firms do not wait for the arrival of May 1st to change their locations. During the weeks preceding that date there are frequent removals, and the present year was by no means an exception in this particular, some of the most notable changes having been already reported in these columns. "Moving Day" is nevertheless well named, for it marks in a measure a culmination of flitting activities. Some rebuilding operations have been inaugurated on Maiden Lane. The premises at No. 49 will give place to a new twelve-story fireproof structure. The ground floor of the old building was hitherto occupied by the Seth Thomas Clock Co., which concern has become established on the third floor of the premises at 51 Maiden Lane. The building at 47 Maiden Lane will also be leveled and a new edifice will rise upon its site. Albert Berger & Co., hitherto located there, are now at 45 Maiden Lane. The Oriental Bank, Ludwig Nissen & Co., Ingomar Goldsmith & Co. and Geiger & Bauer are the occupants of the building at the corner of John Street and Broadway, which was leased by Ludwig Nissen a year ago, and subsequently remodeled. The Dennison Mfg. Co. are the sole occupants of the Dennison Building, 15 John Street, which was completed during the past year. The owner of the Jewelers' Court Building, 51 Maiden Lane, is now Edw. Schmidt, who purchased it some weeks ago from Boehm & Coon, the one-time owners of the Jewelers' Exchange Building, 14 Maiden Lane. Appended is a partial list of the recent removals, exclusive of those already mentioned: Hirsh & Hyman, from 40 Maiden Lane to 2 Maiden Lane. Horton, Angell Co. (New York office), from 68 Nassau Street to 37 Maiden Lane. Henry Kahn & Co., from 189 Broadway to 194 Broadway. Henry Lederer & Bro., from 37 Maiden Lane to 11 Maiden Lane. S. & B. Lederer (New York

office), from 11 John Street to 9 Maiden Lane. Lissauer & Co., from ground floor to first floor, 12 Maiden Lane. Henry E. Oppenheimer & Co., from 12 Maiden Lane to 3 Maiden Lane. Providence Stock Co. (New York office), from 11 John Street to 9 Maiden Lane. Spencer Optical Mfg. Co., from 15 Maiden Lane to 12 Maiden Lane.

### New Law Against Trading Stamps

A worthy achievement of the Merchants' Association was the passage of the Anti-Trading Stamp law, which was signed by Governor Odell on May 9th, and went into effect June 1st. The new law is said to have the merit of being constitutional, and if this be so it will be a boon, indeed, to the business world. As all KEYSTONE readers are interested in an anti-trading stamp measure, with the constitutional qualification, we reprint the law, the provisions of which are as follows:

1. No person shall sell or issue any stamp, trading stamp, cash discount stamp, check, ticket, coupon, or other similar device, which will entitle the holder thereof, on presentation thereof, either singly or in definite number to receive either directly from the vendor or indirectly through any other person, money or goods, wares or merchandise, unless each of said stamps, trading stamps, cash discount stamps, checks, tickets, coupons or other similar devices shall have legibly printed or written upon the face thereof the redeemable value thereof in lawful money of the United States.

2. Any person who shall sell or issue to any person engaged in any trade, business or profession, any stamp, trading stamp, cash discount stamp, check, ticket, coupon or other similar device, which will entitle the holder thereof, on presentation thereof either singly or in definite number to receive either directly from the vendor or indirectly through any other person, money or goods, wares or merchandise shall, upon presentation redeem the same either in goods, wares or merchandise or in lawful money of the United States, at the option of the holder thereof, at the value in lawful money printed on the face thereof, provided the same be presented for redemption in number or quantity aggregating in money value not less than five cents in each lot.

3. Any person engaged in any trade, business or profession who shall distribute, deliver or present to any person dealing with him, in consideration of any article or thing purchased, any stamp, trading stamp, cash discount stamp, check, ticket, coupon or other similar device which will entitle the holder thereof on presentation thereof either singly or in definite number, to receive either directly from the person issuing or selling same, as set forth in the second paragraph hereof, or indirectly through any other person, shall, upon the refusal or failure of the said person issuing or selling same to redeem the same as set forth in the second paragraph hereof, be liable to the holder thereof for the face value thereof, and shall upon presentation of the same in lots or number aggregating in money value not less than five cents in each lot, redeem the same either in goods, wares or merchandise, or in lawful money of the United States, at the option of the holder thereof, at the value in lawful money printed upon the face thereof.

4. Any person, firm or corporation who shall violate any of the provisions of this act, shall be deemed guilty of a misdemeanor.

5. This act shall not apply to tickets, coupons or other vouchers placed by any merchant or manufacturer in or upon packages or goods sold or manufactured by him if such tickets, coupons or other vouchers are issued by such merchant or manufacturer in his own name, to be redeemed by him.

### Duty on Coquille Glass and Chatelaine Bags

The claim of Hammel, Riglander & Co., importers of optical goods, 35 Maiden Lane, that coquille glasses, measuring about one and three-quarter inches in maximum dimensions are not dutiable at 45 per cent. ad valorem, under Par. 109, of the Tariff Act, but on the contrary are free from duty, under Par. 565, of the Tariff Act, was sustained by the Board of Classification of United States General Appraisers, at New York recently. The opinion of the Board as written by General Appraiser Sharetts was confirmative of decisions rendered in previous cases of a similar character. It was to the effect that the articles in question were glass plates or disks, and that they were roughcut or unwrought, and for the use claimed. As stated above, the protest of the importers was accordingly sustained.

Another protest recently sustained by the Board was that of E. & J. Bass, manufacturing jewelers, 573 Broadway. In this instance the goods consisted of a number of small chatelaine bags which were assessed at 60 per cent. ad valorem, under Par. 408, of the Tariff Act, instead of at 45 per cent. ad valorem, under Par. 195 or Par. 322. In these articles the bag was made of cotton velvet, and the front of tinsel giving the article a beaded effect, but the bag was not composed in parts of beads. It had a metal framework, was lined throughout with a cheap cotton cloth and had a metal hook and chain by which it may be attached to a belt or girdle. The gist of the Board's decision follows: "It is manifest that the collector's classification of the goods as articles composed in part of beads was erroneous. Being manufactures of cotton and metal, the articles are specifically provided for at the rate imposed for manufactures in chief value of either of those materials, and it is unnecessary to determine which component is of chief value, as the rate for manufactures of cotton and metal is the same."

### Importations of Precious Stones

According to the returns made by Gen. George W. Mindil, chief examiner of precious stones at this port, importations of these goods for the month of April amounted in value to \$1,459,476, which is less by about \$498,742 than the total amount for the corresponding period of last year. Of the aggregate volume for April of this year \$651,052.66 represented the value of uncut, and \$808,423.34 the value of cut stones. For the same period a year ago importations of uncut stones amounted to \$508,364, and cut stones to \$1,449,853, thus showing the rather abnormal decrease of 80 per cent. in the importations of cut, and an increase of 28 per cent. in importations of uncut stones. This condition is said to be due to the strike of the diamond polishers at Antwerp. The subjoined table shows the classified importations of precious stones for the past five calendar years:

	Cut.	Uncut.	Total.
1904 . .	\$808,423.34	\$651,052.66	\$1,459,476.00
1903 . .	1,449,853.76	508,364.55	1,958,218.31
1902 . .	1,118,866.82	422,481.79	1,541,348.61
1901 . .	1,579,491.72	718,545.13	2,298,036.85
1900 . .	298,021.87	53,632.57	351,654.44

# \$100 REWARD!

## CHART FOR THE GRADING OF DIAMONDS.

- A. Blue white and perfect.
- B. Blue white and imperfect.
- C. Extra white and perfect.
- D. Extra white and slightly imperfect.
- E. Extra white and imperfect.
- 1. White and perfect.
- 2. White and slightly imperfect.
- 3. White and imperfect.
- 4. Commercial white and perfect.
- 5. Commercial white and slightly imperfect.
- 6. Commercial white and imperfect.
- 7. Good color and perfect.
- 8. Good color and slightly imperfect.
- 9. Good color and imperfect.

Copyrighted, March, 1902, by S. C. Scott.

We are not infallible. If we were, we would be willing to offer the above-named reward to any one who had found one of our diamonds to be otherwise than as represented, as we have never knowingly sent out an imperfect stone as a perfect stone.

Thousands of diamonds have been sold by our system of grading, and we have yet to hear of a dealer being compelled to take back one of our diamonds because it was not as represented. But being fallible, if we ever do make a mistake, we will make it good.

If you are particular, this is the safest way for you to buy and sell diamonds. Send to us for your next prospective sale and compare prices.

S. C. SCOTT MFG. CO.,


9 Maiden Lane, New York.



## Hawkes Cut Glass.

GRAND PRIZE AWARDED AT PARIS EXPOSITION.

A yellow diamond makes a good show until compared with a white one.

Examine *Hawkes Cut Glass* and look for this trade-mark engraved on each piece,  without which none is genuine.

T. G. Hawkes & Co.,  
Corning, N. Y.



*Originality of Design  
Characteristic  
of*

## Egginton's Celebrated Cut Glass.

*Highest grade in every  
respect. Sold by best  
dealers everywhere.*

Manufactured by

**The O. F. Egginton Co.**

*Inc. Oct. 11, 1899.*

Look for trade-mark  
engraved on every piece.



Corning, N. Y.

## New York Letter

(Continued from page 891)

**Meaning of "Dimensions" Under Tariff Act**

Protests by importers against assessments under the Tariff Act continue to occupy the attention of the Board of United States General Appraisers. An interesting point was raised recently by Albert Lorsch & Co., 37 Maiden Lane, in regard to a quantity of imitation precious stones exceeding one inch in length, but containing less than one inch of superficial surface. The collector assessed these goods at the rate of 45 per cent. ad valorem, under Par. 112, of the Act of 1897, as manufactures of glass or paste. The importers claimed that the goods were dutiable at 20 per cent. ad valorem as imitations of precious stones under Par. 435. The protest was grounded upon the plea that Congress, having used the word dimensions instead of dimension, in Par. 435, at least the average dimension—if not both dimensions—must exceed one inch in order to exclude imitations of precious stones from classification thereunder. The Board's decision was given at some length. It stated that had Congress been legislating with regard to a single substance there would be much force in the importer's contention. Congress, however, it went on to say, disposed of all kinds of precious stones collectively. The plural word, "imitations," was employed in Par. 435, and as a corollary, the plural word "dimensions" was used to make the sentence grammatical. "We can see nothing," the decision continued, "in the choice of language employed by Congress to indicate an intent to include length, breadth and thickness in the word dimensions. Had such been its intent, the paragraph would probably have read 'not exceeding one cubic inch in dimensions' (see Par. 258.) In our opinion," the decision concluded, "the collector committed no error in classifying the merchandise as manufactures of paste or glass and assessing it for duty at 45 per cent. ad valorem under Par. 112."

**Advance in Price of Rough Diamonds**

Cable advice received by local diamond importers at the beginning of last month intimated another advance of five per cent. in the price of all grades of rough diamonds. Apparently the rise was not due to any cause peculiar to the time of its occurrence, for it is the fifth advance that has taken place since February, 1903; the dates of the others being February 12th, March 23d and October 13, 1903, and February 17, 1904. This latest rise is all the more inexplicable for the reason that most of the factories of Antwerp and Amsterdam are said to be at a standstill owing to a strike, and moreover there has been but a moderate demand for goods in the American market for the past few months.

**Bulk Sales Law Amended**

The law passed at Albany two years ago upon the demand of the New York Credit Men's Association, with the object of regulating the sales of stock in bulk, was amended last month in various particulars. Many of the amendments are merely grammatical alterations; some, however, give the bill a larger and more definite scope. Three new provisions have been added and it is chiefly by these that the adequacy of the bill as a preventive of fraud has been increased. In its original form the bill presumes all sales to be fraudulent in the carrying out of which certain conditions are not fulfilled. The bill goes on to specify these conditions, one of which is to the effect that at least five days before the sale, the

purchaser must "make full explicit inquiry of the seller as to the names, places of residence or places of business of each and every creditor," now amended to read: "each and all of the creditors of the seller and the amount owing each creditor." At this stage a new provision has been intercalated, which presumes a sale to be fraudulent unless the purchaser shall, in addition to the foregoing, "obtain from the seller a written answer to such inquiries," and the new clause likewise holds the sale to be fraudulent unless the "purchaser shall retain such inventory and written answers to his inquiries for at least six months after such sale." Here the original provisions continue. The following provisions have been expunged: From the close of Par. 1: "The seller shall at least five days before such sales file a truthful answer in writing of each and all of said inquiries." From the opening of Par. 2: "That, except as provided in the preceding section, nothing therein contained, nor any act thereunder, shall change or affect the present rules of evidence, or the present presumptions of law." These new provisions have been added at the end: "2. The seller shall at least five days before such sale fully and truthfully answer in writing each and all of said inquiries, and if such seller shall, knowingly, willfully make or deliver, or cause to be made or delivered to such purchaser any false or incomplete answers to such inquiries, said seller shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished accordingly. 3. Nothing contained in this act shall apply to sales by executors, administrators, receivers or any public officer conducting a sale in his official capacity." The act is now operative.

**School of Commerce Dedicated**

The new High School of Commerce building, in Sixty-fifth Street, between Broadway and Amsterdam Avenue, was formally dedicated on May 11 with exercises in which the Board of Education, Ex-President Charles Stewart Smith, of the Chamber of Commerce, President Fornes, of the Aldermen, and others took part. This new high school is the first and only institution of the kind in the United States. Its new building is also the first high school erected on Manhattan Island for the use of boys exclusively. The school was organized only two years ago and has had a remarkable growth. It now has an attendance of more than 1300 students, and prospects for so many more that the Board of Education has deemed it advisable to acquire an additional plot of land to the east of the school for the enlargement of the present building. The building itself is an imposing looking white sandstone structure three stories high, with a frontage of 150 feet. It cost more than \$400,000. Its establishment by the Board of Education was first suggested by Superintendent Maxwell, at a Chamber of Commerce dinner, in 1898. It was opened for use in an unfinished state last September. At the dedication, the principal, James J. Sheppard, outlined the school's aim and purpose. This was the first time in the history of the United States, he said, that a high school had been dedicated in which was offered a thorough four-years' course devoted solely to the preparation of young men for business careers. The school didn't expect, as many business colleges do, he said, to take graduates of the elementary schools and in a few months prepare them for business. Nor was it expected that the graduates of the school would be finished business men upon the receipt of their diplomas, any more than it was expected that a lawyer or a doctor would be a finished professional man upon graduation. But the school did aim to

give its students the requisite technical training for a business career, and a breadth and depth of preparation that would insure all-around efficiency. Special attention would also be paid to the moulding of the students' characters. Other speakers expressed the belief that the school would be a mighty power for good in promoting New York's commercial supremacy. Its founding is considered to mark an important epoch in the city's commercial progress.

**Jewelers' Security Alliance**

The regular monthly meeting of the executive committee of the Jewelers' Security Alliance was held on Friday, May 13th, the following members being present: Chairman Butts, President Sloan, Vice-presidents Wood and Champenois, Treasurer Karsch, Secretary Noyes, and Messrs. Abbott, Alford, Bowden and Brown of the committee. The following were admitted to membership:

B. Eysel, Long Island City, New York.	Miss Mary C. Shaw, Troy, New York.
Henry P. Tournier, Bloomington, Ind.	Towle & Winterhalter, Butte, Montana.
Jensen, Herzer & Jeck, Nashville, Tenn.	J. Schmelzer, Centralia, Ill.
McHenry & Stevens, Zanesville, Ohio.	C. A. Richardson Co., Jackson, Miss.
Tucker Jewelry Co., Higginsville, Mo.	Kerr & Thiery, Newark, N. J.
Southern Loan & Jewelry Co., Tampa, Fla.	Le Bron Jewelry Co., Montgomery, Ala.
Rush & Smith, Mount Carmel, Illinois.	A. R. Mann, Clarksville, Tenn.
Furnan L. Shaw, Camden, New Jersey.	V. A. Morse, El Reno, Okla.
W. T. Thompson, New York.	L. Goldberg, Grand Rapids, Michigan.
C. H. Broadbent, Utica, N. Y.	Jay Collier, Uniontown, Pa.
Castleberg National Jewelry Co., Washington, D. C.	Marks & Saxe, Troy, N. Y.
H. S. Davis, Mt. Gilead, Ohio.	C. H. Noyes, Paris, Texas.
	The Cox & Kuss Jewelry Co., La Salle, Ill.

The Thos. F. Brogan Co., manufacturing jewelers, have removed from 26 Union Square to 7 West Thirty-eighth Street. The company's new quarters comprise the entire top floor of a modernly appointed building.

A representative of a diamond dealer of Paris, France, arrived here on the *Kronprinz Wilhelm* recently, bringing with him what is reputed to be one of the finest collections of colored diamonds in the world. The value of the gems is said to be \$303,000. They were destined for exhibition at the St. Louis World's Fair.

The partnership hitherto existing between Walter McTeigue and William Jassoy in the jewelry manufacturing firm of McTeigue & Jassoy, 31 West Thirty-first Street, has been dissolved. This business will be continued by Mr. McTeigue, who assumes all the concern's liabilities and will liquidate all its debts. Mr. Jassoy has opened a jewelry manufacturing business at 1 Maiden Lane, with his brother, Otto Jassoy, under the style of William Jassoy & Bro.

David Belais, of H. & E. O. Belais, has been elected president, *pro. tem.*, and Ludwig Nissen, of Ludwig Nissen & Co., treasurer, *pro. tem.*, of the Humane Society. This is a recently formed organization whose object is to prevent cruelty to animals.

W. Green, of W. Green & Co., 6 Maiden Lane, accompanied by his wife and family, left recently for Europe. Mr. Green will combine pleasure and business on his tour. He will visit the principal factories in Europe and arrange new business connections.

Henry Freund, the genial head of the well-known firm of Henry Freund & Bro., left for Europe on the *Deutschland*, May 12th, on a buying trip. Most of his time abroad will be spent among the diamond cutters of Amsterdam, where a stock of choice stones will be personally selected. Mr. Freund expects to return on the same steamer about July 1st, with one of the steamer's strong boxes filled with his foreign purchases.

(Continued on page 895)

# New Milestone in Chain Manufacture.



**HANDKERCHIEF HOLDER  
BRACELET.**

PATENTED, JULY 22, 1902

**Directions for Use.**

With the bracelet on the left arm. Draw the center of the handkerchief between the wires of the bracelet into the corrugations.

To remove the handkerchief, pull the bulk of the handkerchief **down** gently with the **right** hand.

Indispensable for holding ladies' wrist-bags, purses, muffs, fans, etc. Pass the purse-chain or muff-cord between the wires of the bracelet. Pass around twice, so weight of article will rest on both the wires.

★ **H & H** Registered.  
**THE AMERICAN HALL MARK.**

**Makers of Gold Filled Chains and Locketts**

Be sure to see our new designs and patented Watch Protector. It overcomes all fob fasteners.

## HAMILTON & HAMILTON, JR.

BRANCH OFFICES:

New York City, 3 Maiden Lane.  
Chicago, Ill., 402 Stewart Building.  
San Francisco, 307 Claus Spreckels.

Works: Providence, R. I.



## New York Letter

(Continued from page 893)

**Death of Adolph Keller**

Adolph Keller, senior partner in the firm of L. H. Keller & Co., wholesale dealers in tools and supplies, and president of the Keller Jewelry Mfg. Co., died at the Galt House, Louisville, Ky., on May 18th, from a fit of apoplexy. His remains were conveyed to New York on the following day. The funeral was held on Saturday, May 21st, from the Church of Saint Francis Xavier, West Sixteenth Street. In the matter of age, Mr. Keller may be said to have been in the noonday of life, for he had only attained his forty-fourth year. He had been partially indisposed of late and had for years been a sufferer from rheumatism. About a month prior to his demise he went to French Lick Springs, Ind., upon the advice of a physician, but, as he began to grow worse, he left for Louisville, Ky., to consult a specialist; but after being in that city ten days, succumbed. Deceased was born in New York City, and at the age of fourteen entered the service of his uncle, the late L. H. Keller, then one of the most widely-known and highly-esteemed members of the jewelry trade. The youth began his life-work as an errand boy, but his business aptitude and industrious spirit soon manifested themselves and his reward was duly forthcoming. His advancement was continuous, and upon the death of his uncle, in 1889, he became a partner in the firm, together with his cousin, H. P. Keller, and L. J. Boesse. Mr. Boesse retired in 1895 and the business had since been continued by deceased and H. P. Keller. The Keller Jewelry Mfg. Co., of which deceased was president, was organized a few years ago with a capital of \$60,000.

The death of Mr. Keller at so early an age and in the midst of a career that was notable in past achievements and rich in future promise, is one of the saddest events of recent occurrence in the trade. That he leaves a widow, naturally overwhelmed by the affliction, and an infant son to mourn his loss, makes it still more pathetic. In common with their numerous friends, THE KEYSTONE desires to extend to the family sincere condolences in their bereavement.

**L. E. Waterman Co.'s New Factory Opened**

The L. E. Waterman Co., fountain pen manufacturers, formally opened their new factory in the Rhinelander Building, Duane and Rose Streets, on Saturday, May 14th. Some 200 of the company's employees, together with a number of invited guests, inspected the new plant and were afterwards tendered a very cordial reception. Frank W. Wakeman, president of the company, acting as host. In its new home the company have a floor area of 9000 feet, and windows being on three sides there is an abundance of natural light. This space has been parceled out judiciously and with a view to speed, freedom and comfort in productive operations. The reception by which the opening was marked included the inspection by the guests of the gold at various stages of its evolution, from the original sheet to the completed pen. The visitors were regaled with choice refreshments.

**Bishop Collection of Jades in Art Museum**

The collection of jades bequeathed by the late Mr. Bishop to the Metropolitan Museum of Art, in this city, was placed on exhibition at that institution last month. In character and scope this collection is reputed to be the greatest in America and to be unequaled by any in Europe. It includes more than 1000 specimens, representing the jade in as many different forms and in various stages of evolution. This rare accumulation had its nucleus in the Hurd jade vase purchased from Tiffany & Co. in 1878, and said to be one of the finest ever brought from China. It must have been a source of inspiration to Mr. Bishop, for in the eleven years that ensued he acquired about 400 pieces. At about this time Dr. George F. Kunz, the mineralogical expert, was called in and he began the preparation of a catalogue minutely descriptive of the collection. There were, of course, numerous subsequent accretions, and meantime Dr. Kunz continued to prosecute investigations in conjunction with eminent authorities in Europe. The result of their labors will be a most unique compilation; limited, however, in issue and given only to public institutions, gratis. At the time of his demise, Mr. Bishop had expended over \$100,000 upon its preparation.

**Watchmakers Inspect Watch Factory**

Members of the New York Watchmakers' Society, to the number of thirty-eight, visited the factory of the American Waltham Watch Co., at Waltham, Mass., on May 16th, upon the invitation of E. C. Fitch, president of the company. The party divided themselves into separate groups, thus affording the individuals an opportunity for a more adequate and satisfactory inspection of the plant than would have been possible had they gone through it in a body. The different knots of visitors were conducted through the great establishment, beginning at the department in which the raw material is handled. Its passage through each subsequent stage was then followed, the various processes being lucidly explained by those conducting the visitors. The functions of the multifarious machines were also explained, and their practical working demonstrated by operators. The watchmakers were then shown through the city of Waltham, and were afterwards taken to Boston on a private car. A sight-seeing expedition was also enjoyed in the Hub, after which the party journeyed back to New York, delighted with their trip, impressed by the Waltham Company's plant and gratified by the courtesy of its officers.

Eliassof Bros. & Co., 11 Maiden Lane, contemplate making some changes in the arrangement of their office, with the object of increasing the space behind their counters.

Mrs. Louise W. Tiffany, wife of Louis C. Tiffany, second vice-president and director of Tiffany & Co., and president of the Tiffany studios, died recently at her home, 27 E. Seventy-second Street, after an illness of several months.

F. W. Stuart, who has been in the employ of L. Witsenhausen for the past seven years, has entered the services of L. W. Rubenstein, 54 Maiden Lane, in whose interest he will travel in the nearby States.

Theodore A. Kohn & Son, retailers, hitherto located at 56 W. Twenty-third Street, have become established in their new and handsomely-appointed building at 321 Fifth Avenue, near Thirty-second Street. This building has been in course of construction since the beginning of last fall. It is built of white marble and iron, with a mansard roof. It is five stories high, and the dimensions of

the ground floor are 138 feet x 26 feet. This portion of the building is occupied exclusively by the firm itself, the apartments overhead being rented to other concerns.

S. B. Ross, hitherto with Jos. H. Fink & Co., has opened business as a diamond dealer at 14 Maiden Lane.

Chas. S. Crossman, of Chas. S. Crossman & Co., 3 Maiden Lane, accompanied by his wife, sailed for Europe, May 7th, on board the *Princess Irene*. For Mr. Crossman, the trip will combine business with pleasure. Italy is the first objective point, and from there the tourists travel north to take in the various continental markets.

C. G. Alford, of C. G. Alford & Co., accompanied by his wife and daughter, has been enjoying his usual fishing sojourn at Saranac Lake.

A verdict was recently rendered in the French courts in the folding opera glass suit which has been pending for some time. The litigation arose out of the invention of a folding opera glass by a French inventor, M. Troispoux. Another inventor, M. Batault, claimed that a patent previously obtained by him on a similar glass was infringed by Troispoux, but the court, after a review of the history of such patents, not only decided against Batault, but mulcted him in the costs of the suit, 500 francs damages and such other damages as Troispoux and the houses handling his invention were entitled to by reason of loss of business.

L. H. Davis, of B. H. Davis & Co., importers of diamonds and manufacturers of diamond jewelry, 68 Nassau Street, sailed for Europe on May 31st. He will visit London, Paris, Antwerp and Amsterdam on business, and will afterwards sojourn at Carlsbad for the benefit of his health.

At the regular monthly meeting of the Jewelers' Association and Board of Trade, 170 Broadway, held Thursday, May 12th, the following firms were unanimously elected members of the association: F. S. Gilbert, North Attleboro, Mass.; Wm. H. Luther & Son Co., Providence, R. I.; Orient Mfg. Co., East Weymouth, Mass., and the Wadsworth Watch Case Co. (Chicago branch).

Louis Stern, for the past four years superintendent of the diamond mounting department of Stern Bros. & Co., has opened in business for himself as a diamond mountings manufacturer at 176 Broadway.

Dr. Geo. F. Kunz is collecting for the United States Geological Survey data regarding radioactive minerals in this country. He requests jewelers to co-operate with him in his research by furnishing him the names of minerals and other substances, coming under their notice, having a radio-activity, and also the circumstances under which they have been obtained. An inquiry addressed to Dr. Kunz, 40 E. Twenty-fifth Street, New York, or to Chas. Walcott, director of the United States Geological Survey, Washington, D. C., will evoke a reply, giving instructions as to how radio-activity in a substance can be detected.

The death of Abraham Honigman, a well-known diamond broker, occurred on May 8th, at his residence, 213 W. Seventy-eighth Street. He had reached the threshold of his eightieth year, having been born in Germany in September, 1824. He came to this country in the 40's, and opened a jewelry business at New Orleans. He afterwards traveled through the countries of South America and then came North and opened a store at Troy, this State. He came to the metropolis in 1852 and continued in business here until about one year ago, when his advancing years necessitated a relinquishment of business activities. He is survived by three sons and two daughters.

## **MAIL ORDERS.**

When you order watches you want what you order and to have the order sent out quickly.

We have the goods if any house has them, and a reputation for promptness.

Try us especially on railroad watches. Order from our most convenient office.

**J. W. FORSINGER,**

Wholesale Watches,

Columbus Memorial Building, **Chicago.**

Room 711, No. 2 Maiden Lane, **New York.**



WESTERN BUREAU OF THE KEYSTONE  
ROOM 601 COLUMBUS MEMORIAL BUILDING  
CHICAGO, May 25, 1904.

Generally speaking, trade conditions in the West, Northwest and Southwest are the same in May as they were in April, "only better." Business in the jewelry and optical trades presents few new features, but is content to move along in a steady but not rapid pace. The month of June will open with more encouraging prospects and a promise of a better business, for the reason that the weather is now much more seasonable. The continued good weather of the past fortnight has made the country roads better, and has enabled the farmers to do an immense amount of work, which has enlivened business in many quarters where it was dull and added to the movement in general. This is what the traveling salesmen have been reporting the past few days. Good weather at this time of the year does not always mean increased current business in the rural communities. It means that the farmers are very busy, especially when it comes as late as it did this year, and that they are wasting little time going to town to purchase supplies. They only buy what they must have, and the rural carrier brings them the mail so that they go to town infrequently. But this does not worry the dealer. He knows that his business life depends on the prosperity of his customers. If they have ample time and good weather while putting in their crops it is a good indication that they will have a large harvest. As to the general crop outlook in the Chicago territory, it is quite favorable. Hot sun from now on will bring out the crops very rapidly. Take it altogether, the crop outlook is improved over that of a month ago. And if the crops are good we of the great West, Northwest and Southwest will not have to worry about the election, especially this year. June will be convention month in Chicago, and the low rates which the railway lines are granting the Republican National Convention which convenes in this city June 21st to 24th, should bring in a large number of buyers to this market and undoubtedly will. The rate is one fare both ways and 25 cents added. Tickets will be on sale by all roads from June 16th to 20th, with return limit up to June 29th. This will be a most favorable opportunity for the out-of-town dealer to visit the market to stock up for the summer trade. It is needless to add that magnificent stocks await the visiting purchasers, as the big jobbing houses have made no curtailment whatever by reason of the temporary quietness. In fact, their lines are more elaborate and complete than ever before at this time.

#### Personal Mention

Alfred Linton, with Spaulding & Company, has just returned from a six-weeks' visit to his old home in England. Mr. Linton is looking well and reports a most delightful trip.

W. F. Newcomb, in charge of the optical department of C. D. Peacock, has gone on an extended trip to California and the Far West. Dr. Newcomb is on a vacation trip, seeking health and pleasure, and he and his party will take in the Yellowstone Park on their return. They will be absent until about July 1st.

N. B. Barton, head of the Ostby & Barton Company, ring manufacturers, Providence, was in Chicago for a few days the early part of the month, calling on the jobbing trade.

Charles H. Spencer, manager at Norris, Alister & Company's, returned the early part of the month from a trip to Oswego, N. Y., his old home, whither he was called to attend the funeral of his father, whose death occurred at the family home in that city April 26th. Mr. Spencer will have the sincere sympathy of the trade in his great loss.

John C. Perry, general manager of the Hamilton Watch Company, Lancaster, Pa., spent a few days among the Chicago trade last week. Mr. Perry was in the West on a flying business trip, stopping off at the leading trade centers.

Wm. C. Sommer, the well-known optician, spent several days the early part of the month in Springfield, Ill., his old home, visiting among old friends and looking up familiar scenes.

R. A. Kettle, Chicago manager for Robbins & Appleton, selling agents for the American Waltham Watch Company, has just returned from a two-weeks' visit to the factory in Waltham, Mass.

Ferd. J. Wertz, who calls on the Western jobbing trade for Martin, Copeland & Co., left Chicago headquarters last week for an extended trip over his territory, which will include the Pacific Coast.

Geo. W. Wells, president of the American Optical Company, Southbridge, Mass., spent last week in Chicago, accompanied by Mrs. Wells. Mr. Wells is visiting the larger cities of the West, combining business with pleasure while looking into trade conditions and prospects in the great Western country. Mr. Wells was inclined to think that business, if anything, was a little better in the West than in the East, though there seemed to be a great deal of caution displayed in buying in all sections of the country. Mr. Wells is always a welcome trade visitor in Chicago, as elsewhere, as the representative optical manufacturer of America.

F. H. Noble, of F. H. Noble & Co., returned this week from a two-weeks' outing spent at West Baden in company with a party of friends. He reports an enjoyable and healthful vacation.

H. Lodge, foreign buyer for the house of Spaulding & Company, is now in Europe, buying art goods for his firm.

Alfred Hirst, of Hirst Bros. & Co., Oldham, England, a well-known British wholesale watch-makers' and jewelers' supply house, spent a few days in Chicago last week, calling on the trade. Mr. Hirst is on a tour of observation among the American manufacturing centers. Mr. Hirst said he was enjoying his trip and was much interested in what he had been seeing. He expected to take in the World's Fair at St. Louis before returning home.

Geo. W. Hamilton, the well-known practicing optician, for years located at 42 Madison Street, has recently removed to the second floor of the Stewart Building, where he occupies the corner room.

Joseph Nordman, of Nordman Bros., wholesale, San Francisco, Cal., and Mrs. Nordman, arrived in Chicago the early part of the week. Mr. Nordman was en route to Europe and will be absent two months on a trip, wherein he will combine business with pleasure. Mrs. Nordman will remain with friends in Chicago until her husband returns from Europe. On their return to San Francisco they will take in the World's Fair at St. Louis.

William A. Lamb, who represents the Geo. H. Fuller & Son Company, familiarly known in the wholesale and manufacturing trade from Boston to San Francisco, and St. Paul to Galveston, and from Vancouver to the City of Mexico as "Will," was married April 6th in El Paso, Texas, to Miss Mable Moore, a Chicago young lady, who journeyed to El Paso, accompanied by her mother, so that she could meet Mr. Lamb, who was on his return from an extended trip to the Pacific Coast. They were married in the Episcopal Church in El Paso on the above date. The next day Mr. and Mrs. Lamb started for the City of Mexico, continuing Mr. Lamb's regular trip as their wedding journey, Mrs. Lamb's mother, Mrs. Moore, returning home. The young couple arrived in Chicago last week after a charming trip, and are now at home to their friends at 4824 Calumet Avenue. Mr. Lamb is now receiving the hearty congratulations of his friends, for he is popular with the trade, and Mrs. Lamb is to be congratulated upon winning so worthy a gentleman for a husband. THE KEYSTONE takes pleasure in extending its best wishes to both parties.

Among the optical students in attendance at the Northern Illinois College during the month of May, were D. D. Ricker, Aurora, Ill.; J. T. Ray, Brooklyn, S. Dak., and E. H. Abbott, of Owatonna, Minn.

G. Marcus, of the California Jewelry Company, wholesale, San Francisco, accompanied by Mrs. Marcus, were in town for a few days last week enjoying life in the Western metropolis. They were en route to Europe, where they expect to enjoy ten weeks of traveling and sight-seeing. Mr. and Mrs. Marcus stopped off at St. Louis for a few days, to look over the World's Fair. They were delighted with the big show and will do it thoroughly on their return.

L. Siligman, of the L. Siligman Jewelry Company, sailed for Europe the early part of the month to be absent two months. The trip is one in which he will combine some business with his pleasure and sight-seeing.

(Continued on page 901)

**I**N every occupation there must be degrees of worthiness. Some so pronounced in excellence they speak eloquently with an unmistakable ring of merit.

Our diamond department is imbued with the determination to give the retail jeweler positive, genuine value for his money as the result of dealing with us. We own our large stock of diamonds and precious stones at strictly bottom prices. Our gems are selected by experts and imported direct by us.

One of our diamond buyers is now in Europe scanning the diamond marts for the right kind of goods for the retail dealer. We are enabled, therefore, to place diamonds of the highest quality in our customers' hands at lowest prices, quality considered.


Large or small, your orders always receive our prompt and intelligent consideration. We see to it that you get what your order calls for, as we give this department of our business our unceasing and careful supervision.

## BENJ. ALLEN & CO.

WHOLESALE JEWELERS,

131 Wabash Avenue,

CHICAGO, ILL.

 COMMENCEMENT season is here! Watches will be desirable as gifts. We are prepared to meet the demand in solid gold and the standard makes of filled cases, in the very latest designs. There will be times in the next few weeks when you will want watches quick—we can render such service. The retail jeweler can make money by having the goods in stock that are in demand, thereby avoid losses in your business. Our 1904 Catalog is compiled for the convenience of the retail jeweler; it contains a large assortment of the most desirable goods. (See page 3 for index to the Watch Department). The handling of mail orders is a science with us. Try us and be convinced.

The Republican National Convention will be held in Chicago, commencing June 21st. Tickets on all railway lines on sale June 16th to 20th inclusive. Return limit June 29th. Rate, one fare both ways, plus 25c. Should you be in our city at this time it will be our pleasure to meet you. We invite you to make our store your headquarters.

## BENJ. ALLEN & CO.

WHOLESALE JEWELERS,

131 Wabash Avenue,

CHICAGO, ILL.

**A**T no time in the long career of this house have we been in a better position to give the retail jewelers the very best of service from every standpoint.

Not only are we strong in Diamonds, but our regular lines of Watches, Jewelry and everything needed by the jeweler are stronger than ever. Remember please that we are the selling agents for the Mt. Washington Cut Glass Company and the Pairpoint Corporation, and we display a full line of their samples.

Reliability is our watchword. Every line of goods we sell is a trade builder for both ourselves and the retailer. Long experience is at the service of the dealer who buys of this house.

During this month there will be many times when you will want goods quick. Send us your mail orders and see how well we take care of you.



**STEIN & ELLBOGEN COMPANY,**  
WHOLESALE JEWELERS AND DIAMOND CUTTERS,  
COLUMBUS MEMORIAL BUILDING, ❁ ❁ CHICAGO.

## Chicago Letter

(Continued from page 897)

Dr. George W. McFatrach, secretary of the Northern Illinois College, and Mrs. McFatrach will have the sincere sympathy of their many friends in the trade in the loss of their infant daughter, their first born. The little one was only allowed to brighten their home for three short weeks, when spinal meningitis caused its death.

Theodore Kuehl, of Geo. Kuehl & Company, cuckoo clock importers, returned the middle of the month from a ten-days' stay at the St. Louis Exposition, where his firm has a large and complete display of cuckoo clocks from the Black Forest in Germany. Their booth is located in the German exhibit and is in good taste and quite attractive. Mr. Kuehl is enthusiastic over the St. Louis World's Fair, and says it is a great show. It is his opinion that in view of the physical immensity of the undertaking, its unequalled area under roof, its vast acreage, the enormous sums of money invested, the universal exposition at St. Louis is to break all records and to set a new pace in the exploitation and display of the world's progress. In area its grounds are twice as large as those of the Chicago Columbian Exposition, hitherto the sum and crown of all such endeavors. It will be remembered that our World's Fair in Jackson Park eleven years ago cost about \$27,000,000 in the aggregate. The World's Fair in Forest Park, St. Louis, is now in full swing and has cost the builders and exhibitors almost \$60,000,000. The total horse power to energize the Chicago Exposition was 17,000. St. Louis has installed a concentrated plant of over 40,000 horse power. To the practical mind accurate figures such as these convey at least a partial grasp of what is to be seen this year at St. Louis. The test of its beauty, of its splendors and of its utilities must come, Mr. Kuehl thinks, by witnessing the Ivory City itself, and by applying, if possible, some contrasts between it and those of Chicago, Paris, Buffalo, Omaha, Charleston and the lesser expositions of the past dozen years. Those who have seen its completed palaces, who have counted the large number of pavilions, castles, villages, national and State buildings of all kinds, and marked the unfailing beauty of them, those who have observed the natural landscape advantages of the fair site and the noble forest of primeval trees which crown its many hills, agree that the managers, concessionaries and exhibitors at St. Louis have already fulfilled every promise both as to its immensity and its surpassing beauties. Mr. Kuehl also believes that the St. Louis Exposition will please the people and draw great crowds.

Sumner Blackinton, widely known among the trade from his long connection with the chain house of W. & S. Blackinton, is in town this week with a new line—that of the J. G. Fuller Company—with which he has recently joined his fortunes. Mr. Blackinton has severed his connection with the old house entirely, and will in the future devote his energies to the Fuller line.

Mrs. Elva H. Cooper, of Ashtabula, Ohio, is taking a post-graduate course at the Northern Illinois College. Mrs. Cooper is a very bright and a successful optician.

Charles Melchor, traveler for C. H. Knights & Co., spent last week at headquarters, stocking up for his June trip.

J. W. Armbruster, selling agent for the Illinois Watch Company, was in town recently, calling on the wholesale trade in the interests of his firm.

A. F. King, of King, Raichle & King, wholesale, Buffalo, N. Y., was in Chicago last week paying his respects to the manufacturing trades.

Harry S. Hyman, head of the house of Hyman, Berg & Co., retail, has been appointed on the board of governors of the Jewelers' Club of Chicago, succeeding Ernst M. Lunt, manager of the Towle Manufacturing Co., who recently resigned.

Alphonse Judis, of the Alphonse Judis Company, wholesale, San Francisco, wife and son arrived in Chicago last week and remained in town several days, seeing the sights and calling on the trade. They left here for St. Louis, where they expected to spend a week or ten days, looking over the World's Fair.

Benj. C. Allen, son of the head of the house of Benj. Allen & Co., accompanied by his wife, sailed on the French liner *La Lorraine* for Europe May 12th, to be absent two months. Their first objective point was Paris, where they will spend a week or more. From there Mr. and Mrs. Allen will spend some little time traveling through France to Amsterdam, where Mr. Allen will make the firm's purchases of diamonds for the fall trade. From Holland they will go to London and spend three weeks looking over Merrie England. They expect to return to Chicago about July 15th.

H. S. Butterfield, of Butterfield Bros., wholesale, Portland, Ore., spent a few days in Chicago the early part of the week, calling on the wholesale and manufacturing trade. Mr. Butterfield was combining business with pleasure on his trip, and expected to visit St. Louis and see the World's Fair on his return to the West.

President George Johnston, of the Johnston Optical Company, Detroit, spent several days in Chicago the early part of the month combining business with pleasure.

Among the recent graduates of the Northern Illinois College of Ophthalmology, are Ernst Strassburger, Chicago; Nathan Bergson, Chicago; Charles Robert Hudgel, M. D., Ladysmith, Wis.; G. H. Goodwin, Tracy, Minn.; Morris Platt, Chicago; Thomas P. Hartley, Toronto, Ont., and Robert Prather, of Clarendon, Texas.

Frank McGuire, the well-known optician, of Jamestown, Ohio, is spending the summer in Chicago, in order to be near his invalid daughter, who is a patient in one of our city hospitals.

R. E. Boyd, of the house of Purdom & Boyd, manufacturing opticians, Birmingham, England, and J. H. Marlow, a retail optician, of Harrogate, England, spent a day in Chicago last week calling on the manufacturing optical trade. Both Mr. Boyd and Mr. Marlow were mighty pleasant gentlemen to meet, and said they were delighted with their reception during their limited stay in the Western metropolis. They liked our vim and push and our large way of doing things optical. These gentlemen were on an extended trip through the States, beginning with their landing in New York. From here they journeyed to Springfield, Illinois, to visit with a relative of Mr. Marlow's. From there they go to St. Louis to spend ten days looking over the World's Fair. They go from there to Philadelphia, and from there to Montreal, and then sail for home.

Dr. G. W. McFatrach, secretary of the Northern Illinois College of Ophthalmology, will address the Northwestern Optical Association which meets in St. Paul on June 22d.

S. W. Branley, manager of the clock department at C. D. Peacock's, is off on an extended pleasure outing to California and the Pacific Northwest. He expects to take in the Yellowstone Park ere he returns.

John Herschede, of the Herschede Hall Clock Company, Cincinnati, is in Chicago to-day, calling on the trade in the interests of his firm.

J. N. Mulford, head of the Mulford Jewelry Company, Memphis, Tenn., and Mrs. Mulford are spending a fortnight in Chicago, making up the firm's new fall catalogue. Mr. Mulford is making his headquarters at the office of the Towle Manufacturing Company while in town.

Fred. C. Klein, of F. C. Klein & Bro., lapidists, sailed for Europe May 7th, to be absent about three months. Mr. Klein was accompanied by Mrs. Klein and their family. The trip is one of pleasure and sight-seeing entirely. The party will travel extensively on the continent, spending a considerable portion of their time at Mr. Klein's old home in Oberstein, Germany.

Egbert Lusk, for several years past house salesman in the Chicago office of the Towle Manufacturing Company, has gone on the road for the same house, succeeding Mr. Fuller.

Amos W. Huggins, of the house of A. I. Hall & Son, the well-known jobbers, of San Francisco, Cal., has been in Chicago this week accompanied by his family. Mr. Huggins is on his annual buying trip to the Eastern manufacturing centers, where he will select goods for the firm's fall trade. He is always welcomed by the manufacturing trade in this market, as he is a popular man. Mr. Huggins, though not buying as freely as last year, was of the opinion that the Pacific Coast country would enjoy a good fall trade.

President Max. Ellbogen, of the Stein & Ellbogen Company, will sail for Europe early in June on his regular annual diamond-purchasing trip. While abroad Mr. Ellbogen will visit London and other European diamond marts, selecting the firm's stock of "rough" goods for their fall cutting. Mr. Ellbogen will be absent about two months.

George Lawrence, Western traveler for Reed & Barton, visited the Chicago office of this firm yesterday.

Miss Rose Bruce, for five years past a faithful employee of the Stein & Ellbogen Company, will be married to Dr. L. Wilson, of Wilmot, S. Dak., Thursday, June 2d, at her home in this city. After her marriage she will reside at Wilmot, S. Dak.

Charles F. Wood, head of the diamond house of Chas. F. Wood & Co., New York, spent a few days here the early part of the month at the Chicago office of the firm. This is Mr. Wood's first appearance in this market in seven years.

### Gossip Among the Trade

Chicago was the playground of 2000 Elgin watchmakers and their wives and children, Monday, May 2d, when the annual outing of the employees of the Elgin National Watch Works occurred. Fifty cars of the Aurora, Elgin & Chicago Railway Company's Interurban line were chartered to bring the excursionists to the city. The programme included visits to the down-town retail establishments, the theaters, parks and other places of amusement.

At a special meeting of the officials of the Jewelers' Club, of Chicago, which was recently held at the rooms of the club, 146 State Street, President Dungan appointed the following committees: Finance committee—Harry Hahn, chairman; C. H. Hulburd and Ben. Englehardt. Entertainment committee—James J. Caldwell, chairman; Sol. Hess and C. W. Edwards. House committee—Benj. F. Coffin, chairman; William Drexmitt and Alfred H. Wittstein.

(Continued on page 903)

## ***Diamond Conditions To-Day:***

*Rising market.*

*General scarcity of rough and finished product.*

*Each a good reason for the wise buyer to lay in a stock.*

SEND US YOUR ORDERS FOR LOOSE OR MOUNTED  
DIAMONDS OF EVERY DESCRIPTION.

Our business is the largest of its kind in the world, thereby giving us a prestige and advantage of anticipating rises in the market and opportunities for picking up bargains that few possess.

Our facilities for filling orders promptly for Diamonds, Watches, Silverware, Clocks, Optical Goods, Tools and Material are unsurpassed.

No order too small to receive our immediate and careful attention.

### **A BARGAIN BUNCH.**

EACH RING  
A STAPLE AND  
QUICK SELLER.



ALL FINE WHITE  
CUT DIAMONDS,  
14 K. MOUNTINGS.

COMPLETE FOR \$69.75.  
SUBJECT TO CATALOGUE DISCOUNT.

**Otto Young & Co.,** Wholesale Jewelers,  
149-153 State Street, Chicago, Ill.



## Chicago Letter

(Continued from page 901)

The F. E. Morse Company will remove from 163 State Street to the Thomas Church Building, 151 Wabash Avenue, the middle of June. Their new quarters will be larger and more modern than the old.

John Neumann, of Neumann, Rosen & Co., manufacturing jewelers, who is the treasurer of the Chicago District Turn Verein, has arranged to escort 3000 of his lodge associates to the World's Fair at St. Louis, June 30th.

Adolph Schwab, importer of Swiss watches, has removed his Chicago office from room 418 Silversmiths' Building, to room 1016, the same building, where they have a fine light and nearly double the space they formerly occupied.

L. A. Eppenstein & Co. have succeeded to the wholesale jewelry business of A. Davis & Co., who have been located in the Champlain Building up to May 1st, when they removed to the Silversmiths' Building.

R. J. Hillinger & Co. have removed from room 917 Silversmiths' Building to room 807, the same building, where they have double the space they formerly occupied.

The Chicago office of the Webb C. Ball Watch Company is now nicely located in their new quarters in the handsome new modern office building known as the Railway Exchange Building, at Jackson Boulevard and Michigan Avenue. The new office occupies a floor space of over 1200 square feet on the eighth floor of this building, and has been furnished in modern style with entirely new fixtures.

Arthur R. McDougall & Co., retail opticians, are now nicely located in their new store at 29 Wabash Avenue.

James T. Edwards, the well-known manufacturers' agent, is now handling the line of the Davis Manufacturing Company, of Providence, in addition to the chain line of the B. S. Freeman Company.

L. L. Rennels, retail, formerly at 709 West Madison Street, is now located at 637, the same street.

Woollett & Jacob are a new wholesale firm who have only recently embarked in business in room 806 Columbus Memorial Building. Both members are well known in the trade, the former having been a successful trade repairer and the latter was formerly with Norris, Alister & Co. and later with L. H. Shafer & Co.

Burchard & Challen, Eastern manufacturers' agents, in the Silversmiths' Building, have added two storage rooms to their quarters, where they will store stock for their fall business.

The Murine Eye Remedy Company is now very nicely located in their new quarters at Michigan Avenue and Randolph Street.

### News from the Trade

News has reached this office that H. D. Cone, head of the H. D. Cone Jewelry Company, Cedar Rapids, Iowa, has recently been called upon to mourn the loss of a much-beloved mother, whose death was from pneumonia. Mr. Cone will have the sympathy of the entire trade in his great loss.

The Hauson Jewelry Company, of Princeton, Ill., is one of the real progressive and successful retail firms of the State. Two years ago they succeeded to the old-established business of O. H.

Pitkin. Only recently they have enlarged their quarters and made extensive improvements in their store. They now have one of the real modern and tasty stores of the Sucker State.

The Tripp-Bradley Optical Company is a new retail optical house just embarking in business at Memphis, Tenn. Both members of the firm were in this market for several days early in the month, selecting their opening bill for the new store. They will have a strictly modern establishment and propose to push their business from the start.

Charles E. Berry, formerly watchmaker for Jeweler M. H. Bell, of Kalamazoo, Mich., passed through Chicago recently, en route to Pine Bluff, Ark., where he had secured a similar position with R. H. Stearns & Co.

Hupp, Sowers & Johnson are a new firm recently opened up at Streator, Ill. The members of this firm were all formerly partners or employees of the old and well-known Streator house of Mills & Hupp and have opened a new and modern store under the firm-name as above. They bought most of their opening bills in this market. The two brothers Mills will continue the old business of Mills & Hupp under the name of the Mills Jewelry and Piano Company.

The Benj. Allen & Company Employees' Benefit Association, recently organized, has been incorporated. John A. Cox, E. Schreiner and A. L. Wiffin were the incorporators.

News has reached the trade here that Jeweler Harry D. Dunning, of Fremont, Nebr., desires to sell out his business on account of failing health. Mr. Dunning has one of the finest stores in Nebraska and has long done a successful business. He is now in Colorado seeking health and is really a very sick man.

J. D. Lorenzo, the well-known jeweler, of Mishawaka, Ind., has recently sailed on the German liner *Kaiser Wilhelm, 2d*, for a two months' tour in Europe. The trip is one of purely pleasure and recreation.

Kent Clarke, a former well-known silverware salesman, has recently located at Columbus, Kansas, where he is engaged in the oil business.

### Out-of-Town Visitors

W. A. Quimby, of Lead City, S. Dak., was a welcome trade caller in Chicago recently. When met in one of our jobbing houses he said that trade in his section was a bit quiet this spring, though he felt sure it was about up to that of last year.

Charles S. Sharp, of Ripon, Wis., was a visiting buyer in this market last week.

Oscar Hoberg, of Thorpe & Hoberg, Sioux City, Iowa, arrived in town the first of the week. Mr. Hoberg was here on a purchasing trip.

C. E. Prouty, of Bradford, Ill., was a trade visitor in this market the early part of the week, making purchases for the home store.

W. H. Beck, the well-known Sioux City, Iowa, jeweler, and his son, W. Cornish Beck, arrived in town last week and met with their usual warm welcome from the trade. Young Beck left the same evening for Washington, D. C., to attend the graduation exercises of the fashionable boarding school where his sister graduates. Jeweler Beck remained in town for several days, attending to some buying. When seen in one of our manufacturer's offices he said that though his business did not seem to be quite so brisk as at this time a year ago, still sales were about up to last year for the first five months. Mr. Beck thought that prospects were encouraging for a good fall trade.

H. F. Wichman, a leading jeweler, of Honolulu, Hawaiian Islands, spent several days in Chicago last week, enjoying life and the sights of the metropolis of the great West and doing some buying. Mr. Wichman went out to Elgin for a day to look through the factory of the Elgin National Watch Company, and was delighted with his trip.

Sam. Park, of the Boyd Park Jewelry Company, Salt Lake City, was among the many Western jewelers in the Chicago market recently.

H. T. Segerstrom, of Ironwood, Mich., was a visiting buyer in this market the early part of the month.

Kiefer & Wenzel, of Sault Ste. Marie, Mich., were represented in this market by E. J. Kiefer, who was here, combining business with pleasure. Mr. Kiefer spent a pleasant day at Elgin, looking over the big watch factory.

G. W. Chase, a well-known jeweler, at Moberly, Mo., was in Chicago a few days recently, and was a welcome trade caller. Mr. Chase was en route to Buffalo as a delegate to the annual convention of the Y. M. C. A.

C. D. Gardner, of Manistee, Mich., was among the Northwestern visitors who visited this market last week on a buying trip.

Jeweler C. K. McCain, of Kokomo, Ind., was represented in this market recently by G. V. Brown, his watchmaker. Mr. Brown enjoyed a day at Elgin during his visit, viewing the big watch factory.

W. C. Morse, of Farmersburg, Ind., was a visiting buyer in this market recently, selecting goods for his new branch store, which he is just opening up in Shelburn, in the same State.

H. E. Randall, of Hammondsport, N. Y., was a trade caller in Chicago recently.

W. J. Boszhardt, of Fort Atkinson, Wis., was a buyer in this market the early part of the present week.

J. C. Peers, of Rockford, Ill., was among the recent visiting buyers in this market.

C. F. Graff, of Elkhorn, Wis., was in Chicago recently making purchases for the home store.

Wilber Gibbs and Mrs. Gibbs, of Bellingham, Wash., were welcome visitors in the Chicago market last week. Mr. Gibbs was a liberal buyer while here and reported that trade was about the same as last year in his section of the country. Mr. and Mrs. Gibbs spent several days at St. Louis looking over the World's Fair before returning to their far Western home.

The firm of Anderson & Company, of Ishpeming, Mich., was represented in this market last week by Otto Eger, who was here on a buying trip.

H. W. Yasaan, of Spring Valley, Ill., was among the many buyers in this market the present week.

Wm. O'Neill, Dayton, Wash., was in Chicago this week combining business with pleasure.

John Spencer & Daughter, of Edgerton, Wis., were represented in this market recently by Mr. Spencer, who was here on a purchasing trip.

Hall, Sayles & Fifield, the well-known jewelers of Janesville, Wis., have been represented in this market at different times recently by each of the three members of the firm, who were here combining business with pleasure.

Albert L. Haman, the well-known jeweler and railway-time inspector of St. Paul, Minn., was in Chicago recently calling on his friends in the trade.

Charles F. Stiff, the well-known and successful jeweler of Little Rock, Ark., is in Chicago to-day calling on the wholesale and manufacturing trade and doing some buying for the home store.

# Methods of Mining Gold

**T**HERE is no business so difficult to master as the mining of precious metals, and none in which practical experience counts for so much, nor in which so much of progress is due to the practical worker. In every instance it has been the scientist who has followed, and the miner who has broken the path with pick and shovel. The United States has had no small share in this empirical progress. Deep vein and hydraulic mining, and the whole host of improvements in mining machinery which made possible the great gold production of the last half century, were first tried in the United States, and to-day mining machinery the world over is of American invention and American make.

## What Machinery has Done

Much of the large production of gold in the United States is due to the great body of the metal contained in the gold fields which deep vein and hydraulic mining lay bare, but even more is due to the introduction of machinery for working low grade, refractory ores, and processes for saving flour gold—gold too fine to be saved by washing; and it is the perfection of this machinery that the country must look to largely for a continuance of their gold supply.

Forty years ago ore paying less than \$25 to the ton was considered of no value; now ore paying \$1.50 a ton is worked at a profit. In the United States alone there is a great quantity of low grade refractory gold ore, and in the gravel deposits an unlimited supply of float gold. It was deep vein mining and placer mining by hydraulics in the United States, with their consequent great production of gold, that first called the attention of miners to the enormous waste of gold under the old processes and caused the production of machinery to save this gold. Deep vein mining had been carried on in California, on a small scale, since the early '50's, but it was not until 1858, with the discovery of the Comstock vein in Nevada, that deep mining became a regular industry.

Up to that time seven-eighths of the gold mined in the world had been taken from the placers. At the present time three-fifths of the gold produced is taken from the quartz veins and cement deposits, and the greater portion has to be treated by various processes for freeing the gold from base metals.

## Placer and Quartz Mining

When the great bonanza was opened up on the Comstock, vein mining had no past history by which the American miners could be guided. In the little that had been done in California, placer methods and machinery had been used. Mexico had been mining gold for 200 years, but she had done nothing save surface work, and her machinery had not progressed beyond the arastra and the patio process. The arastra, by means of which the ore was crushed, consisted of a stone-bottomed pan with a frame of wood some ten feet in diameter. Inside the pan were heavy stone drags attached with raw-hides to arms, which extended over the framework. Horses or mules were hitched to the free ends of the arms and driven around and around, crushing the ore under the drags as they went.

After the ore was crushed in the arastra, it went through the patio process of amalgamation. In this process the crushed ore with the quicksilver was put into an enclosure paved with stone and surrounded by a stone wall. Horses and mules were let in and driven around until the gold or silver had amalgamated with the quicksilver. The quicksilver was then drained off, squeezed and retorted.

Previous to the discovery of the Comstock mines, the arastra had been superseded in California by a crude stamp mill which crushed about one ton of ore to the stamp in twenty-four hours. The stamp was of wood with an iron shoe and dropped about forty times a minute on a piece of cast iron placed on a mortar block and enclosed in wood. Subsequent to this time, rapid advance was made in mining machinery and in all methods of handling ore. The wooden stamp was replaced by steel stamps, which dropped 100 times a minute and crushed five tons of ore to the stamp every twenty-four hours.

## Improved Processes

The pan process of amalgamation, in which the mixing and amalgamation are accomplished by mechanical means, replaced the old patio process; and where, with that process, 50 peons and 100 horses and mules had been employed, an 80-horse power engine did the work. High explosives were introduced and high speed hoists and mining cages were invented, all of which made it possible to mine and hoist with one 200-horse power

Crude  
Methods of the Past.

Great Loss of Gold.

Improved Machinery  
of To-day.

engine 1000 tons of ore from a depth of 1500 feet in one day. With improved pumps and pumping machinery the water problem was solved.

Most of the ores of this country require the treatment of fire before the precious metal can be extracted from the base; yet, during the first two years neither roasting nor smelting processes were used on the Comstock, and, as a consequence, fully 40 per cent. of the gold and silver values were lost. In Europe the reverberatory furnace was being used for this purpose. It was finally introduced here, but the method was found too tedious and costly to be applied to the ore of this country. What was needed was an automatic roasting furnace, and after the failure of the reverberatory several automatic furnaces were invented and tried. They were all built on the same lines, and while they were an improvement on the reverberatory there still remained numerous defects.

The process through which the ore went was substantially as follows: First, dampness was eliminated; then when a temperature of 200 degrees was reached the sulphur took fire and passed off as sulphurous acid, and finally the arsenic fused and passed off in fumes.

As the ore reached a still greater heat, chlorine, formed from the salt which had been introduced with the ore, formed volatile chlorides of antimony and zinc blende and fixed chlorides of silver. The gold was then free. This method was successful in the treatment of silver ore. The working of silver was cheapened and the output greatly increased.

The furnaces were not so satisfactory in treating gold ores, however. It was found that from 10 to 50 per cent. of the gold values, varying with the character of ore was lost from volatilization, which occurred when the metal came into contact with the flames, the strong draught in the furnace carrying off the volatile gold in fumes.

## Volatility of Metals

All metals, with the single exception of platinum, are volatile, and gold in certain combinations is the most volatile of all. In telluride of gold, for example, which has been found to contain 56 per cent. gold, although not a trace of metallic gold could be found with the most powerful glass, the gold passes off with the tellurium in the form of yellow vapor at a temperature of 850 degrees. Ordinarily gold does not fuse until a heat of 2100 degrees is applied.

At the time that the automatic furnaces were being introduced, the chlorination process was being put into successful operation in California. In this process, in which ore is extracted from the auriferous material by means of chlorine gas, it is necessary to roast all ores containing sulphurets and arseniurets.

An attempt was made to use the automatic furnace here, but the loss of gold was so great that it was found more economical to use the old reverberatory furnace; which, though expensive and tedious, was free from the objectionable draught. Chlorination plants to-day are still using this furnace and stirring the ore by hand.

Experiments with the problem of roasting ores have continued, however. Two muffle furnaces are being introduced now in Colorado, in the practical working of which the mining world is much interested. The furnaces are built on the same lines and differ principally in points of mechanical construction.

The heat is applied to the outside of the cylinder, so that the flames do not come in contact with the ore. The ore is fed into the cylinder and carried through in detail by automatic means. No draught is used and no more oxygen is permitted to enter than will be consumed by the fire. As a consequence, any gold which is volatilized remains with the ore and is discharged with it.

The loss of the sulphurets, which were carried away in the water from the stamps, was another source of great waste. Soon, however, a mechanical concentrator was invented which was capable of working twenty tons a day. By means of this concentrator metals containing the values were separated from the gangue, even when these metals had a specific gravity of only from one to one and a half greater than the gangue. The concentration was then worked up to a high per cent. by the chlorination process.

By the time these processes and devices had been perfected, practically all the gold mined from veins was being saved, with the exception of that which floated in water and could not be brought in contact with quicksilver.



## *New England*

**G**IFTS for the Bridesmaids? What more suitable or daintier than "Elf" Enameled Watches—bright, iridescent colorings or rich plain gold with monogram? Nothing would be more constantly worn and nothing is prettier. Illustrations show exact sizes. We have an equally fine line in Boys' and Men's sizes.

New England Watch Co., Waterbury, Conn.

37-39 Maiden Lane,  
New York.

131 Wabash Avenue,  
Chicago.

Spreckels Building,  
San Francisco.

Fraternal Order  
of Eagles



In Fraternal Order of Eagle, as well as Benevolent Protective Order of Elk Goods, we are specialists. We carry everything from silver buttons to the most expensive charms. This is a class of trade to cater to, and it will pay you to lay in a stock of their emblems. They sell at all seasons of the year.

Let us send you a selection package. We should like to give you an idea of the range of prices and patterns. Designs submitted and prices quoted for Past Exalted Ruler presentation charms.



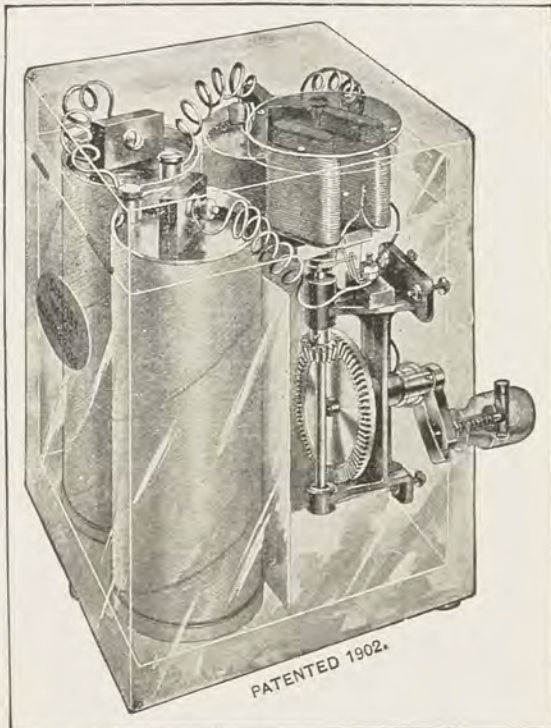
HENRY FREUND & BRO.

The Jewelry House

9 Maiden Lane, NEW YORK

*Jewelry, Watches and Diamonds*

The Simplex Watch Demagnetizer



requires no outside current. This obviates the difficulty experienced by many watchmakers who have found that their demagnetizer requires the opposite current to that which they are able to secure and that they are obliged to use a transformer. With the Simplex all you have to do is to press the spring, turn the crank and gradually move the watch away and the work is done.

**THE SIMPLEX DEMAGNETIZER** has an automatic switch which cannot remain closed through neglect, making it absolutely impossible for it to "burn out" your machine, an advantage over all other demagnetizers. It is portable, also. You can carry it with you to any part of your shop, or town, or county. It is always ready for use at a moment's notice, anywhere. It weighs only 9 pounds, and is enclosed in a substantial piano-finished quartered oak case with nickel-plated trimmings. It measures 6 by 6 by 8 inches.

**THE SIMPLEX DEMAGNETIZER** is actuated by a three cell dry battery which will last for a year or more and can be renewed at any time for 45 cents. The gears are of brass, cut from the solid, and all pinions are of steel, accurately fitted.

And the price cannot fail to fit your pocketbook. In fact the additional profit that you can make on demagnetizing twenty watches will more than pay the ten dollars which we charge you for **THE SIMPLEX DEMAGNETIZER**.

**THE SIMPLEX DEMAGNETIZER** is guaranteed. If it is not satisfactory at any point, in efficiency, in construction, in simplicity, we will refund you your money.

Price, \$10.00, express prepaid.



New Automatic Eyeglass Holder, made in silver, roll-plate and gold.



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ESTABLISHED 1892  
**KETCHAM & McDOUGALL**  
MANUFACTURERS  
GOLD & STERLING SILVER THIMBLES  
AUTOMATIC EYEGLASS HOLDERS  
37 AND 39 MAIDEN LANE, N. Y.  
SEND FOR CATALOGUE "E"



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# JUNE ROSES

And Wedding Bells---  
and HB-RINGS--- a  
pleasing variety  
of new designs in all  
patterns this summer

**HEINTZ BROS. RING MAKERS**  
BUFFALO N.Y.



HB



440. 3½ dwts.



395. 3½ dwts.



549. 5 dwts.



434. 6½ dwts.



235. 4¼ dwts.



372. 3 dwts.



436. 6¼ dwts.



531. 4¾ dwts.



306. 3½ dwts.



354. 3¾ dwts.



558. 5½ dwts.

75<sup>c.</sup>  
per dwt.



483. 5¾ dwts.



150. 4 dwts.



191. 4 dwts.



220. 4¾ dwts.



339. 5 dwts.



133. 4½ dwts.



481. 5¾ dwts.



457. 3¾ dwts.



441. 5½ dwts.



384. 3¼ dwts.



357. 4¼ dwts.

Rings are guaranteed 10 K.

We use genuine Doublets only.

Our lines of Rings are carried by the  
Leading Wholesale Houses.

**DAMM & BLOCK**  
MANUFACTURERS OF  
**10KT RINGS**  
SOLE MAKERS OF  
The Solid One Piece  
Fancy Set Rings.  
**BUFFALO, N.Y.**

507-515  
WASHINGTON ST.  
TRADE MARK.  
STAMPED IN 10KTRINGS

The three greatest Clock bargains ever offered to The Trade,  
in the closing-out-and-discontinuing sale of  
"Standard" Electric Clocks.

This No. 10



(49 in. high, 12-in. dial)  
at  
\$15, net.

This No. 46

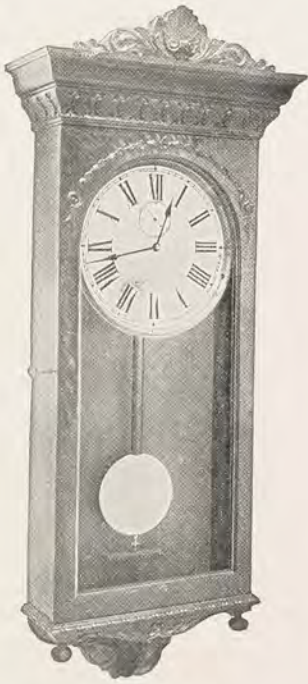
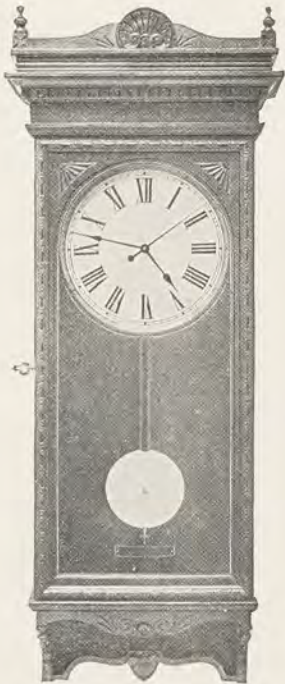


(47½ in. high, 12-in. dial)  
at  
\$15, net.

and this



No. 42  
(50 in. high, 12-in. dial)  
at  
\$12.50, net.



Why \$12.50, for No. 42.

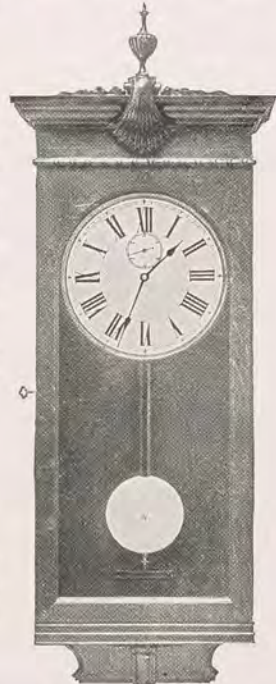
When we discontinued the making of "Standard" Electric Clocks we had on hand an excessive stock of No. 42. A great many of these have since been sold at the special price of \$15, net; but we must still sell about 100 of them to "even" the stock with No. 10 and No. 46, as it is desirable to have the three patterns "run out" at the same time.

Therefore we reduce the price on No. 42, from the special \$15 to the **extra** special \$12.50, net,

**until 100 have been sold,**

when the price on what are then left will be restored to \$15, same as Nos. 10 and 46.

The wise ones who **order in time** to get their share of **the first hundred** No. 42's will buy the biggest Clock bargain in the history of The Trade.



The three styles here shown are practically all that remain of the six styles of

"Standard" Electric Clocks

which we had on hand when the closing-out sale began. There are not enough left of any of the other styles to justify advertising them. The three patterns shown above remain, because the original quantity of each was largely in excess of the sold-out patterns—they are quite as desirable. In fact, No. 10 has led all other patterns in sales from the beginning.

Testimony to the extraordinary goodness of these Clocks continues to accumulate in our hands. Every buyer seems to feel, after the Clocks have been bought and **tried**, that this is indeed a **real** bargain. Over a thousand Jewelers have told of their great satisfaction in selling these remarkable

timekeepers. There seems to be not one discordant note in the chorus of praise. "The Clocks justify every word that you have said in praise of them—and more," writes one who has ordered a fourth lot. Remember:

The "Standard" Electric Clock requires *no winding*; has *no springs* to break, *no weights* to fall; is so *simple* and *mechanically perfect* as to make repairs unnecessary; requires *no outside connecting wires*, but is run by a dry battery (such as is used for door-bells, etc.), concealed within the clock-case, the average life of which is eight or ten months, and which can be renewed for eighteen cents by any local dealer in electrical supplies; and is the *most accurate* of all clocks.

**Do not put off** your ordering—you may wait too long. Let us send you one of each, at least—and be sure to "get in" on that **hundred** lot of No. 42's. We will sell Clocks to you **direct**.

**NEW YORK STANDARD WATCH CO.,**  
Jersey City, New Jersey.

## The Old Man to the Junior Partner:

---

“No, Billy—we don’t want any —— Filled Cases, and you can return all that lot that was sent ‘on memorandum.’ We’ll stick to the three grades of *one line*—Keystone Extra, Boss 14 Karat and Boss 10 Karat. So there!

“Reasons? Why, Billy, there are more reasons than you can shake a stick at. One big reason is that I was selling Boss Cases twenty years before you were born—and twenty years before the kind in that ‘memorandum’ lot was born, too! The Boss Case and I grew up in business together and the Old Man knows the Old Reliable from ‘way back. I’ve seen the other makes come along, from time to time, and have their spurt, and then fizzle out and be forgotten in a little while. Since I first sold watches I’ve seen *seven* Filled Case concerns go up the spout. Why? Simply because there was no helping it—the *gold stuff* wasn’t there, or they monkeyed with ‘outside’ trade, or played fast-and-loose with their price-lists, or in general didn’t seem to have any fixed principles in trade. Fate will not stand for any such fiddle-faddle policy of business—such happy-go-lucky ways. The Boss for me, every time—not only because it is the only Filled Case that has ‘proved up’ its guarantee *through the 25 years*, but because it has done a lot for *me*. My sense of duty tells me I should be loyal to *it*, in turn.

“Sentiment? Well, Billy, you may call it sentiment, if you will; but when Sense *and* Sentiment join, you’ve got a pretty good proposition behind you. And as for sentiment—now listen a bit, Billy, and you’ll say I’m dead right.—

“In the first place, remember that the Filled Case business *began* with the Boss Case. James Boss *invented* the Filled Case, back in 1853. Consequently, all the profits I’ve made on Filled Cases must be traced to the original Boss Case, which made these profits possible.



“Then, practically every *improvement* on the original invention, every new *good* thing in Filled Case construction and ornamentation, is first shown in the Boss line.

“That’s something; but there’s a lot more—the things that count for *money-profit* to me.

“The name, ‘Boss,’ stands for *fixed policy as to prices*. I feel that the Boss is *the rock* on which we can base profits in the sale of Filled Cases. If prices and discounts were not rigidly maintained on Boss Cases, what would result? If Keystone policy ever *wobbled* on the discount question; if the Keystone Company ever ‘let down the bars’ on prices; if the Boss Case was sold at varying figures, and not *always* at the same price to big or little dealer—well, wouldn’t there be the devil to pay, by us retailers? The smaller case concerns, who are now held to some decent appearance of maintaining their list prices by the moral force of Keystone example, would then fall over each other in the effort to ‘unload’; each jeweler would slash away, in mortal terror lest his competitor was buying at a *lower* ‘bottom figure’; our profits would go by the board.

“Besides, the Keystone people make specific effort, in good faith, to secure to the Jeweler a fair profit on their products, by putting restrictions on the prices at which their cases may be advertised to the public. Square? Why, yes—proved in more ways than you youngsters will ever know of.

“So, Billy, you see there’s both sense and sentiment in my holding to the Boss for keeps; and you can ship back that ‘memorandum’ lot of another make to the despairing folks who sent it. *We* know what’s what, in Filled Cases”

---

**The Keystone Watch Case Co.**  
**Philadelphia.**

# WORLD'S FAIR OFFICIAL SPOON



FOUR SIZES & WEIGHTS  
\$1.00 \$1.50 \$1.75 \$2.25



The front of the handle represents  
A CENTURY OF PROGRESS

—of the—  
LOUISIANA PURCHASE TERRITORY

In Panorama, Viz: The Setting Sun; The Buffalo and the Indian; The Lewis and Clark Expedition; The Prospectors; The Settlers in Prairie Schooners and the Modern Locomotive.

In the Bowl is shown the Cabildo in which was signed the Treaty ceding the Louisiana Territory by France to the United States.

The opposite side bears the official signature of W. B. Stevens, Secretary of the Louisiana Purchase Exposition, without which no spoon is official.



We have secured the contract from the Louisiana Purchase Exposition Company for the manufacture and sale of this spoon, which will be sold to the public by the RETAIL JEWELRY TRADE only. The figures quoted above are the prices at retail. A suitable discount will be allowed to the dealer, which, together with further details, will be disclosed for the asking. The design of this spoon is not local, but historical, and will therefore sell in every section of the world. The spoon itself is pronounced by everyone to be the most finely finished and artistic of any ever gotten out for this purpose.

EISENSTADT MFG. CO., ST. LOUIS.

## Methods of Mining Gold

(Continued from page 904)

### Progress in Placer Mining

Placer mining had in the meantime been progressing with equal rapidity. When the American placers were first discovered Mexicans flocked into the country, and as they had much experience with placer mining, the American miners were prepared to profit by their teaching. Their principal method, however, was dry washing, which would not answer at all with the new placers. The miners worked for some time with pick, shovel and pan, and managed to make good wages where the diggings were rich. Soon the Chinamen came with the rocker, and this proved to be a decided improvement over the pan. This apparatus required two men to operate it, one to shovel gravel into the sluice box, while the other shoveled from the scoop the coarse gravel which did not go through. Tables with riffles—depressions containing mercury—caught the gold which passed through the perforations.

In the early '60's hydraulics were first employed in placer mining. In the beginning of the industry a canvas hose, some six inches in diameter, capable of standing a pressure of from 30 to 40 pounds, with a nozzle about 1½ inches in diameter, was used. With this hose four or times the amount of gravel one man could handle could be washed down into the sluices. Not content with this improvement, iron pipes capable of standing a pressure of 500 pounds were introduced. To the end of these pipes a nozzle six inches in diameter was attached. Sluices were constructed from two to four feet wide, into which the water from the hydraulic washed the gravel as it was broken down. These sluices were fitted with undercurrents, riffles, grizzlies and all the gold savers then in use. Through these iron pipes 3000 miners' inches of water could be forced—a power greater than that required to run one of the largest modern battleships. The hardest cement melted before this mighty stream, and whole mountains of gravel found in the old Pliocene channels were washed down.

In placer as in vein mining, much of the precious metal was lost in the first years of the industry, though the impression was that the appliances then in use saved practically all the gold contained in the gravel. In time it was demonstrated that 75 per cent. of all the gold contained in the auriferous gravel deposits was float gold—so termed because it floated on the water. It could not be brought into contact with quicksilver, and for years it was a total loss.

Since the discovery of these enormous losses, much time and money have been spent in experimenting with methods for saving this float gold. The most promising of these is a combination dredging and amalgamating machine. It shows great improvement in the handling of gravel, but its chief interest lies in a saving appliance which saves practically all the float gold. The gravel is hoisted and then dumped into a revolving cylindrical screen, which separates the fine gravel from the coarse. The fine material, which contains all the values, is passed into a large tank where it is forced into contact with quicksilver several hundred times, until all the fine gold is saved by amalgamation. When these machines are in practical operation and fulfill their promise, gravel mining will be revolutionized. Their successful operation will be of special interest to California, since they do not conflict with the debris laws, which put a stop to hydraulic mining.

The Pacific Coast offers an immense field of work for some

such machine as this. On the coast of California and Alaska there are more than 1000 square miles of gold-bearing sands which have been tested and shown to contain gold to the value of \$1 a ton. One company which owns 11,000 acres of beach sands at Nome, made over a hundred borings to bed rock on its property, the distance to bed rock varying from forty to sixty feet. The gravel was tested every two feet and was found to contain from \$1 to \$4 in gold to the cubic yard.

### Wireless Telegraphy in 1904

So little is heard now-a-days of wireless telegraphy that our readers will be interested in knowing the progress and prospects of wireless intercommunication from no less an authority than Signor Marconi himself. The distinguished inventor is thus reported: What are the prospects of wireless telegraphy for the ensuing year? To some extent it has emerged from the experimental stage—that is, over certain distances it is an actual practical working system—scientifically and commercially perfect. In overcoming long distances its practical utility has also been demonstrated, but it has not been able so far to justify itself on commercial grounds.

I know from my own experience, from my own positive knowledge gained by incessant labor, that the transmission of signals across the Atlantic is thoroughly practicable. It has been done and is being done, and in the approaching year I have every reason to believe that I shall be able to maintain a full and efficient service between Great Britain and the United States. At the present moment we are negotiating with the United States Government for the establishment of wireless communication between the American continent and the Philippines, and not only do we look forward with confidence to establishing wireless communication on a commercial basis between Great Britain and the United States, but also between the United States and the continent of Europe.

Our next important experiment will be the connection of Italy and South America by the wireless system. It is a distance of 6500 miles, nearly double that to America from London, and I may say we are as certain of success in this as over the shorter distance.

At present we are working for the British admiralty on wireless communication between London and Gibraltar. It is proving most successful, and of the 1000 miles 500 is over the sea, while 500 is across the Spanish peninsula. There is no interference with our signals over that distance, and one of the most important developments of the near future will be the absolute security with which we can transmit over any distance.



Mines and Metallurgy Building, St. Louis Exposition

*The S. O. BIGNEY CHAINS  
have become the standard make of  
the country.*

*Our reputation for continually producing new  
and original articles is unquestioned.*

*Our Chains sell and stay sold, which means  
that they give entire satisfaction.*



Inquire of your jobber for our Gents' Vest Chains made of 1/15, 1/10 and 1/8 stock; our Swell Front Chain, which is a winner; our Bigney Jr. Patent Fob, Parisian and Oriental Crosses, Guard Chains, Uncle Sams, Negligees, the Ladies' Jaunty, Dickens, Victors, Ponies, Secret Locket Chains, Neck Chains, Patent Bracelets, Locketts, Chatelaine Pins and Bead Necks.

*New York Office, 3 Maiden Lane.*

**S. O. BIGNEY & CO.** *Factory, Attleboro, Mass.*

## WE ARE READY

With a Complete Line of New Goods for the Season of 1904, in  
STERLING SILVER and STERLING SILVER FRONT GOODS.

TOILET WARE,  
MANICURE  
and DESK  
FITTINGS,  
MATCH BOXES,  
CIGARETTE  
CASES.



BRACELETS,  
FOBS,  
CHATELAINES,  
PINS of all kinds,  
WAIST SETS,  
GOLF  
HAT PIN SETS.

No. 3050.—HAIR BRUSH. One-half actual size.

TRY OUR NEW METAL: SILVEROIN. It looks and wears like Sterling Silver.

**BRISTOL MANUFACTURING CO.,**  
SILVERSMITHS,

New York Office: 3 Maiden Lane.

Factory: Attleboro, Mass.

WE DO NOT SELL THE RETAIL TRADE.

## Cleveland and Northern Ohio

The past month has been very monotonous and uneventful in this section, trade being very dull in all lines. The iron-ore interests are lazily awaiting developments. There is little demand for structural work, and consequently little call for iron. A similar lack of demand confronts the dealers in luxuries, which include those in the jewelry business. The next few weeks will see at least a temporary revival, as the graduations and weddings draw near—several dealers report a good business in commencement gifts already. This augurs well for next month. There has been a very fair diamond business done here and gold jewelry has sold well. Silver goods have been quiet. Collections among the large firms are good. Small dealers report poor collections.

A. T. Hubbard spent several weeks the past month at the private preserves of the Ottawa Shooting Club, in pursuit of the finny tribe.

Frank Martin, manager of the porcelain and art department of the Cowell & Hubbard Co., will sail for Europe in a few weeks on his annual buying trip for the firm.

The Sigler Bros. Co. are now established in their new location, 29 Euclid Avenue, and gave a public opening on the 23d ult. The new store room has been laid with mosaic floor and has new cases and new trays. It is a decided improvement over the old location.

The Henry Welf Jewelry Co., located in the Rose Building, Erie Street, have decided to retire from business and are closing out the stock and fixtures by auction. Mr. Welf has been in poor health for some time past and decided to close out. He has been in harness in this city for over thirty years.

L. M. Sigler will sail for Europe the first of the month and will spend several weeks in Amsterdam and Antwerp.

Harry Goldberg, for some years on Ontario Street, is fitting out a new store at 311 Superior, Cuyahoga Building, and will open about the first of the month. The room is small, but mirror fixings add greatly to its apparent size and attractiveness.

J. H. Heiman, 144 Euclid Avenue, seems to be a favorite mark for the crooks. One night last month the show case in front was smashed and some plated work taken. He was previously the victim of several light robberies.

Through the peculiar manipulation of a money order, one of our well-known jewelers has come into conflict with the post-office department of the Government. About six months ago a money order was issued at Dayton, Ohio, to an individual for \$3.00, which was raised to \$50.00 by some one and passed along. In time it was taken in a business transaction by A. D. Ernne, the jeweler, and cashed in at the post-office department here. In a few weeks it was discovered to have been "raised," so the Government has now brought suit against Mr. Ernne to make it good. Mr. Ernne's contention being that as the post office money-order department did not question it when cashed in, his responsibility has ceased to exist.

The Julius King Optical Co., have been making an extensive exhibit of all kinds of optical appliances at the convention of the Ohio State Medical Society, which met here recently at the Hotel Hollenden.

Arthur L. Wilcox, of Wilcox & Hibbard, Akron, Ohio, was in town last month showing a new ring stick which he is manufacturing.

H. W. Beatty, the jeweler in the old Arcade, has been attracting a great deal of attention of late by his window display of loose diamonds. The displays have been very attractive.

W. W. Wattles, the veteran jeweler of Pittsburgh, was a visitor among the trade the past month. Mrs. Wattles accompanied him on this trip, which was purely for pleasure.

The following Ohio jewelers were noticed in town last month: W. P. Crouthers, Oberlin; D. C. Steiner, Sterling; Geo. High, Medina; F. R. Montgomery, Sandusky; Harry Downs, Bellevue; L. J. Goddard, Ravenna; C. H. Rogers, Seville; E. J. G. Lovett, Willoughby; A. E. Kintner, Painesville; A. H. Coleman, Akron; H. S. Sumner, Akron; F. N. Prevy, Akron; Mr. Frank, of Frank, Laubach & Clemmer, Akron.

## Birmingham, Ala., Letter

### Improving Conditions

There is a more hopeful feeling in every section of the State at this time and business promises well along all lines, though conditions have been dull so far. This is natural, however. Summer-time is always quiet, especially in the farming districts while the crops are growing, and the time for making new contracts with labor in the mineral sections makes conditions slow there also until a new trade is made. But outside of these factors there is much to be grateful for and to rejoice over. In the first place the last few days have seen rains over the cotton belt in sufficient quantity to guarantee good crops, and corn and other crops also greatly benefited by the recent showers, which were generous as well as timely. Then, several favorable happenings are reported from the mineral belt. The big wire and rod mill with its hundreds of skilled men, at Ensley, has gone to work after several months of idleness, and there is talk of the rolling mill of the Republic Co., at Birmingham, getting back to service again in a few weeks, with a pay roll of many thousands each week. To this may be added the fact that several new furnaces are to get to blast, notably one at Battelle, and two at Gadsden, with the two million-dollar steel mill at Gadsden owned by the Alabama Steel and Wire Co., who have for several years operated the big mills for wire making at Ensley.

### Crops Saved by Timely Rains

The rains of the past week came in time to save the farmers thousands of dollars in their crops, which were in bad condition as a result of the long drouth. In many cases the cotton had been dried up in the stalk, and in some cases the seed had failed to germinate and there was trouble to get new seed to replant. This caused great uneasiness, but now anxiety will pass away, for the rains will insure a good crop. Fruit has done and is doing well, with early peaches on the market. Melons will come along well and bring much money with them. It now looks like 11-cent cotton (maybe higher), a price which will give the farmers plenty of money. A. F. Armstrong, a banker at Marion, which is in the heart of the cotton section, said last week to the writer that the farmers of Alabama are in better shape than they have been for thirty years and that his people will have lots of money this fall. A new industry near Marion is also attracting much attention just now, and that is tobacco, which is being raised there on experiment. The product has been so good that none could tell it from the Cuba leaf.

### Graduation and Wedding Presents

The time of school closing has come and with it a good trade for the jewelers. Graduation presents are selling well and the trade in them is high class. There is also a good trade developing in presents for June weddings. Several well-known couples are to be married and their friends are choosing handsome presents. Graduation pins, class pins and medals are also in demand, and a number of good orders have been secured in these. There is also a demand for heavy plate and cut glass fully up to expectations, and some sales are reported in high-price Venetian ware, which is becoming very popular. Good watch sales are reported by Montgomery dealers and a like report comes from the Birmingham stores.

The store of C. L. Ruth & Son, in Montgomery, is one of the handsomest in the State. The improvements noted in these columns some time ago have been completed and everything looks bright and attractive. The steel ceiling has been tastily decorated and frescoed and the cut-glass cases in the rear, with the optical furnishings, are beautiful to look upon. The department for optical work is one of the most complete anywhere and gives this firm great advantage in this class of work. Both the Ruths are popular citizens. The elder is a member of the city council and is always in the fight when their is a question of the best interests of his city to be considered. Young Mr. Ruth is a member of the board of directors of the Y. M. C. A., and is making a fight with his associates for a new building which is badly needed.

The end of a big burglary case in which a jeweler is interested is in sight, it seems, in the transfer to the mines this week of James McCormack who, last year, broke open the window of the Ike Loeb jewelry store and secured several watches. The robbery was committed in the night, the window being crushed in with a big rock. Several watches were taken. McCormack was later arrested in Nashville with some of the watches in his possession. On trial, he was given five years in the mines and sent there this week.

The store of the Le Bron Jewelry Company, Montgomery, has been renovated and beautified interiorly. Several new cases and shelving plans have been adopted which lend a metropolitan appearance to the whole.

A handsome water set was presented to F. C. Shepard, general freight agent of the Louisville and Nashville Railroad, who has been transferred to Owensboro, Ky. It was given by several score of his friends, and furnished by the Le Bron Jewelry Company. A handsome loving cup was given by the directors of the Y. M. C. A., which was furnished by the Ike Loeb Co.

The Castleberry Optical Co. is open for business at Montgomery, and is the only exclusively optical company in the city and one of the very few in the State. W. H. Castleberry is president, and will have entire charge of the business. The store is on Perry Street under the Arlington Hotel. Handsome rooms with every facility have been fixed up.

The new store of F. W. Bromberg, at Birmingham, with its new fittings, is one of the most attractive in the city. Mr. Bromberg has replenished his stock after the auction, with which he expresses himself as well pleased.

S. O. Cox, an old Birmingham boy, is making his way in Atlanta. He was in Birmingham a few days ago at the opening of the new country club, but only stayed a day or two. He has charge of a large department with Crankshaw.

**The Bassett Jewelry Co.,**  
 Manufacturers of  
 Gold and Gold Filled  
 Chains, Locketts, Charms,  
 Fobs, Seals, Bracelets, Etc.,  
 Manufacturers' Building,  
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## THE BEST ADVERTISEMENT

a firm can have is its reputation for reliability and good treatment. We stand on our record.

Our prices the highest, our returns the most prompt.

**Cincinnati Gold & Silver Refining Co.**

**Cincinnati, Ohio.**

Let us have a trial with your shipments of old gold, old silver and sweeps. We insure satisfaction by holding all consignments of old gold and silver until our offer has been accepted.

We pay expressage, whether our offer is accepted or not. We have special facilities for separating gold and platinum, and solicit this kind of work.

## Kansas City and the Great Southwest

### Business Looking Up

After one of the very worst springs that this section of the country ever experienced, the coming of the summer season is opening up with business indications of a more cheering sort. Trade has been dull with both wholesale and retail establishments, but in the last two weeks business has looked up considerably, and is even better than usual at this time of the year, which is by no means the best for the jewelry trade. The weather has been exceedingly cold and wet, and throughout the country traveling men have remarked upon the backwardness of work. Rains have delayed the putting in of crops considerably, but it is extremely doubtful if there will be any noticeable permanent damage to trade conditions.

### Anniversary of the Flood

A year ago this time Kansas City was stricken with a terrible flood, which fairly paralyzed business of every description and caused the loss of thousands of dollars' worth of property. To-day, every trace of the disaster is removed and there seems to be no fear that there will be a repetition of the visitation. During the early part of May Kansas City people feared another flood, for the waters rose until the pipe lines carrying the water supply were cut off. This lasted only for a day, however, and the damage was quickly repaired.

### A Lively Campaign

The campaign for governor of Missouri is being closely watched by business men all over the State, and there was probably never a time when the interest in the outcome was so great. This is because of the entrance into the arena of Joseph W. Folk, who won international fame as the opponent and prosecutor of boodlers. Ex-Mayor Reed was a candidate for the nomination early in the race but withdrew, and most of the counties that he counted on went strongly for Folk at the primaries.

### A Handsome Jewelry Store

Cady & Olmstead, who have been for several years located at Eleventh and Walnut Streets, have moved into their new quarters at 1009, 1011 Walnut Street, just a half block below their old stand. Their new quarters are very handsome and, although the arrangement of the stock is not nearly completed, it is easy to see that they will be able to fix up a very handsome store. The building, the second and third floors of which are occupied by the Merry Optical Company, has been entirely remodeled, with a great deal of new iron work about the front, and with the addition of mosaic floors and many other desirable features. Cady & Olmstead's new store room is very prettily decorated with two shades of green, against which the mahogany fixtures show up handsomely. The stock is rapidly being placed, and in the course of another week it is quite likely that the store will look as much at home as if it had been in its new quarters all of the time.

The Edwards & Sloane Company, who have been expecting to get into the new Gumbel Building, will probably not be able to take up their new quarters for a month or two yet. Work on the building has been progressing very slowly owing to the backward weather.

The Kansas Optical Association met in Wichita, Kans., May 14th. A large number of opticians was present from all over the State, and the meeting was a very successful one.

The Missouri Optical Association will meet on June 15th in St. Louis, and the visitors will have an opportunity to attend the World's Fair as well as to participate in the convention. Several Kansas City opticians have decided to go to the St. Louis meeting.

A. Rosenfield, the Leavenworth jeweler, has sold his Lohengrin apartment house in Kansas City for \$35,000. The Lohengrin is located near Thirtieth and Main Streets, in this city, and is one of the handsomest apartment houses in the city. Mr. Rosenfield took in part payment a 284-acre farm in Leavenworth County.

The jewelry store of J. W. Montfort, Alva, Okla. Ter., was entered by burglars the night of May 5th, and a large number of watches, rings and \$700 in money was taken. The money, which was in gold and currency was in the safe, which was opened and rifled. Watches were taken by the dozen, and a number of the most valuable rings in the stock were also taken. The burglars came near making a clean sweep, and the robbery was one of the largest that has ever happened in that portion of the West. Mr. Montfort has issued a circular offering a reward for the capture of the burglars, and enumerating minutely the articles stolen. These circulars have been sent all over the country and Mr. Montfort hopes by this means to recover at least a part of his stolen property.

Guy M. Shriner, of Gurney & Ware's, who has been ill at his home in Fairfield, Iowa, has recovered and is again at work.

Richard Miller, of McPherson, Kans., accompanied by his wife and daughter, has sailed for Germany, and will be abroad four months. Mr. Miller was born in Germany and has not visited that country for more than twenty years. While abroad he and his family will visit Switzerland, Italy, France and England.

W. S. Hall, Mankato, Kans., has gone to Omaha to take a course in engraving.

The Kessill Jewelry Company is a new firm that has recently opened up a store in Pittsburg, Kansas.

The firm of Arnold & Turck, Ellinwood, Kans., has been succeeded by Turck & Daugherty.

E. H. Snow and Otto Knaul, of Woodstock, Hoefler & Company's traveling force, were in the city last month stocking up for their early summer trips.

Miss Sarah Kersten, for several years in the business department of the Meyer Jewelry Company, and a trusted employee of the firm, is to be married the middle of June to J. H. Abbott, of Minneapolis, Minn.

William Slimm, the jeweler, of Wilson, Kans., reports that speculators are prospecting for oil in the vicinity of that town.

J. Q. A. Sheldon, of Manhattan, Kans., is visiting his son Charles, in this city.

The Miller Optical Company, has succeeded Peter Miller at Kingman, Kans.

Alvin Gordon has opened a new jewelry store at Du Queen, Ark.

Charles Wright, who has been in California for some time, has returned to Kansas City and is once more with Gurney & Ware.

George W. Wells, president of the American Optical Company, of Southbridge, Mass., accompanied by Mrs. Wells, spent a few days in Kansas City recently. While here Mr. and Mrs. Wells were entertained by Mr. and Mrs. C. L. Merry. They will visit Omaha and Chicago en route home.

J. H. Searfoss, formerly of Smithville, Mo., has opened up a new store at Excelsior Springs, Mo.

Ellsworth Dunning, Concordia, Kans., has returned from a hunting trip.

W. D. Groff, of Clyde, Kans., who has been visiting in Oklahoma, has returned home.

J. B. Hampton, of Colby, Kans., was a visitor to the Kansas City wholesale houses last month. He visited at St. Joseph before returning home.

The firm of Erickson & Howe has succeeded G. H. Howe at Douglas, Ariz.

Among the out-of-town jewelers who visited Kansas City wholesale houses during the past week were F. E. Shortess, Traer, Iowa; J. H. Whiteside, Liberty, Mo.; E. R. Williams, Richmond, Mo.; F. Kolstad, Pleasant Hill, Mo.; L. S. Grimm, Jewell, Kans.; William Glick, Junction City, Kans.; Otto Burklund, Ossawatimie, Kans.; C. F. Bass, Huntsville, Mo.; C. L. Gansie, Independence, Kans.; W. H. Meyer, Lawson, Mo.; H. P. Hobbs, Des Moines, Iowa; Leslie White, Lees Summit, Mo.; J. B. Hampton, Colby, Kans.; G. N. Rankin, Olathe, Kans.; J. W. Schmandt, Holden, Mo.; P. C. Peterson, Waverly, Kans.; A. J. Carruth, Herington, Kans.

## "Appleton's Cyclopedia of Applied Mechanics"

Students of mechanics and mechanical practitioners in all branches have now an excellent opportunity to procure at a low price the well-known three-volume library of mechanical knowledge, "Appleton's Cyclopedia of Applied Mechanics." This masterly compilation was edited by Park Benjamin, Ph.D., L.L.B., whose name is an earnest of thoroughness and reliability. The contributors to the volumes comprise the best-known experts in all branches of applied mechanics, and the benefits to be derived from the results of their researches and scientific accomplishments are of incalculable value to the man seeking the highest and most advanced practice in the mechanical field.

As a reference work this cyclopedia has no equal. It covers authoritatively and exhaustively 10,000 different topics, has 2700 pages and nearly 8000 engravings. It is the recognized standard of mechanical practice in workshops, manufactories, technical schools and libraries all over the United States, and is regarded as indispensable by the most accomplished machinists, engineers, electricians and mechanics generally. Each volume is bound in half morocco, measures 10 x 7 x 2 inches, and they weigh twenty pounds. A feature of the volumes is the unique excellence of the engravings which include diagrammatic and sectional drawings with full explanatory details.

No mechanical art on which information is needed is missing from this work. Agricultural machinery; wood, metal, stone and leather working; mining, hydraulic; railway, marine and military engineering; working in cotton, wool and paper; steam, air and gas engines and all manner of motors; lighting, heating and ventilation; electrical, telegraphic, optical, horological, calculating and other instruments—these and numberless other subjects are exhaustively treated.

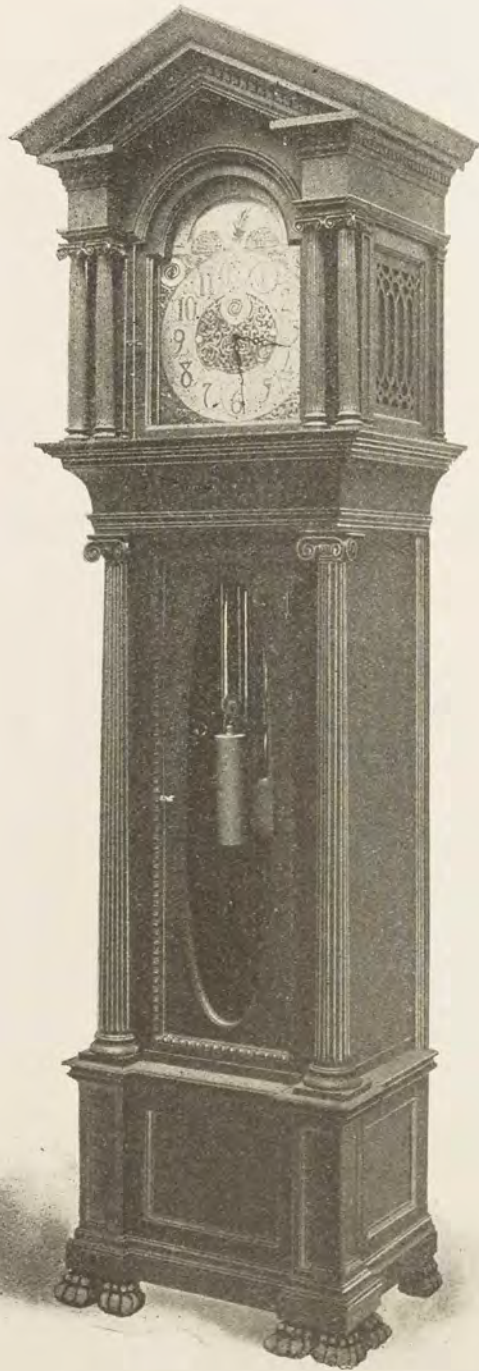
The cyclopedia is published by the Norman W. Henley Publishing Co., 132 Nassau Street, New York, and the price has been reduced to \$12 for the complete set of three volumes. Considering the enormous labor and expense of compilation, the aggregation of talent represented in the list of contributors and the size and substantial character of the volumes themselves, the reduced price is a rare opportunity indeed. The books can be had from THE KEYSTONE office on receipt of the publisher's price as stated above.

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Hall Clocks that Chime on Tubes,  
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FINE  
SILVER-PLATED  
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Selection packages sent upon request.

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Gold Filled or Sterling  
Silver, soldered links,  
Stones of all colors.

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**JUNE**, WHEN ROSES ARE IN BLOOM,  
GLORIOUS TIME OF BRIDE AND GROOM,  
WITH A **RING** ON EITHER HAND,  
NOTHING HAPPIER IN THE LAND.

Up-to-date methods in the manufacture of **RINGS** enable us to offer  
exclusive styles and particularly good values. **SIGNETS** a specialty.  
We carry stock in Chicago office, and solicit memo. orders.

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## Cincinnati Letter

**Season Backward and Trade Dull** The customary apathy which is to be expected each summer, has made its appearance this season with the usual result and dull business is reported all around. The prolonged appearance in the Ohio valley of rainy and unseasonable weather has aided in retarding business in general to such an extent that merchants are complaining considerably. When the fact is considered, that for several years past all lines of commerce have prospered abnormally, the present inevitable reaction should not cause any worry, as it was bound to come. The condition is much better than it has been many a summer within the memory of all members of the trade, although not pleasing to them. From out of the mass of complaints come gleams of good cheer, diamond dealers and makers of high-class goods reporting a steady demand. The jobbing and novelty trade seem to have suffered most from the depression, and it is reasonable to suppose that when the St. Louis Fair is ended, this will have disappeared.

Eugene Swigart, of E. & J. Swigart, spent three weeks last month fishing and freezing, in the neighborhood of Sault St. Marie, Mich., and then returned home with glowing stories of great catches and warm sunshine.

Max Greener, the well-known jeweler, of Shelbyville, Ky., was in the city a few days, replenishing his stock.

The firm of Brown & Osborne, jewelers, at Mount Olivet, Ky., has been dissolved; A. F. Brown continuing in business alone. He was in the city a few weeks ago, on business.

H. W. Curtis, of Knoxville, Tenn., stopped off a few days, while on a trip to New York City and the East. Before leaving, he ordered some diamonds of Jos. Noterman & Co.

The famous old Hellebush Street clock, which for many years has pointed the time of day to down-town pedestrians, has been sold by Jeweler Joe Kenkle to L. C. Eisenschmidt & Bro., of Newport. The clock originally cost several thousand dollars, and was considered one of the best of its kind. It will be set in front of the store of the purchasers, in Newport, Ky.

### Jeweler Spots a Thief

Wm. S. Witcher, a wrecking engineer, giving his home as Marietta, Ohio, has been bound over to the grand jury upon a charge of grand larceny, preferred against him by Frank Flint, the Race Street jeweler. Witcher entered the store and while looking at diamond rings slipped one into his pocket. Mr. Flint's brother, a clerk in the store, noticed that he was one ring short and accused Witcher of having taken it. Witcher denied the accusation, and after being turned over to the police tried to dispose of the ring by throwing it out of the patrol wagon. The tag became unfastened, however, and the ring stuck to his finger. At the police station he said that he had been under the influence of a drug and did not know what he was doing. The detective department identified him as the man who had committed a highway robbery a number of years ago, for which he served seven years in the penitentiary. Witcher's wife came to Cincinnati to hunt up her husband, who had been missing from home for some days, and at police headquarters, where she reported his disappearance, she was informed that he was charged with a felony. She was shocked to learn that he had a criminal record previous to the time she had married him.

Arthur Spiegel, of Gustave Fox & Co., spent several weeks in Chicago in the interest of his firm during the month of May.

The firm of Lindenberg, Strauss & Co. have leased the remainder of the second floor of the Carew Building, and expect within a short time to occupy it. The addition of this annex to their present commodious quarters will give them one of the largest jobbing rooms in the city.

### A Gigantic Jardinier

One of the largest jardiniers ever exhibited in Cincinnati was recently shown in the show windows of the Lewis & Neblett Company, Post Office Square. The vase weighs several hundred pounds, is eleven feet in diameter and about three and a half feet in height. It was made in Dresden of the famous German pottery clay in four panels, which were subsequently screwed together. The decorations on the panels represent alternately "spring" and "autumn." The vase is valued at \$250.

Emil Clauss, the Vine Street pawnbroker, has been arrested on a charge of receiving stolen goods. The case is the outcome of an arrest made nearly a year ago, when Martin Blair, a trusted employee of the Miller Brothers Jewelry Company, was charged with having stolen about \$2000 worth of goods. Blair is now serving a term in the workhouse, and confessed to having pawned considerable of the stolen jewelry with Clauss.

John Zelle, the well-known jeweler of Eaton, Ohio, put in several days among the jobbers, replenishing his stock. Zelle reports business very favorable, considering the fact that this appears to be an off year.

The stock and fixtures of Duhme Bros. & Co., East Fourth Street, was sold at auction early in May by order of the court. George Halm, a well-known capitalist, bid it in at \$24,075, and he will continue the business. Bids had been advertised for by the receiver, and a number were received, which subsequently were rejected by the court. Following the rejection, the court concluded that better results could be obtained by a public sale, and ordered the sheriff to dispose of the property by auction.

Sol. Gilsey, of S. & H. Gilsey, Third Street jobbers, spent a few weeks during the past month visiting friends at Macon, Ga.

Lee Loeb, of the firm of Herman & Loeb, is home from a week's visit at French Lick Springs.

Joseph Noterman, Jr., of the Race Street diamond firm, narrowly escaped serious injury a few weeks ago, while driving in Covington. One of the span of horses stepped into a hole and fell, tripping the other animal and upsetting the trap. Mr. Noterman escaped injury by jumping. The horses, in trying to extricate themselves, demolished the vehicle.

The police have four men under arrest who are suspected of having robbed jewelry stores in Detroit and Chicago. A lot of gold and silver jewelry was found in their possession and taken by the officers. All are strangers to the local department.

Chas. Esberger, the over-the-Rhine Vine Street retail jeweler, has equipped his store with a new and complete line of staple jewelry and novelties.

Thomas Lovell made a trip to Atlantic City and other Eastern points, last month, to rest up from a prosperous but trying winter season.

Adolph Schaar, formerly traveling with Plaut & Co., has been engaged by Lindenberg, Strauss & Co., to represent them in Virginia, West Virginia, North Carolina and South Carolina.

Manufacturing jewelers Joe Noterman and Ed. Croninger went to Frankfort, Ky., May 18th, to attend the State annual conclave of the Kentucky Knights Templar. They were absent from the city several days.

Elias Phillips has been in the East for a month's relaxation from business affairs.

W. B. Wickward last month purchased the jewelry and optical goods store of D. C. Jones, at 22 Arcade, and is now conducting the business.

Sig. Strauss, of Lindenberg, Strauss & Co., recently spent a week in New York and the Attleboros on business.

Arno Dorst, of Dorst & Co., has been in St. Louis and the Southwest for a month past, taking in the fair and casting about for a chance to extend the firm's business by opening another manufacturing plant.

Frank J. Voiral, jeweler, at Fort Wayne, Ind., was among the wholesalers during the month and left several orders.

Isa Oppenheimer, of Hahn, Oppenheimer & Co., after a visit to Hot Springs, recently accompanied Julius Hahn to New York City on a business trip.

A small fire recently caused some damage to the jobbing firm of B. L. Young & Co., 218 Carlisle Building. Following the clearing up, the firm decided to move back to New York.

The Herschede Hall Clock Co. has on exhibit in the Varied Industries Building at the St. Louis Fair, a beautiful collection of hall clocks. The exhibit is valued at several thousand dollars. Frank Herschede personally superintended the arranging of the exhibit.

O. W. Smith, jeweler, at Carrollton, Ky., was a visitor in the city recently and left some orders with the wholesale trade.

The Homan Silver Plate Co. has completed a number of extensive improvements in its repair department, with a view to developing this branch of the business. When the work of enlargement has been completed, the capacity of the company in this line will have been largely increased and the firm will be prepared to do all kinds of high-grade gold and silver repair work.

A. J. Wahlrab, of Dayton, Ohio, made a flying visit to the city a few weeks ago, to place a rush order for certain lines of stock.

Oskamp, Nolting & Co. have removed their show rooms from the second to the first floor of their large Elm Street building. The move is made with a view to increasing their floor space in the sales department. A number of other improvements have been made during the past few months, which have resulted in this firm having one of the most modern and elaborate wholesale plants in the city. The management announces that the improvements will continue during the year.

Philip Harr, jeweler, at Aurora, Ind., made a flying trip to the city to lay in some necessary supplies, and reports a fair business among the hoosiers.

Arthur Jacobs, of D. Jacobs & Co., was out on the road for several weeks and returned with a number of nice orders.

Eli Gutmann, of L. Gutmann & Sons, visited New York and other Eastern cities and was absent several weeks.

Among the jewelers to visit the trade during the past month were: Indiana—Frank J. Voiral, Fort Wayne; Philip Harr, Aurora. Kentucky—Max Greener, Shelbyville; O. W. Smith, Carrollton; A. F. Brown, Mount Olivet. Tennessee—H. W. Curtis, Knoxville. Ohio—A. J. Wahlrab, Dayton; John Zelle, Eaton.

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Chains stamped **R. & D.** or **R. S. Co.** are manufactured by us of 14 K. Solid Gold Tubes filled with composition metal, and are thoroughly well made. Because they are so made we are able to fully warrant them. This warrant, too, is a guarantee that IS a guarantee.

A guarantee for a gold filled chain is not unusual. It is its manufacturer's advertising stock in trade. It is useful in convincing the prospective customer, but a most vague and unsatisfactory pledge to the purchaser.

We warrant our chains to wear **TWENTY YEARS** and we make this pledge exactly as binding as any watch case guarantee. A registered **CERTIFICATE OF GUARANTEE** is supplied with every chain.

The last link of each chain is stamped with a number which corresponds with the number on the Certificate of Guarantee. If the chain does not wear as warranted this certificate entitles you to a new chain.

We make these 14 K. Gold Filled Chains in a large variety of newest and most staple patterns. Such a line, backed by so strong a guarantee, cannot but interest all chain purchasers and chain wearers.

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NEW YORK OFFICE—9-11-13 Maiden Lane.

183 Eddy Street, PROVIDENCE, R. I.

## Providence and Attleboro

### Jewelers Aid School of Design

So favorably impressed has been the New England Manufacturing Jewelers' and Silversmiths' Association by the working of the Rhode Island School of Design, at Providence, that members of the first-named body have taken practical steps with a view to further enhancing the school's usefulness. Of course, the association has always been a liberal contributor to the school in a general way, but perceiving the immense value in an industrial community of the special technical training which it affords, a committee of the association paid a visit to the school some weeks ago and what they saw there confirmed their intention of further endowing the institution. Accordingly it was decided to establish a number of scholarships. Under this arrangement the donors are at liberty to select an employee of their own and allow him to avail of the instruction afforded. The following are the names of the manufacturers who have shown a particular interest in this connection: Theodore W. Foster; Henry G. Thresher, of the Waite, Thresher Co.; J. M. Buffinton, of the Potter & Buffinton Co.; William P. Chapin, of the Chapin & Hollister Co.; Harry Cutler, of the Cutler Jewelry Co.; Charles M. Robbins, Attleboro; Charles T. Paye, of the Paye & Baker Mfg. Co.; Parks Bros. & Rogers, John T. Mauran Mfg. Co. and George K. Webster, North Attleboro.

### Want Plainville Made an Independent Town

The people of Plainville have begun a movement which has for its object the establishment of Plainville as an independent town distinct from Wrentham, with which latter it is now associated. A petition has been circulated and signed by those favoring the movement, praying the legislature of the State to grant legal recognition to the town as an independent entity. The industrial progressiveness of Plainville, with its 1200 inhabitants, its jewelry manufactories and other enterprises, is urged as a potent reason why it should be made a separate municipal center. The immediate contiguity of North Attleboro appears to a section of Plainville people to justify consolidation with the first-named town. The geographical connection of both places, it is true, is so close as to make one appear practically a physical continuation of the other, but North Attleboro is situated in Bristol County and Plainville in Norfolk County and, to probably the bulk of Plainville citizens, this objection puts consolidation out of the question.

### Jewelers Interested in Speedway

A projected tour of some Eastern cities by Edward A. Sweeney, of the W. H. Wilmarth Co., and Charles H. Tappan, of the D. F. Briggs Co., both firms of Attleboro, has for its object the inspection of city speedways with a view to ascertaining the best form of top-dressing for such. The two gentlemen named are devotees of horse trotting and they, together with a few other jewelry manufacturers, presented \$7500 to the town of Attleboro for the construction of a speedway there. The municipality gave \$2500 additional, and the work of constructing the track is now on the verge of completion.

The directors elected at the recent annual meeting of the stockholders of the Westminster Bank, Providence, included the following well-known members of the local jewelry trade: William O. Cornell, of Cornell & Andrews; Frederick A. Ballou, of B. A. Ballou & Co., and Joseph P. Burlingame, of J. P. Burlingame & Co.

At a recent meeting of the Rodenberg-Smith Co., of Providence, William H. Manchester was elected treasurer of that concern. He is its general manager as well. This company intends to increase its quarters and make other necessary provisions for its growing business.

A most enjoyable evening was spent at the Gorham Casino, Providence, some weeks ago, when the Gorham Orchestra, a talented organization composed of employees of the Gorham Mfg. Co. gave its fourth annual concert. The selections rendered were exceedingly choice, being made up of high-class compositions, with an agreeable intermixture of popular numbers. In addition to the orchestral renderings, there were a number of clever solos and quartette selections.

Articles of incorporation for the Brown Mfg. Co. were filed recently with the Rhode Island secretary of state. The object of this company, as stated in the articles, is to engage in the business of manufacturing jewelry in Providence. The capital of the concern is \$25,000, and the names of its incorporators follow: William I. Macomber, William L. Ballou and Alfred S. Johnson.

The recent departure of Miss Charlotte S. Taylor from the firm of Regnell, Bigney & Co., Attleboro, with whom she was employed as assistant bookkeeper, to become head bookkeeper for E. D. Gilmore & Co. another Attleboro firm, was availed of by the firm she was leaving and by its employees to make her the recipient of a seal leather pocketbook as a mark of esteem. John A. Cunningham, office manager for Regnell, Bigney & Co. made a graceful and appropriate speech in formally presenting the gift.

Wm. Smith & Co., chainmakers, Providence, recently celebrated the fiftieth anniversary of the founding of that firm. The occasion was formally announced in a handsomely printed folder, bearing a photograph of the late William Smith, founder of the business, and extending the greetings and gratitude of the firm to its customers.

Mrs. Adah S. Sturdy, whose death occurred some weeks ago, was the widow of the late James H. Sturdy, who for many years was one of the leading jewelry manufacturers of Attleboro. Mrs. Sturdy's death was the culmination of a paralytic shock, from the effects of which she never recovered. She numbered among her ancestors Roger Williams and Stephen Hopkins, of whom the last-named was first commander of the United States navy.

The Paye & Baker Mfg. Co., of North Attleboro, has awarded contracts for the erection of an addition to the company's factory. Portion of the new structure will be used as an office, and portion as a stock room. It will be a two-story building, measuring 38 x 34 feet.

The Jewelers' Association and Board of Trade, Providence, has acquired some additional floor space and has reinforced its staff of employees. The association's quarters are situated in the building of the Union Trust Co., but the growing demands made upon it necessitated an enlargement in both its space facilities and working staff.

The optical store of Eastman & Co., 19 Aborn Street, Providence, was entered some weeks ago and robbed of a quantity of goods, including telescopes, opera glasses, eyeglass hooks and chains, sample spectacles, reading glasses, etc. Access was gained to the premises by boring holes about the lock on the rear door, breaking out a portion of the panel and then undoing the fastenings of the door. Up to the present writing no clue as to the identity of the perpetrator has been discovered.

Amos S. Blackinton, Jr., has resigned from the position of foreman of W. & S. Blackinton Co.'s factory, North Attleboro, and has accepted the position of general manager of the factory of S. O. Bigney & Co., Attleboro. Another recent change in the staff of W. & S. Blackinton Co. is the election of George G. Wheeler to the general managership of that company.

The Jewelers' League inaugurated its baseball season at North Attleboro recently, when the following selectmen of the town pitched, batted and caught the first ball: Albert Totten, of Thomas Totten & Co.; Fred. S. Gilbert and Frank L. Shepardson, of F. L. Shepardson & Co.

The severance of the connection of Edward E. Richardson, hitherto assistant business manager of S. O. Bigney & Co.'s factory, Attleboro, was made the occasion of a presentation to him of a beautiful Morris chair on behalf of the firm and 130 of its employees. A set of resolutions accompanied the gift. These expressed the high esteem in which Mr. Richardson was held by the workers.

The Attleboro firm of Fontneau & Cook was recently transformed into a corporation under the laws of Massachusetts, and is now known as Fontneau & Cook Co. Edward P. Claffin, hitherto special partner in the firm, has disposed of his interest therein to Louis Busiere and retired from business on an ample fortune. Mr. Busiere is a well-known business man and member of the Board of Trade of Taunton, and proprietor of the Poole Silver Co., of that city. Frank Fontneau is superintendent of the recently incorporated company's factory, and William A. Cook is its salesman.

Walter Gardiner, erstwhile partner in the firm of D. Wilcox & Co., manufacturing jewelers, Providence, died suddenly at his home, on Thursday morning, May 19th. His death was entirely unexpected and caused a severe shock to his many friends. Some weeks prior to his demise the partnership which had existed between himself and Dutee Wilcox in the firm of D. Wilcox & Co. was dissolved, deceased retiring from the concern. This business is being continued by Mr. Wilcox under its old name.

The Corey Mfg. Co. recently removed from North Attleboro and has become established in the Metcalf Building, 158 Pine Street, Providence.

The H. D. Merritt Co., of Pawtucket, was recently incorporated with a capital of \$100,000. The object of this concern is the manufacture, purchase, sale and use of jewelry, and the names of its incorporators are: William A. Sherman, Louis E. Morse and Ella A. Rose, all of North Attleboro.

The death of Herbert N. Mason, at one time a well-known manufacturing jeweler, occurred at Attleboro on May 13th, at the age of seventy-three. Deceased became connected with the jewelry business after receiving an education in the schools at Attleboro. He first entered the factory of E. Ira Richards & Co., North Attleboro, and afterwards worked with Charles E. Hayward for many years. In partnership with Earl Richards he opened a jewelry manufacturing business under the firm-name of Mason & Richards, but subsequently disposed of his interest in this concern to Mr. Richards and went to farming near Mansfield. He came to Attleboro six years ago and remained there until his death.

Frederick Young, an employee of the Gorham Mfg. Co., at Providence, for forty-eight years, died recently from an apoplectic stroke. He was much esteemed both by his employers and co-workers. For many years he filled the position of foreman of one of the company's departments. A widow, a son and two married daughters survive him.

Our Motto: Better Values for Your Money Than Any Competitor.



ORMOLU GOLD 24 K. CLOCKS  
OUR SPECIALTY.

STERLING SILVER,  
SILVER PLATED WARE,  
FLATWARE,  
CLOCKS, NOVELTIES, CUT GLASS,  
ECCLESIASTICAL GOODS, ETC.

PICTURE FRAMES  
ORNAMENTAL MIRRORS.

## OUR FULL LINE IS NOW READY.

Every piece made heretofore has been discarded.

**OUR NEW DESIGNS ARE THE PRETTIEST AND MOST ARTISTIC ON THE MARKET**

We have added a large line of A1 Silver-Plated Ware, including Sterling.

### ANCHOR SILVER PLATE CO.

*Main Office and Works, ST. PAUL, MINN.*

# OMEGA



# MOVEMENTS

ARE FINE TIMEPIECES.

All made with Lever Escapements and Double Roller.

Pendant Set.

Fitting American Cases.

Made in  
6 Different  
Grades.

10 Ligne.  
11 Ligne.  
0 Size.  
12 Size.  
16 Size.

From 7 Jewels to 21 Jewels,  
Adjusted to heat and cold,  
and 5 Positions.

**SOLD ONLY TO LEGITIMATE JEWELERS.  
PRICES NOT ADVERTISED IN ANY JOURNAL.**

A TRIAL WILL CONVINCe YOU OF THEIR MERITS.

SEND FOR PRICE-LIST.

**EDMOND E. ROBERT,**  
3 Maiden Lane, NEW YORK.

SELLING  
AGENTS.

**CROSS & BEGUELIN,**  
17 Maiden Lane, NEW YORK.

## News from the Northwest

At this writing it is still too early to state the outcome of what jewelers have begun to look for their semi-annual holiday business. The last two weeks of May and the first two weeks of June, owing to commencement exercises and June weddings, coupled with the advent of the summer girl, always give the jewelry line a special boom, and to use one retailer's expression "1904 is no exception, we have a large amount of goods laid aside awaiting delivery orders," we trust all have received their due share. The season has been handicapped somewhat by the lateness of spring and the cool weather, but it is bound to get warm and our shirt waist girl and outing flannel suit man will have to have the opportunity to display their new jewelry.

The Twin Cities should enjoy the visits of a great many outside jewelers and opticians next month, as the State Retail Jewelers' Association, the Minnesota State Optical Association and the Northwestern Optical Association will hold their meetings in June. All have good programmes in view and they should have good attendance. We note with pleasure that the different associations are going to devote part of their time to the social feature, and we think the results will justify them, as it will be an object for each member to bring his best girl with him.

John Fredell succeeds Herman Fredell at Center City, Minn.

John A. Musch, Mellette, S. Dak., has filed a petition in bankruptcy.

W. J. Flack, Detroit, Minn., reports a loss by burglars last month.

We are pleased to note that Jake C. Hub, Mapleton, Minn., who has been quite ill, has recovered sufficiently to be again at the store.

The Kuhlo Mfg. Co., St. Paul, has moved to 97 East Fourth Street.

Clifford V. Bates, Huron, S. Dak., has moved into his new store.

Geo. E. Bierlein has bought out M. F. Troxall at Bryant, S. D.

G. H. Goodwin, Tracy, Minn., has sold out to J. R. Alexander, who has disposed of his drug line and will devote his entire time to the jewelry business.

Wm. Grinnell, formerly watchmaker for G. H. Goodwin, has started in business at Tracy, Minn.

H. F. Wadell, Stewart, Minn., has moved to Glencoe, Minn.

J. S. Kierstein, a graduate of Stone's School, St. Paul, has opened a repair shop at Walnut Grove, Minn.

E. J. Callick, formerly with H. T. Segerstrom and C. M. Bean, Ironwood, Mich., is now with Geo. R. Holmes, St. Paul, Minn.

A. J. Krueger, North Branch, Minn., was married last month. Albert is expected back in time for the jewelers' and opticians' meetings, as he has not missed one so far. Our congratulations, A. J., and may your shadow never grow smaller.

J. A. Herbert, Duluth, spent a short vacation at Alexandria, Minn., last month.

Miss Hattie Haigh, of Sischo & Beard, St. Paul, spent a pleasant two weeks at Brooklyn, N. Y., last month.

Fire at Brainerd, Minn., last month caused C. L. Burnett and E. S. Houghton to pack up their goods in a hurry. The loss is covered by insurance. Brainerd has now had four bad fires in four months. Hard luck, truly.

Jac. Gruesen, Duluth, Minn., is happier than ever, owing to the arrival of a new girl at home.

Albert H. Sugg, Zumbro Falls, Minn., will be married June 15th to Miss Lulu Watts, South Troy, Minn. THE KEYSTONE extends hearty good wishes to the happy young couple.

L. Sheridan, St. Charles, Minn., is again comfortably settled in his store, which was destroyed by the cyclone last summer.

Reid & Orr, Rochester, Minn., have dissolved partnership. L. A. Orr will continue the business.

G. W. Ellis, Stewartville, Minn., has moved into his new store.

A. Lagerstrom, Cannon Falls, Minn., is laid up by having a sprained ankle.

C. L. Eckberg, Red Wing, Minn., after six months' illness, is again able to attend to his business.

Emil Dickman, lately with A. H. Sugg, Zumbro Falls, Minn., has bought out F. W. Zimmerman, at Hammond, Minn.

D. E. Furmer, Stewartville, Minn., has sold out to A. Schroeder.

C. H. Anderson succeeds Howard & Anderson at Chatfield, Minn.

A. E. Seyl and A. W. Johansen, Chicago jewelers, took advantage of the railroad war and paid a visit to the Twin Cities last month to renew trade acquaintances.

O. G. Hulberg, Duluth, spent a short time at the World's Fair, St. Louis, last month.

Ed. Gruenhagen, graduate of Stone School, St. Paul, is now in business at Wentworth, S. Dak.

J. O. Peterson has moved from Brookings to Summit, S. Dak.

Geo. W. Boeringer, St. Paul, has been serving on the grand jury the past month.

Chas. O. Mowry, St. Paul, wore a broader smile than usual last month. Cause: "A new boy at home."

J. O. Kellum, Bingham Lake, Minn., is now located at Milnor, N. Dak.

C. A. Larson, Superior, Wis., was found dead in his store May 12th. Heart failure.

Henry Caesar, Washburn, Wis., will reopen his store there, which has been closed for the past year while he was having his eyes treated.

W. M. Slade has moved from Mitchell to Alexandria, S. Dak.

Wm. R. Crandall, Mankato, Minn., came near having a serious fire loss last month, only the coolness of Mrs. Crandall saving their home from being destroyed. As it was the damage will exceed \$1000.

John Caesar, Stillwater, Minn., has been busy repapering and painting his store.

Geo. C. Nerbovig, Le Sueur Center, Minn., reports the arrival of a baby girl at his home last month.

C. A. Hoffman, Minneapolis, has moved to 624 Nicollet Avenue.

Paul C. Hirschy, Minneapolis, has moved his optical parlor to 524 Nicollet Avenue, second floor.

Clifton A. Snell, Minneapolis, will take up office practice June 1st.

Wm. Schleicher has begun business at Young America, Minn.

The following trade visitors to Twin City jobbers were noticed last month: James E. Reid, Rochester, Minn.; Cecil S. Dodge, River Falls, Wis.; O. G. Hulberg, Duluth, Minn.; E. L. Overjorde, Northwood, Iowa; Emil F. Huhner, Stillwater, Minn.; I. M. Radabaugh, Hastings, Minn.; F. W. Seaman, St. Croix Falls, Wis.; L. E. Bryant, Belle Plaine, Minn.; C. A. Wilcox, Wahpeton, N. Dak.; Julius Anderson, Mora, Minn.; Fred. Willman, Stillwater, Minn.; John G. Bett, Minnesota Lake, Minn.

## Dallas and the Lone Star State

**Saengerfest Stimulates Trade** The most notable event which has happened in Dallas for some time was the recent meeting of the Texas State Saengerfest, which brought thousands of visitors to the city, all of whom were delighted by the brilliant musical programme which was rendered. The committee are especially to be congratulated upon the successful culmination of their efforts in bringing to Dallas one of the greatest of living singers, Mme. Marcella Sembrich. As might naturally be anticipated the great musical festival had a highly beneficial effect upon local trade, the jewelers reaping a gratifying share of the profits.

G. A. Bahn, the popular jeweler-optician of Austin, is the possessor of what is possibly the most famous cat in the South. An admirer of this remarkable feline presented her with a pair of earrings, whereupon a scribe of the Bahn establishment composed a poem of two stanzas testifying to pussy's gratitude for the gift.

G. A. Pfaeffle, the Greenville jeweler, is now rejoicing in the proud title of papa—a baby boy having been recently presented to him.

J. M. Grogan and wife, of Arlington, will leave shortly for a visit Mr. Grogan's old home in Alabama.

Louis Peine and family, of Wharton, will leave shortly for a visit to the World's Fair.

The Shuttles-Mitchell Co. has moved to a larger location over 312 Elm Street.

W. A. Simmons, of Collinsville, I. T., has sold his interest to his brother, F. C. Simmons.

Maurice Chambers, formerly of West, Texas, has accepted a position with A. Threadgill, the Marlin jeweler.

R. H. McDill has opened a store near the Wilson Building, on Main Street, which he will conduct in connection with his jewelry and watch repair business.

W. A. Peck, of Denison, attended the Shriners' banquet held in Dallas the first of last month.

S. A. Gordon, of Lockhart, has increased his stock and moved to a larger building and better location on the north side of the square.

A. Weatherford, of Plano, will move into larger quarters on the first of June. We are glad to note Mr. Weatherford's success.

Among the new firms reported is that of Largent & White, of McKinney. Both of the gentlemen composing this concern were formerly with the firm of Largent Bros., who were recently burned out and whose business will be continued by the new firm.

J. W. Pittman, the Cleburne jeweler, was in Dallas last month.

B. Booth was a recent visitor to Dallas en route to Sherman to attend a reunion of the Grand Lodge of Odd Fellows, of which order he is a very enthusiastic member.

Dr. M. W. Armstrong, of the Armstrong Jewelry Co., of Brownwood, has been quite ill at her old home in Temple for several weeks, but we hope soon to be able to report her complete recovery.

Elba Elmore, of Pilot Point, was a recent visitor to the local market. Mr. Elmore leaves on June 1st for a three-weeks' visit to Hot Springs, Ark. We hope he will return much improved in health.

Young jewelers have recently arrived in the houses of Asa Cordill, of Ballinger, Texas, and W. E. Wilson, of Navasota.

(Continued on page 927)



# REMEMBER

that our prices are as low as any conservative wholesale dealer could ask to have them, when the quality of our stock is taken into consideration, 1-8, 1-10, 1-15 seamless gold filled.

Our woven wire fobs are 1-15, which is more than 150 per cent. better than the 1-40 ones floating on the market. Our elegant new fall styles, embracing all novelties in chains, are ready for jobbers' inspection.

## 1000 NEW STYLES

METAL FOBS, VIZIER CHAINS, VEST CHAINS, LORGNETTES, NECK CHAINS, CHATELAINE PINS, BRACELETS.

☞ We make goods that will give the consumer satisfaction. ☜

C. A. MARSH & CO., ATTLEBORO, MASS.



Seasonable Novelties.



Scofield & DeWyngaert,

48 and 50 Walnut St., NEWARK, N. J.

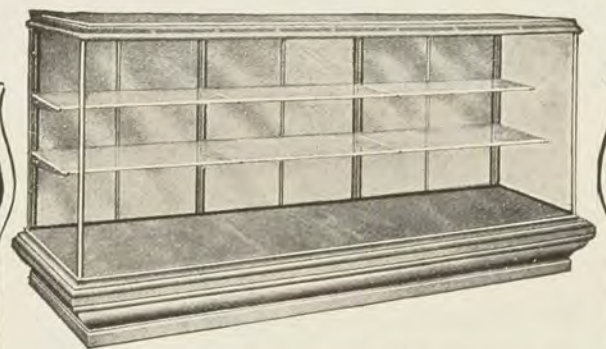
Sales Office, 9-11-13 Maiden Lane, New York.



**75c.** is not the price to you, but the price at which this clock can be profitably retailed.

We've had a pretty hard time to keep up with the orders for these new Den Clocks. Reason enough. They've made good, and over all the land dealers are stirring things up by selling these handsome little clocks for 75c. Look at the illustration again—think of a windowfull of these clocks with a 75c. price card. Wouldn't that make a lot of people step into your store pretty lively? Send for the Den Clock Folder if you want details.

**American Cuckoo Clock Co.**  
Philadelphia.



ILLUMINATED *Quick Sales* SHOW CASE.  
JOHN PETZ, Patentee.

Our Mr. John Petz's invention of the illuminating device for show cases was the ideal result hitherto vainly sought for by the progressive merchant—a means to create quick sales and more sales.

Our show cases possess all the good features of all other show cases and many features exclusive with us, an excellence which places them beyond the reach of competition. We charge no more for our show cases than they are worth.

Write to-day for full description and prices.  
P. S.—We make outside show cases, too.

**DETROIT SHOW CASE CO.,**

Show Case Builders to Progressive Merchants,  
482 to 490 Fort Street, West, DETROIT, U.S.A.  
Canadian Branch, WINDSOR, ONT.

JOHN PETZ, Pres. & Supt. HERBERT MALOTT, Secy. & Treas.

## Pittsburg and Vicinity

### Local Trade Conditions

June wedding seasons usually bring with them bits of cheer to the jewelers of Pittsburg, and this year is no exception to the rule, though the cheer is a little more limited in its extent. The year is apparently settling down to be a quiet one for the trade here. Business conditions do not warrant the belief that there is to be that briskness that characterized the past few years of rush trade in all its branches, and the majority of the tradesmen say that what they accomplish will depend upon their own hard-driving efforts to bring the trade to them. There is a noticeable increase in attention to detail in all retail stores and the wholesaler is doing what he can to meet every small want of the retailer. The ambitious and energetic store seeks publicity in the leading society journals of the city, and has attractive advertisements for wedding gifts, recognizing this feature of the business more than in past years.

### The Merchants' and Manufacturers' Association

To the jeweler, as much as to the other manufacturer, there took place in Pittsburg this month one of the most momentous meetings that has marked the business history of the city. It was a social dinner and meeting of the new Merchants' and Manufacturers' Association, mention of which was made in a recent issue of THE KEYSTONE. This association has among its members such representative firms as George B. Barrett Co. and Heeren Brothers & Company, representing the jewelry trade. At the meeting there were discussed plans for cultivating the trade of the smaller storekeepers and dealers in what is known as the Pittsburg district. This feature of the business has been left untouched in Pittsburg for years, because the business here went along without it until the average business man became dangerously indifferent to its importance. One of the wholesalers and manufacturers talked earnestly and honestly upon this subject after the meeting. It was such a talk as will do good to all the trade, for it did not spare the speaker in the least. He said that Pittsburg merchants and manufacturers had at last awakened to the fact that business would not always seek them, and that times had changed so much that it was time for them to go out and seek business. There has been a disposition in the past if orders came in and the house did not happen to have the goods in stock, to return them, with a brief statement to that effect. Now, they would take a little more trouble to fill them, even if they had to go out to get them. It was also pointed out that the trade had suffered, because other cities had taken advantage of this factor locally, and had penetrated within twenty miles of the city and carried off the plums, while the local manufacturers were quietly sleeping in content and without ambition to check it. The weakness of the position of the local tradesmen was never more keenly pointed out than by this manufacturer, and while he referred particularly to the jeweler, his argument applied to all trades. He said that changed conditions were forcing these considerations on the attention of Pittsburg as never before.

### Conservative Purchasing

As to the purchase of stock by retailers this season, it is stated that in this district there has been an appreciable falling off, because most of the retailers have been heavily stocked up for some time and are averse to loading

up any more. They are pushing their existing stocks with vim and earnestness all the time, but are confronted with a quiet condition in all lines of business, a declining activity, mills running only thirty, fifty and seventy-five per cent. of their capacity, and a corresponding decrease in the earning power of the workers. There are a number of weddings promised during the next few weeks, and a share of the trade from them is coming to local dealers. The stocks, however, are so large that it will not materially affect new business, but will rather help clear up the situation for the fall. Banks are showing well filled vaults of cash, with a limited demand for it for legitimate trade, while speculative movements are curtailed for want of confidence in the general business conditions of the country. Measured by the iron and steel trade, the universal measuring stick of this section, the feeling of unrest and hesitancy is not unreasonable. There are hopeful signs, it is true, of stronger conditions in the near future, with activity in sight for railroad construction and shipbuilding, that will help the steel mills, but thus far it is confined only to "signs."

Some heavy contracts for material have come to Pittsburg mills during the present month which means active operations for some time, and involves the use of probably 30,000 tons of structural steel. But then there is the general idleness of the coal mines on account of the strikes on the great lakes, which have tied up shipping and has made it impossible to deliver next winter's fuel supply to the Northwest. This has made hundreds of coal mines idle, and thousands of miners are resting on their oars waiting to be called "back to the mines."

### Dullness Among Small Dealers

There are but few classes of laboring men that spend money more freely than the coal miner when he has plenty of work, and he is a good customer of the cheaper jewelry trade. The consequence of this is that these smaller merchants are feeling the present depression more keenly than many of the others.

Again, idleness has brought about a more active criminal coterie. A negro entered the store of a jeweler in Frankstown Avenue, East End, on the evening of May 13th, and asked to have a watch crystal replaced. While the jeweler was fitting the crystal the negro made a grab for a gold watch in the show case before him. The jeweler started to stop him and the negro threw a handful of fine dust into the storekeeper's eyes and escaped. The police seldom capture such thieves as these, for they disappear in the mining districts and seldom come back until they are forgotten.

P. C. Gillespie, of Gillespie Brothers, Park Building, spent some time this month in New York picking up some fresh stock, and this firm reports a healthy trade at this time. J. Diamond, one of the leading optical dealers, who removed to new quarters at Penn Avenue and Sixth Street, has fitted up a handsome store, which is admired by the trade generally. The arrangements of this store are thoroughly modern and attractive.

### Mining and Coke Regions

Among the suburban dealers who recently purchased stock at G. B. Barrett Co. were H. G. Davis, who has just opened a new store in Mt. Gilead, Ohio, and H. C. Morrison, a well-known dealer in Mt. Pleasant, Pa., which is in the center of the coke regions. Both report the present conditions of trade in the mining and coking regions as hopeful for a conservative business during the year. There is a fair call for cut glassware and for importations of art goods, but

compared with the stocks on hand this is not wholly satisfactory. The chief movement seems to be confined to the smaller novelties for summer decorations and jewelry of the semi-necessary type. All stores are working on lower margins of profits and are developing a much keener competitive business sense than has apparently been necessary before.

### A Jewelers' Organization

Some time ago there was a mention made in THE KEYSTONE regarding a proposed jewelers' club or trade association in Pittsburg. At that time this matter had only been informally discussed and in a most casual manner. During the past month it is learned that the germ of organization is still working well and that there are excellent prospects for an organization among the local trade in time. The greatest argument in favor of the organization is that it will do away with the present jealousies of the trade by fostering acquaintance and a mutual regard among the jewelers. There is no trade so poorly organized as the jewelry trade, and those who are now taking an interest in this movement are convinced that it is a move in the right direction. It is promised now that a club list will be compiled this summer, and that definite steps will be taken before fall.

### Exorbitant Rents

In talking "shop" with a number of down-town jewelers it is learned that rents this year have advanced in some cases to double what they were a year ago, and in face of a much slower trade. The outcome of this was not so apparent this year, but when the advances were made leases were all short term—mostly for a year—and at the end of that time there is likely to be considerable changing going on if the landlords continue to extort unnatural and impossible rents. One instance of this was cited where a well-known jeweler who paid \$3200 a year, until April of this year, is now asked \$6200 for the same store.

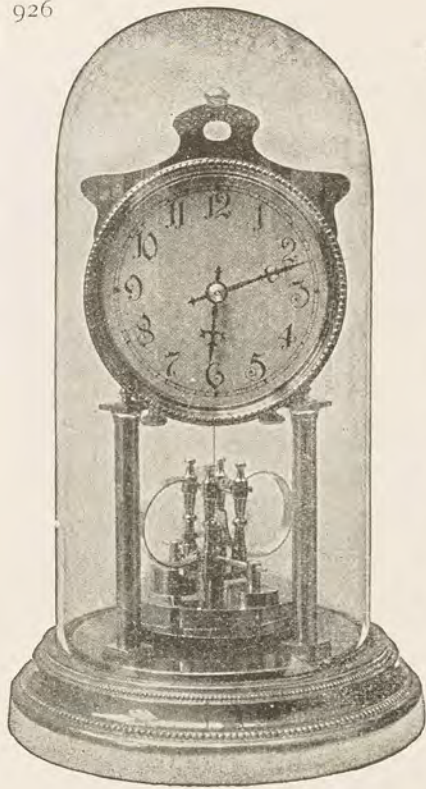
The diamond trade has been holding up somewhat strangely at this time. Advancing prices have made the business somewhat speculative, but in spite of all this dealers claim here that while the general movement of jewelry stock has been slow, there has been a spurt in the demand for diamonds that has been exceptionally remunerative.

There has been an unusual number of callers on the trade in Pittsburg during the present month, and we have gathered from these the information that "things are quiet" all through the district at the present time.

It is said that the new department store of James McCreery & Company, of New York, which is to be opened in a handsome new building this summer, will have a large jewelry department. The store will have a twelve-story building exclusively to itself, and the edifice is rapidly nearing completion.

## To Cement Leather to Iron

A good way to glue leather to iron is to paint the iron with a mixture of white lead and lamp black, dissolved in oil. Then cover with a cement made of the best glue soaked in water until soft, and dissolved in vinegar. This is mixed thoroughly with one-third of its bulk of white pine turpentine, and thinned with vinegar until it can be spread with a brush. It should be applied to the iron while it is hot and the leather put on and quickly pressed into place. It must be held tight by a clamp while it is drying.



Height, 12 inches. Diameter, 7 1/2 inches.

# "The Special Year-Long"

is by far the handsomest clock of the "400-Day" kind in the market. Handsome metal dial, 4 inches diameter, compensated pendulum.

**JOBGING TRADE SUPPLIED.**

**J. B. BECHTEL & CO.**  
725 Sansom St., Philadelphia.



## CANDO Silver Polish IS THE BEST

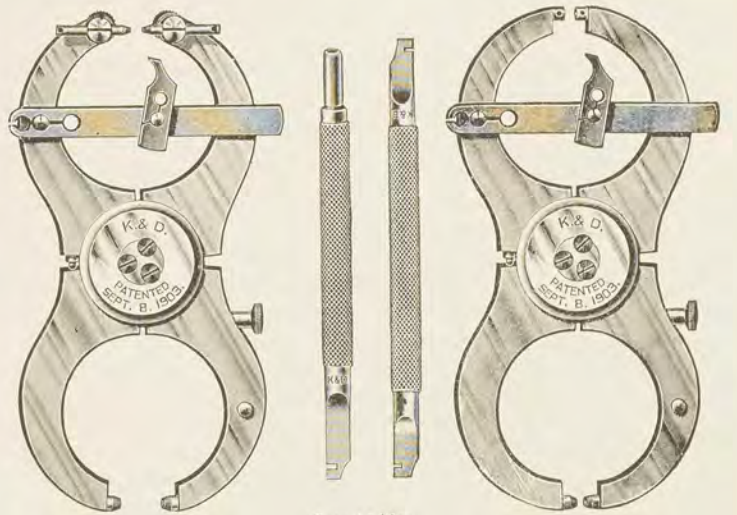
for Jewelers to handle—it is a quick seller and positively superior to any known polish on the market. The patent cap used on jar for **CANDO** is made to perfection.

We call special attention to the importance of a package for Silver Polish that can be **RESEALED** after it is once opened.

Samples sent when requested. Correspondence solicited.

**PAUL MFG. CO.,**  
Boston, Mass.

## K & D QUALITY



Cuts 4 1/2 Size.

No. 401. Parallel Centers. Solid Nickel. No. 402. Parallel Centers. Brass. No. 404. Solid Nickel. No. 405. Brass.

**FOR SALE BY THE TRADE.**

MADE BY

**KENDRICK & DAVIS,**  
Lebanon, N. H.

Send for  
Catalogue No. 5.



## WE LEAD



with the Reliance Brand Balance Staffs and C. & F. Jewels Made for all sizes of American movements and guaranteed to fit.

**BALANCE STAFFS, 60 cents per dozen net. C. & F. JEWELS, 50 cents per dozen net.**  
Jewelers' Findings stamped Reliance Brand means that it is made of the best quality stock.



Send us a trial order and be convinced of our assertion. A complete stock of American and Swiss Materials always on hand. We also carry a complete line of Jewelry and Novelties made by the leading manufacturers. A complete stock of Optical Goods always on hand. Special attention given to mail orders. Orders filled from any catalogue.

**KORONES BROS.,** Jobbers in Watches, Clocks, Jewelry, Watchmakers' Tools, Materials, Jewelers' Supplies, Engravers' Tools and Optical Goods,  
38 Chrystie Street, NEW YORK.

## THE FINEST WATCH, CLOCK and CHRONOMETER OILS IN THE WORLD.



Always ask for Nye's.

Proved to stand every test.

Used by all the leading watch factories and by all watchmakers who value their work. Sold by all tool and material dealers.



## San Francisco Letter

### Palatial New Store

A notable event of recent happening in the local jewelry trade, was the opening of the Bohm-Bristol Diamond Company's new store at 114 Geary Street, this city. The company has conducted a business at Denver, Colo., for a number of years and this will be continued. The establishment just opened in San Francisco, embodies in its equipment all the improvements that modern mechanism and decorative skill have imparted to the fixtures and facilities of a high-class store. It is furnished in solid mahogany and heavy French plate glass; the electrical fixtures are magnificent specimens of the metal-workers' art, and are a considerable improvement on everything that we have hitherto seen in this line in 'Frisco. The store will be under the personal management of Mr. Bristol, who will be assisted by the following force of clerks: A. S. Cunningham, F. J. Wheeler, F. R. Templeton, A. J. Breiling and J. M. Ricketts. Mr. Bohm will in the future make his headquarters at the Denver store.

Samuel Bayles, who formerly conducted a jewelry store in Spokane and later a store in Nome, has returned to San Francisco and will locate in California as soon as he can find a suitable location. Mr. Bayles called upon the trade while here and bought a fine stock of goods.

H. A. Minasian has accepted a position as head watchmaker with L. Katz, of Sutter Creek, California.

Geo. Bangle, who conducts a retail store in Vallejo, Cal., was in town last month with his family, and will be among the host of Californians who are going to visit the exposition at St. Louis.

W. F. Wooster, of Suisun, Cal.; H. C. Zapf, of Grass Valley, and C. W. Wickersham, of Bakersfield, Cal., were among the out-of-town buyers in this market last month.

Albert Haber, of M. Schussler Co., with three or four other kindred spirits, are roughing it through the Yosemite, camping wherever night finds them.

A. Huguenin, who was formerly connected with Shreve & Co., of this city, will vacate his present store on Market Street, and J. Macowsky, formerly of Kearny Street, will enlarge Mr. Huguenin's old quarters and open a fine attractive new establishment some time in the near future.

Geo. M. Roy, of the Roy Jewelry and Optical Co., of Kearny Street, near Sutter, in the building formerly occupied by Mr. Macowsky, which will give him a fine new store nearer the business center.

Armer & Weinschenk, wholesale dealers in material and jewelers' sundries, of Sutter Street, this city, have installed a new up-to-date printing plant in their establishment, and are very busy stamping and printing boxes, etc.

F. E. Smith, retail jeweler of San Jose, Cal., was a visitor in town attending the Grand Lodge of Odd Fellows when they held their conclave here, as he was a delegate from his home lodge.

F. Golden, of the Frank Golden Jewelry Co. stores of Reno, Carson and Tonapah, was among the visiting tradesmen in town last week buying stock for his three stores.

John M. Sinclair, traveling representative of Armer & Weinschenk, has started on his Northern trip and will not return to town for three or four months. Mr. Sinclair expects to book a large number of orders for fall delivery.

A. Eisenberg & Son, of 126 Kearny Street, San Francisco, recently returned to town from a six-weeks' trip.

Paul H. Neuffer, the enterprising retailer of Olympia, Washington, has started in a sight-seeing tour to Europe and will be away from his old haunts three or four months.

A. G. Prouty has accepted a position with Simons, Bro. & Co., of Philadelphia, and will represent this house covering the entire Pacific Coast territory, with home offices at 120 Sutter Street, San Francisco, where he will be pleased to receive friends of the firm at any time. THE KEYSTONE joins his many friends in wishing Arthur a successful career in his new venture.

L. Koberg, the retail jeweler, of Healdsburg, Cal., was on a buying trip to town last month, and reports business in his section as fair for this season of the year. He did not hesitate to describe the outlook for future business as very bright.

J. C. Leudan, A. Eisenberg & Co.'s knight of the grip, has started out on a six-months' trip to call upon his friends in the trade.

L. S. Lehrberger & Co., wholesale jewelers of 126 Kearny Street, this city, have been making a few needed improvements in their offices, which now present a very bright, attractive appearance.

H. F. Wichman and family, of Honolulu, arrived in San Francisco on the O. and O. steamer *China*, after a very pleasant voyage. Mr. Wichman will spend a few weeks visiting friends in Brooklyn, New York, and incidentally call upon the trade in New York City.

A. W. Huggins, of A. I. Hall & Son, of San Francisco, is taking a vacation, visiting friends in the East. Mr. Huggins has taken his family with him, and they will spend some time at St. Louis, looking over the exhibits at the exposition.

Alphonse Judis, of Alphonse Judis Co., is among the Coast jobbers who have migrated East. Mrs. Judis and Master Frank accompany him. Elberon, N. J., will be their address after they have visited Chicago and St. Louis. We feel safe in saying, a hearty reception awaits their arrival at this Atlantic Ocean summer resort, as their friends summering there are legion.

D. S. Buiford and wife, of Whittier, Cal., were among the visiting trades people in town recently. After spending a delightful honeymoon visiting friends in Modesto, Stockton and Sacramento, they returned home by way of the Pacific Ocean.

J. Nordman and wife, of Nordman Bros., San Francisco, is away from his old stamping ground, visiting friends and relations in Europe. Uncle Joe will be absent three or four months, and on his return will visit the watch and case factories in the East in the interests of his material departments.

The trade are extending their sympathies to Rudolph Barth (with Rothschild & Hadenfeldt) upon the death of his mother, whose funeral took place from her late residence in this city on Tuesday, May 10th.

Leon Nordman, of Nordman Bros., San Francisco, returned home from his Eastern trip after an absence of two months, looking in good health.

A. Feldenheimer, of Portland, Oregon, passed through San Francisco en route to the East, where he will no doubt look over the market preparatory to buying for his fall trade.

The Los Angeles retail jewelers reaped a harvest last month during the convention of the Brotherhood of Locomotive Engineers, doing a very large business in all railroad grades of American timepieces. It made quite a busy month, particularly as this is the dull season of the year in the Southern section of this State.

## Dallas and the Lone Star State

(Continued from page 923)

The following dispatch from Rosebud, Texas, dated April 25th, is taken from the *Dallas News*: "The meeting at the Baptist Church, which has been going on for the last two weeks closed last night with a crowded house to hear Rev. Gus Evans deliver his first sermon. He announced several days ago that he felt called to preach, and of his intention to do so. He will dispose of his business and prepare himself for the ministry. Mr. Evans has been conducting a very successful business, but now offers his stock for sale to enter into a new field of labor. We wish him all success in his work." Rev. Evans has hitherto been conducting a watch and jewelry repairing business in Rosebud.

C. B. Pittman and wife were visitors to the great Saengerfest recently held in this city.

M. N. Harrison, formerly of Pilot Point, is now in the employ of J. N. Bucher, Hillsboro.

H. H. Hawley has returned from a two-weeks' visit to Huntsville. During his sojourn he made quite a reputation for himself as a squirrel hunter.

We regret to announce the critical illness of W. E. Berry, formerly in business in Childress, Texas.

L. S. Patterson, formerly of the Patterson Jewelry Co., of Lampasas, Texas, is now in charge of the Walter Hafner Jewelry Co.'s store at Smithville.

A. H. Kerr, of Corsicana, recently suffered from a fire at his place of business. We are glad to announce that Mr. Kerr's loss was one of slight proportions.

W. E. Heald, the popular San Angelo jeweler, attended the Grand Lodge of Knights of Pythias recently held in Houston. Mr. Heald is one of the most prominent members of the order in Texas.

H. D. Leffel, of San Angelo, contemplates a visit to the World's Fair City in June. It is also his intention to spend some time at his old home in the Hoosier State before his return.

Clarence Magee has given up his work in the jewelry interests to devote all his time to musical pursuits. He expects to start shortly on a concert tour of the State, and has already booked as many engagements as will occupy all his time until the fall.

Robert A. Terrell, for many years the efficient optician for Arthur A. Everts, was recently united in marriage to Miss Margaret Brewer, of this city. They have the best wishes of numerous friends.

Henry Iverson, of Henry Iverson & Co., Corsicana, and wife, were visitors to Dallas during the Saengerfest.

W. K. Browning, bookkeeper for Morgan & Hawley, has returned from a two-months' vacation in Hot Springs.

W. H. James, formerly in the jewelry business in Sulphur Springs, is now deputy county clerk of Hunt County, Texas.

T. H. Benninger, with J. W. Pittman, of Cleburne, is one of the few who have been struck by lightning and lived to tell of the experience. About four weeks ago Mr. Benninger was quietly working at his bench when he was smitten by a flash; he was unconscious for a period of two hours. Ever since he has been answering the inquiries of his many friends as to "how it felt," etc.

H. J. Ritter, of Seymour, was among the arrivals during the past month. Mr. Ritter contemplates moving to Dallas.

A. S. Fonville, of Wichita Falls, has been forced to seek more commodious quarters, and now has a store room to himself.

# The Giant } in Quality of } in Sales Collar Buttons }



The Standard Collar Button.

Millions of Krementz  
One-Piece Collar Buttons  
made, and are sold  
all over the world.

**WHY?** Because of their HIGHEST QUALITY, BEST CONSTRUCTION, GIVING THE MOST WEAR, AND GREATEST COMFORT and their IRON-CLAD GUARANTEE.

To verify this we invite the trade to read "The Story of a Collar Button, with Illustrations," which may be had FREE for the asking, and to try the experiment suggested on page 5 of that booklet, by which all may easily determine the exact amount of 14 K. gold in Krementz plate.

Extract from "Printers' Ink,"  
Nov. 23, 1898.

The Little Schoolmaster now suggests, to every pupil in his class, to send a two-cent stamp to Krementz & Co., 49 Chestnut Street, Newark, N. J., and ask to be favored with a copy of their leaflet, "The Story of a Collar Button." Afterward, if any pupil will send to *Printers' Ink* another leaflet, new or old, that is half as good as this one, or that approaches it in excellence, the deserving student will be rewarded with one of *Printers' Ink's* souvenir spoons as an acknowledgment of his discovery and contribution. "The Story of a Collar Button" is the best piece of advertisement construction that has come to *Printers' Ink's* attention in the year of our Lord 1898.

Should you wish to utilize this booklet to increase your collar button business, we will, on receipt of your order, print your card upon and send you a quantity of them.

The several qualities of  
Krementz One-Piece Collar Buttons are stamped  
as follows, ON BACK:



Patent Sustained by United States Supreme Court.

Quality and Construction have made Its Reputation.

All Krementz Collar Buttons—of every quality—  
are Manufactured by

## KREMENTZ & CO.,

in their Factory

49 Chestnut Street,  
NEWARK, N. J.

PARKS BROS. & ROGERS,  
20 Maiden Lane, New York,  
Selling Agents to Jobbing Trade.



ONE OF OUR WELL-KNOWN NOVELTIES.

No. 10.

## LEADERS FOR THE JEWELRY TRADE

We fill the long-felt want of the jewelry trade for popular-priced leaders in STERLING SILVER JEWELRY.

We show the largest line of Sterling Silver Hat Pins, Belt Pins, Brooches, Waist Sets, Links, Scarf Pins, College Pins, etc., on the market.

WRITE FOR SAMPLES AND PRICES.

## Rothschild Bros. Co.

Largest Manufacturers of  
Attleboro, Mass., U.S.A.  
Popular Priced Sterling Silver Jewelry and Novelties.

## The Highest Achievement in Watch Construction

is represented in the

# VACHERON & CONSTANTIN

GENEVA, SWITZERLAND



THE LEADER in { Quality Durability  
Adjustment Style

It Fits All Sizes of American Cases  
New Grades—New Sizes—New Improvements  
Special Grades for Railroad Men

EDMOND E. ROBERT, SOLE AGENT  
3 Maiden Lane, New York

## St. Louis Letter

### Trade Improving in the World's Fair City

Business at our wholesale houses, as well as the retail stores, shows a steady improvement over a month ago, due to the fact that weather conditions have been more favorable in May than April. The weather is not quite seasonable. Then World's Fair visitors are beginning to put in their appearance in goodly numbers, and our streets present a busy, lively, animated scene, showing that there are a large number of strangers in town. Trade kept up fairly well during the month of May, and will run about the same as last year at this time. At a number of houses called upon they said that, if anything, May was better with them than last year. The outlook for a large local trade during the summer and fall is very encouraging, never was better. In addition to the World's Fair attendance, St. Louis accommodated several large conventions last month, including the national and international press associations, the national and international good roads' organizations, the national federation of women's clubs and several other national and State bodies. Yet there was no perceptible strain on the facilities of the city for taking the best care of all comers. So thorough have been the preparations, that provision is offered here for a multitude of probability. Rooms in private houses have been little utilized as yet, and these can be numbered by tens of thousands. Our city at one time was apprehensive that its lodgings and lines of transportation could be over-taxed, but these questions have been set at rest by actual tests and enumeration.

### Hotel Facilities and Rates

Many of the World's Fair hotels are making rates of 75 cents a day for large parties of visitors. They will be placed two in a room. The almost universal rate outside of the large down-town hotels now agreed upon is \$1 a day, and at many private houses the rate has been reduced to 50 and 75 cents for each person where two occupy the same room, rather than allow rooms to stand empty. So that none of our readers need stay away from the greatest of World's Fairs for lack of accommodation at fairly reasonable figures. St. Louis is a large city, and, like all large cities, it is prepared to care for the wants of all classes of the people, the pretentious as well as unpretentious, those who are fond of display and those who are satisfied with the simple comforts of life. Whether the cost of entertainment be excessive or moderate depends upon the ability of those seeking entertainment to find accommodations to suit them. Prices that would appear reasonable to some, would strike others as being extortionate. The person who is limited to an expenditure of \$5 a day, must not expect to get \$10 worth per diem for his money. If he expects it, he will be disappointed.

### What it Costs to See the Fair

We note that the press of the country has taken up and is discussing with more or less calmness, sometimes unfairly, the question of exposition period hotel rates in St. Louis. A peculiar feature of the matter is the fact that while some complain of excessive rates, others are inclined to think the prices charged are moderate, everything considered. A Boston artist recently sent a communication to the *Transcript* of that city, upon which it commented, criticising the new schedule that was announced to go into effect coincident with the opening of the fair. Another

artist who was on the ground at the time, according to the same paper, was able to satisfy himself at the very moderate price of \$2 per day, and the hotel people themselves claim that a false impression regarding terms has gone abroad. The fact of the matter is, the situation in St. Louis at present is precisely what it was in Chicago eleven years ago. One visitor finds that the prices are exorbitant; another experiences no difficulty whatever in living and entertaining himself on the most reasonable terms. Those who are seeking costly accommodations in St. Louis must be prepared to pay well for them; those who are determined to practice economy, we are sure will find little trouble in doing so. Thousands of people who will visit our great and highly interesting World's Fair this summer and enjoy every moment they spend here, will be able to boast on their return that the experience cost them less than they expected. Other thousands will likely not enjoy themselves at all, because the experience will cost them more than they can afford.

### Representatives of Every Race Represented

The visitor to the fair is struck with the ubiquity of the suave Frenchman and the alert Japanese, and it is evident that these two nations are represented more largely than any other foreign countries. Germany, of course, is very prominent in heavy goods like iron and steel products. She is not lacking either in displays that represent the goldsmith's and silversmith's arts, but generally she does not make as good a show as might be expected. It is generally understood that the long siege of hard times that Germany has been having the past few years, has resulted in a general curtailment of her displays. Great Britain is prominent in fine china and other lines that will interest readers of THE KEYSTONE. The Russian is conspicuous for his absence, the original plan to erect a Russian building on the grounds having been vetoed at the time of the breaking out of the war with Japan. South and Central American countries are not as prominent in this exposition as had been hoped by its officers, though Mexico has stepped into the breach to give a good representation from Latin America. The whole flavor of the exposition is fully as cosmopolitan as the Chicago Fair, and herein lies one of its great educational features. Representatives of every race and almost every nation of the globe are here, the oddity of their raiment adding not a little to the charm of the exposition.

### Labor Troubles at the Fair

Exhibitors in all the buildings have been complaining bitterly of the inadequate quantity and poor quality of labor furnished by the exposition authorities. This trouble will account mainly for the tardiness of exhibitors getting their exhibits in shape. The Gorham Company and the Herschede Hall Clock people were much annoyed by labor difficulties. Happily this trouble is now mostly over with, and exhibits will be complete and in good order by the first week in June. It seems that the whole fair is unionized to a degree that is startling. Exhibitors are not permitted to bring in their employees to set up their exhibits, machinery, etc., but are compelled to draw on the exposition authorities for what labor they need, taking men furnished regardless of their inexperience at the particular work at hand, though they are permitted the use of one superintendent to direct the work. Laborers practically unskilled, though holding union cards, are able to make from \$5 to \$8 in an eight-hour day on the scale of prices in April and May, and com-

plaint is made on the part of the exhibitors that the whole aim of the labor unions seems to be to make the job last as long as possible; because they realize that as soon as the work is completed the men will be out of work, and it is their plan to make a year's wages in a few weeks. The fact that the fair was in an incomplete state last month, is charged to this "soldiering" programme of the labor unions.

W. F. Kemper, our well-known Franklin Avenue retailer, who is secretary of the Collins Electric Clock Co., a local concern, has a nice exhibit of this firm's product in the Varied Industries Building at the World's Fair. The clocks are not on the market as yet.

The item in the last month's issue of THE KEYSTONE, which stated that the well-known house of Tiffany & Company of New York, would have an exhibit at our World's Fair, was a mistake, as they are not among the exhibitors at the exposition, nor will they have a jewelry exhibit at the fair.

J. H. Bartlett, of Marshall, Texas, was among the large number of visiting jewelers here last month, looking over the exposition and doing some buying. Like all of our World's Fair visitors, Mr. Bartlett was greatly delighted with the "Ivory City" at Forest Park. He thought the Fair was more than worth a trip to see.

Louis Heilbron, of Texarkana, Texas, was a welcome trade caller here last month. Mr. Heilbron found his way out to the World's Fair, and was pleased with our great exposition. He said it was his impression that it was safe to estimate the attendance from the Lone Star State at the Fair between this time and its close at about half the population, as the citizens of Texas took a great interest in the Louisiana Purchase Exposition and would support it loyally and liberally.

J. L. Warren, of the Warren Jewelry Company, Colorado Springs, Colo., was here for several days last week, taking in the sights at the World's Fair. Like all visitors, Mr. Warren was pleased with the latest and greatest of expositions. He brought word that the Centennial State would send a large number of visitors between now and its close.

Among the many jewelers who were in St. Louis during the month of May, calling on the trade and looking over the great World's Fair, we noted: C. E. Banta, Pittsburg, Kans.; A. R. Wharton, of the Tower Jewelry Company, Springfield, Mo.; Chris. Keyler, Nashville, Ill.; W. H. Childrey, Haw River, N. C.; J. Schmelzer, Centralia, Ill.; Tom. S. Riley, Mexico, Mo.; I. Zeller, Durango, Colo.; Geo. Porth, Jefferson City, Mo.; G. W. Chase, Moberly, Mo.; C. E. Turner, Mineral Wells, Texas; Adam Hafner, De Sota, Mo., and John Koetting, of St. Genevieve, Mo.

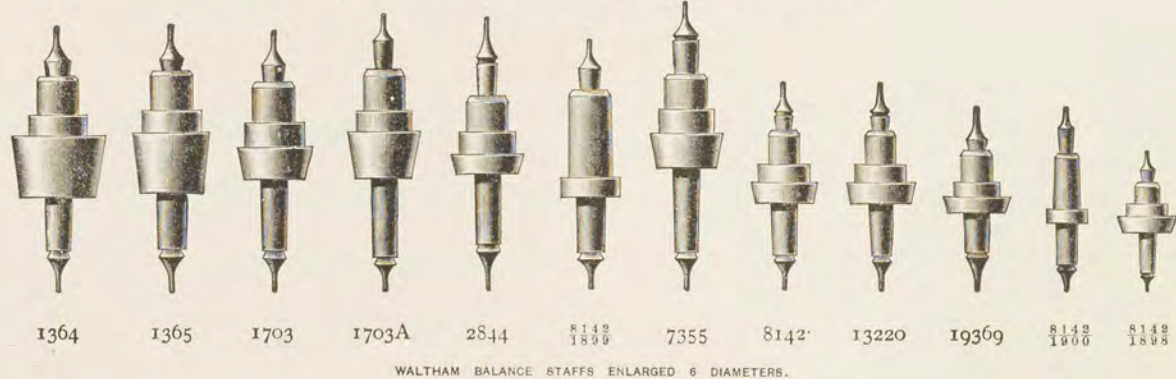
Samuel and Morris Eisenstadt, of the Eisenstadt Manufacturing Company, left May 21st for a ten-days' trip to New York and other manufacturing centers, wherein they will combine business with pleasure.

R. E. Boyd, of the firm of Purdom & Boyd, manufacturing opticians, Birmingham, England, and J. H. Marlow, a retail optician, of Harrogate, England, were in St. Louis the last week in May, looking over our World's Fair. They were welcome callers among the trade here, and expressed themselves as more than delighted with the wonderful exposition at Forest Park. Both gentlemen were of the opinion that it was the greatest they had ever seen, and well worth their long trip to see. They were on an extended tour of America, and said they were delighted with the Great West and her great central city.

(Continued on page 928c)

## AMERICAN WALTHAM WATCH CO.'S MATERIALS.

### WALTHAM BALANCE STAFFS.



WALTHAM BALANCE STAFFS ENLARGED 6 DIAMETERS.

WALTHAM BALANCE STAFFS.	1 Dozen each Size, Number, &c.	½ Dozen each Size, Number, &c.	¼ Dozen each Size, Number, &c.	Single Balance Staffs.
	NET PRICES.	NET PRICES.	NET PRICES.	NET PRICES.
7 Jeweled, Sterling or Bond Street Grade.....	\$2.00	\$1.05	\$0.60	\$0.25
15 Jeweled, P. S. B. or Royal Grade.....	3.00	1.55	.85	.35
17 Jeweled, A. T. & Co. or Riverside Grade.....	4.00	2.10	1.10	.45
21 Jeweled, Vanguard or Am'n Grade.....	5.00	2.60	1.35	.60

### WALTHAM COCK AND FOOT HOLE JEWELS IN REGULAR SETTINGS.

WALTHAM COCK AND FOOT HOLE JEWELS IN REGULAR SETTINGS.	1 Dozen each Size, Number, &c.	½ Dozen each Size, Number, &c.	¼ Dozen each Size, Number, &c.	Single C. & F. Hole Jewels.
	NET PRICES.	NET PRICES.	NET PRICES.	NET PRICES.
7-15 Jeweled Grade.....	\$2.00	\$1.05	\$0.60	\$0.25
17-23 Jeweled Grade.....	2.25	1.20	.65	.35

### WALTHAM COCK AND FOOT HOLE JEWELS IN POLISHED (ECLIPSE) SETTINGS.

WALTHAM COCK AND FOOT HOLE JEWELS IN POLISHED (ECLIPSE) SETTINGS.	1 Dozen each Size, Number, &c.	½ Dozen each Size, Number, &c.	¼ Dozen each Size, Number, &c.	Single C. & F. Hole Jewels.
	NET PRICES.	NET PRICES.	NET PRICES.	NET PRICES.
7-15 Jeweled Grade.....	\$2.10	\$1.10	\$0.60	\$0.30
17-23 Jeweled Grade.....	2.35	1.25	.65	.40

### WALTHAM COCK AND FOOT END STONES IN SETTINGS.

WALTHAM COCK AND FOOT END STONES IN SETTINGS.	1 Dozen each Size, Number, &c.	½ Dozen each Size, Number, &c.	¼ Dozen each Size, Number, &c.	Single C & F. End Stones or Cap Jewels
	NET PRICES.	NET PRICES.	NET PRICES.	NET PRICES.
7-15 Jeweled Grade, Ruby, in Composition Settings.....	\$1.25	\$0.65	\$0.35	\$0.15
17-19 Jeweled Grade, Ruby, in Gold Settings.....	2.25	1.25	.75	.30
19-23 Jeweled Grade, Diamond, in Composition Settings.....	10.00	5.25	2.75	1.25
19-23 Jeweled Grade, Diamond, in Gold Settings.....	11.00	5.75	3.25	1.35

ORDER BALANCE STAFFS and JEWELS BY NUMBER and STATE THE SIZE, KIND, MODEL and QUALITY REQUIRED.

## St. Louis Letter

(Continued from page 928 a)

### A Hotel for the Jewelry Trade

An institution which has a personal and pecuniary interest for every member of the trade who visits the St. Louis Exposition, is the Fielding Hotel and Club, situated at 5601-5607 Delmar Boulevard, St. Louis, Mo. The objects of this hotel, as announced by the management, are to provide special accommodations for jewelers, their families and friends who visit St. Louis during the World's Fair; to locate them conveniently to the grounds; to protect them against exorbitant charges and for their convenience generally. Of particular interest to jewelers staying at the hotel will be a large sample room (96 x 100 feet) on the ground floor for displaying Eastern manufacturers' lines of holiday goods, thus enabling the visitors to profitably and economically combine business with pleasure. One of the concerns, whose lines will be shown in this sample room, is the J. D. Bergen Co., cut glass manufacturers. The names of all the firms represented and other information can be obtained by writing to the hotel at the address above given. But the most attractively-liberal offer in connection with the hotel is this: That one buyer from each visiting firm of jewelers will be entitled to one week's room for himself and wife free of charge. Apart from this free offer the hotel rates are most liberal, rooms being obtainable at a rate as low as one dollar per day per person, European plan. The hotel is new, fireproof, and has every modern convenience and improvement.

Jeweler J. H. Greer, of Fort Worth, Texas, who was married in that city, May 10th, came direct to St. Louis with his bride, where they spent their honeymoon looking over the wonders at the exposition.

Louis Bauman, the well-known traveling salesman, who has for over fifteen years past represented the L. Bauman Jewelry Company in the West and Southwest, has resigned his position with this firm and gone with Sidney L. & Morris Bauman Company. Mr. Bauman will continue on the road, as usual, covering his old territory.

Jeweler Louis Harris, retail, 1214 Franklin Avenue, sailed for Europe April 26th, to be absent two months. Mr. Harris will combine some business with his travel and sight-seeing.

Will Lamb, the well-known and popular traveler for the Geo. H. Fuller & Son Co., spent ten days here last month doing the World's Fair, accompanied by his bride. Mr. and Mrs. Lamb were en route to their home in Chicago, after a most enjoyable wedding trip to the City of Mexico.

S. W. Croft is a new man on the traveling force of the L. Bauman Jewelry Company. He will cover the smaller points in Missouri and Illinois territory.

J. L. Wolff, of Paducah, Ky., was among the many jewelers here last month doing some buying and looking over the World's Fair.

Charles Cedarstorm, Northwestern traveler for the Eisenstadt Company, spent a greater part of last month at headquarters assisting the house force in entertaining World's Fair visitors and visiting his family. He is out among his customers again this month.

H. M. Hubbard, Texas and Arkansas representative for the St. Louis Clock and Silverware Company for the past eight years, will make his old territory for the L. Bauman Jewelry Company, succeeding Louis Bauman.

The Missouri Association of Opticians will hold their regular annual meeting in St. Louis at the World's Fair, beginning June 16th. A large attendance is expected from the jewelers of the State, and the occasion promises to be a memorable one in the history of the society.

Mark Eiseman, Southern traveler for the L. Bauman Company, spent ten days last month at headquarters entertaining World's Fair visitors.

The firm of Lowe & Youngblood, Monroe, La., was represented in this market last month by Mr. Youngblood, who was here with his bride for several days looking over our wonderful World's Fair.

J. Reed Elliott, the well-known traveler for the Eisenstadt Company, spent the month of May at headquarters assisting the house force in entertaining and looking after World's Fair visitors.

Ben. Friedman, of Memphis, Tenn., was here for several days last month enjoying the sights of the World's Fair and doing some buying.

Mrs. Jaccard, wife of F. L. Jaccard, Texas traveler for the Bauman-Massa Company, has just recovered from a serious case of blood poisoning. Mr. Jaccard has long made his home at Fort Worth, where he is a popular citizen.

W. C. Gaston, of Keytesville, Mo., was in St. Louis a few days last month doing some buying and looking over the World's Fair.

Henry Wicke, a former well-known and pioneer jeweler of St. Louis is dead at the age of sixty-seven years. His death occurred at his home in this city, May 11th. His funeral on the 13th instant was attended by a number of members of the trade. The services were conducted under the auspices of Lyon Post, G. A. R., of which the deceased was a member. The interment was in St. Peter's Cemetery. Mr. Wicke's death was pronounced due to a combination of pneumonia and Bright's disease. It was stated that Mr. Wicke had received serious internal injuries three years ago by being crushed under a brick wall. The deceased was born in Bremen, Germany, and came to St. Louis in 1851. For forty-five years he conducted a jewelry establishment at Eleventh Street and Franklin Avenue. He is survived by his widow, a former Miss Mary Reiter; two brothers, William and Charles Wicke, of Bremen, Germany, and four children, Mrs. George Kleucker, of Bromschwig, Germany; Mrs. Earl Threlkeld, of Charleston, Ill., and Harry and Wallace Wicke, both of St. Louis.

Among the many visiting jewelers here World's Fair opening day were R. G. Rutherford, Mount Vernon, Ill.; E. Rickmus, New Melle, Mo.; F. Herold, Jerseyville, Ill.; J. F. Swain, Sparta, Ill.; E. Roberts, Elvins, Mo.; W. J. Krug, Staunton, Ill.; Geo. Noterman, Nokomis, Ill.; C. Holderle, Salisbury, Mo.; E. Giffin, Chesterfield, Ill.; T. E. Gontermann, Granite City, Ill.; J. H. Keadle, Belleflower, Mo.; E. K. Kane, Pinkneyville, Ill., and W. H. Wheeler, Palmyra, Ill.

The Herschede Hall Clock Company, of Cincinnati, have completed their exhibit at the World's Fair. Their booth is near the pavilions of the Gorham Company and the Mermod-Jaccard Company in the Varied Industries Building. It is a handsome and unique affair, showing a fine display of the firm's make of hall clocks to excellent advantage. The booth contains 1000 square feet, and jewelers will find it a most inviting and restful nook to visit.

O. G. Hulberg, of Duluth, Minn., was in St. Louis for several days last month, looking over the World's Fair. He thought the big show a great success and a wonder.

St. Louis Clock and Silverware Company early in the season opened up a handsome department for the display of World's Fair goods on its fifth floor, which is devoted to exposition souvenirs exclusively. It has been doing a rushing business from the start.

E. C. Weidlich and F. B. Weidlich, of Wm. Weidlich & Bro., spent part of the past month at headquarters, looking after World's Fair business. They expect to be in the house most of the time through the months of June and July to greet World's Fair visitors.

O. K. Steuwer, who travels in the South for the Eisenstadt Company, was off the road a greater share of last month. He visited his old home in Cincinnati and the remainder of the time was at headquarters, looking after World's Fair trade.

Geo. W. Wells, president of the American Optical Company, Southbridge, Mass., accompanied by Mrs. Wells, spent several days in St. Louis the early part of May. During their stay they visited the World's Fair grounds and were delighted with our big show and thought they would come back later in the season and do the Exposition thoroughly.

Joe Auer, Southern traveler for the Bauman-Massa Company, spent most of the month of May at headquarters, looking over the lines of Eastern manufacturers' agents and selecting goods for the firm's fall trade.

The St. Louis Watchmaking School, R. Jaegermann, president and manager, has recently issued a handsomely-illustrated prospectus in booklet form, showing a picture of their new building at 5815 Easton Avenue and sectional views of the class rooms and office. It also contains a history of the growth of the school and a list of graduates, and is neatly printed.

Jeweler O. O. Russtad, of Grand Forks, N. Dak., and Mrs. Russtad spent a week in St. Louis last month, looking over the World's Fair. They expressed themselves as highly pleased with our big show.

George Stieffel, of the Mermod & Jaccard Jewelry Company, is in charge of their exhibits in the Varied Industries Building at the World's Fair. Most of the manufactured articles are displayed in their elegant "gold pavilion" 75 x 25 feet. A short distance away the firm has a live exhibit, showing the process of manufacturing jewelry and various other articles out of gold and silver.

The Rowley Ophthalmological College is a new optical school just established in St. Louis, with quarters on the eighth floor of the Holland Building. W. J. Rowley, the well-known refractonist and optical specialist, favorably known among the trade from his long connection with the Geneva Optical Company as their Southern and Southwestern traveler, is at the head of this College. President Rowley states in his prospectus that the object of his school is to teach a thorough course in optics, and believes that it will pay those interested to investigate his college when they come to our great World's Fair.

A. Eisenberg, the well-known wholesale jeweler, of San Francisco, Cal., and his son, A. Eisenberg, Jr., were among the trade visitors in town last month, who were looking over the World's Fair. They were charmed with the big show and said that the Pacific Coast would furnish a large number of visitors before the gates of the greatest of all expositions were closed on November 30th. Mr. Eisenberg said he was agreeably surprised at the largeness and magnificence of the display. He felt that the fair was well worth a long journey to see.

## All Roads Lead to St. Louis

### A Magnificent Spectacle

The Louisiana Purchase Exposition is now in full swing, and the thousands of visitors who pass through the gates daily proclaim that the great show is all that was claimed for it, and much more. Your correspondent, after a brief visit to the marvelous city of palaces, is already an out-and-out enthusiast. On first entering the grounds one is impressed by the pomp and splendor of the spectacle. The picture presented by the main part of the exposition is of surpassing beauty. Much has been said and written about the great fan-shaped main picture of the World's Fair, but not enough to portray adequately its beauties of architecture and outside features. Now that the picture is finished, the fine points of it are thrown into clearer relief, and the skill of the artists of architecture who conceived it cannot be questioned.

With the towering Louisiana Purchase Monument as a centerpiece, there are eight enormous exhibit palaces grouped in this section, forming the surface of the enormous fan, while the handle of the fan, as it may be called, is made up of the Cascade Gardens and Festival Hall, on the top and slope of Art Hill. No fan ever had a more richly-jeweled handle. It is inlaid with bright bits of flower plot and statuary and splashing fountains. The fan-shaped area embraces more than a hundred acres. These eight palaces, in which are gathered the choicest specimens of art and industry products from all lands, cover from eight to fifteen acres each, and the wide spaces between them are embellished by landscape and water effects never surpassed.

For more than a mile stretch the limpid lagoons, extending on each side of the Grand Basin, into which pour the waters from the cascades. Here and there the lagoons are spanned by bridges which look massive and solid enough to stand for ages, and on each side of the water is a wide paved promenade. Grass plots, plentifully besprinkled with beds of blossoms, add to the vivid beauty of the scene.

### The Beautiful Cascade

What is undoubtedly the most impressively-beautiful feature ever seen at any exposition is the unique waterfall known as Cascade Hill, at the St. Louis Fair. The cascade is an artificial Niagara so beautified by architecture, statuary and illumination that the spectator is fairly ravished by the sight of it. The cascade itself is divided into three parts—a large middle cascade with a smaller one on each side, the water flowing directly into the head

of the Grand Basin. In all, about 90,000 gallons of water per minute are supplied at a head of 159 feet, forming the greatest artificial water effect ever attempted.

The water is taken from the Grand Basin itself, and raised to the top of the cascade by a pumping station located under Festival Hall. The pumping machinery consists of three thirty-six inch single-stage turbine centrifugal pumps, each driven by a 2000-horse power Westinghouse alternating-current motor. The total horse power utilized is thus 6000, making this the largest electric pumping station in the world.

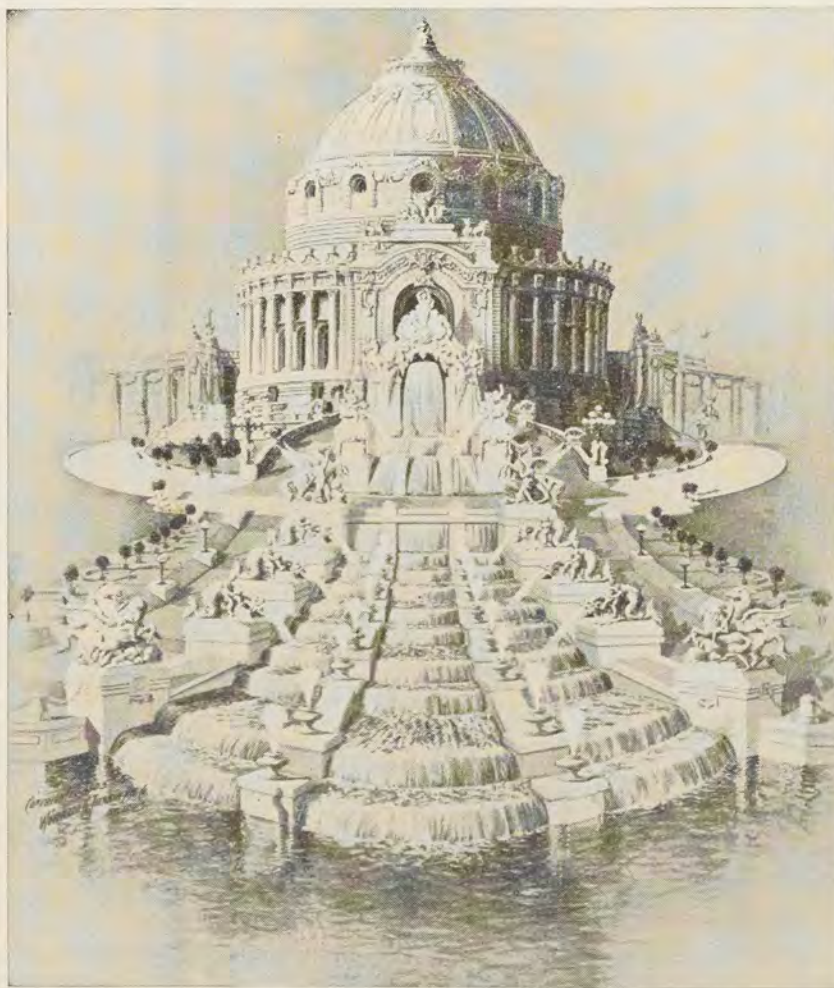
The daylight scenes are vivid and varied, but perhaps the crowning glory of the exposition is to be found in its night pictures. The Pike is a blaze of light and a babel of sound until near midnight. The main picture of the fair—that fan-shaped group which includes the cascades—is the nocturnal center of interest for those who delight in witnessing the grandeurs made possible by latter-day discoveries in the science of electric illumination.

When all the great palaces are aglow with their incandescent lamps—half a million altogether—and Festival Hall and the Terrace of States and the pavilions and the cascades are illuminated, then the noises of the day are hushed and the exposition becomes a magnified fairyland of enchantment.

There is music from bands in the pavilions, from tinkling lutes and guitars in the gondolas on the lagoons, and from the great pipe organ in Festival Hall, while the waters from the fountains and the cascades furnish a

music of their own. When the electric glow, by a wonderful contrivance invented for this spectacle, is softened and changed into various tints, touching the flowers and waters, the statuary and the palaces with new hues from moment to moment, and from the German castle on the hill ring out resonant chimes of the big bells—that is to many impressionable natures the supreme moment of this unsurpassed World's Fair.

England, France and Germany have all reproduced historic buildings as their national pavilions at the World's Fair. The Orangery, the Grand Trianon and the Castle at Charlottenburg represent three of the most famous and beautiful types of European architecture, and the gardens surrounding them are marvelously beautiful. These three great nations have very large exhibits in all of the exhibit palaces. Rivalry between them is keen, and each government has expended more than a million dollars that their resources and national achievements may be exploited. Italy has erected a charming villa on a prominent site south of the Administration Building, and has surrounded it with typical Italian gardens.



Festival Hall and Cascade Hill

## Omaha and the West

### Business Quiet in Nebraska

With all the usual indications of prosperity present, business continues dull with the wholesalers. Collections started poorly at the beginning of the season, and show little if any improvement. It is early, however, to tell the effects that the prospects of abundant crops will have upon the trade. A better spirit prevails in all sections of the State, and the wholesalers confidently predict that business will become better during June and July. Meantime, however, a number of salesmen have been granted temporary vacations. It is remarked that there have not been more than half as many dealers in the city as there were at a corresponding period last season, when business was excellent. Those who have visited the wholesalers, have been conservative in their buying. Many of them bought extensively last summer and fall and found themselves overstocked this spring. This fact and the fact that demand is unusually light, will explain why the jobbers are complaining of dull times. The out-of-town dealers stated they expected to buy much more heavily when the atmosphere cleared a little and the indications of prosperous conditions became more definite.

### Dullness in Retail Business

The Omaha retailers are also finding trade light, but recently the weddings in the society set have had a pronounced tendency to improve conditions. Some excellent sales have been made by the leading jewelers of handsome and costly gifts. Were it not for these weddings, the retailers would probably have as much reason for complaint as the jobbers. On the whole, trade is unsatisfactory; but better times are promised. Here, as elsewhere, notwithstanding the temporary dullness, there is no feeling of pessimism. Every one is optimistic and hopeful.

A safe in the store of Hare & Teal, at Murdock, Nebr., was blown with dynamite on May 18th and jewelry valued at \$400 was taken by the cracksmen. No trace of the men who did the job has been found.

Miss Cleda Strawn, daughter of Mr. and Mrs. George N. Strawn, was married recently to Nathan Roberts, of Kansas City. George N. Strawn, her father, who is the material salesman for E. A. Dayton & Co., a firm that moved to Chicago last month, attended the wedding which took place just prior to his departure for Chicago. The bride was a graduate of last year at the High School. Mr. and Mrs. Roberts will make Kansas City their home.

John A. Musch, a jeweler, of Mellette, S. Dak., has filed a petition in voluntary bankruptcy in the United States Court. Mr. Musch schedules his assets at \$1650 and his liabilities at \$1216.

J. H. Van Kerk, a prominent jeweler at Shickley, Nebr., has sold out.

The Mawhinney & Ryan Company has increased its capital stock from \$60,000 to \$75,000.

John Baumer, a veteran jeweler, of Omaha, who recently retired from business, has sold his residence to the Swedish M. E. Church.

W. A. Quinby, of Lead, S. Dak., while in this city was a guest of Sol. Bergman.

J. L. Moore, a dealer of Tekamah, Nebr., was in the city recently.

J. Bryans has gone into the jewelry business at Woodbine, Iowa. He visited the jobbers in Omaha some weeks ago.

M. S. Hall, a dealer of Mankato, Kans., called on the jobbers last month.

O. C. Zinn, of Hastings, Nebr., was a visitor in the city recently.

F. Lemon, a prominent jeweler of Ashland, Nebr., has sold out his business and will move to Provo, Utah, where he will again establish a jewelry store.

Max Egge, a prominent jeweler of Grand Island, Nebr., was a recent caller on the wholesale trade in this city.

The firm of Eisele & Feirman, which was established recently for the refining of metals, has carried out its design of collecting gold and silver waste, etc. Much of the business of the firm is now with dentists, who willingly part with gold and silver to have it refined and who buy it back after it has been prepared for them by the refiners.

## Philadelphia Letter

### Record-Breaking Coinage

There has been extraordinary activity of late in the production of gold coins at the Philadelphia and San Francisco Mints. Operations at the mint in this city during the past month have broken all previous records of that institution. The final shipment of a total of \$10,000,000 in bullion was received here from the assay office in New York on May 9th. The gold bars were packed in boxes averaging about \$60,000 to a box. Each gold bar weighed from twenty-eight to thirty pounds, and was worth about \$8000. About the time this was received at Philadelphia six tons of gold were being daily turned into double eagles at the local mint, and each ton was worth approximately half a million dollars. The total coinage for one week about that time was estimated at twenty tons, worth \$10,000,000. This total would have been much larger, it is said, had not the supply of bullion run out. As fast as the gold was coined the shining eagles were stored away in sacks in the mint vaults and treasury notes representing their value were being issued by the Bureau of Engraving and Printing at Washington. One hundred millions of dollars in silver and more than two hundred millions in gold were in the mint on May 11th. It has been reported that in accordance with an official order this rate of coinage will continue for an indefinite period, or until the existing stock of bullion is practically exhausted. The unusual coinage activity, however, has not been confined to May, as for several months past the gold coining has been larger than at any other time in the history of the country. The mints are making up for the comparatively small coinage of gold last year, when they were so busy with the special silver coinage for the Philippine Islands that there was little time for replenishing the domestic stock of coins. In January, February, March and April the total coinage of gold at the United States mints was about three times as large as it was in the entire twelve months of last year. At this writing the gold coinage is mostly in double eagles, or twenty-dollar pieces. The whole number of these pieces turned out in the four months prior to May was 6,370,477. An interesting calculation is made by the *New York Sun*, to the effect that if a part of these were scattered across the country in a straight line at intervals of three feet, a man walking from New York to San Francisco could pick up a twenty-dollar gold piece at every step, and there would still be more than a million pieces left for Uncle Sam.

### Death of Prof. Maxwell Sommerville

The recent death of Prof. Maxwell Sommerville, of Pennsylvania University, which event occurred some weeks ago in Paris, removes an interesting and widely-known figure from the domain of glyptographic art and oriental research. The late professor was an enthusiastic investigator of Buddhist relics, the Buddhist religion and the mysticism of the East generally. The department of his activities that possessed a particular interest for jewelers, however, was that of glyptography, or the art of engraving on gems. He was professor of this subject at Pennsylvania University, and throughout his studious career he gave it painstaking and persistent attention. He was a frequent visitor to Egypt, Africa and the Orient, often jeopardizing his personal safety in his zeal for more knowledge of engraved stones. A collection of these gems, resulting from his expeditions, was exhibited in the Metropolitan Museum of Art, New York City, for some years, but upon the acceptance by the deceased of the professorship at the university here, the gems were turned over to the last-named institution. These, together with several other presentations to the university, represented an outlay of over half a million dollars.

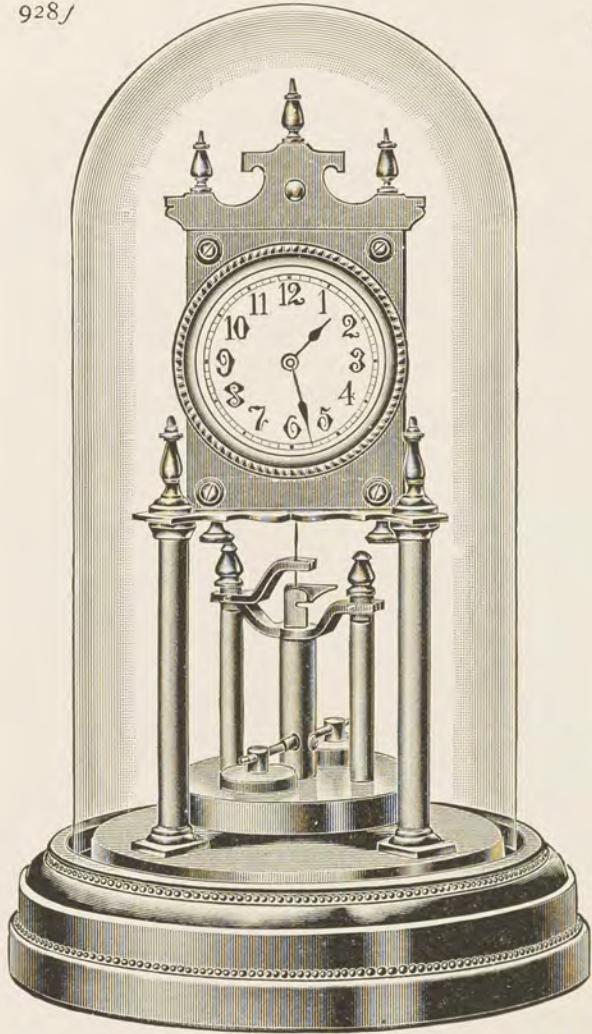
The annual shad dinner of the Philadelphia Jewelers' Club was held on Tuesday, May 24th, at Griffith's Inn, Essington, a delightful spot on the bank of the Delaware. It was a most enjoyable function in every particular; the weather was beautiful, the programme pleasing and the attendance large. The savory shad formed the feature-in-chief of the gastronomical exercises, and there were in addition viands and beverages aplenty. An array of clever entertainers, vocalists and musicians accompanied the party and contributed much to the humor of the day. The event passed off without the slightest hitch in the programme, and every participant enjoyed himself to the utmost. The club's executive are to be congratulated upon having added one more to their series of notable successes in the realm of social entertainment.

William M. Waller, jeweler and watchmaker, 1129 South Twentieth Street, died recently after a short illness from typhoid fever. The news of his unexpected demise was a shock to his numerous friends, especially those in the secret and fraternal orders with which he was affiliated. He was a member of Rising Star Lodge No. 126, F. & A. M.; Ajalon Lodge No. 282, I. O. O. F., and Southwestern Assembly No. 18, A. O. M. P.

Harry C. Barry, of M. Sickles & Sons, has been receiving the congratulations of his friends upon the arrival, recently, of a baby boy at his home. At this writing mother and child are doing well.

Wm. P. Sackett has gone to Europe in the interest of the jewelry departments of Wanamaker's New York and Philadelphia stores. His tour will occupy several months.

The following pupils recently entered the Philadelphia College of Horology: Jay A. Pifer, Catawissa, Pa.; G. L. Blackwell, Camden, S. C.; Geo. Rosenstock, Bloomsburg, Pa.; Miss Grace Willard, Jamestown, N. Y.; G. E. Dail, Windsor, N.C.; O. P. Best, Church, Pa.; C. A. Alt, Church, Pa.; Mrs. C. J. Medows, St. Elmo, Ont.; Nelson Swetzer, Knox, Pa.; H. C. Cooper, Vladivostock, Siberia; E. S. Goldy, Philadelphia; C. D. Barnes, Cherry Creek, N. Y.; L. C. Wiley, Randolph, N. Y.; G. Van Licklen, Patchogue, L. I.; R. M. Lynch, Oswego, N. Y.; J. W. Anderson, Martinsburg, W. Va.; Miss Florence S. Rink, Indiana, Pa.



**GEO. KUEHL & CO.,** 178 E. Randolph St.  
Chicago, Ill.

Manufacturers and Importers of

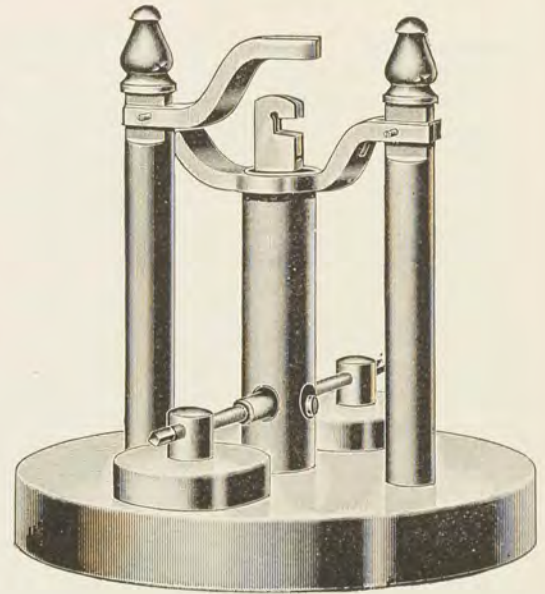
**Cuckoo Clocks**

with



Sole Agents of the

**400=Day Clock,  
"The Ideal."**



Compensating Torsion Pendulum.

Observe that this mechanism is based on scientific suggestions to regulate the clock in obedience to the rise and fall of the temperature.

YOUR JOBBER

will supply you.

German Patent,  
D. R. P. No. 144687.

German Patent,  
D. R. F. G. No. 208297.

**SOMETHING FOR YOUR CONSIDERATION.**

The number of students in attendance at the Horological Department of Bradley Institute is constantly increasing. This speaks more for this institution than anything we could say. It means that the school is doing good work, consequently, turning out good workmen, and that the trade appreciates the fact by recommending others to try this path which is strewn with so many successes. A student in possession of one of our diplomas or holding a recommendation from the institution can be relied upon as being just as represented. You can improve your condition. Why not start now by dropping a postal card to



**"Horological," Peoria, Ill.**



## Among the Trade

*The trade are invited to send us reliable items of news for this department*

### Alaska

I. J. Sharick, of Juneau, has been making some alterations and improvements in his store and installing some handsome new fixtures. This is now one of the handsomest jewelry stores in the gold-mining State. An interesting feature of Jeweler Sharick's activities is the voluntary meteorological record which he keeps and which is published periodically in the press. The observations are recorded on the regular form supplied by the Department of Agriculture. They embrace temperature, amount of rainfall, directions of wind, and general character of the weather for each day.

### Delaware

J. T. Mullin & Son, of Wilmington, had on exhibition in their show window last month the handsome cup presented by the *Morning News*, of that city, to the rifle teams that competed there on May 24th. The trophy was an excellent window attraction.

### Illinois

Jeweler Hapke, of Newman, has been receiving the congratulations of his friends upon the arrival on May 12th of a baby boy at his home.

### Indiana

The Suntheimer & Mast drug and jewelry store, at Shipshewana, was destroyed by fire on April 21st. The firm is composed of J. E. Suntheimer, and Uriah E. Mast. The building which the firm occupied was a triple-front, two-story, brick structure, which had been erected in the site of a store formerly occupied by this firm, but which was also burned. The date of the first burning was May 20, 1900, and in neither case did the amount of insurance carried cover the loss sustained. The firm states that the fixtures and stock destroyed in the recent fire were worth \$19,950, while the amount of insurance carried was \$5000. The members of the firm are as yet undecided as to whether they will rebuild, or purchase a business at some other place.

Crete H. Daugherty, jeweler, of Fremont, died recently from pneumonia at the age of sixty-seven. He was one of the oldest business men in Fremont. He had been seriously sick during the winter, but had recovered sufficiently to give attention to his business. About the middle of April, however, he contracted a cold, which rapidly developed into pneumonia and death soon ensued. Deceased fought through the Civil War, and came to Steuben county in 1875, locating at Angola, where he was in business for several years. He removed to Fremont some twenty years ago, and there conducted a jewelry business until the time of his death. For the last two years he has been a member of the board of town trustees. He was twice married and is survived by a widow and one son. By a peculiar coincidence, Miss Victoria Fitting, who lived with the Daugherty family, died rather suddenly early on the morning following the demise of the jeweler.

### Iowa

A. R. McLane, of Moulton, recently made for A. A. Org, of Burlington, a ring of somewhat extraordinary dimensions. The ring is size 13 in., 14 K. gold and weighs 32 dwts. It is made on the style of a signet ring, and has a Masonic and an Odd Fellow emblem engraved on it. The wearer, who is 6 feet 3 3/4 inches tall and weighs 260 pounds, is an engineer on the Burlington Railroad.

B. F. Cowles, who hitherto conducted a jewelry store at Talmage, Nebr., has removed his business from that place to Hamburg.

### Kansas

W. S. Evans, of Hiawatha, announces that he has sold out his jewelry business there to S. D. Wones, who has been with him for the past three

years. The new proprietor is a good watchmaker and a graduate optician and his predecessor speaks of him in the highest terms.

Henry F. Baier, who has charge of the optical department in the jewelry store of F. K. Baier, Salina, recently left for Chicago and will be accompanied home by his wife and baby, both of whom have been on a visit in the Western metropolis for several months.

### Louisiana

The Jewelers' Fraternity, of New Orleans, held a most enjoyable smoker in the Odd Fellows Hall, that city, on May 13th. This function was held for the purpose of celebrating the installation of the newly-elected officers, and it was a very happy idea on the part of the executive to mark the occasion in such an appropriate manner. The Jewelers' Fraternity is to be congratulated upon its continuous success as a promoter of good fellowship.

### Maryland

The James R. Armiger Co., one of the jewelry firms that suffered in the recent disastrous fire that visited Baltimore, recently became established in spacious and well-appointed quarters at 310 North Charles Street in that city. Prior to the burning, this firm was located at 31 East Baltimore Street. The new quarters are modern in every respect, and are three times greater in area than the old, their dimensions being 28 feet in width and 70 feet in depth. The lighting arrangement is admirable, and the walls and ceilings are finished in green and beautifully decorated with festoons of roses. The fixtures are of solid mahogany, handsomely carved. An exceptionally fine stock has been installed.

### Massachusetts

S. P. Prood & Son, of Worcester, have announced their removal from 200 Front Street to 822 Washington Street, and that hereafter the firm will be known as that of S. P. Proodian & Sons. The new name, the firm state, is the more correct form of the original.

One of the Merchants' Week window attractions, at Waltham recently, which has been favorably commented upon by watchmakers and others, is a watch escapement model made by Harrie P. Gough, of Port Henry, N. Y., a student in the Waltham Horological School. This model has been on exhibition in the show window of the Waltham Jewelry Company's store. The model is about fifty times the size of a watch escapement and was made from the rough materials, each portion being first filed into shape and afterwards polished.

### Michigan

Ernest Eimer, who was in the jewelry business at Muskegon for eighteen years, recently sold his establishment to Louis B. and Fred. P. Fuchs, of Chillicothe, Ohio, by whom it is now being continued under the name of Fuchs Bros. The retirement of Mr. Eimer from the jewelry business was owing to the large demands made upon his attention by his optical department. It became practically impossible for him to attend to both ends as he would wish to, so that hereafter he will exclusively devote himself to his growing optical branch, which for the present he will conduct at the old stand. His successors came to Muskegon well recommended. Fred. P. Fuchs is an expert workman and he will have charge of the repair department.

A. J. Ruff, watchmaker and engraver, who has been with H. C. Hulett & Son, Marshall, for about a year, recently engaged in business for himself in that town, where he occupies a portion of the premises of M. J. Gillett, the music dealer.

### Minnesota

The partnership hitherto existing in the firm of Howard & Anderson, of Chatfield, has been dissolved. Mr. Howard has retired and his interest in the firm has been purchased by Mr. Anderson, who will continue the jewelry, optical and stationery business in the new quarters of the concern.

### Mississippi

T. P. Martin, of Edwards, was married recently to Mrs. Ida Price. THE KEYSTONE joins with the friends of the newly-married pair in extending them felicitations.

### New York

T. B. Gasser, of Carthage, has been appointed local watch inspector on the New York Central Railroad.

Homer H. Thomas, of Cuba, has been engaged by Jeweler Franklin J. Ives, of Oneonta, to take charge of the watch and jewelry department of the latter's store. This addition to the store force was necessitated by a large increase in optical work, which requires all Mr. Ives' attention. A. J. Parke will continue to assist in the optical department.

### North Carolina

Louis Selig, of Elizabeth City, is established in a handsomely-appointed store at the corner of Main and Water Streets. This establishment is conveniently laid out and their is goodly provision for stock display. Jeweler Selig first located in Elizabeth City in the year 1882, and has built up a substantial business there. His new business home bespeaks a progressive spirit on the proprietor's part and doubtless continued development may be anticipated.

### Ohio

Albert Zoellner, of Portsmouth, has let the contracts for a fine three-story block at the corner of Third and Chillicothe Streets, the first floor of which will be fitted up in elegant style for his jewelry business.

C. H. Harris, of Portsmouth, recently returned from the West Virginia mountains, where he had been on a two-weeks' sojourn for the benefit of his health.

### Oregon

I. Aronson, formerly of Seattle, Wash., has purchased the stock and fixtures of O. H. Rieger, at Portland, and has been selling it at auction. He states that if he can make satisfactory arrangements in regard to leasing the store it is his intention to remain in Portland permanently.

### Pennsylvania

Robert C. Hall, of the firm of Chapman & Hall, of Franklin, has announced that he has purchased the interest in the foregoing business owned by L. T. Chapman, and that hereafter the store will be known as the Robert C. Hall jewelry store. Mr. Chapman, hitherto the senior member of the firm, has been in the jewelry business in Franklin for a long number of years, during which he made a host of friends. The new proprietor is a son of Rev. H. G. Hall, who was formerly minister of the Methodist Episcopal congregation in Franklin. Jeweler Hall first started in the drug business in Franklin and was eminently successful. Later, he bought an interest in the Chapman store. He is a good business man and will, no doubt, achieve continuous success in the jewelry business.

### Tennessee

The firm of Rosenblatt & Co., Greeneville, has changed its nomenclature to that of Lancaster & Co.

### Washington

Lawrence Ludlow Moore, of Lawrence L. Moore Co., 705 Second Avenue, Seattle, was married recently to Miss Elsa Earl Dérémeaux. THE KEYSTONE joins with their many friends in extending congratulations to the happy pair.

### West Virginia

Riley Bros., of Philippi, have succeeded to the business of C. G. Bergman & Co., Buckhannon, of which concern R. H. Riley is now in charge. No change will be made in the business of Riley Bros., as the newly-acquired concern at Buckhannon will be conducted as a branch.

## United States Movements.

Made with greatest care at every stage of the manufacturing process. Every detail carefully watched from start to finish. *Quality*, not quantity, is the supreme consideration: we have constantly in mind the purpose to produce the *most accurate* timekeepers, grade for grade, in the market. The broadest guarantee is put on every movement and the rare complaint is met in a liberal spirit.

### O size.

Our O size movements are unsurpassed in quality and beauty.

Made in lever set only and will fit any regular O size case by simply cutting bezel for setting lever. No change in stem necessary.

#### No. 172, Hunting, \$18.00.

(According to Keystone Key.)

Nickel, 15 jewels (4 pairs in settings); quick train; straight line escapement; exposed pallets; cut expansion balance; Breguet hairspring; sunk second dial; damaskeened plates; gilded center wheel.

Decorated dials, 50 cents extra.

#### No. 174, Hunting, \$14.40.

(According to Keystone Key.)

Nickel, 11 jewels (top plate jeweled in settings); quick train; straight line escapement; exposed pallets; cut expansion balance; Breguet hairspring; sunk second dial; damaskeened plates; gilded center wheel.

Decorated dials, 50 cents extra.

#### No. 176, Hunting, \$11.70.

(According to Keystone Key.)

Nickel, 7 jewels; quick train; straight line escapement; exposed pallets; cut expansion balance; Breguet hairspring; sunk second dial; damaskeened plates; gilded center wheel.

Decorated dials, 50 cents extra.

### 16 size.

Upon examination these movements will be found, grade for grade, the equal of any in the market for construction, workmanship and finish, regardless of price.

They are made in lever set only, and will fit any regular 16 size Hunting case by simply cutting bezel for setting lever. No change in stem is necessary.

#### No. 105, Hunting, \$15.30.

(According to Keystone Key.)

Nickel, 15 jewels (4 pairs in settings); quick train; straight line escapement; exposed pallets; cut expansion balance; Breguet hairspring; patent regulator; double sunk dial; damaskeened plates; gilded center wheel.

#### No. 108, Hunting, \$11.70.

(According to Keystone Key.)

Nickel, 11 jewels (top plate jeweled in settings); quick train; straight line escapement; exposed pallets; cut expansion balance; Breguet hairspring; patent regulator; sunk second dial; damaskeened plates; gilded center wheel.

#### No. 110, Hunting, \$9.00.

(According to Keystone Key.)

Nickel, 7 jewels; quick train; straight line escapement; exposed pallets; cut expansion balance; Breguet hairspring; sunk second dial; damaskeened plates; gilded center wheel.

The Retail Jeweler needs UNITED STATES Movements to "round out" his stock and have *the best at a price that pays*. Supplied by the jobbing trade.

United States Watch Co.,  
of Waltham, Mass.

## Lessons in Horology

### COURSE IN MECHANICS AS APPLIED TO CHRONOMETRY

By JULES GROSSMANN, Director of the Horological School, of Locle, Switzerland, and HERMANN GROSSMANN, Director of the Horological and Electro-Mechanical School, of Neuchatel, Switzerland.

Authorized translation by JAMES ALLAN, JR., Charleston, S. C. Former pupil of the Locle Horological School.

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(Continued. Part VI.)

From Fig. 10 the difference  $Ab - Aa$  gives the length  $ab$ ; subtracting then the two foregoing equations, one from the other, we obtain

$$ab = 994 \cos AOB' - 994 \cos AOB,$$

whence follows

$$\cos AOB' - \cos AOB = \frac{ab}{994} = \frac{0.0001154}{994};$$

since the angle  $AOB$  is equal, in this case, to half of  $2^\circ 6'$ , which is  $1^\circ 3'$ , we can write, after having completed the calculation of the second member of the equation:

$$\cos AOB' - \cos 1^\circ 3' = 0.000000116.$$

In order to determine the value of the angle  $AOB - AOB'$ , we can find in a table of natural trigonometrical lines the difference between the cosines of the angles  $1^\circ 2'$  and  $1^\circ 3'$ . This difference is 0.000053; we will then have the proportion,

$$\frac{0.000053}{0.000000116} = \frac{60''}{x}$$

$$\text{from whence } x = \frac{60 \times 116}{5300} = 1.3'';$$

$$\text{then } AOB - AOB' = 1.3''.$$

**78. Second Calculation.**—A clock from the Black Forest, such as those that were manufactured in large quantities during the years between 1840 and 1850, runs under the action of a weight of 625 grammes. This weight descends in 24 hours from a height of 1250 millimeters. What is the work produced by this force during one second?

The work produced during the descent of the weight will be

$$W = 625 \times 1250$$

in 24 hours; during one second it will be  $24 \times 60 \times 60 = 86400$  times less; therefore

$$W_m = \frac{625 \times 1250}{86400} = 9 \text{ gr. mm.}$$

We see that this clock requires a much greater mechanical work than that of the regulator of the preceding example. This difference becomes still more obvious if we compare the two pendulums. The weight of the pendulum of the last clock is only 8 grammes, while the pendulum of the regulator weighs 6500 grammes.

Although we could not, at this time, compare two clocks, whose pendulums have neither the same length, nor the same weight, nor the same amplitude of oscillation, we note, however, that the regulator requires much less motive force than a small clock of the Black Forest.

#### The Barrel Spring as a Motive Force.

**79.** These springs are thin blades of properly-tempered steel; they are of a sufficient length and coiled up in spiral form in the interior of the barrel. One of their extremities is fastened to the wall of the *drum* and the other to the *hub*, which is a cylindrical piece adjusted on the arbor of the barrel or forming part of it. When one holds firmly either the barrel arbor or the barrel, and causes the one of these two pieces left free to turn, the spring begins to wind around the hub and manifests a certain force from its extremities, which tends to bring it back to its first form. When the arbor is made fast, the force displayed by the spring has then the effect of causing the barrel to revolve.

**80.** The place occupied by the spring in the interior of the barrel should be equal to half the disposable space.

**81. Measurement of the Force of a Spring.** The force developed by the spring is susceptible of measurement. For this purpose let us adjust on the barrel arbor a graduated lever arm, along which a certain determined weight can slide. While holding the barrel in the hand, let us set up the spring to the point that we wish to study, one turn for example; let us endeavor then to produce

equilibrium by sliding the weight along the lever arm. When the two actions, that of the weight on one side and of the spring on the other, neutralize each other, equilibrium is produced, and it is then evident that the effort displayed by the spring is equal to the effect produced by the weight. This last effect will be perfectly determined when we know the size of the weight and the length of the lever arm, at the extremity of which it exerts its action. We know that in mechanics the *moment* of a force (42) is the product of the intensity of this force by its lever arm.

The moment of the force of the weight will give us then the moment of the force of the spring.

**82.** If the lever of the preceding experiment has not its center of gravity on the axis, it will still be necessary to take account of the effect produced by the weight of this lever, which cannot, practically, be reduced to a simple geometric line. In order to determine this we must find the distance of the center of gravity of the lever from the axis, and multiply this value by the weight of the lever. We then add this product to the moment of the force previously obtained.

Let us suppose, for example, that a weight of 20 grammes, suspended at the extremity of a lever arm 200 millimeters long, makes equilibrium with the elastic force of a barrel spring. The product

$$20 \times 200 = 4000$$

represents the moment of the force exerted by the weight.

If, moreover, the weight of the lever is 7 grammes, and the distance from its center of gravity to the center of the arbor 143 millimeters, the moment of the force exerted by the lever will be

$$7 \times 143 = 1001.$$

Adding this value to the moment of the force of the weight, we obtain the moment of the force of the spring that we will designate by  $F$ , then

$$F = 4000 + 1000 = 5000 \text{ grammes}$$

in round numbers. This is the approximate value of the moment of the force of the spring in a watch of 43 millimeters (19 lines).

Let us remark that generally these levers are furnished with counter weights combined in such a manner that the center of gravity is found on the axis.

**83.** The number 5000 that we have just obtained, signifies that the spring considered is capable of making equilibrium with a weight of 5000 grammes suspended at the extremity of a lever arm equal to the unit of length, therefore 1 millimeter (Fig. 14).

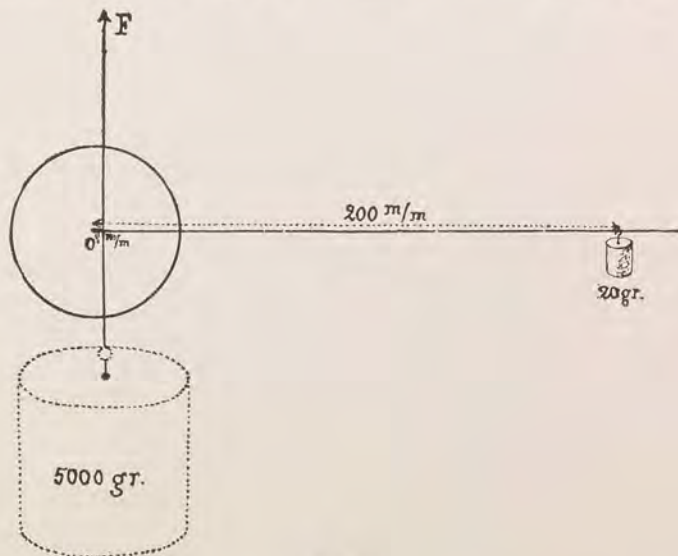


Fig. 14

**84.** Examining in this manner the force of a spring, we will prove that it varies very much according to the number of turns that it is set up. Experience proves in fact that the moment of the force of a spring being, for example, at its maximum point of tension, 5000 grammes, this moment constantly diminishes, and will not be more than about 3400 grammes when the barrel will have executed four rotations around its axis.

ESTABLISHED 1867

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PATENT

Enamelled Metal Signs.

PITTSBURG, PA.

EM

The advertisement is framed by an ornate border with classical motifs. At the top left, a small oval contains the text 'ESTABLISHED 1867'. The main title 'HEEREN BROS. & CO' is in a decorative banner. Below it, 'PATENT' is written in a simple font, followed by 'Enamelled Metal Signs.' in a large, stylized font. The central illustration shows two cherubs in a workshop. One cherub stands on a wooden platform, painting the word 'Signs.' with a brush. The other cherub sits on the platform, holding a palette and a brush, looking at a book. A ladder leans against the platform, and various painting supplies are scattered around. At the bottom, 'PITTSBURG, PA.' is written in a large, blocky font, and a circular logo with the letters 'EM' is centered below it.

Lessons in Horology

(Continued from page 929)

85. We understand then that the imperfections of the primitive watches being known, the ancient horologists should have sought means for correcting the inequality of the action of the motive spring, and that for this purpose they should have invented the ingenious arrangement of the *fusee*, which will be explained later on.

This corrective is really almost entirely abandoned, and is seldom used except in marine chronometers; in pocket watches it has become useless in proportion as the improvements in the construction of escapements have come into use, and as the isochronism of the oscillations of the balance wheel has been obtained.

Theoretical Study of the Moment of a Spring's Force.

86. Coefficient of Elasticity. When a body receives an exterior effort, the molecules which compose it tend to follow the direction of this force; they approach each other or separate themselves, the one from the other. The result is a force equal and opposite, which tends to make the displaced molecules recover their former positions.

This property, common to all bodies in different degrees, is called their *elasticity*.

According to the effort exerted, the molecules approach or leave each other; the first case is an effect of compression or contraction, the second is an effect of tension.

87. The reaction is always equal to the action; we can then measure the elastic force of bodies by the exterior effort which is applied to them. The following experiment will explain this assertion:

88. Let us secure one of the extremities of any vertical rod, to the other extremity we suspend a weight (Fig. 15). This rod from that moment undergoes a certain elongation, and we can prove that the molecular effort developed is equal to the weight producing the elongation. The elongation of this rod will depend on the size of the force *P*, on the length of the piece in its natural state, on the cross section of this piece being assumed the same throughout, and finally on the material of which it is composed.

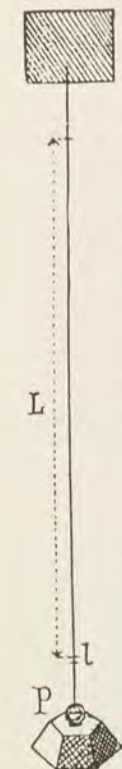


Fig. 15

By experimenting on a rubber band we can see that under the action of a force *P*, the transverse section of the body diminishes at the same time that the elongation is produced. This regular diminution on almost the entire length of the band does not take place uniformly near the two points of fastening. Therefore, it is necessary to take the elements for the experiment sufficiently removed from these points in order to eliminate a source of error which would influence the final result.

Let us take again, for example, a rod of iron, whose transverse section is 1 square mm.; we have measured the distance between two marked points sufficiently removed from the points of fastening; let *L* be this length. We suspend from the lower end of the rod a weight *P*, and we measure anew the length between the two marks; we obtain then an elongation *l*. Experiments made in this manner have demonstrated that, provided the load *P* does not surpass a certain limit, *l* remains proportional to the load.

Supposing now that the experiment were physically possible, let us determine what should be the load *P* that could produce an elongation equal to the original length *L*. We call this particular value of *P* the *coefficient of elasticity* of the body; we will designate it by the letter *E*.

The elongation being proportional to the load, we have

$$\frac{P}{l} = \frac{E}{L}$$

whence

$$E = \frac{PL}{l}$$

Thus, in the case of an iron rod, whose original length *L* was 1000 millimeters, if we suspended from it a load *P* of 1000

grammes, we will find an elongation of 0.05 mm., which gives

$$E = \frac{1000 \times 1000}{0.05} = 20000000 \text{ gr}$$

as the coefficient of the elasticity of iron.

89. The elongation *l* is inversely proportional to the transverse section of the body; thus for a section of surface *s* the formula above will become

$$E = \frac{PL}{sl}$$

90. When the coefficient of elasticity is known, it is easy to determine the value of the force exerted by the molecules of a body subjected to the action of an exterior force by the relation

$$P = \frac{Els}{L}$$

The fraction  $\frac{l}{L}$  represents the elongation per unit of length; this fraction should remain very small for this formula to be exact. The quantities *E*, *s*, *L* are constant; *P* and *l* vary together.

The same formula expresses the relation which connects a force *P* of compression to the contraction *l*, which results from the action of this force, when the piece compressed does not bend. We will give then to *P* and to *l* the signs + and -, + for the forces of tension and the elongations, - for the forces of compression and the contractions; the formula then becomes general.

91. Variation of the Coefficient of Elasticity. All watchmakers know that after having forged a piece of brass, the elastic force of the metal is increased. In hammering this body one diminishes its volume, but one cannot change its weight; the molecules which compose the piece are forced together, and the specific weight of the metal will be increased. This simple fact shows us that the coefficient of elasticity of solid bodies should vary with their specific weight.

When a watch (not compensated), regulated to a certain temperature, is exposed to a higher temperature, it loses about 10 seconds in 24 hours for each degree centigrade. The spring is expanded by the effect of the increase of temperature, its molecules are separated from each other; the specific weight of the metal has diminished at the same time as its coefficient of elasticity. The reverse takes place when the watch is observed at a lower temperature than that to which it had been regulated.

It does not appear that the coefficient of elasticity of steel undergoes a great variation by the effect of tempering and that of reheating. A piece of steel in fact changes its dimensions very little by tempering. It has been proven that by tempering in water a piece of steel stretches about  $\frac{3}{10000}$  of its original length, but that this elongation is lost when the piece is reheated to the blue color, the specific weight of the steel not being modified, the coefficient of elasticity retains the same value as that which it possessed before tempering.

92. We give here a table of the coefficients of elasticity of some bodies employed in horology. The figures below are taken from the "Almanac of the Bureau of Longitudes."\*

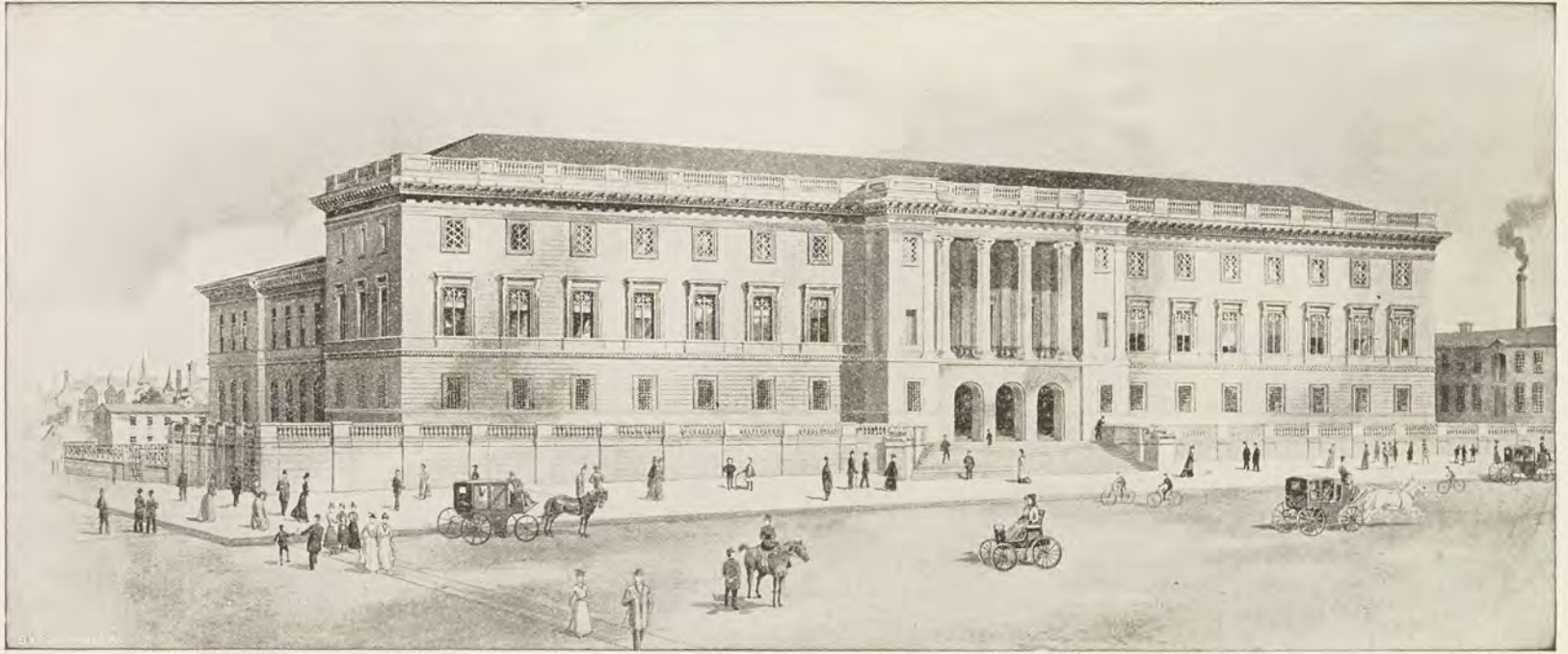
Values of the Coefficients of Elasticity, *E*.

Substance.	Hammer Hardened.	Annealed.	
Steel . . . . .	19549	19564	
English Steel . . . . .	18809	17278	
Creusot Steel {	Very soft . . . . .	20705	-
	Demi-soft . . . . .	20911	
	Hard . . . . .	20599	
Silver . . . . .	7358	7146	
Bronze : 90 Copper, 10 Tin {	Ordinary . . . . .	7589	-
	Phosphorous . . . . .	8250	
	Laveissiere . . . . .	9061	
Copper . . . . .	12449	10519	
Berry Iron . . . . .	20972	20794	
Brass : {	32 Zinc . . . . .	9277	-
	68 Copper . . . . .	9395	
German Silver : {	18 Zinc . . . . .	10788	-
	61 Copper . . . . .		
	22 Nickel . . . . .		
Gold . . . . .	8132	5585	
Palladium . . . . .	11759	9789	
Platinum . . . . .	17044	15518	
Iridized Platinum : {	10 Iridium . . . . .	21426	-
	90 Platinum . . . . .		
Flat Glass . . . . .	-	6722	
Zinc . . . . .	8735	9292	

REMARK—The above values are expressed in kilogrammes; we will always reduce them to grammes whenever we introduce the coefficient of elasticity in our calculations. The coefficient of the extra fine steels employed in horology is generally superior to the value given in the above table. Experience has led us to employ 23000 for its mean value (therefore 23000000 grammes).

\* An almanac published by the astronomers of the Paris Observatory.

(TO BE CONTINUED)



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(Continued. Part XVI. Begun in March, 1903)

In the formation of the capital B the loop at the upper left corner should come down nearly to the top lower-case guide line. The loop at the right of the center of the line of beauty should be on the line half way between the top and the bottom of the letter, and the upper curve at the right of the line of beauty should be closer to the line of beauty than the lower one, and should be as shown, and as the dimensions would indicate, shorter than the lower one.

In the capital C the loop comes up nearly to the center line, the same as the loop of the A. The loop, as shown in our illustration, is shaded both at the right and the left. This is done to show the student that it can be shaded in either place or in some cases in both. The writer prefers shading the loop at the right in cutting the stroke up. The main stroke of this letter is cut down, and the stroke at the right of the main stroke is cut down on less angle than the main stroke. Said stroke should cross the main stroke half way between the base and the top guide line.

The line crossing the line of beauty in the D should first be cut from the line of beauty to the end of the loop. Then from the beginning of said line around up to the top of the loop. The main loop of the capital D should be cut down to the top of the lower-case guide line the same as the similar loop in the capital B.

### Detail in the Capitals

In the capital E the loop in the center should be on the center line, drawn half way between the top of the letter and the base, which would make the top loop of the letter smaller than the bottom one, this being the correct form of the loop. This loop, as here shown, is shaded both at the left and the right to show the student that it can be shaded in both places a little or shaded more on either side as the artist prefers. The author's opinion of this loop is the same as that of the C, viz., that the lower loop presents a better appearance if shaded on the right side in cutting up instead of being shaded in cutting down. Of course, the main stroke of the letter is always cut down.

The capital F is simply a line of beauty crossed in the center, as illustrated. In cutting the top stroke the loop should come down nearly to the center guide line. In practice it will be found very convenient to cut this top of the F by beginning in the center of the top and cutting around to the bottom of the loop and then cutting the remaining portion of the top from that beginning to the end in the opposite direction.

The capital G is considered by many beginners a difficult letter to cut, due largely, we believe, to the fact that strictly mechanical lines in its formation are hardly practicable. It will be seen, however, that the upper right loop protrudes slightly over the end of the line of beauty, and that the main stroke of the top is cut down to the lower-case guide line, and the stroke at the left of the upper main stroke down to the center guide line. The line of beauty is cut and formed exactly the same as any line of beauty, excepting that it is shorter, coming slightly above the center guide line.

### Wherein Engravers Differ

The capital H is engraved in many different styles. The style here shown is, in the author's opinion, the easiest cut, and it is preferred because of such ease in cutting and the fact that it is as artistic as the other styles. The portion changing the style, to which we refer particularly, is the top of the line of beauty, the one here shown, and in our opinion the most simple, being cut in two strokes. This loop will come down nearly to the center guide line. It will be seen that the shade stroke at the right of the line of beauty is nearly parallel with the latter, and if a letter is made in this way it is quite sure to be correct, the great trouble with most

beginners being that they form the line of beauty in too much of a scroll shape, thereby making it impossible to cut the stroke at the right parallel with it. And a point may be given here to the beginner, if he does not exaggerate the suggestion, that will be of benefit to him in cutting this letter. That is, to make the line of beauty of an H straighter than any other line of beauty in the script capitals. Great care should be exercised not to make the line too straight. The loop at the right at the top is formed by the hair line crossing the two main strokes of the H midway between the top and bottom of the letter. The loop at the right, the same as all other small loops in the script capitals, is cut up nearly to the lower-case guide line.

The capital I is formed simply by a line of beauty on the correct angle of 50° to 52° with the stroke at the left, which is cut down and crosses the line of beauty on the center guide line.

The capital J is, in general formation, the same as the I, excepting that a loop is formed at the base of the letter and that this loop protrudes below the line one and a half times the height of the lower-case letters. The loop at the left of the line of beauty forming the top stroke should come down to the top of the lower-case guide line.

### Engraving the Capital K

The first half of the capital K is formed the same as the capital H. The upper half of the right portion of the letter is a hair line only. In some cases it is shaded slightly and a loop is formed at the end, but the style here given is used mostly. The lower half of the right portion of the letter is a double cut which was thoroughly described in a previous chapter as applied to the lower-case N and M. The little loop at the right center of the capital stem is formed midway between the top and bottom of the letter. The loop at the lower right of the letter is not made quite as high as like loops in other letters. The reason for this will be plainly seen if the student will try cutting it in both ways. Some engravers cut this loop nearly to the center guide line the same as a like loop in the capital H, but it is generally made smaller than such loops in other letters.

The capital L is formed by a line of beauty, the stroke at the left being cut down and crossing the capital stem in the center, and the base line is cut by cutting from the line of beauty to the left and the end of the loop beginning again on the line of beauty and cutting to the right. If this beginning of cutting both ways is made midway between where the line crosses the line of beauty and the end of the loop, it will not matter. In fact, it is safe to say that such a position is adopted more universally than beginning directly on the line of beauty. This base line of the capital L is rather difficult to cut without making the line appear to curve downward too much. This is avoided by carrying the point of the graver upward to counterbalance the curving downward of the stroke by the graver being turned over to the right to make the shade.

### Engraving the Capital M

Engravers do not agree as to the method of cutting the capital M, but the author believes that the best way to cut the letter is to cut all the strokes excepting the right stroke of the loop down. The object of cutting them down is that the top of the letter should be pointed, and, as previously stated, it is easier to make an artistic point of such a letter by cutting down than by cutting up, as the tendency to shading the top of such letters at the curve just before reaching the point is such that it is deemed advisable to cut this stroke down. The tendency to making this line heavier at the top was described in a previous chapter. The perfect mechanical capital M would be so outlined as to make the first hair line and the first shade stroke, and the second hair line and the second shade stroke nearly an equal distance apart on the graduating scale. Of course, there will be a variance in cutting these lines, but if the student will bear in mind that he should get them equal distances apart he will have a gage to go by which will greatly assist him.

In cutting the capital N it will be seen that the two hair lines, which are nearly the form of lines of beauty, are made almost parallel with each other, and the main shade stroke is nearly perpendicular. In the case of the one shown in our cut at Fig. 67 we have purposely made this stroke exactly perpendicular, showing the student that if he aims to get it perpendicular he will avoid the tendency to running the hair line at the right of the main stroke into the main stroke at the bottom of the line or just before reaching the bottom guide line. While we illustrate this stroke perpendicular, the student should bear in mind that if it should be or can be on an angle of five or ten degrees to the right it will be more artistic.

(TO BE CONTINUED)

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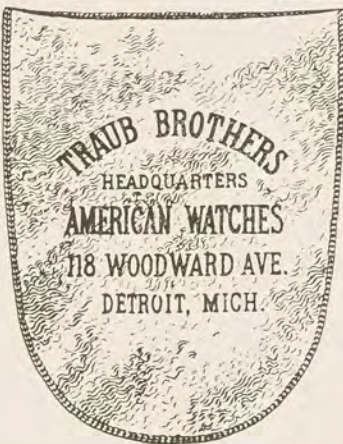
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## A NEW BOOK ON WATCH AND CLOCK ESCAPEMENTS.





**About Fitting Watch Glasses**

Article No. 39 of the serial entitled "Cleaning and Restoring," begun in the April, 1901, issue of THE KEYSTONE.

**W**E cannot too earnestly recommend the careful attention of the trade to the process of grinding and finishing the edges of watch glasses. We are well aware that many of the trade will scout the idea, and insist that a good stock of glasses will avoid all such bother; still, times will occur when we would give considerable for such facilities. While on the subject, it may be well to say that the trick many workmen have of cutting out the channel or groove in which the glass rests, with the graver, should never be resorted to for the mere purpose of "making a glass fit," except the bezel can actually be improved by such cutting out.

**Proper Movement Fitting to Cases**

A trouble frequently exists in bezels, as regards the fitting of the glasses after the bezel is in place. We mean by this, that a glass may rest very loosely in the bezel when the bezel is removed from the watch, and yet be quite tight when the bezel is on the watch. Such a condition generally comes from the center of a case being out of round. It is a good policy to examine all cases, to see if putting the movement into them does not in some way distort them. Not infrequently we will find a hunting case that the front lid will fly up all right with the movement out, but when the movement is in place, the front back sticks; now the rational conclusion in such cases, is, putting the movement in the case distorts it.

Of course, some workmen will say the movement must be true in the round, and cannot distort the case; yes, the movement is undoubtedly round, but the recess in which the movement goes is not round. It really makes no matter what the cause is, we know the result; that is, when the movement is in the case, the front back catches and hangs, and when the movement is out, the case works free, and how to remedy it is the problem. Of course, we should first examine and see if there is no bend or "out-of-shape" look to the back. It should fit down tight to the center, and look all right when the movement is out. Admitting such to be the conditions, we must then accept the fact to be that if we "do something" to the case, it will change it so that putting the movement into it will not alter its form, so the fly-up spring will open the front back the same as with the movement out.

Usually a little inspection in connection with hard thinking "as to what makes it do so" reveals the mystery. Sometimes the case

screws spring the center outward a little and produce a bad result. Again the recess or sink in which the movement rests is out of round, and the perfectly round movement does it. At any rate, if we locate the trouble, it is very quickly remedied. Another trick which we would call attention to, is filing down the cannon pinion when it touches the glass. As a rule, in fitting glasses it is by far the safest policy to always put in as high a glass as the case will carry. This insures freedom to the hands, and the cannon pinion will not rub on the glass.

A little "dodge" in connection with case springs will just fit in here, and close out this communication. All workmen of any experience will often have instances in which the lip of the fly-up spring will have cut into the joint, and go under the seat, or place where the spring should act. The owner does not feel disposed to pay for a new spring, and any explanation you can make, as to the necessity of a new spring and a piece soldered into the case, will strike him as a dodge to get his money. This may not always be the feeling, but in a majority of instances it will be. Now, the situation is this: if we can contrive to hold the case spring lip away, so it acts on the joint properly, we will accomplish the desired result. We can generally do this by hard soldering a piece to the lip, shown at *b*, Fig. 1. Usually this can be accomplished very readily by brightening the inside of the lip at *a*, and fusing a small bit of 14 K. gold solder, so it forms a little protuberance to throw the lip back on the joint. Such addition is shown at the dotted outline *a*.

**A New Dodge in Soldering**

The writer has a device which he got up for soldering steel specs, which does the job with great satisfaction. It consists of a collar *C*, which slips on the tube *D* of an alcohol lamp, as shown at Fig. 3. The blowpipe is shown at *B*, and

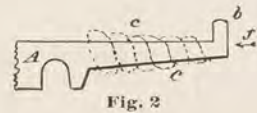


Fig. 2

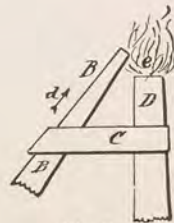


Fig. 3

is home-made, and adjustable as to distance, from the flame *e*. A small flexible rubber tube is attached to *B*, through which we blow. The blowpipe is set to give a steady pointed flame, of sufficient power to quickly heat any part of a steel spec frame, and in a large majority of instances the parts to be joined are held by the hands, and the job moved away when the solder flows. In the present instance, after scraping the lip *b* to

make it perfectly clean, a little borax is applied, and a lump of gold solder the size of a small pin-head, laid on and quickly fused, so as not to reduce the temper of the spring. To prevent the heat from running up the spring, a rope of wet tissue paper can be applied to *A* at the dotted lines *c*, Fig. 2.

We shall now take up a new theme, which will be of great interest to our readers, and which is, how to make a watch throughout of a new model containing many decided novel improvements. In these papers we shall discuss not only how to make the several parts, but to have such parts constructed of the material best adapted to the end of correct timekeeping and practical service. The full theory of expansion balances will be considered, and also other methods than the composite bi-metallic segments to the balance. Anti-magnetic matters will also be treated.

[TO BE CONTINUED]

**Saint Dunstan, the Goldsmiths' Patron**

Saint Dunstan, divine and statesman of the tenth century, celebrated alike in legendary and authentic history, was born at Glastonbury in 925. He became Archbishop of Canterbury, and presided over that see twenty-seven years. He was not only a patron of the useful and fine arts, but was also greatly proficient himself. Contemporary biographers speak of him as a musician, painter and architect, as well as a skillful worker of metals, who made with his own hands many of the sacred vessels used at Glastonbury. This reputation as a worker of metals which Dunstan left behind him, caused the Worshipful Company of Goldsmiths' to choose him for their patron, as the amusing lines from "A Lay of Saint Dunstan" so humorously tell us:

Of course you have read,  
That Saint Dunstan was bred  
A goldsmith, and never quite gave up the trade!  
The company—richest in London, 'tis said—  
Acknowledge him still as their patron and head.

By the goldsmiths he is styled "Seynt Dunstan, our blessed patron, protector and founder," the annual election of the wardens and change of punches for marking wares taking place on the anniversary of his death, May 19th, on the eve of which the yearly visit of the craft was paid to the saint's chapel in St. Paul's Cathedral. Since 1660, however, the date of the annual election and use of the new punches has been May 30th.

Few characters in English history have been more variously represented than that of Dunstan, and there are many legends as to his power over demons. Everyone is acquainted with the tale of the devil in the guise of a pilgrim visiting the saint while at work at his forge, and being seized by the nose with red-hot tongs; but few are aware that the adoption of the horseshoe as an infallible charm against the visits of "Old Iniquity" can be traced to another legend of the saint, where, instead of seizing the demon by the nose, he shod him with red-hot iron, releasing him only on his bond not to intrude.

Where the horseshoe meets his sight,  
On land or sea, by day or night,  
On lowly sill, or lofty pinnacle,  
On bowsprit, helm, mast, boom or binnacle.

Saint Dunstan died in 988. His emblem is a pair of tongs; he is also represented with a harp, upon which he is said to have been greatly proficient.

## STAND BY THOSE WHO STAND BY YOU

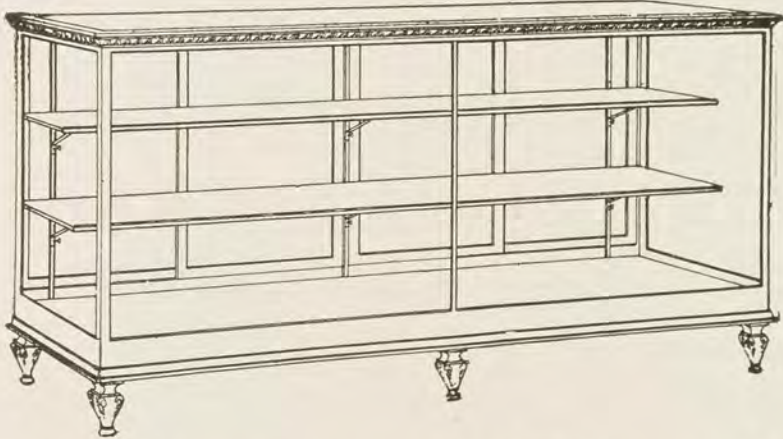
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It is made of solid oak, or other wood desired, highly polished, beveled plate-glass top, double strength glass front, ends and doors, has two highly polished shelves of same wood as case, supported by Tom's adjustable brackets, metal legs six inches high, and doors run on steel tracks.

DIMENSIONS:—Length as ordered, 28 inches wide, 43 inches high, upper shelf 12 inches wide, lower shelf 16 inches.

The construction of this case is first-class. It has a nicely molded top, ornamented with egg and dart.

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**Assaying by Cupellation**

Article No. 44 of the serial entitled "Gold Working," begun in the November, 1900, issue of THE KEYSTONE.

**W**E will now take up the process of assaying or refining by cupellation. This process can be employed for other metals, especially ores, but we will confine ourselves to the assay of gold and silver. About the only mechanical essentials in the process of cupellation are cupels and a muffle and furnace. Cupels are usually made of bone ashes, and for ordinary operations the best policy is to buy them. Such cupels can be had of any dealer in druggists' supplies at a merely nominal price, in any quantity desired by the assayer. But, inasmuch, as we always intend to aid the readers of THE KEYSTONE to the fullest extent of our ability, we will describe the process of making such cupels. Bones of any kind, calcined or burned to remove all organic matter, ground into a powder can be employed; but the kind of bones most readily available for the artisan are those forming the core of the horns of cattle. Such bony matter is very friable and readily reduced to powder from the spongy form in which it exists naturally. Around any tanner's yard an abundance of cattle skulls can be procured from which the horns have been knocked off leaving the cores and a portion of the bony matter of the skull.

Such bones are exposed to a red heat for some time, which dissipates all the animal tissues containing carbon or nitrogen and leaves the phosphate of lime ready to be reduced to a powder by grinding in some sort of a mill, or they can, on a pinch, be pulverized in a mortar. Where selected horn cores are used they can readily be broken into small pieces, after which an ordinary coffee mill will reduce them to a fine powder. Ordinary wood ashes can be employed for making cupels if all soluble matter is removed. After the bone dust is provided, to make cupels we require molds made of brass shaped to form the cupel, which is fashioned as shown at Fig. 1 and Fig. 1a. The latter figure being a vertical section of Fig. 1 seen in the direction of the arrow *z*. About the best form of mold for making cupels is shown at Fig. 2, the dotted lines *c* indicating the form of recess inside of the mold. This

mold, as shown, is supposed to separate on the line *f* coming into two halves for the sake of readily removing the cupel. It is not usual to make such molds in halves, but to have the formed cupels ejected from the bottom: a false bottom of brass being fitted in the lower end of the recess. We think, however, the novice in such matters will find time saved to make the mold separable as shown. For holding the halves *DD'* together a brass ring as indicated at the dotted outline *E*, Fig. 3, is driven on to *DD'*. To make certain of the halves *DD'* coming perfectly together, the steady pins *g g'*, Fig. 3, are employed. Fig. 3 is a view of Fig. 2 seen from above.



Fig. 3



Fig. 4

The plunger *FF'*, Fig. 4, is made of brass and shaped as shown. As illustrated at Fig. 4, the plunger *r* is on a smaller scale than the mold shown in Figs. 2 and 3 in order to show it at full length. The part *F* is only a handle for holding it while forming cupels. The proper quantity of bone dust is placed in the mold and the plunger *F'* set on top then *F* is forcibly struck with a heavy wooden mallet to compress the bone dust. Just how hard to strike and how many blows to give can only be determined by experience.

A knife edge inserted between *D* and *E* throws the ring *E* off, when the halves of the mold readily separate and the formed cupel drops out. No more water should be added to the bone dust than just sufficient to make it pack. The boss, or projection *d'*, on the end of the plunger *F* forms the recess *d''*, which recess is for holding the metal to be treated. The circle *d''*, Fig. 1a, indicating the recess formed in the cupel by the boss *d'*, Fig. 4.

**Muffles for Assaying**

It is formed of well-baked fire clay and shaped as shown, that is, it is a half cylinder; *B* with a flat bottom, *B'* on which the cupels rest when the process of cupellation is being performed. At *z* are shown a series of slots opening into the interior of *B* to allow a free circulation of air to oxidize the lead used in the process. We do not show any furnace for heating the muffle *B*, but will do so in our next article. Before we do so, however, we would say a few words on furnaces.

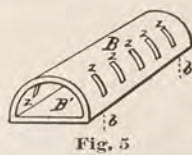


Fig. 5

In olden times the material chosen for heating such muffles was invariably charcoal, but in recent times such fuel has become scarce and expensive and charcoal has given place to other fuels. Coal gas has been used extensively in late years for such purposes, also crude petroleum. As far as economy is concerned, no fuel is as desirable as such crude oil for two reasons: (a) actual cost of fuel; (b) safety from accident. Where coke or other solid fuel is used accidents will occasionally occur, and the contents of a cupel will be thrown into the fire, and to remove a few grains of gold from a peck of half-burned coke requires about as much labor as the gold is worth. While with a liquid fuel the fire chamber is always clean and particles of gold can be swept together with perfect ease.

(TO BE CONTINUED)

**Ring Superstition.**

The young man had just selected a handsome diamond solitaire ring in a jewelry store, and the hoop was larger than he wanted it to be.

"Will you have that stone put in another ring?" he asked the clerk.

"We can have that made any size you wish," was the reply.

"No, that won't do. I want it put in a ring made just the right size, and it must not be cut at all."

The clerk promised that it should be done. "Strange how superstitious every one is getting," said he, after the customer had left the store.

"That is an engagement ring, of course, and it is considered bad luck to have an engagement ring cut to make it the proper size—supposed to cut the engagement, you know. That used to be the whim with wedding rings, and is still, but recently it has been applied to engagement rings, and now we have to keep mounts of all sizes and put the stone selected into one for the purchaser."

**The Biggest Carving Knife**

"The biggest carving-knife ever manufactured may be seen at the World's Fair," says *The American Inventor*. "This monster blade is thirty feet in length and has an edge as sharp as a razor. It is made out of the finest steel, and the handle is a masterpiece of the cutler's art, elaborately carved and beautifully polished. It would take a veritable giant to wield a knife like this. The blade is altogether of American manufacture, and it is expected to show for the first time that American cutlery has now reached a point of perfection where it fears no rivalry. The giant carving-knife cost several thousand dollars, and special machinery had to be made before its construction could begin. No such knife was ever before manufactured."

**Ink Spots on Marble**

Ink spots on marble may be removed with a paste made by dissolving an ounce of oxalic acid and half an ounce of butter of antimony in a pint of rain water, and adding sufficient flour to form a thin paste. Apply this to the stains with a brush; allow it to remain on three or four days and then wash it off. Make a second application, if necessary.

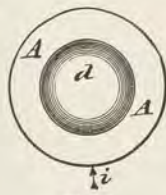


Fig. 1



Fig. 1a

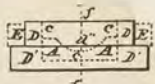


Fig. 2

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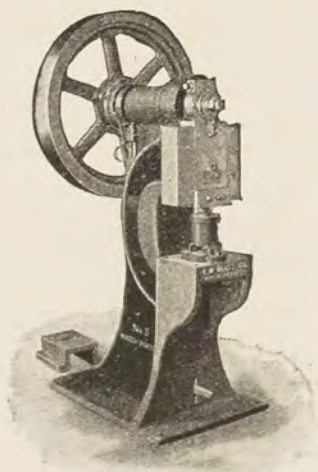
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As occupations bearing great reward for proficient workers, Watchmaking and Engraving are, we believe, without an equal. Our school is putting young men on the road to success every day; you will be wise if you avail yourself of the opportunity, and enroll without delay. The instruction is **practical**, and is applied individually; students may enter at any time.

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The school whose  
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best recommendation.

### New Motion for the Minute Hand in Chronographs

**W**E are indebted to the *Journal Suisse d'Horlogerie* for the following description of an entirely new mechanical arrangement by which in chronographs the instantaneous movement of the minute hand is effected. The inventor is August Baud, of Geneva, Switzerland.

The mechanism which he has invented is independent and works upon the instant; is of easy application and inexpensive. At all events, several highly competent watchmakers have declared that its working leaves nothing to be desired. For a more lucid understanding of the arrangement of the working parts we reproduce below a detailed drawing.

Upon a pivoted detent, *AA*, is carried a star wheel, *B*, held in position by the click spring *C* fixed upon the detent *A*. The free end of the detent *A* having the form of a nose, well rounded, rests against and also meshes in the chronograph ratchet *E*, which is furnished with five semi-circular hollows equally distributed around its periphery. The plate spring *D* serves to retain the detent *A* in its position against the ratchet *E*. At the center of the watch is placed the chronograph wheel *F* which, when in motion,

again makes a one-fifteenth [ $\frac{1}{15}$ ] turn; the nose of the detent *A* rests upon the circumference of the ratchet and the position of the detent is not altered. To turn the hands back to their starting point, the ratchet *E* must again be given one-fifteenth [ $\frac{1}{15}$ ] of a turn, the nose of the detent *A* under the pressure of the plate spring *D* will engage the next hollow, and in this position permit the hands to be turned back, which is done in the way usual with chronographs.

From others already known this arrangement differs in that the star *B* being fixed upon the detent *A*, approaches or recedes from the wheel *H* according to the position of the detent at any given time. As a consequence the system may be said to be in a measure independent from the fact that neither one of the two principal functions takes place at the same time; it is moreover instantaneous, because these two functions are simultaneous and instantaneous.

### Seconds Counter for the Rapid Adjustment of Clocks

Translated for THE KEYSTONE from the Deutsche Uhrmacher Zeitung.

**I**N response to an article which appeared some time ago, stating that there was no apparatus of the kind indicated by our title, M. Kruger, of Berlin, has shown us a small seconds counter of his own make, which he has had in service for several years.

Figs. 1 and 2 represent it slightly reduced. We will give a short description. A simple watch dial, of which the minute hand serves for counting the seconds, is fitted in a plate of metal. The gearing, visible only in part (Fig. 2), comprises a wheel *D*, fixed on an arbor perforated through and through, and engaging with a pinion on the

with the clock which is to be adjusted, and to transmit the movement of the minute hand to that of the seconds.

This organ of brass is composed of the piece *B*, terminated by a lengthened cone, which is adjusted in the perforated arbor of

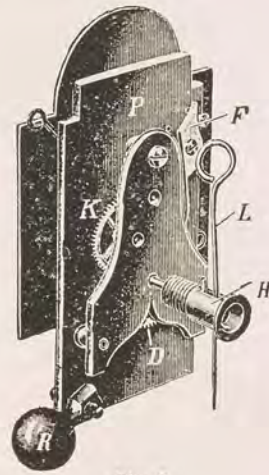
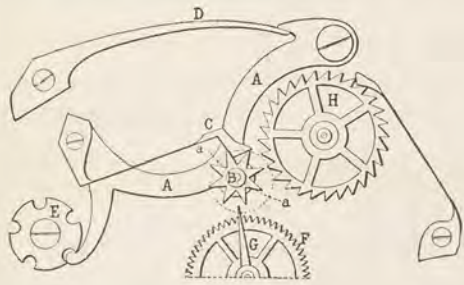


Fig. 2

the wheel *D* (Fig. 2). The other extremity is perforated with a hole large enough to allow the easy penetration of the pivot *G* of the arbor of the minutes. On the piece *B* a



makes one turn in exactly one minute. Fixed upon it is a finger *G* which in its motion around the center and at the proper instant operates the star wheel *B*. Finally, *H* represents the wheel of the minute plate.

Our drawing shows the watch at rest. When the work is set in motion the ratchet *E* makes one-fifteenth [ $\frac{1}{15}$ ] a turn; the nose of the detent being forced out of the hollow in which it rested, is now carried for a short space of time upon the boss in such a way that the star wheel *B* is depressed along the arc *aa*, and assuming the position indicated by the dotted circle, comes at the proper moment in contact with both the finger *G* and the minute plate *H*.

The finger *G*, pushing against the star *B*, causes the latter to lift the click spring *C*. The construction is such that the falling of the click spring *C* into position on the star wheel *B* causes it to make a quick jump, or rapid movement, which it imparts to the wheel *H*, thus giving it an instantaneous motion and advancing it one tooth.

In the absence of the usual arrows indicating the direction of motion of the work, we take the liberty to inform the reader that as they see the drawing now, the motion above described has just taken place and the finger *G* is off on its journey for another minute. If the chronograph be stopped, the ratchet *E*

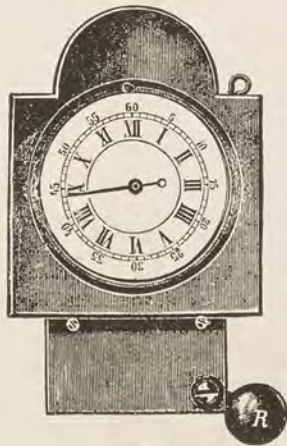


Fig. 1

same arbor as the intermediate wheel *R*, itself engaged with a second pinion, whose prolonged pivot carries the seconds hand. In order to reduce the effect of the play of the gearing on the movement of the latter, a spring *F*, attached to the plate *P*, exerts on the axis of the hand a slight pressure, sufficient for the desired effect.

The figure, somewhat enlarged, shows the joint *H*, designed to connect the counter

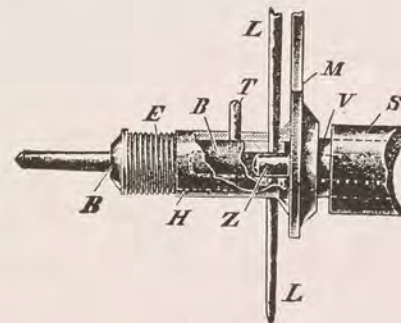


Fig. 3

socket *H* slides freely, of which the beveled shoulder bears the minute hand *M*. This socket has two long openings opposite each other, allowing the bolt *L* and the guide pin *T* screwed in the piece *B* to pass (Figs. 2 and 3). A spiral spring *E*, whose ends are connected with the pieces *B* and *H*, presses the latter against the hand *M* already mentioned. When the holes in *B* and that of the arbor *Z* are in a straight line, the bolt *L* can be easily introduced and operate the transmission desired.

Fig. 4 represents in about double the size the spherical joint *R* (Figs. 1 and 2), serving to fix the apparatus and to permit it to readily take its position when in use.



Fig. 4

"The Keystone is all right. It is the best thing for a watchmaker that is published. I can't see where it can be improved. I am always interested in Workshop Notes, as there is always something useful to be found there."—D. H. Fuller, Jeweler, Melrose Highlands, Massachusetts.



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Workshop Notes

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

An INDEX to the questions answered in Workshop Notes department for each year accompanies each December number. Subscribers are requested to preserve these indexes, and, before mailing questions, to refer to them, as similar questions may have been answered in previous issues. These indexes are arranged alphabetically, according to subject covered in each answer, and tell the issue and page on which the information may be found.

*"Cuckoo."*—Please advise how to repair a cuckoo clock bellows. When it strikes it is very faint, but we can't remedy it.—There are but two faults we can think of that will cause the clock to strike faintly; one is the bellows has a hole in it, the other is the wire does not lift the bellows high enough to fill it with wind. The chances are that the first fault is the cause. If you find a hole in the bellows you can close it with a piece of material such as the bellows is made of, using photographers' paste to attach it. As a rule, however, to make a good job it is better to put in a new bellows. These you can procure from the American Cuckoo Clock Co., 37 North Ninth Street, Philadelphia.

*"Swiss Regulator."*—(1) Am unable to bring Swiss regulator to time. It is a fine jeweled movement, has a heavy pendulum, with five steel and four brass rods, large ball. There is an index fastened across rods near top. On the left side is the word "Dilation" and on the right "Condensation," with a long rod as indicator, which can be adjusted by a thumb screw. Just above ball is a hollow screw with holes around for raising or lowering ball. I have tried to regulate with this screw but have failed. Nearly all the changes made thereby have been variable. What is the use of the indicator and how can I get the clock to time?

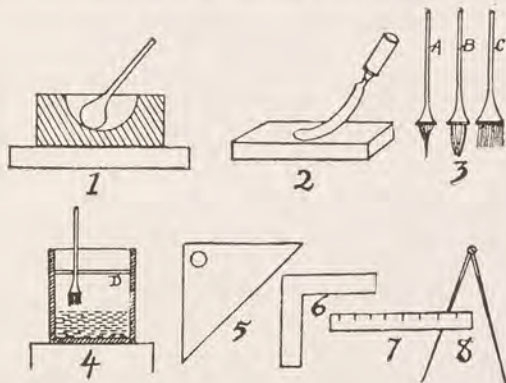
—Swiss regulators containing compensation pendulums of brass and steel have always given more or less trouble in bringing to time, especially in adjusting to temperature. We have known them to run correctly in an even temperature, and during the middle of summer lost as much as twenty seconds in twenty-four hours, and in winter gain the same. Each regulator of this kind requires to be studied and the pendulum changed according to its actions. This requires months of time and a thorough knowledge of adjusting compensation pendulums. Probably when you regulate the clock you raise or lower the ball too much at one time, which causes a great change in the rate; try moving the hollow screw not more than a half turn at any one time; by doing this you can very soon tell just how much to move it for the clock to gain or lose any number of seconds, and thus be able to get the clock to run fairly well, providing the temperature adjustment is somewhere nearly correct.

(2) I have had a watch which after it has run about twenty hours will stop with tooth of escape wheel on impulse plane of entering pallet about half way along. It does not stop every day, but occasionally, and will not do so when the watch is wound. It can always be stopped in the same position after running more than half way down. The other pallet is all right. Can you give me the cause and the remedy?—It seems from your description the watch must bind somewhere in the train, and we think it is in the barrel or center wheel. Take the watch apart and examine the center wheel; see that the pivots are not cut or the holes too large, also that it has end shake; examine all the wheels for the same trouble, then examine the barrel; also see if the spring is not too wide and binds in the barrel. There is some binding about these parts, as you state the watch will run about half way down before stopping, showing that it requires a great deal of power to keep it going. Just because it stops with a tooth on a pallet stone does not signify that there is something wrong with that pallet stone, the watch being out of beat will cause that. As it runs satisfactorily when fully wound shows that the fault is not there, but in the train. A close examination of the train will, we think, locate the fault.

(3) Can you tell me when Aud. Dunlop was in business in London?—1720 to 1740.

*"Window Signs."*—Will you kindly give us some pointers on making signs for show windows?

—While card writing is almost necessary to the window trimmers of smaller cities, few of them seem to comprehend the proper methods required to make a show card. They go at in a haphazard manner, and the result is a haphazard card. A knowledge of detail is what they require, and we will endeavor to give a few hints on such details: Fig. 1 is a section of a color mining stone bowl, which can be purchased at paint goods stores. Fig. 2 is a piece of smooth marble, eight by ten inches in size, on which to mix colors. The color mixing knife is also shown. Fig. 3 includes a set of camel's-hair brushes, assorted sizes. Fine brush A is for outlines; broad ones, B and C, for filling in. The color pots, 4, should be provided with brush supports, D, so as to keep the brushes from the paint when not in use. A triangle, 5; a square, 6; flat rule, 7; and a compass, 8, are also required.



The following hints on colors will be found useful. Ivory black is prepared from ivory chips. The chips are carbonized for several hours in crucibles, then pulverized and lixiviated. It will combine readily with either oil, turpentine or varnish. It dries well. English vermilion is a genuine sublimate of mercury and sulphur, and is produced in several shades, from a pale orange to a rich, deep crimson. Umber is a native ochre; it is no definite body, but a mixture of various substances. It is a soft brown pigment, transparent in oil, owing its color to the presence of hydrated oxide of iron and manganese. Carmine is prepared by coloring alumina with cochineal and tin. It is a deep, brilliant scarlet. Ultramarine is a silicate of aluminum with sodium sulphide. The better ultramarines are all finer and softer, and more intense in color than the poorer ones. A color has its full value when it is in contrast or harmony with other colors. Nevertheless, between these two extremes—white, which absorbs all the sun's rays, and black, which does not reflect any—each color has an expression and character peculiar to itself, and each is enlivened as it approaches its lightest shade by its mixture with white, just as it is saddened and perishes as it approaches its darkest shade by its mixture with black. Yellow is the emblem of light; red is a favorite with all nations of the world. The expression of blue is one of purity. It is impossible to attach to this color the idea of boldness or license. It is an unobtrusive and imaginative color. The complementary color of blue, orange, corresponds to other feelings. A mixture of light and heat, yellow and red, orange plays a brilliant part in the decoration of the universe. The color with which nature has tinted the background of all her pictures—green—is the most suitable ground for other colors. It unites wonderfully well with yellow and blue, which have produced it; it heightens red, and there is no flower or ripe fruit which it does not set off to greater advantage, either by analogy or contrast. It is only when combined with black that green becomes symbolical of sadness. It then characterizes the plants which grow among ruins, like ivy. As the window trimmer is frequently required to gild articles for display, the process may be described. The material to be gilded is first covered with a solution of gelatine in hot water, to which an equal quantity of alcohol is added, and the leaf gold put on while wet. Then take a sheet of soft paper and press and smooth it over the leaf gold until the gelatine below is evenly distributed. By this spots in the gilding are prevented. Do not use too much gelatine, as otherwise the gold becomes spotted;

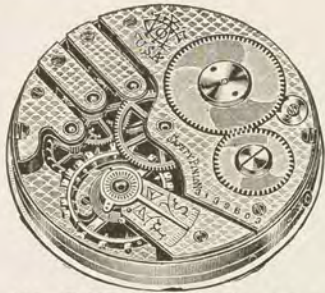
nor too little, for in this case the binding is too weak to enable the gold to withstand subsequent polishing. The surfaces should be cleaned before gilding. After having the leaf gold put on, the whole is allowed to dry for ten or twenty minutes, when the gold is rubbed with cotton, whereby the lustre is produced. Then another layer of gelatine is spread on with one stroke of a full, soft and large brush, and if especially good work be required, a second layer of gold leaf is put on and covered with gelatine as before. In this case, however, the gelatine is best used hot. The same process can be employed for silvering, but more gelatine should be taken, as leaf silver is thicker than leaf gold. As accessories to window trimming, stencils have come to perform a useful part. Where a number of show cards are to be lettered in the same manner, no more effective or expeditious way of getting them out is to be found than by stenciling the same, unless it is to have the cards printed, a much more expensive process. Furthermore, aside from the mere lettering on the card, the trimmer may add and reproduce any ornament or device he chooses, and there again avoid the expense of having a cut engraved. To begin with, the window trimmer needs but few things for cutting and applying his stencils: A very sharp knife, any kind of extra thick paper (this must be coated with shellac varnish or oiled to prevent the paint from soaking into it), some paint brushes, oil and water color paints of the desired colors, and a bottle of turpentine. After the patterns or lettering chosen or designed is traced, or drawn upon the paper, care being taken that the design introduces cross-strips to hold all together, it is cut away. Then the varnish is applied. When dry it is taken up and the edges of the stencil carefully cut here and there where the varnish may have run over, as it is necessary to keep them clear and sharp. Next the desired colors are gotten out; a large plate will serve for a palette, though separate saucers for



Fig. 9

each color are preferable. The colors, if oil, are mixed with a great deal of turpentine, but water colors should be applied "stiff." Next the stencil is held firmly against the fabric to be lettered or decorated, and quickly but neatly painted over, care being taken that the stencil pattern does not slip and rub the design, and that part of the fabric appearing through the stencil each time is thus stamped. The design can be repeated on the fabric at will, and in any arrangement the window trimmer sees fit. On cards and thin papers it is better to use thickly-mixed water colors in place of oil colors, as these latter are liable to spread. In the cities one can get stencils already cut, but there is no reason why the window trimmer should not design and cut his own, as very little practice in this art makes perfect, and one's own designs are, for many purposes, generally more applicable.

*"Traveling."*—When a French eight-day cylinder traveling clock gains time when first wound, and loses the last of the week what is the cause and remedy?—This is one great fault with the cylinder escapement. Being what we term a frictional rest escapement it is affected very easily in its time-keeping if it is not clean and the oil fresh. A great many workmen when cleaning a French clock with a cylinder escapement neglect to remove the mainspring from the barrel. It is necessary that this should be done and the spring given a thorough cleaning to ensure a free and even power on the train. Nothing will cause a clock with a cylinder escapement to vary in time more than a set or gummy mainspring, for it will gain time when first wound and lose when half run down, or when there is but little power on the train. Examine the mainspring and see that it is neither gummy or set. If it is set, put in a new spring and you can probably bring it to time.



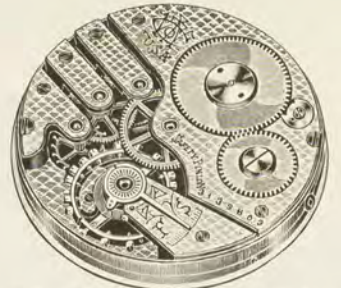
**No. 130. Bridge Model, 16 Size, 7 Jewels.**  
Nickel damaskeened, quick train, straight line escapement, exposed pallets, cut expansion balance, hardened and tempered breguet hairspring, safety pinion, screw bankings, exposed polished steel winding wheels, dust band, roman or arabic white enamel dial with monogram "T. W. Co." **Price, \$8.00.**

ASK YOUR JOBBER for  
Sample Line of  
**NEW TRENTON  
MOVEMENTS.**

**No. 130.**  
7 Jewels.

**No. 135.**  
11 Jewels.

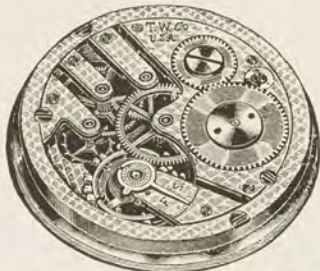
Hunting and Open-Face, Pendant Setting.  
Nameless. Engraved Monogram "T. W. Co."  
Fitting all standard 16 size pendant setting cases.



**No. 135. Bridge Model, 16 Size, 11 Jewels.**  
Nickel damaskeened, quick train, straight line escapement, exposed pallets, cut expansion balance, hardened and tempered breguet hairspring, safety pinion, screw bankings, exposed polished steel winding wheels, dust band, depressed center and seconds, white enamel dial with monogram "T. W. Co." **Price, \$9.50.**

**TRENTON**

Moderate  
in Price.



**No. 315. "FORTUNA." Special 12 Size, 7 Jewels**  
Nickel damaskeened, cut expansion balance, safety pinions, screw bankings, straight line lever escapement, hardened and tempered breguet hairspring, quick train, exposed winding wheels, handsome white enamel dial with depressed second and red marginal figures. Stem wind and lever set. **Price, \$7.50.**



**No. 200. "RELIANCE." 16 Size, 7 Jewels.**  
Nickel damaskeened, cut expansion balance, safety pinion, screw bankings, straight line lever escapement, hardened and tempered breguet hairspring, quick train, exposed winding wheels, dust band, handsome white enamel dial with depressed seconds. Hunting lever set. **Price, \$6.00.**

Price-List furnished on application.  
All leading Jobbers sell TRENTONS.

PRICES ACCORDING TO KEYSTONE KEY.

Manufactured and guaranteed by the

**TRENTON WATCH COMPANY, Trenton, N. J., U.S.A.**

**WATCHES**

Thoroughly  
well finished.



**No. 300. "FORTUNA." 6 Size, 7 Jewels.**  
Nickel damaskeened, cut expansion balance, safety pinion, screw bankings, straight line lever escapement, hardened and tempered breguet hairspring, quick train, exposed winding second wheels, handsome white enamel dial with depressed second and red marginal figures. Stem wind and lever set. **Price, \$5.00.**



F. W. SCHULER, Principal.

**I want to tell you**

that there is as much difference between Horological Schools as there is in Solid Gold and Gold-plated Jewelry. We have been conducting our College over TEN years on the Solid Gold basis. Our method of teaching is thorough, practical and up-to-date; the kind of instructions we give you cannot be had at any other college. If you want a thorough, practical knowledge of Watchmaking, Engraving and Optics, come to us, we can give it to you in a short space of time. Send for our Prospectus—it will prove this to you and will give you full information.

*The Philadelphia College of Horology,*

Established 1894.

Broad and Somerset Sts., Philadelphia, Pa.

**COLLEGE OPEN ALL SUMMER.**



## Workshop Notes

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

*"Chaser."*—Will you please give some pointers on repousse work, or chasing? The kind of tools used, etc. Do you know of a good book on the subject?—Repousse and chasing so closely resemble one another that the terms may almost be said to be synonymous, so the following brief description of repousse work will, no doubt, give the information you desire: A piece of metal about an inch larger all around than the size of the proposed design is fixed upon an iron semi-circular block filled with cement. When the metal has become cool, the design is drawn or traced upon it, and the outline of the design is indented with the aid of a hammer and steel punches called "tracers," the preference being always given to those that are slightly blunt, owing to the fact that if sharp ones are used the metal is more liable to split in the later stages of the process. After the outline is completed the metal is taken off and annealed, the outline being rendered visible on the reverse side. The metal is now fixed upon a pad of modeling wax with the reverse side uppermost and the protuberances raised or pushed out by means of a hammer and punches, in order to form the rough design. For the bolder details boxwood punches are employed, while steel punches are used for the smaller parts. After this the metal is again annealed, cleaned and refixed on the cement block, but this time with the reversed side underneath, and the background of the design is beaten down into position with planishing and other suitable tools. The planes are then treated, leaving the most important parts to be done last. The alternate chasing from back to front is repeated several times, until every part has been reduced to its proper position and form. The surface is next treated, in order to produce feeling, expression and fineness of texture; but excellence in this part of the work is only arrived at after long practical experience. This subject is treated upon to some extent in all works devoted to the jeweler's art, but we know of no book entirely given up to it.

*"Gunner."*—Will you kindly tell me how to put a gun-metal finish on brass?—The true gun-metal finish is intended for articles of steel. It can, however, be simulated on brass by several processes. Lacquering, for instance, with the lacquer properly colored, will do it. A steel-gray on brass can be obtained by using a mixture of 1 pound of strong hydrochloric acid with 1 pint of water, to which is added 5¼ ounces of iron filings, together with a like quantity of pulverized antimonium sulphide. A deep black-blue stain on brass can be produced with a stain made as follows: In a tightly-closed vessel dissolve by shaking 3½ ounces of copper carbonate in 1½ pints of strong spirits of sal-ammoniac. If a precipitate is not formed, sufficient copper carbonate must be added to produce it. Such solution should be allowed to stand for a few days before use, when the cleaned articles are placed therein and remain until they show the desired color.

*"Enamel No. 2."*—Kindly inform me how to hard enamel on gold, what apparatus is necessary, etc.—A detailed description of the process of enameling, together with the illustrations necessary to make the text intelligible and of value, would be too long for this department. We may, however, in the near future take up this subject in a special article. There are several good books on the subject, prominent among them being Cunyngame's "Art Enameling on Metals," price \$1.60. The following extract from "Silverwork and Jewelry," will give you the information you desire regarding apparatus, etc. The following things will be found useful: A china mortar and pestle. A small agate mortar and pestle. A nest of covered palettes

as used for water-colors. A slab of ground glass about twelve inches square. A large rounded hematite burnisher. A few wide-mouthed glass bottles with corks, to hold the enamels. A few pieces of sheet iron. Some binding wire. A corundum file. A small flask of hydrofluoric acid. A six-inch dipping tube, made of quarter-inch tube, to use with this acid. A lead trough made by bending up the sides of a square of rolled sheet-lead—that at five pounds to the foot will do. A good strong painter's palette-knife. A long handled pair of tongs. A muffle-furnace, or, for small work, a crucible. The colors used should be pure and brilliant and few in number. As a general rule each color should be separated from its neighbor by a line of metal, and be also bordered by a line of metal. That is to say, where the enamel is used to decorate a surface it should be enclosed in cells, made either by cutting them out of the surface with gravers and scorpers, or by raising the walls of the cells from the back, or by soldering flattened wire bent to shape edgewise to form the cell walls or cloisons; the cloisons form a kind of network which encloses the enamel in its meshes and carries the metal construction through the design. The color and sheen of the metal outline harmonize the different colors with each other, and give a greater brilliancy of effect than can be obtained by any other means. The color of the metal, in fact, is a valuable ground tint. The limitations of this method are great, but in those very limitations lies the strength of the student. The scheme must be completely thought out, the outline must be clear, and the color clean and pure. Nothing can be left to chance. Many valuable hints can be gained by a careful study of Indian enamel work; that of Jeypore in particular is full of suggestiveness and beauty. Enamel may be used as a background for set stones, or an effect of color made the motive of a design, but in all cases care should be taken to secure a clear metal outline. For translucent enamel pictures the metal outline cannot, of course, be used; but in this case the whole picture should be small enough to set as a jewel. The burnished edge of the setting then takes the place of the metal outline. Large plaques of enamel are unsuitable for personal ornament. If enamel is to be used on small figure subjects, the figures should either be beaten up in the round from sheet, or carved out of solid metal. Enamel rarely stands on cast work, partly because of the inequality of texture of the metal, and partly because the metal is so full of minute air holes. It will hold for a time, especially if soft, but sooner or later will fly off in the form of tiny flakes. This can in some measure be prevented by stabbing the ground of the enamel with a sharp graver, so that little points of metal are left sticking up all over the surface. These hold the enamel fairly well, but you can never be sure that it will not flake off just where it will most be seen. The best grounds for enamel are fine alloy copper, fine silver, fine gold and 22 K. gold.

*"Broken Screw."*—I have a small plug of a broken screw in a watch plate that must be eaten out with an acid. What kind of acid shall I use and how shall I proceed?—Make a tiny funnel of beeswax by working it over the end of a cone-shaped stick. Attach this funnel to the plate so the broken screw stands at the bottom of it, then place in the funnel a few drops of sulphuric acid reduced by adding four parts of water, having the mixture cool. This will eat out the screw in a few minutes. There are several tools on the market for removing such screws, illustrations and descriptions of which can be seen in the catalogue of any tool and material house.

*"Speculum."*—I want a couple of disks, about four inches in diameter, of speculum metal. Can you tell me where I can get them or give me a formula for the metal that you think would answer? I have one formula as follows: Copper 7 parts, zinc 3 parts, tin 4 parts.—Speculum metal contains on an average of from 64 to 69 per cent. of copper and 30 to 35 per cent. of tin; the standard formula for the alloy is 68.21 parts copper, 31.79 parts tin. In view of this fact, we think the formula you mention can be improved. Authorities differ

slightly as to the best formula, but the variation is never of much moment. Otto recommends 68½ parts copper, 31½ parts tin. Mudge gives 65 parts copper, 35 parts tin. Richardson's formula is more complicated, consisting of 65.3 parts copper, 30 parts tin, 0.7 parts zinc, 2 parts arsenic and 2 parts silver. The old Chinese formula is 80.83 parts copper, 8.5 parts antimony, while the old Roman was 63.9 parts copper, 19.05 parts tin, 17.29 parts lead. We do not know just where you could get such disks, but with above data, have no doubt you can make them yourself.

*"Copper."*—Will you kindly publish the ingredients necessary for making gold solution, silver solution and copper solution?—The formula for a gold solution was given in reply to "Gold Solution" in issue of January, 1904. That for silver solution in reply to "Silverer," March, 1904. A copper solution that is highly recommended, can be made as follows: In 7 quarts of warm water dissolve 8½ ounces of crystallized carbonate of soda, adding gradually (to prevent violent effervescence) 7 ounces of crystallized bisulphite of soda; then, while stirring vigorously, add 7 ounces of neutral acetate of copper. In three quarts of water dissolve 8½ ounces of cyanide of potassium, and, after the first solution has become cold, mix the two together. Stir thoroughly with a clean wooden stick, until a clear solution obtains, then boil for half an hour and filter.

*"Engraver."*—In the "Art of Engraving," September, 1903, issue, the writer says: "After drawing these straight lines, the graver being held in the hand as directed, allowing the thumb to act as a guide and sliding it gently over the surface of the metal." Does that mean that the thumb should touch the article we are engraving? I could not quite understand as it read very much like it meant that, while all the time I've striven not to let the fingers touch the article being engraved.—The thumb should rest on the surface of the metal on large pieces, and on watch cases, lockets, etc., against the edge, and when so placed acts as a guide for the point of the graver, which protrudes about half inch beyond the thumb. See Fig. 22, page 24, in "The Art of Engraving." The fingers do not touch the article you are engraving, but the thumb does, for the reason mentioned.

*"Gold Leaf."*—How is gold leaf put on a sign?—Dissolve about ten grains of good transparent gelatin in two ounces of water. If more convenient, you can add half the white of a fresh egg to two ounces of water in a bottle, shake it well and strain. Place a portion of the mixture in a clean vial. Apply the mixture with a camel's-hair brush, painting over the portions of the surface where you desire the gold leaf to adhere. In doing such work the novice, as a rule, experiences difficulty in getting the gold leaf from the book in which it comes, to the surface to be treated. For this purpose a "tip" should be employed. Such a "tip" can best be described as a flat brush made up of coarse, long hairs, widely separated from one another.

*"Lever."*—Will you kindly advise me as to the best course to adopt to get a thorough knowledge of the lever escapement?—Probably the best plan to adopt is to attend a reputable horological school, announcements of which appear on our advertising pages, or apprentice yourself to a first-class workman. Where this is not possible, it would be well to procure a standard book on the subject, study same and practice. It was for this purpose that we recently compiled and published the book "Watch and Clock Escapements," which can be had from this office for \$1.50, postpaid. Even where a course at a horological school is contemplated, the previous study of such a book is to be recommended, as it will undoubtedly save much valuable time at such an institution. The book above mentioned not only covers the lever escapement in all its details, but also the cylinder and chronometer escapements.

Having established a **REPAIR DEPARTMENT** in the full sense of the term, we are able to take care of any amount of repairing, replating, and refinishing of all kinds of hollow and flat silverware, and ecclesiastical goods, such as articles made of white metal, nickel-silver, copper, etc.

To mend a thing well often requires the skill of expert artisans, such as we employ in our various manufacturing departments. As alert, efficient, and intelligent service will be given, we feel our patrons will find it to their advantage to favor us with their work.

Goods for repair should be sent by freight or express paid, each package showing the imprint of the sender, and plainly marked "Repair Department."

## THE HOMAN SILVER PLATE COMPANY.

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New York Salesroom: 32 Park Place.  
Chicago Salesroom: The Silversmiths Building.  
Boston Salesroom: The Jewelers Building.

214-226 East Seventh Street,  
Cincinnati, Ohio, U.S.A.

# MODERN MERCHANDISING

## The Furnishing of Jewelry Stores

WE show in the accompanying illustration an interior view of the handsome store of C. I. Josephson, of Moline, Ill. It is an excellent type of the modern jewelry store of average size. The floor is of tile and the ceiling of handsomely wrought metal. The body of the store is lighted by ten Welsbach lights and the wall cases by electric lights inside them. A noteworthy feature of the wall cases is the curved sections, the glass in front of which hangs upon weights and can be lowered and raised easily by means of brackets attached to the sides, holding a chain out about seven inches from the sash, thus making a perfect balance.

There are no counter cases in front of the sections which are used on the east side for the display of sterling silver and on the west for cut glass. This allows the customer to step up to the case and examine all the stock or any part of it without having to handle it.

The cases are equipped with a very simple and effective dust-proof arrangement on the front doors, consisting of a bracket extending back from the top of the sash, containing on its lower side a felt cushion which engages with a similar one, when the door is pulled down, the bottom and top both striking with equal pressure.

The case arrangement makes available for display all the space in the back of the store and leaves no corners for a collection of unsightly odds and ends.

In place of a wrapping stand two drawers on each side of the store are built into one, giving sufficient depth to hold two rolls of paper of the required sizes. Slats about two inches wider than the paper and about one-sixteenth of an inch in depth are cut in front of the drawer and over them on hinges are hung two strips of wood of the same finish as the drawers. Screwed on the inside is a sheet of heavy steel, which is sharpened to a cutting edge at the bottom. When a piece of

paper is torn off the strip drops back of its own weight and folds the strip of paper under it so that when another piece is wanted lifting the strip will expose enough paper to take hold of.

Just above these are shelves or draws to pull out and wrap the articles on, and twine is always convenient. The great advantage of this is that the paper is always clean and ready and there is no untidy wrapping stand. There is a mirror door on the east side of the safe which leads into the shop. The latter measures 20 x 16 feet. There is one to the west which leads into the optical room. The dimensions of this apartment are 22 x 6 feet, allowing twenty feet for testing vision. The store is heated by a hot-water plant, and all the radiation is from cases under the two front windows. These have asbestos hoods to throw the heat out into the store. In this way no space is taken up in the store by the radiators.

## Treatment of Crank Customers

ONE of the most delicate duties of the store is the handling of crank customers. There are several points to be considered in dealing with this all too numerous class of humanity. As a rule the crank has some very decided ideas of his own as to what he wants, and as to what would be a good thing for every one else to have, and the clerk must

not, therefore, disagree with him too strongly. If he expresses a decided preference for any particular style of watch or other article, manifest an interest in his choice if not approval of it and leave him under the impression that he knows a good thing when he sees it, and that his ideas are correct.

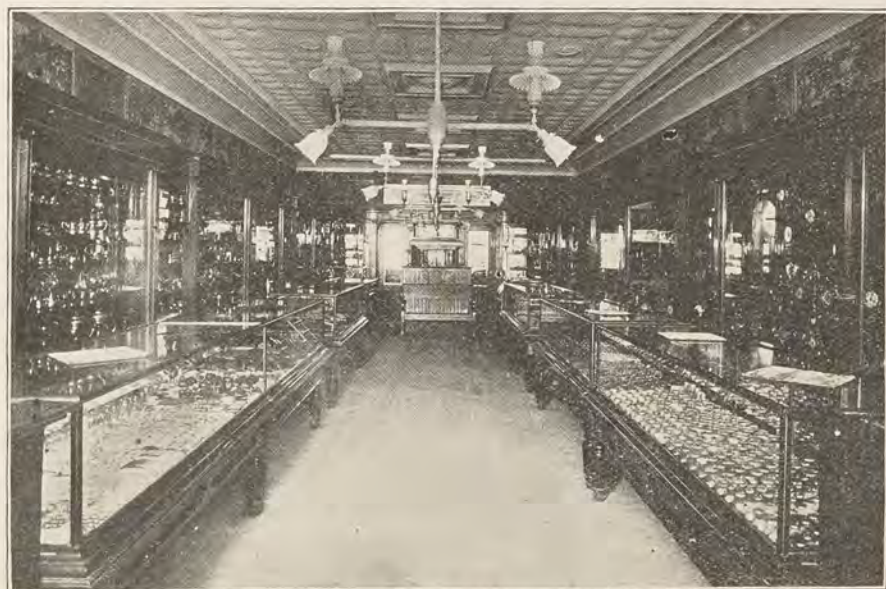
Don't contradict the crank if you want his money. Let him talk, and after he is through you can sell to him without much trouble.

Don't argue with him if you want his business. Let him have his own way—apparently—and you will find he is not so bad a fellow after all.

THERE is the crank who comes into the store with a rush, and is hardly inside when he may be heard all over the house with "Where are all your clerks? I never come in here that I don't have to wait five or ten minutes. If I can't get waited on more promptly I will go somewhere else." But he never goes anywhere else. When he wants anything in your line he is back again with the same old cry. This sort of a crank likes to be well thought of; he likes to think he has made an impression on the entire force as to his importance. Above all, treat him nicely; call him by his name, ask his opinion on some of the questions of the day, and give him the impression that he is a very important member of the business world, and you will find you can get along with him without much trouble.

Then there is the crank who always wants something different from anyone else, and wonders why the manufacturers and dealers don't try to supply the needs of the public better.

You will find it true of almost all cranks that they have some weak spot; if you can find that spot the victory is won, and you will have a friend instead of a "crank" to deal with.



Handsome Store of C. I. Josephson, Moline, Ill.

# DORST & CO.

Kansas City, Mo.

Cincinnati, Ohio.

## TO THE TRADE:

We take pleasure in announcing that we have leased quarters in the New Gumbel Building now being erected in Kansas City, where, about July 1st, we will have in full operation a modern equipped

## JEWELRY FACTORY.

This, with our present Cincinnati plant, will give us the best facilities in the country for doing SPECIAL ORDER WORK and all kinds of JEWELRY AND WATCH CASE REPAIRING, and we will be better able than ever before to maintain our high standard of Promptness and Efficiency. *We solicit your patronage*, and if you will give us a trial we feel sure we can satisfy you.

## DORST & COMPANY,

The Special Manufacturing Jewelers for the Retail Trade,

CINCINNATI, OHIO, ————— and ————— KANSAS CITY, MO.

Lion Building.

Gumbel Building.



### Three Great Lines in One.

Our 10 K. and 14 K. Pearl and Baroque Pearl Jewelry stands for quality, artistic designing, and perfect workmanship.

Our Transparent Enamel Brooches, Pendants and Scarf Pins are especially attractive, and the enameled leaves and flowers are very near to nature.

Our Solid Gold and Gold Filled Locket, in new and original designs, are all made with solid gold invisible joints. They are made in 10 K. solid gold, and in  $\frac{1}{10}$  and  $\frac{1}{4}$  gold filled.

### Charles E. Hancock Co.,

7 Beverly St.,  
PROVIDENCE, R. I.

New York Office:  
Room 714,  
No. 2 Maiden Lane.


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## Hard Soldering Made Easy

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The World's Best GOLD AND SILVER SOLDER

 **Brand.**

Low K., 6 K., 8 K., 10 K., 12 K., 14 K.,  
16 K., 18 K., 20 K.



FOR SALE BY ALL JOBBERS.

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## F. H. NOBLE & Co.

59th and Wallace Streets, CHICAGO.

Chicago Salesroom, 103 State St.

New York Salesroom, 51-53 Maiden Lane.

Jewelers' Supplies, Class Pins, Medals and Novelties.

### Items of Interest

J. S. Grasborg & Co., Schuyler, Nebr., have sold out their business to Jeweler A. G. Kupka, of that city.

David Eber, 109 Joseph Avenue, Rochester, N. Y., has announced the opening, at 197 East Main Street, that city, of a new wholesale establishment with a full line of watches and watch materials, tools, jewelry and optical goods.

A change has taken place in the firm of Krall Bros., Tyndall, S. Dak., L. A. Krall having disposed of his interest therein and opened a store of his own at Wagner, S. Dak. J. P. Krall is now a partner in Krall Bros., which firm continues without change of name.

Max. Kohner, wholesale dealer in watches, jewelry, materials, etc., Baltimore, Md., recently received a large order from far-away Johannesburg, South Africa. It came from one of his former customers. The goods are now under way for their destination.

Coleman Bros., Ardmore, I. T., who conduct a jewelry, drug and musical instrument business, recently issued a convenient little two-page folder designed to stimulate interest in their first-named line. It is sensibly worded and will, no doubt, fulfill the ends for which it was intended.

The firm of H. D. Merritt & Co., manufacturing jewelers, of North Attleboro, Mass., was incorporated on May 7th with a capital of \$100,000, and is now known as H. D. Merritt Company. The officers of the company are W. W. Sherman, president and treasurer; L. E. Morse, vice-president, and Miss E. A. Rose, secretary.

At a meeting of the Harrisburg Retail Jewelers' Association, held in that city on April 21st, a series of resolutions were passed condemning the promiscuous distribution of price-lists of watch movements and cases, requesting all companies to discontinue this practice and commending the action of those which do not follow it.

A. A. Spiegel, junior member of the Gustave Fox Co., 16 East Fourth Street, Cincinnati, Ohio, was recently presented with a little daughter, weighing eight pounds. The parents of the little one are the recipients of general felicitations, as is also Mr. Gustave Fox, whom the happy event makes a grandfather and, by the way, his many friends in the trade are now calling him Grandpa.

James H. Rogers, Gibson City, Ill., has been granted a patent on an improved watch-bow fastening. The purpose of this device is to provide a particular joint between the terminals of the bow and the pendant of a watch case to resist wear and insure a reliable attachment of the bow to the pendant without requiring a complete diametrical insertion of a fastening device relative to the pendant.

Mrs. Wing, wife of John Wing, proprietor of the Ezra Kelley Oil Co., New Bedford, Mass., died recently at the ripe age of seventy-two years. Her demise terminated a long and patiently-borne illness. She was esteemed by a large circle of friends for her many gentle and philanthropic qualities of mind and heart. THE KEYSTONE unites with them in extending its condolence to Mr. Wing in the bereavement that has come upon him. Mrs. Wing was a daughter of the late Ezra Kelley.

William H. Crins, who formerly was president of the Gorham Mfg. Co., died recently at his home on Linden Street, Providence, R. I. His connection with the Gorham Company did not terminate, however, with the relinquishment of its presidency, for he was one of its directors up to the time of his death. He was born in Newport, in 1819, and after receiving his education went to earn a livelihood. He was in the painting business for thirty years, and in 1879 was elected president and a director of the Gorham Mfg. Co., upon the death of John Gorham. In 1894 he resigned from the presidential office and was succeeded by Edward Holbrook. As a mark of appreciation of his services to the company the directorate expressed a wish that he continue as one of its members, and he did so.

The International Silver Company, successors to Rogers & Bro., Waterbury, Conn., has issued a catalogue and price-list of the celebrated Star brand of electro-plated spoons, forks, knives, etc. It is printed on enameled paper in black ink, and profusely illustrated with half-tones. The different articles are carefully listed, prices regularly tabulated and with the index at the end the dealer can obtain at a glance the information he desires. The jeweler will find this catalogue a ready and convenient source of reference.

Albro & Kettley have opened business at 167 Dorrance Street, Providence, R. I., as manufacturers of fine rolled-plate chains, charms, bracelets and fobs. The members of this concern need no introduction to the trade, as both of them were formerly managers of the Albro Co., of Providence, R. I., a firm since consolidated with the Rodenberg-Smith Co. Mr. Kettley will represent the new concern on the road, and Mr. Albro, who has a thorough knowledge of the productive processes, will superintend the operations of the factory.

J. H. Mosher, of Akeley, Minn., has one of the neatest jewelry stores in that section. The interior of the store is artistically arranged and the well-selected stock displayed to its best advantage. An elaborate quick-sales case adorns the wall and a fine system of electric lights has been installed. An interesting feature of one of Jeweler Mosher's recent window displays was an exhibit of some excellent pieces of pyrography, made additionally attractive by the reflections from three oval-shaped French plate-glass mirrors.

After visiting all the various factories and making a thorough investigation of their methods and output, Professor Arthur W. Goodspeed, of the University of Pennsylvania, has placed an order with the Faneuil Watch Tool Co., Boston, Mass., for one of their fine Rivett precision lathes with motor drive and attachments. The Geological Survey at Washington has also recently added one of these lathes to their equipment, and the Bureau of Standards has another Rivett precision lathe for the work of the government exhibit at the St. Louis Fair.

Galt & Bro., 1107 Pennsylvania Avenue, Washington, D. C., a firm which enjoys the distinction of being in existence for over a century, made good advertising capital out of an article which appeared recently in the Kansas City *Star*. This article states that out in the western part of the country, near Hillabe, Ind. Ter., there is an old Indian family living in a hut. Travelers stopping there recently discovered a number of solid silver spoons, a cream ladle and other tableware, all bearing the initials O. P. Y. This family is descended from the old Indian Chief Opothie Yahola, and the initials are supposed to be his. The ware bears the trade-mark of Galt's, Washington, D. C., and was evidently brought from the capital in the early 30's by the old chief, who bought it on some one of his many trips to that city. The spoons are worn now to nearly half size.

A. Y. Boswell, jeweler-optician, of Tulsa, Ind. Ter., advocates the formation of a jewelers' organization in Oklahoma and Indian Territories. He believes this to be necessary for the protection of the interests of jewelers in both of these sections and he would like to have an expression of opinion regarding the feasibility of such a movement from other dealers. He expresses the wish that they communicate with him to the end that with the concurrence of a sufficient number he might issue a circular letter to the different jewelers throughout the territories. He mentions Tulsa, Ind. Ter., Muscogee, Ind. Ter., and Oklahoma City, Okla. Ter., as centers whose locations and railroad facilities are such as would make any one of them a convenient meeting place, and he thinks July 20th and 21st would be suitable dates for assembling. He would like to learn the wishes of other dealers, however, and it is desirable, therefore, that in the responses set to him, which he hopes will be prompt and numerous, the writers will make suggestions in regard to both of these particulars.

O. H. Pitkin, Galion, Ohio, manufacturer of the "Pitkin's Antibreak Pegwood," will mail a 25-cent box of pegwood to every watchmaker who will send him during the month of June eight two-cent stamps and the address of the material house from which he buys his supplies. Only one box to any one address at this price. Send to-day.—*Adv.*

### Death of Henry F. Barrows

Henry F. Barrows, the veteran jewelry manufacturer and founder of the firm of H. F. Barrows & Co., North Attleboro, Mass., died on Thursday, May 26th. Deceased had a life-long connection

with the trade, and his career was marked by singular energy and high integrity—qualities which were fittingly rewarded by a liberal measure of success. He had attained the ripe age of 77 years. His initial step in the jewelry business was



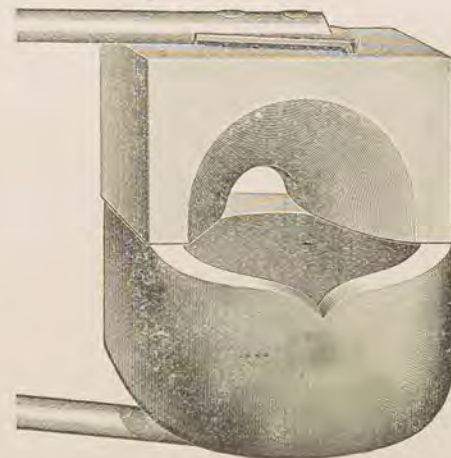
Henry F. Barrows

taken in 1853, and his activities continued for thirty-four subsequent years, at the expiration of which period he relinquished ownership in favor of his two sons, H. F. Barrows, Jr., and Ira Barrows, the latter of whom has charge of the New York office; the former being superintendent of the factory. In November last the firm celebrated its fiftieth anniversary.

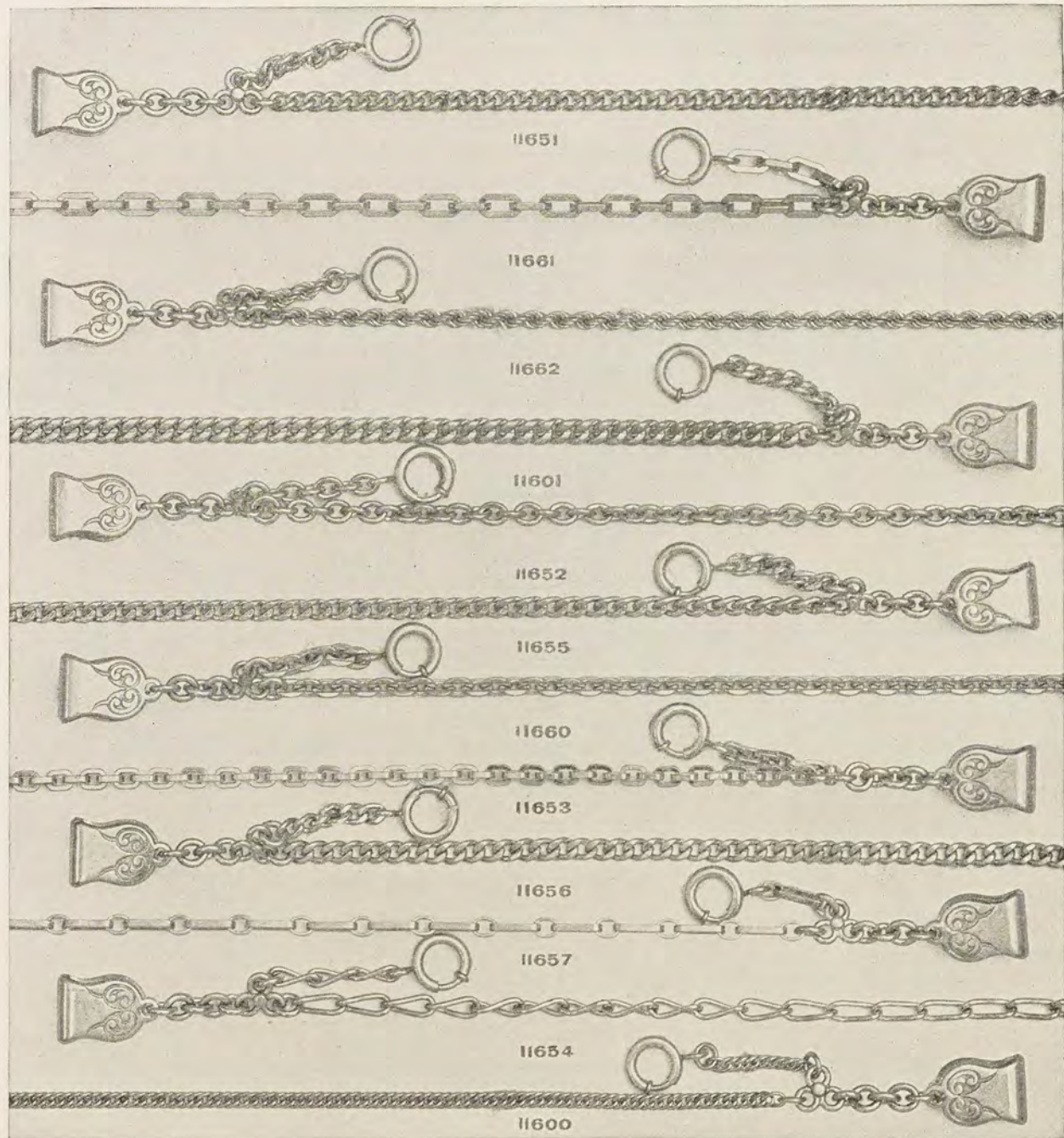
The deceased was connected with several other concerns, and was president of the North Attleboro National Bank almost until his death. He took much interest in the development of North Attleboro, and contributed liberally thereto. It is interesting to recall, that only about a month ago H. F. Barrows & Co. was incorporated under the laws of Rhode Island, and Louis D. Barrows was given an interest in the business. The title of the firm is now H. F. Barrows Co., and the officers are as follows: President, Ira Barrows, of New York; secretary, Louis D. Barrows; treasurer, Henry F. Barrows, Jr.

### A New Crucible

The Ringset Company, Boston, Mass., has placed on the market a new crucible, for which special merit is claimed as to quality and dura-



bility. The crucible may be used from seventy-five to one hundred times in melting gold, and it is claimed for it that the gold may be melted quicker and with less gas than in any furnace. The crucible is known as the Burno, and is made in several different sizes.



## *The Simmons* Golf or shirt-waist chain

The above illustration shows some of the brand-new patterns of the Simmons Golf or Shirt-Waist Chains—a distinct summer season novelty. The safety fastener attached to the chain is made only by us under our own patents and is by far the best and most practical device yet offered to the trade. It is easily adjusted, can't pull off—and it has *no prongs to tear or wear the fabric to which it is fastened.*

Send at once to your jobber for samples. If he can't supply you, write us and we will send a selection direct and render bill through any reliable wholesale watch and jewelry house you may mention.

R. F. SIMMONS COMPANY, Attleboro, Massachusetts.

New York Office, 9-13 Maiden Lane.

Chicago Office, 103 State St.

## The Show Window

**S**EVERAL mechanical displays which were recently illustrated in this department have created some discussion as to the value of this kind of window attraction. We would repeat, that for jewelers, whose business is primarily mechanical, such displays are undoubtedly effective. One of the most expert window dressers has this to say on the subject:

### The Mechanical Window

"It has lately become the fashion to discourage mechanical displays as well as 'picture' windows and elaborate trims of all sorts, under the plea that they are not 'business windows.' 'Give me a plain business window,' says the merchant, and the trimmer does not argue the question very fiercely, for it saves him a lot of thought and a lot of hard work.

"What is a 'business window?' What is usually meant by the term is a window that will sell goods—the final aim of all window trimming. How can a window sell goods? By placing them before the public in such a manner that the observer has a desire for them, and enters the store to make the purchase. Once in, the customer may see other things she wants, and no matter how much she purchases under these conditions the credit of the sale belongs to the window.

"Now, mark one point in this statement. I said 'observer.' All goods placed in a show window are not observed. Since the street is lined with windows, all filled with merchandise, few people stop to notice any of them unless there is something in the window that especially catches the eye. A 'business window' that has no attractive quality is not really a business window. It is a fool window. The attractive window is the business window. To make an attractive window requires all the brain power and craft and taste and handiwork of the most expert trimmer. The inexpert trimmer is the man who decorated that window which is not attractive and which the passing throng does not see at all. In order to make a window stand out from its fellows something more than a plain arrangement of merchandise is needed.

**Must Arrest Attention** "It must be unusual and distinctive to the extent of arresting the attention of busy people as they hurry along the street.

"Shrewd and observant trimmers have found that the secret of successful windows is to have a background or mechanical device that will command attention, and then to place the goods in so ingenious a manner that in looking at the display people note the excellence of the goods and desire to purchase them. It's the old idea of first catching your hare and then cooking it. But you must catch your hare. You must have an attraction that induces the pedestrian to stop and look, or your window is a flat failure. This is why beautiful, artistic and mechanical displays are to be encouraged rather than discouraged. These are the real 'business windows.'"

**A Beautiful Display** The window here illustrated was a very beautiful one of the mechanical variety. The top drapery of this window was white China silk, draped over Nile green, and the floor was white tarleton

puffed over Nile green, making a very rich and pleasing effect. The clock dial was white, bordered with a wide strip of Nile green jeweler's cotton. The circles, segments and hands on the dial were made of cardboard bronzed in gold.

They did not lie flat, but were raised a little from the dial. The words "Spring" and "Time" were pierced in the heavy part of the hands, and were bronzed in green, which made them very conspicuous. The twelve diminutive lights around the dial and the one in the center were green. Encircling the dial there was a vine of bright red roses, beautiful in effect. The harp, with its white strings, forming the ornamental part of the pendulum rod, was of cardboard and bronzed in gold.

The pendulum ball had diminutive blue electric lights encircling it, and the figures "1904" were raised and colored with green bronze. The hands did not move, but the pendulum ball vibrated and the moving colored electric lights made the entire display very attractive. The pendulum vibrated by means of an eight-day-clock movement which was attached to the disk forming the dial. The clock indicated, as will be perceived, no special time of day, but simply "Spring Time—1904." The wings, which denote the flight of time from one season to another, were white, tipped with gold. The small lights on either side of the two steps were green. The articles displayed in the window were seasonable silver jewelry, novelties, etc., with a nice selection of gilt goods to make the color scheme more effective.

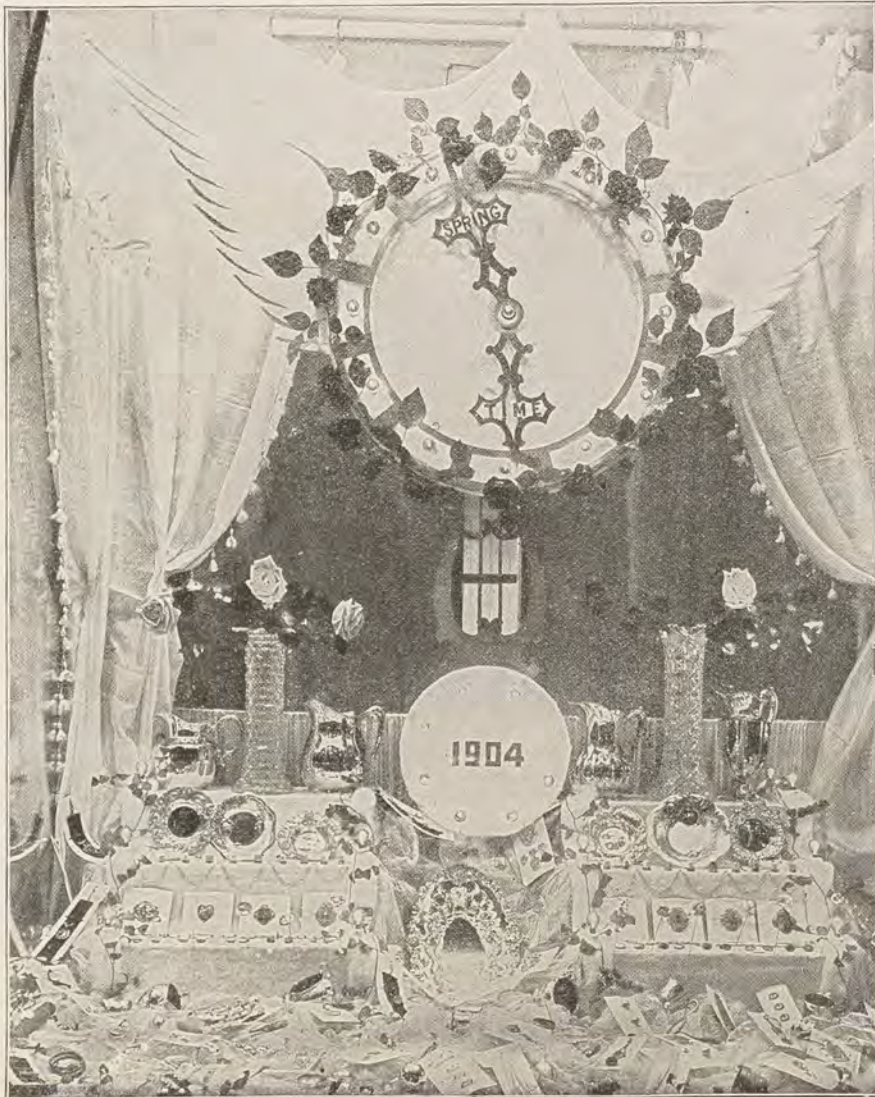
### Fourth of July Displays

The "Glorious Fourth" will very soon be with us again, and its advent will set the trimmers in town and city on the ragged edge of uncertainty as regards their celebration window display. For this occasion almost anything will be in order, bearing in mind that an unlimited display of cheap paper cambric flags, in all possible positions and sizes, becomes vulgar from its incongruity and want of motive. It would be far better to use a single flag, or pair of flags of better quality, crossed and artistically draped, simplicity

of arrangement and harmony of color being the keynote of every beautiful conception.

Here is a good central idea for a Fourth of July window: Procure one small-boy figure. Dress it simply in a wash suit, as if for play and hot weather comfort; pose it with one elbow on a giant cannon cracker (a home-made dummy, of course), reaching from the floor to a convenient height, for the setting of figure and of proportionate diameter. The boy should be placed in an easy pose, the head well up, a straw hat on the back of the head, one leg crossed, if you wish, and a piece of punk in the disengaged hand, as if waiting. The punk may be made to appear "alive" by dipping one end slightly in glue, and while wet, covering it with crimson or fire metallic.

On the morning of the Fourth change the pose, making the boy hold the cracker fuse in one hand, as if trying to set it afire with the punk in the other hand. If you wish, on the morning of the fifth, change the pose again to a sitting position on a small box; bandage the head and one hand, smearing the bandage slightly with turkey lake, ground in water, the punk, broken shorter, lying near, and the disengaged hand supporting the head as if in pain. Any crimson red will do if you have not turkey lake.



Handsome Window Display of Carter-Allen Jewelry Co., Shreveport, La., Designed by J. A. Styron, Jr., Engraver with the Firm

## How to Invest your Savings

**A**LWAYS the first thing which the prospective investor must face is his own selfishness—and he would better do it, squarely and conclusively, right at the start. Money that has been saved from wages or salary looks very precious in the eyes of the man who has earned it.

Naturally, it would seem that this way of looking at the little accumulation would make its owner doubly careful on the question of risking it. But often, if not generally, the effect of realizing how much it means to save even a comparatively small sum is exactly the reverse; the owner of the accumulation says to himself: "This is a big sum; I have spent years in saving it; so large an amount and one that has cost me so much sacrifice and steady effort ought to bring me a nice income."

Consequently, I repeat, the first thing for a man to do who has saved something from his salary and wishes to place at the best advantage, is to hold a very frank session with himself and settle the question: "Are you looking for an investment or a speculation?" After he has had this out with himself he is then—and not until then—in a position to proceed intelligently.

"But," you ask, "how am I to tell the difference between an investment and a speculation?" Perhaps it is not wise to attempt arbitrarily to draw a hard-and-fast line in answering that question; but it is difficult to be practical and helpful without being definite. Therefore I would put the matter this way: Generally speaking, any proposition that pledges to yield you more than five per cent. per annum is a speculation and not an investment.

Let me put the matter another way: Experience has shown that an investment that yields more than five per cent. a year contains too large an element of risk to give the positive and solid basis of security which should be insisted on by the man who is putting into the enterprise what he cannot afford to lose.

Let us suppose that the reader is completely isolated from personal financial advisers of broad experience and seasoned judgment, as he would be if living in a small country town, and that he must get his information largely from the printed page and from correspondence. He wishes to get down to business and learn something about securities and investments.

By all means the first thing for him to do is to get hold of the literature of the savings banks and study their rules and regulations regarding investments. Why? Because the laws of every State very carefully prescribe the kind of securities in which the bank that handles small deposits—the savings of working people—may invest. Some States are more severe and rigid than others in their regulations on this score; but all are careful to hedge the savings bank about with restrictions designed to make its every investment secure. So the attitude of a savings bank, as expressed in its rules for the investment of funds, is likely to be sound and conservative.

Then, too, the savings bank generally pays three per cent. on its deposits. This is a very fair rate for your money while you are simply "keeping it in storage" to get a sum large enough for a profitable investment. In the New England States "mutual" savings banks are quite common and pay a larger rate on deposits. Each depositor is regarded as a share-

holder. There are certain long-time gilt-edged securities that pay a high rate of interest, but command a high premium in the market. Generally, the savings bank laws declare that when the surplus or reserve of the bank exceeds a certain amount, there shall be a distribution to depositors. As a matter of fact, such a distribution in the mutual companies is generally avoided by investing in these high-grade, long-time securities which enable the payment of an exceptional percentage of interest on deposits. There is a lesson to be learned here by the prospective investor.

Every big city of the country has at least one house devoted to the handling of solid securities, which is known as upright and substantial in its management—a house that is in business for a steady, permanent success, and would regard the selling of a doubtful security as suicidal, no matter how large the immediate profit realized. Let the prospective investor write to a house of this kind for information and advice; and then, perhaps, submit this counsel to his best local adviser. This is the most practical and secure method of procedure I can outline.

### Meaning of Convertibility

There are, however, a few very important facts which should firmly be fixed in the mind of every man who has under consideration the investment of his savings. The security of an investment and the rate of return it will bring, are not the only things to be considered in the problem of putting out savings. Among bankers and financial men the term "convertibility" is much used; and it has a meaning which should be carefully figured on every time an investment is made. Not only is it important that you should have your money invested where it is safe and brings you a goodly percentage, but also where you can get it back quickly if any sudden change in your financial condition should come unexpectedly upon you.

Then, too, there is still another important element to be considered in making an investment—the amount and kind of personal attention you are able to give the enterprise in which you invest. If, for any reason, you desire to have no care in connection with your investment, you must pay for that immunity in a slightly lower per cent. of return.

Let us suppose, for example, that you are a woman with neither the inclination nor the experience for active business life. It would, then, be decidedly foolish for you to put your money into an enterprise or a security that demanded the personal attention of yourself or of an agent employed by yourself. And the same observation applies to a very great number of men in a wide variety of callings—men who are not in position to give any personal attention or to have any anxiety about an investment after it is once made.

### Bonds and Mortgages

For persons of this kind, it seems to me the high-class bond furnishes the ideal investment. All the investor has to do is to put his investment away in his "tin box," or safe-deposit drawer, and cut the coupons at the proper time. But, of course, there are bonds and mortgages. Those of the United States Government represent the very pinnacle of security, they are non-taxable and, because of these and other facts, command a high premium—so high a premium that the net percentage of return looks almost infinitesimal to the small investor.

He may then turn to the long list of municipal bonds. The writer has handled millions of dollars' worth of these bonds, and the instances in which

this kind of security has proved to be bad are so few he can almost count them on the fingers of one hand. It is not difficult to obtain a municipal bond paying from three and one-half per cent. to five per cent. a year that is satisfactory and sound on the points of security and convertibility. Bonds of this kind—and, in fact, any good bonds—can be used as collateral at the bank for a loan of seventy-five per cent. to ninety per cent. on their face value; or they can be promptly sold at a good valuation. In my opinion there is no better investment.

But let us suppose that the investor has the time, inclination, experience and ability personally to look after his investment. Then he may enter the field of mortgages and, perhaps, get a larger percentage of return. The man who buys mortgages should, and naturally will, follow the line of his experience and observation. If he is familiar with city real estate values and the manner of doing business in the city he may trust himself to buy city mortgages. On the other hand, the farm mortgage, next to the high-class bond, is commonly held to be the best kind of investment.

Of course, it is important to know that the valuation has been soundly made—and right here is where the personal experience of the investor comes in. The more he knows of farm values the larger return and surer investment he can get. Generally speaking, good mortgages yield from four per cent. to six per cent. The man who has anywhere from \$500 to \$5000 of savings to invest, and knows enough about details of taxation and valuation properly to protect himself, will find a good field in farm mortgages.

I cannot dismiss the subject of savings and their investment without the reflection that the great improvements in cities, in lighting, in urban and rural transportation—all the great material civilizers covered by the phrase "public improvements"—are made possible mainly by the savings of the people who work for salary or wages.

—John Farson, in the Saturday Evening Post.

## The Editor's Plight

"We are thorry to thay," explained the editor of the *Skedunk Weekly News*, "that our composing room wath entered lath night by thome unknown thcoundrel who thtote every eth in the ethtablthment and thucceded in making hith ethcape undetected.

"It hath been impothible, of courth, to procure a new thupply of etheth in time for thith ithue, and we are thuth compelled to go to thith in a thituation moth embarrathing and dithtrething, but we thee no other courth to purthue than to make the beth thtagger we can to get along without the mithing letter, and we therefore print the *Newth* one time regardleth of the loth thuth-thained. The motive of the mitherable mith-creant ith unknown to uth, but donbtleth wath revenge for thome thuppothed inthult."

"It thall never be thaïd that the petty thpite of the thmall-thouled villain hath dithabled the *Newth*, and if thith meeth the eye of the deteth-able rathcal, we beg to athure him that he under-eththimateth the rathourceth of a firth-clath newth-paper when he thinkth he can cripple it hopelethly by breaking into the alphabet. We take occathion to thay to him, furthermore, that before next Thurthday we will have three timeth ath many etheth ath he thole."

—Ex.

"I do not ask for any improvement, only send me *The Keystone*."—E. J. Southany, Jeweler, Bedford, Ohio.

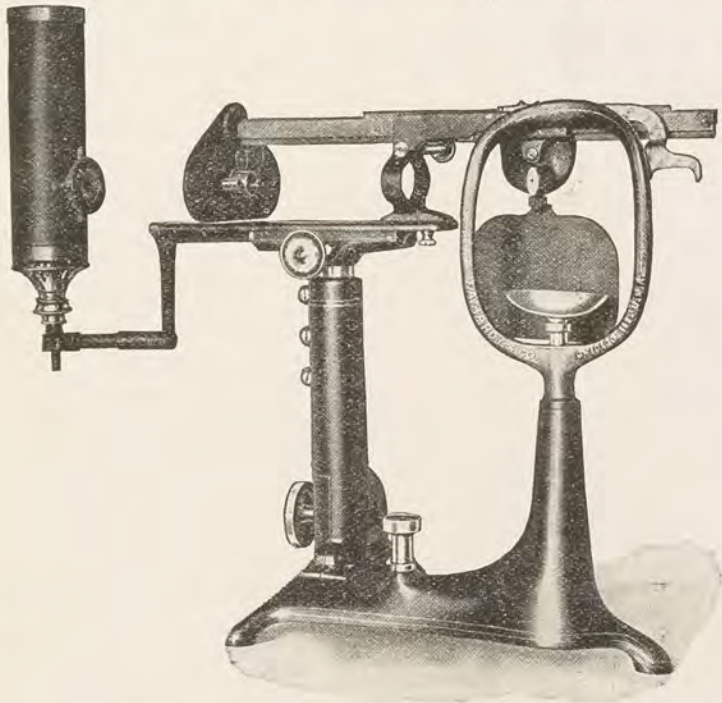


**New Goods and Inventions**

[The illustration and description of new goods and inventions as hereunder is a permanent feature of THE KEYSTONE, our twofold object being to keep the merchant jeweler thoroughly posted on the very latest and most salable goods, and the practical jeweler equally well posted on the newest inventions and improvements in tools and appliances used at the bench. For the benefit of the optician, we also illustrate and describe new optical goods and instruments in this department.]

**The Stigmatometer**

A new instrument which merits the attention of the refractionist is named the stigmatometer and is shown in the illustration herewith. The stigmatometer is an instrument constructed on new and scientific principles for determining the refraction of the eye *objectively*. The result is obtained by projecting on the fundus an image of an astigmatic dial. This instrument is the patented product of F. A. Hardy & Company, Silversmiths'



Building, Chicago. It consists of five essential optical parts, namely: The mirror placed close to the patient's eye at an angle of 45°; the lens directly to one side of the mirror and at its own focal length (125 mms.) from the patient's eye; the screen or astigmatic dial (a glass plate with photographic lines thereon) which is arranged to travel back and forth by rack and pinion adjustment, on a line with the lens and light, so that it may be focused on the fundus whatever the refraction of the eye; the lamp beyond the screen, and the operator's lens plate directly behind the mirror, the lenses of which move automatically as the screen is moved, so that whatever the error of the eye examined, its error is reproduced by the lenses back of the mirror when the screen is focused perfectly on the fundus.

**New Line of Chains**

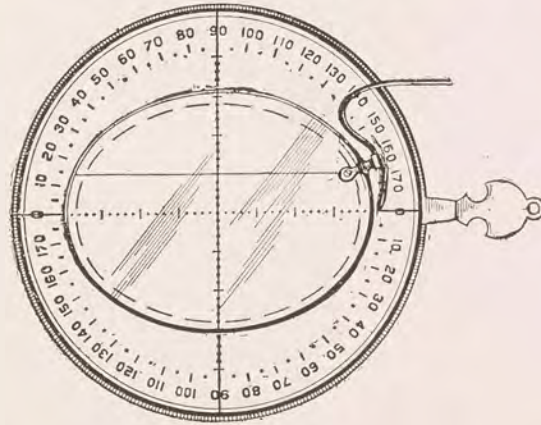
It is only natural that the popular devotion to outdoor pastimes, which of late years has become so pronounced, should be fittingly reflected in jewelry designs, particularly in watches and chains. A useful and interesting addition to goods in the latter category is the new line of golf or shirt-



waist chains that has been placed upon the market by the R. F. Simmons Company, Attleboro, Mass., and one of which is shown in the illustration herewith. These chains form a decided novelty for the recreative season and they have been designed with a view to combining style and serviceability in the fullest possible degree. They are provided with a safety fastener, a device made only by this company. It is easily adjusted, can't pull off and has no prongs to tear or wear the fabric to which it is fastened. These chains seem to have in an unusual degree all the qualities that appeal to the buying public.

**New Axis and Prism Finder**

One of the latest additions to the equipment of the refractionist is the Hamilton axis and prism finder, shown in the accompanying illustration. This contrivance is designed for quickness and accuracy—to economize in both time and labor. It is the product of Martin, Copeland & Co., Providence, R. I. It tells positively the axis of any cylinder and the power and



direction of the base of any prism or combination of prisms. It shows at a glance the amount of prismatic power of decentered lenses and gives the largest lens possible to obtain after uncut lens has been decentered. In addition, it gives the axes of broken cylinders without necessitating the cementing of the parts together. When used without the stand the axis finder can be carried in the vest pocket, its dimensions being 3 mm. thick and 52 mm. in diameter.

**Improved Ringstick**

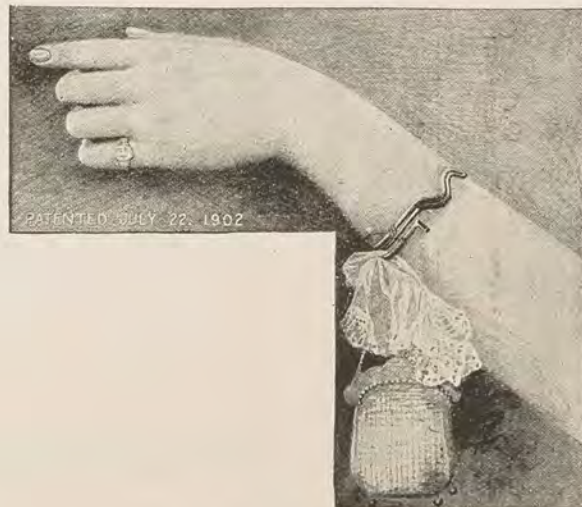
In the accompanying illustration is shown a ringstick which embodies several new features. It is made entirely of hard rubber, is hollow and has



no seams. The maker is Arthur L. Wilcox, of Akron, Ohio. The stick gives the correct measurement up to and including size 13, and on the reverse side to that shown in the illustration there is a millimeter gage for ascertaining the widths of flat band rings.

**A New Handkerchief-Holder Bracelet**

The approach of the sweltering season gives an especial timeliness to the production of the handkerchief-holder bracelet, a contrivance which should appeal strongly to femininity and a cut of which is shown herewith. This bracelet is made by Hamilton & Hamilton, Jr., Providence, R. I., and it fulfils more functions than its name would indicate, for, besides being



such a convenient means of carrying a handkerchief, it is as indispensable for holding a wrist bag, purse, muff or fan. The handkerchief may be inserted by drawing its center between the bracelet wires into the corrugations. To remove it, its bulk should be pulled down gently with the right hand. The purse or muff is attached to the bracelet by passing the purse chain or muff cord twice around the bracelet wires.

ESTABLISHED 1854.

INCORPORATED 1893.

## JUERGENS & ANDERSEN Co.

DIAMONDS, PEARLS,  
MAKERS OF FINE JEWELRY,  
92 TO 98 STATE STREET,  
CHICAGO.

23-25 LOOIJERSGRACHT, AMSTERDAM, HOLLAND.

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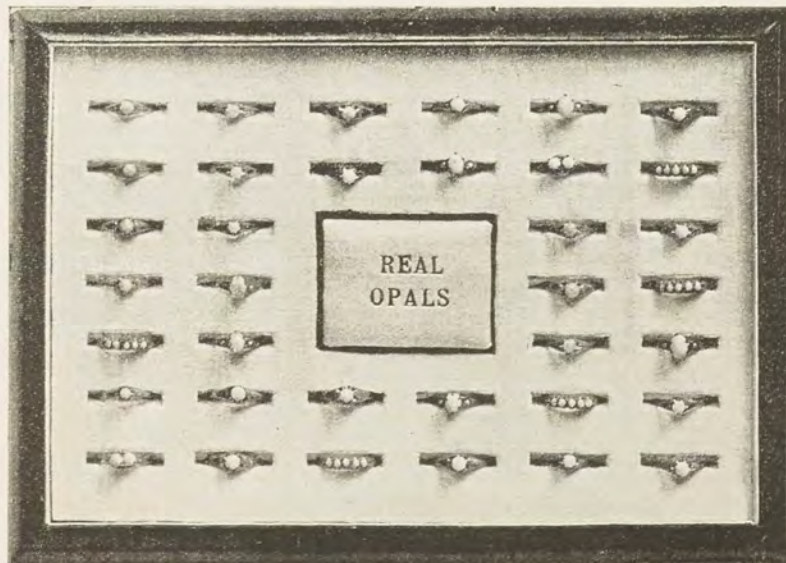
# A TRADE INVIGORATOR.

350 Trays of Genuine Opal Rings as per illustration.

Seamless Gold  
Shell Rings.

Warranted to wear  
three years in con-  
stant use.

Price, **\$48.00**  
per gross.



No. R 508.

Set with genuine  
Opals.

Put up in handsome  
tray.

**\$12.00**  
per tray.

## RHODE ISLAND RING CO., Inc.

101 Sabin Street,

Providence, R. I., U.S.A.

**Write Your Own Advertisements**

**M**ANY jewelers and opticians seem to be laboring under the delusion that the capability to advertise calls for talent and genius far above that which they possess, that, in fact, they might as well try to compose a good poem as a good ad. This is an egregious error. Any good salesman can write a good advertisement if he tries. We are indebted to *Printers' Ink* for the following excellent article on this subject :

**It's Results That Tell**

The cash drawer is the one just, final critic of the advertising. Yet many advertisers who make their publicity profitable seem to think that it must conform to certain set rules. They suffer from what might be called "fear of the expert." The critic of the know-it-all type is disappearing from advertising, but in his day he talked so loudly about what was right and wrong, according to his own lights, that he gained a name for knowing things that he never knew at all. When a business man without an intimate knowledge of advertising takes space in papers or magazines and conducts his own campaign, he sometimes develops an entirely original style of advertising, eminently suited to his business. If he is a good business man his advertising will seldom be weak. It may be crude. It may lack originality. But it will be strong and sound, giving plain, blunt facts of interest to readers who want his goods. Publicity made by a man of this kind is likely to break down most of the rules and ethics of the know-it-all critic. The world at large has a greatly exaggerated idea of the importance of the self-constituted critic. Faith in oneself is the basis of all achievement.

**Lack of Self Confidence**

Sometimes the business man has the courage of his convictions, but in other cases he doubts his methods, even in the face of success, because they do not meet the rules laid down by the critic. In certain instances this doubt has led to loss.

A New York wholesaler in plumbing specialties, for example, began a circularizing campaign a year ago, writing his own copy. He got excellent results, for his literature was based on an intimate knowledge of plumbing trade conditions. After a time,

however, he doubted his own ability, thinking that his copy was not in keeping with the rules of the critics. So he hired an "expert" to write the next folder. It was an admirable piece of work, as pure literature, illustrated with a real old master. As a thing of beauty it was generally remarked upon. But it went wide of trade conditions, gave no information about plumbing specialties, brought no results. Another "expert" gave him a folder and some trade journal ads. in a humorous vein. Readers liked the humor, but bought elsewhere. Then the wholesaler again became his own copywriter, following his own judgment regardless of fine-spun rules and theories. Other men of this stamp avoid the "expert," but never learn to trust themselves. Being self-taught so far as advertising ability is concerned, they stand in awe of the dictum of a critic who merely voices his own personal opinion.

**Critics Often Unreliable**

Critics and "experts" have always been more or less positive in their views—even dogmatic. Criticism is usually passed upon external appearances, without regard for the complex business reasons that lie under the surface of all advertising. Some criticism has done good, but in creating a false respect for itself it has also done harm. The critic of the future will modify his tone, and instead of saying that thus-and-thus *must* be so-and-so, he will state his belief that it *should* be so-and-so. Advertising that pays is right. It may not be the best that can be produced in the circumstances, but it is certainly not the worst. It forms an excellent basis for improvement. The business man who has succeeded in producing publicity that fits his business and brings actual results will do well to follow his own nose, profiting by criticism if it will help him, but never giving way to distrust. From time immemorial the proof of the pudding has been in the eating thereof.

IF YOU BUY IT OF ROSE IT'S ALL RIGHT.

## To Watch Buyers.

We have the best assortment of Watches in this section of the State. We will duplicate any reliable watch at the price, save you express charges, and any risk of future annoyance. We sell reliable watches from \$2.50 up. We sell the 7, 11, 15, 17, and 21-jeweled watches in the different grades in Nickel, Sterling Silver, Gold Filled and 14 K. Solid Gold cases. We Guarantee all Watches, and if they prove faulty from workmanship, we will fully return your money.

**Chas. E. Rose,**  
"THE JEWELER,"  
Mahr Iron Front Building.

ALWAYS YOUR MONEY'S WORTH.



**On Time.**

Punctuality means much to the young man of to-day. His good name and salary may depend on it. We have Watches and Clocks at all prices, but every one of them keeps good time.

If your watch lies, call on us. We will make it tell the truth to the second, and at little cost.

**Monroe & Jackson,**  
76 Norfolk Street.

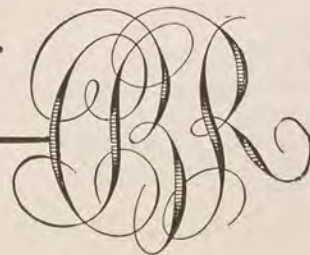


**THE ENGRAVER'S CHISEL**

commemorates on any gift the time, occasion and name of giver—or otherwise—as circumstances may require. An engraved gift is a double gift—it gives the article more personal value and dignity. It is a reminder for years. Many jewelry articles can be engraved in monograms, single letters, quotations and otherwise. Articles purchased at my store will be engraved to your personal order free of charge. It will be perfect hand engraving—work that is a pleasure to you and a satisfaction to myself. Rings, Silverware, Spoons, Watches, etc., are suitable objects for artistic engraving.

**George McL. Presson,**

Jeweler,  
15 & 17 Broadway,  
Farmington.





### Hat Pins and Watch Charms.

Made of genuine long leaf, yellow pine burs, and a souvenir of the yellow-pine belt. Rolled-plate mountings. Durability guaranteed.

Goods sent on memorandum at **\$4.00 per dozen.**

Solid gold and sterling mountings priced on application.

Order selection now. Design patent applied for.

**W. P. McFARLAND, Jeweler,**  
Orange, Texas.

### Learn to Engrave!

At a School where practical engraving is taught in all its branches.

At the School whose graduates are always in demand. At a School where instructions are given by and under the personal supervision of Mr. Richard O. Kandler, who is recognized as foremost authority on Engraving; who studied under the best masters of Europe and America; who is the founder of the first exclusive Engraving School in this country, and is still at the head of the Jewelers' School of Engraving, established in 1889, Terms and Catalogue on application. *Correspondence solicited.*



The Jewelers' School of Engraving, Suite 1119 Masonic Temple, CHICAGO.

PLATE ENGRAVING, STEEL DIES, CRESTS, COAT-OF-ARMS.  
FINE STATIONARY  
PRINTING, EMBOSsing, ILLUMINATING  
WEDDING INVITATIONS, ANNOUNCEMENTS  
CALLING, AT HOME, BUSINESS CARDS ETC.  
SEND 25 CENTS FOR ARTISTIC SKETCH OF YOUR MONOGRAM  
**RICHARD O. KANDLER** SUITE 1119 MASONIC TEMPLE CHICAGO

## THE ART OF



## ENGRAVING

There's at least one branch of handicraft we do not lead in. A firm in this city has found it necessary to ask the Treasury Department for permission to import heraldic engravers under contract. They can't find anyone sufficiently skilled in this country—at least anyone out of employment.

A Philadelphia firm has asked permission of the Treasury Department to bring into the United States, under contract, two heraldic engravers. They state that it is absolutely impossible to secure skilled workmen in this art in this country.

The above extracts from the daily press show that enviable positions and high wages are at the command of skilled engravers. A new way to master this art in the shortest possible time, and practically without expense, is furnished in the work

### THE ART OF ENGRAVING,

a new treatise on the engraver's art, with special reference to letter and monogram engraving; specially compiled as a standard text-book for students and a reliable reference book and guide for engravers. It is bound in silk cloth, contains 208 pages and over 200 original illustrations. The author is a noted engraver and a successful teacher of engraving.

Sent postpaid to any part of the world on receipt of price, **\$1.50** (6s. 3d.)

Published by **THE KEYSTONE**, 19th and Brown Streets, Philadelphia, Pa., U.S.A.



### Expert Watch Work

demands a thorough knowledge of adjustment. Without this knowledge no watch repairer of our day can be successful or high-salaried. The one way to acquire a complete mastery of this branch is to study

### THE WATCH ADJUSTER'S MANUAL,

A Complete and Practical Guide for Watchmakers in Adjusting Watches and Chronometers for Isochronism, Position, Heat and Cold.

This work is recognized as the standard authority on the adjustments and kindred subjects. It contains an exhaustive consideration of the various theories proposed, the mechanical principles on which the adjustments are based, and the methods followed in actual practice.

Sent, postpaid, to all parts of the world on receipt of **\$2.50** (10s. 5d.)

**THE KEYSTONE**, *The Organ of the Jewelry and Optical Trades,*  
19th & Brown Sts., Philadelphia, U.S.A.

## Letters from the Trade

Readers are requested to send for publication new ideas on any subject, technical or mercantile, of general interest to the trade. As this page is for the use of individual readers, we do not hold ourselves responsible for the views expressed.—Editor The Keystone.

### Victims of Schemes

ED. KEYSTONE:—Your article "Beware of This Man" in May KEYSTONE I read with great interest. I tried to get another jewelers' journal to take the matter up some time ago, but did not succeed as you can see by enclosed letter. I also enclose a letter from two other dealers, both from Saginaw, and could give names of many other victims. A letter from the concern, itself, also enclosed, will show you that they refuse to fill their contract on a technicality. They sold, too, to a second party in Anderson, and told both that only one party would handle the goods. I am glad to see that your valuable paper will protect the jewelry trade wherever it can be done, and send you these letters to give you more information.

Yours truly,  
Anderson, Ind. GEO. GREYER.

ED. KEYSTONE:—I read letter of "Easy Mark" in May KEYSTONE with interest as I had a similar experience with a concern located in Cleveland, Ohio, the only difference being that I required them to give forfeiture bond to show their good faith. However, I found that the goods did not wear as represented and, at the end of the year, they utterly refused to take them back so I placed the matter in the hands of my lawyer. After running up an expense on my part of \$24.90 they decided to take the goods back, dollar for dollar, without letting the suit come to trial. I should have followed the case up if they had not, but I think it would have cost me all the bond was worth to have done so. My advice to anyone taking hold of such schemes would be to demand bond heavy enough to pay court costs and several appeals, or let such offers go by.

Yours truly,  
Fryeburg, Me. H. H. BURNHAM.

ED. KEYSTONE:—I have just read "Easy Mark's" letter in regard to the perfume swindle, and wish to tell of another one that has been worked quite successfully in this part of the country. There is one firm in the West doing business under many aliases. Their scheme is this: The agent comes around with a list of goods—various articles of jewelry—amounting to several hundred dollars, and offers various kinds of inducements to buy such a large amount. The terms are four notes, due in two, four, six and eight months. The company warrants the goods to give satisfaction and will exchange any article free of charge that fails to wear if returned within five years. Any article not selling readily can be exchanged within a year. A gross profit of 33 1/3 per cent. is guaranteed, provided ordinary diligence is used to sell the goods and nothing sold at a less profit than is usually charged for jewelry. The "order" and guarantees look nice, but in reality the goods are not such as the average jeweler would have in his store, and the "order"

is a most beautiful contract that is practically impossible to get out of. If the goods are refused they bring suit and generally win out.

Yours truly,  
Montrose, Colo. "EASY MARK, JR."

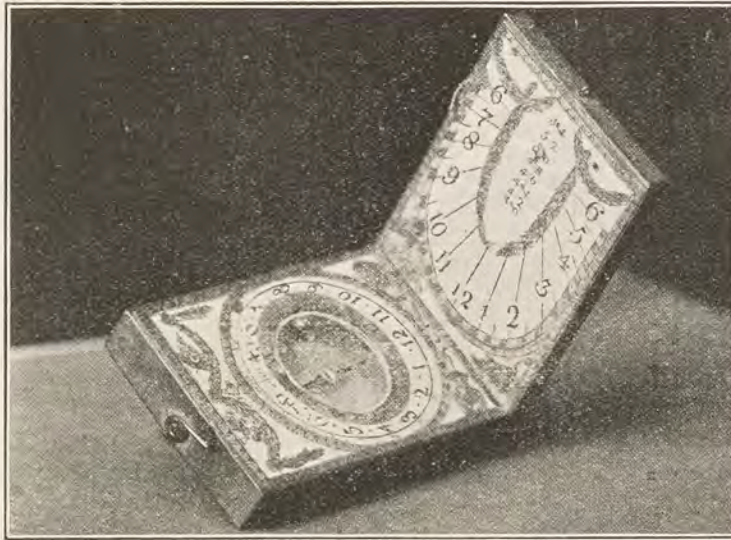
### Catalogue Prices

ED. KEYSTONE:—I would suggest that the prices of articles advertised be marked with letters instead of figures, the letters to represent the price.

Yours truly,  
Mariposa, Cal. JOHN BOND.

### An Interesting Sun Dial

ED. KEYSTONE:—I send you by mail a photo. of an old sun dial which I had in my store some time ago. On the reverse side of cover were the names of all the principal cities of Europe with numbers corresponding to them on center of top



and with a thread running from number in top to pin just in front of compass. The owner of the dial was a lady over seventy years old, who told me her father owned it as long as she could remember, and that his folks brought it from Germany with them. No doubt it will prove interesting to KEYSTONE readers.

Yours truly,  
Bellefontaine, Ohio. C. A. MILLER.

### Alleged Perpetual Motion Clock

ED. KEYSTONE:—The following clipping from the Des Moines, Iowa, *Capitol* goes to show that the problem of perpetual motion has been solved at last:

John W. Bunch, of Keokuk, who has several times before startled the people by announcing that he has discovered perpetual motion, now claims to have actually discovered it and says that the feature of the World's Fair will be his everlasting clock, which runs forever without being wound. He states that he has a chance of organizing a \$10,000,000 stock company which will build a factory here and employ 1200 hands at the start, turning out millions of these clocks.

A wonderful invention, verily! The white man's burden is no more! To saw up the wood in one's backyard, all that is necessary is to hitch

one of the new fangled clocks to it. In place of the locomotive a big clock of peculiar construction will yank the cars along the track; the dynamo will soon cease to buzz and the fretful gasoline motor will cough no more. All hail to the great inventor—the man who has made something out of nothing.

I want THE KEYSTONE to get it on the ground floor of this proposition. And, what think you? Wouldn't it be a good plan to break the news gently to the clockmakers? Just wink one eye at them and tell them to get from under. I'd hate to see them put out of business, but John Bunch (of brains), in Keokuk, has done the trick. Imagine millions of perpetual clocks!

Yours truly,  
S. W. RISIEN.

### Setting Pallet Jewels

ED. KEYSTONE:—I have read of various ways of setting pallet jewels. I use a piece of mica. It punches easily, holds pallet flat, and by holding a corner of it in the lamp blaze it conveys heat nicely, while heat is easily controlled. If the shellac runs into mica it is easily separated.

Yours truly,  
Sandy Hook, Conn. WM. B. GRIFFEN.

### Mail-Order Jewelers

ED. KEYSTONE:—I, and no doubt many others, would like to hear through THE KEYSTONE, from such jewelers as conduct a mail-order business. I understand that many of them have got in the game themselves and find it profitable. Their methods and experiences would be interesting.

Yours truly,  
Detroit, Mich. J. McC.

### A Japanese Jeweler's Business Card

ED. KEYSTONE:—In view of the part now being played by Japan on the world's stage the following business card of a Japanese jeweler may be interesting:

SHO'V THIS  
*Mark of Japanese*

—CARD TO  
*Jinrikishamen*

**JEWELRY MAKER.**  
*A FINEST IN TOWN*

**WHISKYBOY.**

No. 17, AIOICHO ITCHOME, (*Minatobashidori*.)  
**YOKOHAMA JAPAN.**

Our shop is best and obliging worker that have everybody known, and having articles Genuine Japanese Crystal and all kinds of Curious Stones, Shells, Ivory Catseyes, Pearl and pure Tortoise Shell, etc, worked for ladies hair ornaments, Earrings, Lace Pin, Collar-Cuffs Buttons and Fingerrings, also for Gent's scarf pin, Buttons, Charm, and Spectacles, Gold and Silver articles, etc, etc, and (Repairs) gildings gold or Silver plate in electroplate or plainmending Sword, Fan, Chine, Lockets and Charms, etc, Carveing, in Laid, work own nameor monograms or any design according to orders we can works how much difficult Job with lowest Price insure, please try, once try.  
don't forget name **WHISKY.**

This jeweler's card is no less unique than his name, which flavors strongly of a more Western civilization.

Yours truly,  
Lincoln, Nebr. J. B. TRICKEY.

# Mercantile Fountain Pen

In many new styles, in cabinet and show case assortments.

No. 3 A retails \$2.00



ACTUAL SIZE.

## STERLING SILVER PENCIL HOLDER.

The daintiest and most useful pencil holder yet made, and in the most convenient shape—nearly flat, in reality an oval flat.

Retail price—  
Plain . . . \$1.00  
Chased . . . 1.50  
Decorated Pattern, 2.00

Made and warranted by

**AIKIN, LAMBERT & CO.**

Nineteen Maiden Lane, NEW YORK.

Manufacturers and Exporters of GOLD PENS, PENCILS, TOOTHPICKS and NOVELTIES.

General Agents of PAUL E. WIRT.

With our Sample Sets you will prevent orders from being placed with out-of-town parties.

Wedding  
Invitations  
and  
Announcements

Our Sample Sets  
are the finest in  
the field.

Write for  
information.

Calling Cards  
and  
Monogrammed  
Stationery.

WM. FREUND & SONS, 174-176 State Street, CHICAGO.

## THE "RIVAL" FOUNTAIN PEN

SPECIAL No. 1, plain and chased, assorted, \$7.50 per dozen, net cash.  
A HANDSOME PLUSH TRAY, holding twelve pens, given with the first order of one dozen or more pens.

Send for catalogue. Export trade solicited. Send for prices and discount to the trade.



No. 3. Filigree in Sterling Silver or 18 K. Gold Plate. Cut 3/4 actual size.

Ask your jobber for the "RIVAL" Pen. All pens are 14 K. gold. Every pen warranted. Members of National Association of Manufacturers of U.S.A.

**D. W. BEAUMEL & CO.,**

Office and Factory,

All makes of Fountain Pens and Gold Pens Repaired.

45 John St., New York City.

<p>SEND FOR CATALOGUE OF <b>MASONIC</b> AND OTHER SECRET SOCIETY CHARMS, JEWELS, RINGS, BADGES AND LAPEL BUTTONS.</p>	<p>SEND FOR CATALOGUE OF <b>COLLEGE BADGES</b> CLASS PINS AND SCHOOL MEDALS.</p>	<p><b>The G. G. Braxmar Co.</b> Manufacturing Jewelers NO 10 MAIDEN LANE NEW YORK. BADGES &amp; MEDALS A SPECIALTY.</p>	<p>SEND FOR CATALOGUE OF <b>MILITARY</b> G. A. R. ATHLETIC, SHOOTING AND SPORTING MEDALS.</p>	<p>SEND FOR CATALOGUE OF <b>FIRE AND POLICE</b> DEPARTMENT AND OTHER OFFICIAL BADGES.</p>
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## Special Offer to Dealers.

If there is no wholesale dealer in your vicinity, on receipt of \$1.00 in cash or money order, we will send to any express office in the United States, all charges prepaid, 1 dozen boxes, regular size

SILVER  
**ELECTRO-SILICON**  
POLISH

and 100 samples for free distribution. It's exceptional merit has made it famous around the world. Used by owners and makers of Valuable Plate for more than a quarter century.

Electro-Silicon Silver Soap, \$1.25 per dozen.

THE ELECTRO SILICON Co., 30 Cliff Street, New York.





### Growth in Stationery Goods

**A**N old stationer, who is now the head of one of the leading houses in this line, in a recent interview discoursed very intelligently the past and present of the stationery business. Among other things he said:

"Our rapid industrial progress has brought many new business opportunities, but to no tradesmen has it brought more than to the stationer. The shoe dealer of to-day sells more and finer varieties at a greater range of prices than did his father; the hardware merchant, the dry goods dealer, the hat dealer, and the grocer, all offer greater assortments; but the stationer's stock has been extended to embrace many new lines quite unknown to his predecessors, and the old staples include a greater number of varieties than are shown in most other classes of goods. Pens, pencils, ink and paper, a few school goods and some articles for desk use, so few in number that they could have been counted on one's fingers, comprised the entire stock of the old stationer; now the varieties of these articles may be numbered by the score, and while they are still staples, they form but an insignificant portion of the stock.

"A well-stocked stationery store now supplies many articles of hardware, the best selling goods for everyday household use, that used to be found only in the dry goods or notion stores, toys in well-nigh infinite variety, school goods that are being improved and extended every season; pictures, busts and other art goods of various sorts, and novelties without number. These and many other classes of goods are now regarded as stationery, and are supplied to the stationery jobbers. The public have come to look for them in the stationery store, and most of them can be handled without the investment of large capital, and at good profit.

"In fact, these are among the greatest of the stationer's advantages enjoyed in but few other branches of business—the use of small capital, quick returns and large profits. The sources of supply are more convenient

than in most other branches, and most of the goods are of small cost and put up in small lots, making it possible to order frequently and make small bills. There are other features of the business that are particularly advantageous, not the least among them being the frequent opportunity of showing new goods and novelties. There is hardly a day in the year when the stationer cannot show something new—either entirely new goods or the old staples in new styles. And these goods are so pretty and so great in variety that in few other branches can there be so frequent changes of attractive display."

### The New Papeteries and Tablets

The new lines of papeteries are probably more attractive than any heretofore shown. Referring to these the *American Stationer* says: While the boxes are never objectionably gaudy, even a superficial examination of the lines convinces one that the covers are more ornamental than they were last year. Of course, many of the very quiet designs which were more or less the features of the lines then, when manufacturers turned rather suddenly from a tendency to over-decoration, are still numerous to be observed in the lines, and they are not among the least attractive numbers by any means. A large share of the consuming trade which uses the best papers demand just this sort of box. It has been most frequently decorated perhaps with some variety of heraldic design, which is always pleasing to people of a cultivated taste. Other designs of various sorts also are available in which the color work blends most harmoniously, and other artistic little details also have been given careful attention.

#### Many Handsome Boxes

Still other boxes which are likely to appeal to both the popular trade and the trade of less limited means have fancy embossing of floral and other designs of a widely varying character. This is a class of work in which much care must be exercised or it is apt to be of a botchy character which is likely to repel rather than attract trade. None but an unfair critic, however, could find fault with any of the extensive list of boxes displayed in the various sample rooms. As a matter of fact, practically all have already received the decided approval of many experienced buyers, which perhaps is the highest praise that could be given these papeteries. Indeed, the assortments are so uniformly good that a buyer might with perfect safety leave his selections altogether to the salesman with whom he usually deals.

In tablets, like papeteries, the new lines now on display are more elaborately and

ornately decorated than they were last season. The lines are also considerably more extensive than they have been in some seasons past. The expansion here is accounted for not only by the natural reason of a constantly-growing population but by the fact that schools, both public and private, everywhere throughout the country are discontinuing the use of slates and are substituting tablets instead. This accounts for the remarkable growth in the demand for pencil tablets more especially, and in writing tablets to some extent as well.

#### Continually Expanding Demand

It is worthy of note, too, that the latter class of tablets are appealing rather more strongly than ever to some classes of trade who do not care for the little convention that says note paper ought to be used for certain sorts of correspondence, as much as they appreciate the convenience afforded in the compactness of the tablet. The preference is not a commendable one perhaps, but it is one that the dealer is compelled to cater to.

Stimulated by the big increase in the demand for their goods it is not surprising that manufacturers are growing more enthusiastic in the preparation of their lines and that they have turned out such record-beaters this year. In some showrooms the displays of tablets resemble a veritable picture gallery. Bright-colored covers, all of pleasing design, prevail. Some of the more expensive ones are, in addition to the simple color work, still further embellished by embossing and dainty lines of gold to emphasize the detail.

### Unique Fountain-Pen Display

A much admired attraction, recently shown in the display window of L. E. Waterman Co., 173 Broadway, New York, was a miniature model of their booth at the St. Louis Exposition. This booth is unique and elaborate. The four corner posts are imitation 12-foot model fountain pens. The dome at the top is made of vari-colored leaded-glass in the shape of half a globe, carrying out the idea of the "Ideal pen making its mark around the world." This dome is 3 feet in height. The sides of the canopy projecting from the half globe also are of colored glass inlaid with gold pens. The large pens at the top are of highly polished brass 3 feet in height. The space occupied by the booth is 20 by 20 feet. The exhibit is located in the Varied Industries Building, which is directly to the right of the exposition entrance. It is in this building that the jewelry exhibits will be shown, and many will be the attractions therein for the visiting trade.

Ask your jobber for  
**BATES & BACON'S FOBS**  
 with **Safety Attachment**  
Patd. Sept. 22, 1903.  
 and you will get  
**"The Best."**

Bates & Bacon, Manufacturing Jewelers,

9 Maiden Lane,  
 New York.

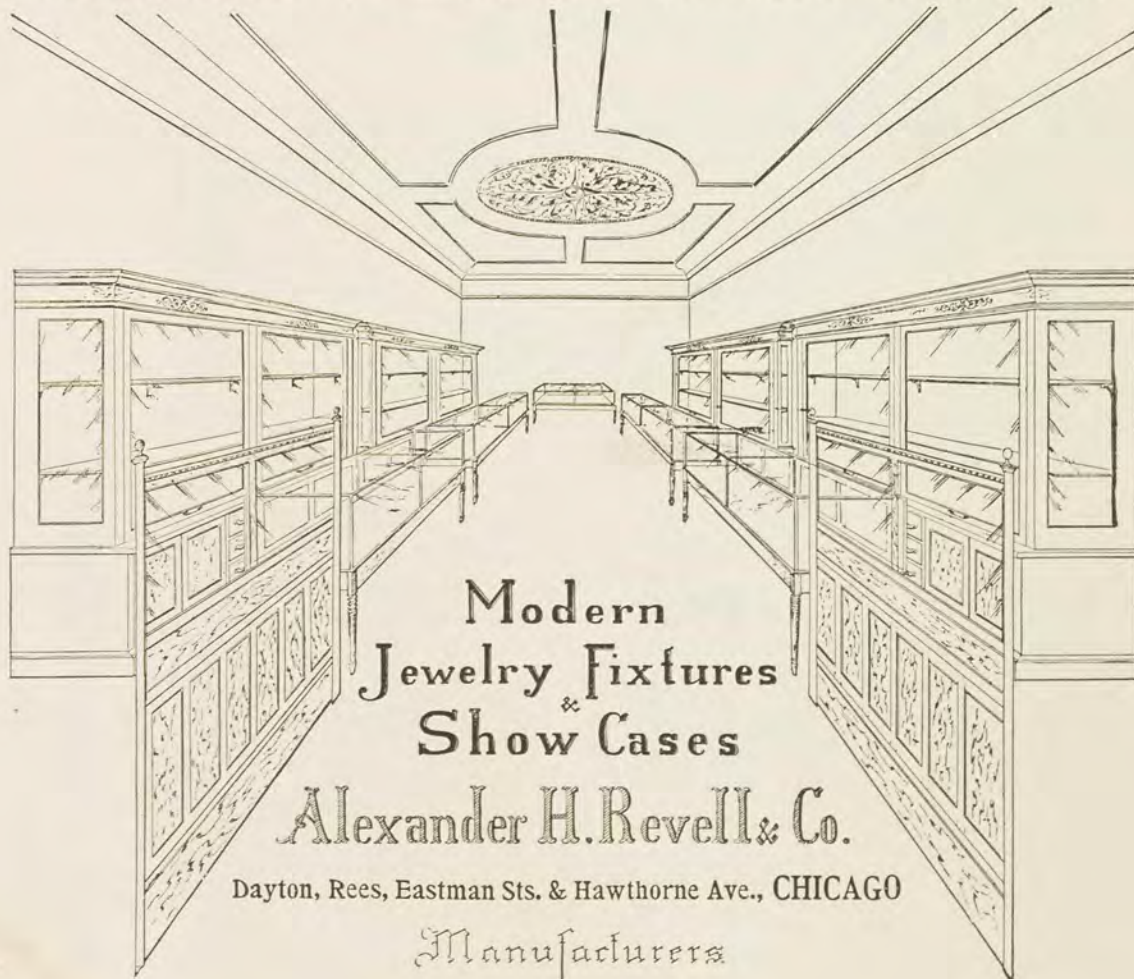
Attleboro, Mass.

103 State Street,  
 Chicago.

**SPECIAL VALUE. Revell No. 400 K Outfit.**

PRICES QUOTED UPON APPLICATION.

4 Wall Cases, each 8 feet long;  
 5 Show Cases and Tables, each  
 8 feet long;  
 2 Screens, each 6 feet long.



Modern  
 Jewelry Fixtures  
 &  
 Show Cases

Alexander H. Revell & Co.

Dayton, Rees, Eastman Sts. & Hawthorne Ave., CHICAGO

Manufacturers

We can furnish any quantity of wall cases, show cases, tables and screens immediately.

Send list of each kind required and we will be glad to quote prices.

**DESCRIPTION.**

Oak, hard oil rubbed finish. Glass double strength.

**WALL CASE.**

Base part 30 inches high, 29 inches deep, outside; three drawers in center, cupboards either side with horizontal sliding paneled doors. Upper part 54 inches high, 18 inches deep, inside. One 10-inch and one 12-inch wide shelves on brackets. Shelves and interior lined with dark green felt. Two doors sliding up and balanced by weights.

**SHOW CASE AND TABLE.**

42 inches high, 28 inches deep, outside. Show case front glass 14 inches high, top glass 24 inches wide, front and top in two lights each, horizontal sliding doors lined with American mirrors.

**SCREEN.**

66 inches high to top of rail, 71 inches high over all, paneled below, glass above.





### Notable Tribute to the American Drummer

A prominent writer in the *National Magazine* pays the following well-deserved tribute to the American drummer: If I were looking for a battalion of Knights of Optimism, the American traveling man would lead the van. Of course, you all know him; that jolly, joking, tender-hearted, generous and hail-fellow who is "well-met" on every trip. The conquests of trade he leads, with a grip as a knapsack; and who ever heard of a man selling goods who could not smile, be good-natured and optimistic? Bouncing about on "limiteds" and way-freights—a twenty-mile drive or a five-mile walk—he covers his territory, and keeps the remote and isolated section in touch with city ways. The boys gather at the grocery to hear him talk. The country merchant advises with him—family confidences are exchanged—the duel of barter is passed when the confidence is reached that "that man and his house are square." Human nature is his chief text-book, and he "keeps in touch with his trade" and knows the people as well as the merchants. The odd moments of leisure in waiting for trains, the dreary hours of a lonely Sunday and weary wait of long winter evenings are utilized. The traveling men are the couriers of commerce, and the American traveling-man is known world-wide for keen and hustling activities.

Oscar Samuels, traveling representative of J. Engel & Co., Baltimore, Md., was recently called home from the road, owing to the death of his brother in New York City.

Messrs. Graves, Miller and Moore, representing respectively the Standard Optical Company, Geneva, N. Y., The Pennsylvania Optical Company, Reading, Pa., and the Bausch & Lomb Optical Co., Rochester, N. Y., were all in Kansas City last week looking after the business of their respective firms.

### The River gives up the Body of the Long-missing Elgin Secretary

The mystery of the sudden, unexpected and complete disappearance, six months ago, of Wm. Geo. Prall, for over thirty years connected with the Elgin National Watch Company, the greater part of that period its secretary, has at last been solved. His body was recovered from the Calumet River at South Chicago at 6.30 o'clock on the evening of May 24th, by Frank Todd, a member of the South Chicago Life Saving Station. It was identified by the number of a key chain found in one of his pockets which had been issued by a Chicago detective agency. There were no marks of violence on the body so far as could be told by a hurried examination, and the theory of the police is that Prall committed suicide while temporarily demented. The body was seen floating a short

distance within the mouth of the harbor. Apparently it had drifted in from the lake before a strong east wind. Mr. Prall disappeared the twenty-eighth day of last November. He was last seen leaving the office of the Elgin Company, at 131 Wabash Avenue, at 10.30 o'clock on the morning of his disappearance. He did not close the desk at which he had been working for several hours, and left his overcoat lying on it. Papers of the company entrusted to his care were found later in perfect order. The theory of the police at the time was that Prall had left the city, but it is now believed that he committed suicide by drowning in Lake Michigan, walking to his death directly from the office. Ever since his disappearance the police have been trying to locate Mr. Prall, and circulars bearing his picture were sent all over the world. Announcement was made by President Hulburd, of the Elgin Company, last December that the accounts of the missing secretary had been investigated and found correct in every particular, and that Mr. Prall had also left a large balance in bank to his personal account. Mr. Prall was born in England nearly sixty years ago. He was a long time resident at Oak Park, and a pillar in the Second Congregational Church of that suburb, of which he was also a trustee. He was also a member of the Oak Park Club and was held in high esteem by all who knew him as a neighbor and a business man. Dr. Sidney Strong, his pastor, said: "He was the last man any of us thought would disappear in the manner he did, as nothing that he ever said or did in any way reflected upon his character." He left a widow and three children, William, Laurie and Mrs. Margaret McCusick, only recently married. "I am absolutely at sea as to the manner in which Mr. Prall met his death," said President Hulburd when questioned about it. "It is my opinion, however, that he was demented."

### The Minnesota State Retail Jewelers' Association

The semi-annual meeting of the Minnesota Retail Jewelers' Association will be held at St. Paul on June 15th and 16th. A good programme has been arranged. A paper by I. M. Radabaugh, of Hastings, on the subject, "The Jeweler as a Merchant and Store-Keeper" should prove very instructive to the trade, as Mr. Radabaugh has the ability to present his subject in a way that convinces. Emil Geist, St. Paul, will present a paper on "Watch Repairing," also a subject for good discussion. President Reiner is arranging for two more papers to round out the day's work. The business sessions will be held the 16th, the 15th being devoted to the social features, including a trolley ride and boat excursion in conjunction with the members of the State Optical Association. The board of directors wish to impress on the jewelry trade in general that all are welcome whether members or not, but naturally are still looking for more applications for membership. Secretary Herdliska reports quite a number of applications.

### Reward

We will give \$5.00 for the present address of J. H. Burke, who, up to last September, was a jeweler at Malta, Mont. About 30 years of age, light auburn hair, smooth face, weight about 155 lbs., Swede, American born, married, last address was Benson, Minn. Reward also offered for the whereabouts of F. Howard, formerly a jeweler at New Rockford, N.D. Address, Reed-Bennett Company, Wholesale Jewelers, Minneapolis, Minn.—Adv.

### Detroit, Mich., Letter

The fine weather this locality has been enjoying for the past three weeks has had a very beneficial effect upon business in general, and there seems to be a better feeling among the trade. While collections are still rather slow, the general outlook for summer business is good. Detroit as a summer resort and convention city is second to none, and the jobbers are expecting considerable visiting from the trade throughout the section during the summer months. As a special inducement to visit Detroit the railroads will make special rates at stated periods throughout the summer.

P. Y. Foote, of Bay City, Mich., was quite ill recently, but is now again able to resume his duties at the store.

Escanaba, Mich., has been visited by an epidemic of typhoid fever. The death rate has been about from six to eight per day. Coupled with the recent failure of a large concern there, in which \$200,000 worth of goods were thrown upon the market, the prospects of a good business are not very bright.

C. W. Chamberlain, of Farmington, Mich., was a welcome visitor last month.

Jeweler Wright, of Giddings, Wright & Co., of Davis, Mich., was seen among the trade buying for summer business.

P. C. Maylone, representing the Elgin National Watch Company, spent a week in this section calling upon the trade in behalf of his company.

F. P. Parker, of Litchfield, Mich., has bought some new fixtures and stock which add materially to the appearance of his place.

Geo. M. Tripp has left Litchfield to accept a position as manager of a jewelry store in Tecumseh, Michigan.

Mr. De Puy, of De Puy & Brown, of Stockbridge, Mich., was seen calling upon the trade during the month.

F. D. Lampman, of St. Ignace, Mich., was in Detroit last month on business.

Mr. Bennett, son of L. M. Bennett, of Traverse City, Mich., visited his uncle, E. K. Bennett, of Detroit recently.

J. Mednikow, a jobber, of Milwaukee, Wis., called upon the dealers here recently on his return trip from the Eastern manufacturing centers.

O. H. Lutz, of Ann Arbor, Mich., was a recent visitor here buying goods.

D. B. Bancroft's stock was sold to Noack & Gorenflo. The stock was offered for sale at auction, and Noack & Gorenflo making the highest bid secured the entire stock.

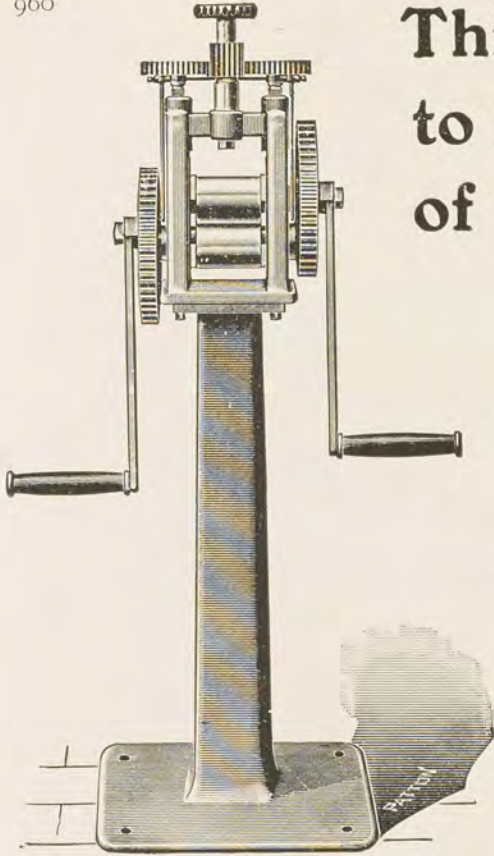
Mrs. Christopherson, wife of Mr. Christopherson, of the firm of Christopherson & Amsden, jewelers, of Menominee, Mich., died April 20th.

H. J. Levy, of Battle Creek, Mich., has returned to his native town after an absence of eight months.

W. W. Hicks has purchased the entire stock and good-will of Adams & Bros., of Tecumseh, Michigan.

Samuel T. Marsh, aged seventy-one, once a prosperous jeweler of Detroit, died last month.

The following jewelers were recent buyers in the market not noted elsewhere: Chas. E. Hight, Mt. Pleasant, Mich.; F. A. Covelle, Wayland, Mich.; J. A. Barth, Jr., Green Bay, Wis.; A. J. Smith, Plainwell, Mich.; L. A. Hoard, Waupun, Wis.; Murphy Bros., Fox Lake, Wis.; G. A. Weinkauf, Princeton, Wis.; The Square People, Menominee, Mich.; R. Banger & Co., Oshkosh, Wis.; A. Molle, Antigo, Wis.; Leo Kerbs, Wayne, Mich.; E. J. Stroehm, Battle Creek, Mich.; D. D. Ranney, Leslie, Mich.



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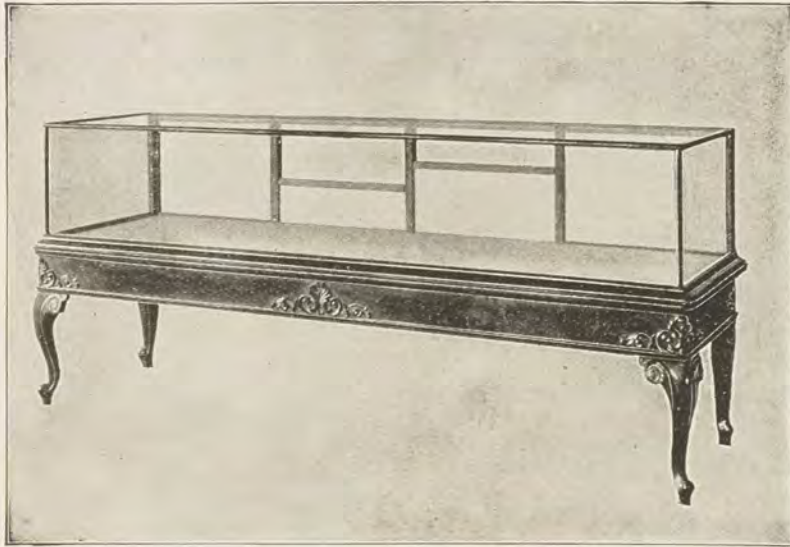
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## "In the Leafy Month of June"

BY JOHN TWEEZER

Nature achieves her highest endeavors, in respect of green and growing things, in this month of "perfect days." She invites us in a hundred cajoling ways to walk a-field and witness her handiwork. Let us turn for a little from contemplation of our material affairs while we "loaf and invite our souls."

Lie down under this leafy canopy and pull a blade of grass. It has very little strength, nothing of notable beauty—a not-much-cared-for detail, apparently, in Nature's abundant provision; to be trodden under foot to-day and to-morrow be turned in a furrow or stacked in withered heaps. But of all flowers that paint the hills, of all spreading vines and stately trees and fragrant fruits, no growing thing is by man more deeply loved, by God more highly graced, than that narrow stalk of feeble green. It speaks of rest and meditation and comfort, of the sustenance of flocks, of slopes, of soft shadows, of crisp hillsides pearled with dew, of the infinite hope in those quiet words of the 147th Psalm, "He maketh grass to grow upon the mountains." It is eloquent of humility and cheerfulness: humility, in that it appears to have been made only for lowly service—appointed to be trod upon, and fed upon; cheerfulness, in that it appears to exult under violence—stronger for being rolled, multiplying its shoots when mowed, sending forth perfume when trod upon.

And here, on the projecting root of the tree under your elbow, is still humbler leafage. This moss is one of the most interesting and curious things in all of Nature's store. It has been called the *immortal* vegetation—for its upper leaves do not decay nor fall. The worm frets its not, nor does the autumn fade it. It neither blanches in heat nor pines in frost. To it is entrusted the weaving of the dark, eternal tapestries of the hills; and while the winds of departing spring scatter the apple-blossoms like drifting snow, and summer dims the flame of the sumac, and autumn sends the forest leaves scurrying into the dark hollows, the mossy stain upon the edge of yonder hill reflects the sunset of a thousand years.

Mosses are "the first mercy of the earth," veiling with tender pity the scarred roughness of the rocks; and they are the last mercy to man, taking up their watch by his headstone and covering his grave forever with soft broidery. "Trees for the builder's yard, flowers for the bride's chamber, corn for the granary, but moss for the grave."

But now, lying on your back under these spreading branches, look through the

overhead canopy of leaves upon another form of Nature's beneficence to man. It is strange how indifferent most of us are to the wonderful beauty of cloud forms and to the mystery of cloud formations. There is scarcely a moment in our lives when Nature is not producing for us picture after picture, glory after glory, between our heads and the arching sky—and we never lift our eyes to see the surpassing beauty of these exhibitions. Who noticed the precipices of tall white mountains that girded the horizon at noon yesterday? Who saw the spears of narrow sunbeams that smote upon their summits until they melted in a dust of blue rain? Who saw them later in the darkening twilight, when the west wind blew the dead clouds before it like withered leaves?

And who stops to marvel at the *phenomenon* of clouds and asks, "Why do they float?" They are water, and water is heavier than air—why do they float? Why do those colossal mountains of vapor in the upper air maintain their massy outlines under the hot rays of the midsummer sun, but melt away when the sun *has set*? "Knowest thou the balancings of the clouds?" asks the sacred prophet; and science sadly answers, "Verily, no!"

Then again, how is a cloud shaped? Puzzle no longer as to its material, size and luminosity; ask what spins it into a web or piles it into a snowy pyramid? Why does it fall into ripples, or stretch into bars, or curl in braids, or stand in overhanging precipices? The curves in which they move, the very method of their motion, are far beyond our ken.

But at least, though we be ignorant, we may yet find bliss without wisdom, if we attend the wondrous panorama which Nature stretches daily across the broad blue sky. This vision of beauty is for each one of us who will turn his eyes to it. Sometimes gentle, sometimes capricious, sometimes awful, never the same for a few moments together; almost human in its passions, almost spiritual in its tenderness, almost divine in its infinity, the clouded sky appeals to all that is best in the immortal soul of man.

May each of us receive unto himself the message which it would speak!

### An Exquisite June Poem

These perfect verses of James Russell Lowell, from "The Vision of Sir Launfal," will bring joy to all who can read "with the spirit and the understanding." They breathe the very breath of the season and are vibrant with the odor and warmth and life of the early summertime. I know they will appeal to the sensibilities of ten thousand KEYSTONE

readers and bring to the consciousness of each the joy of living in this "high-tide of the year."

What is so rare as a day in June?  
Then, if ever, comes perfect days;  
Then Heaven tries the earth if it be in tune,  
And over it softly her warm ear lays;  
Whether we look, or whether we listen,  
We hear life murmur, or see it glisten;  
Every clod feels a stir of might,  
An instinct within it that reaches and towers,  
And, groping blindly above it for light,  
Climbs to a soul in grass and flowers;  
The flush of life may well be seen  
Thrilling back over hills and valleys;  
The cowslip startles in meadows green,  
The buttercup catches the sun in its chalice,  
And there's never a leaf nor a blade too mean  
To be some happy creature's palace;  
The little bird sits at his door in the sun,  
Aflit like a blossom among the leaves,  
And lets his illumined being o'errun  
With the deluge of summer it receives;  
His mate feels the eggs beneath her wings,  
And the heart in her dumb breast flutters and sings;  
He sings to the wide world, and she to her nest—  
In the nice ear of Nature which song is the best?

Now is the high-tide of the year,  
And whatever of life has ebbed away  
Comes flooding back with a ripply cheer,  
Into every bare inlet and creek and bay;  
Now the heart is so full that a drop overfills it,  
We are happy now because God wills it;  
No matter how barren the past may have been,  
'Tis enough for us now that the leaves are green;  
We sit in the warm shade and feel right well  
How the sap creeps up and the blossoms swell;  
We may shut our eyes, but we cannot help knowing  
That skies are clear and grass is growing;  
The breeze comes whispering in our ear,  
That dandelions are blossoming near,  
That maize has sprouted, that streams are flowing,  
That the river is bluer than the sky,  
That the robin is plastering his house hard by;  
And if the breeze kept the good news back,  
For other couriers we should not lack;  
We could guess it all by von heifers lowing—  
And hark! how clear bold chanticleer,  
Warned with the new wine of the year,  
Tells it all in its lusty crowing!  
Joy comes, grief goes, we know not how;  
Everything is happy now,  
Everything is upward striving;  
'Tis as easy now for the heart to be true  
As for grass to be green or skies to be blue—  
'Tis the natural way of living;  
Who knows whither the clouds have fled?  
In the unscarred heaven they leave no wake;  
And the eyes forget the tears they have shed,  
The heart forgets its sorrow and ache;  
The soul partakes the season's youth,  
And the sulphurous rifts of passion and woe  
Lie deep 'neath a silence pure and smooth,  
Like burnt-out craters healed with snow.

### Tweezerisms

There never was a brass band capable of playing all the airs that the drum major puts on.

A measly little alarm clock has spoiled the making of many a fortune—in dreamland.

A "stitch" in time can be ripped out by the watchmaker.

It is never too late to advise a man to mend.

The mind of a bigoted man is like the pupil of the eye—the more light you pour on it the more it contracts.

Never put off until to-morrow that which you ought not to do to-day.

"Great fleas have little fleas upon their backs to bite 'em,  
And little fleas have lesser fleas, and so *ad infinitum*;  
While the great fleas themselves, in turn, have greater fleas to  
go on,  
And these again have greater still, and greater still,—and so on!"

I prefer a forgetory that fails to remember one's own good deeds, to a memory that recalls the unpleasant things that were done by another,

J. T.

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## Reviews of Current Ophthalmological Literature of the World

### The Influence of Dental Diseases on Certain Troubles of the Eye

The theory of the dental causation of various eye troubles is not new. As early as 1824 Travers called attention to strabismus as a symptom that sometimes would arise in children from difficult early dentition, and Galezowski, the eminent French ophthalmologist, has for several decades supported this theory by many able reports from his practice. Many other ophthalmologists like Weinberg, Power, Knies, Bull, Davis and Weill have contributed valuable data to this problem, but nevertheless the matter does not appear to have received the deserved attention by ophthalmologists and refractionists in general.

Still though the functions of the eyes and the teeth are so different, the anatomic relations existing between the teeth and their sockets on the one side, and between the eyes and their sockets on the other are so intimate that one may easily see how morbid affections of the one organ may influence, either by direct continuity or by reflex, the functions of the other organ. This is well indicated by the French ophthalmologist Despagnet when he says: "The same periosteum which lines the orbital cavity extends to the alveolar border of the upper jaw, the mucous membrane of the mouth is in direct continuation with the conjunctiva. Many times the roots of the upper teeth extend directly into the antrum of Highmore (a cavity in the upper jawbone) and from this situation disease frequently reaches through the orbit through the thin partition of bone. The angular artery and certain veins run almost directly from one region to the other. The same general nervous supply reaches both, not only through the fifth pair, but also through the sympathetic system."

Lately in the *Journal of the American Medical Association*, Dr. Willis O. Nance, of Chicago, again calls attention to the importance of this fact, and reports several cases in which an apparently very severe eye trouble was relieved at once by proper attention to the teeth. His four cases he describes as follows:

Mr. H., aged twenty-eight, farmer, had been suffering intensely from pain in the region of the right eye for nearly two weeks. The lids were markedly edematous, the eye protruding and deeply injected, the pupil dilated, and the eyeball but feebly movable. Iced applications, leeching and hypodermatic injections of morphia had but temporarily relieved the pain and given the patient little sleep, the inflammatory process meanwhile increasing in intensity. On the second day under observation it was noted that the cheek on the corresponding side was swollen, and questioning elicited the information that the patient had suffered periodically for several weeks from a diseased tooth. Extraction of a badly decayed molar was

immediately followed by the escape of a quantity of pus, and antiseptic treatment brought about a rapid amelioration of the orbital and ocular symptoms.

Several months ago Mrs. F., aged thirty-eight, was sent to me by her family physician. She had complained of severe headaches and inability to read or sew for a period of eight or ten weeks. The right pupil was widely dilated and there was no response to light stimulation. Patient was wearing weak convex lenses. Examination revealed compound hyperopic astigmatism of both eyes, and the correction was ordered for constant use. Ophthalmoscopic examination was negative. There was no history of syphilis. Potassium iodid had been administered for several weeks in increasing doses to a maximum of 200 grains per diem, with no improvement. Examination of the teeth demonstrated a sensitive upper molar which presented a cavity of considerable proportions in which rested the remains of an amalgam filling. The tooth was properly treated, and within a fortnight the mydriasis had entirely disappeared.

A man of forty-eight years came to my clinic presenting a well-marked localized injection of the sclera of the left eye. This condition had developed, according to a statement volunteered by the patient, simultaneously with an attack of toothache several months previously. The further observation had been made that, as the odontalgia moderated in severity, the eye symptoms gradually disappeared only to return when the dental disturbance recurred. So evident was the connection that the patient suggested the relationship at the first visit. On examination, the man was advised to have several roots extracted, and on submitting to the operation was permanently relieved of the ocular trouble.

The other case was that of a girl, sixteen years old, who came under my service at the Illinois Charitable Eye and Ear Infirmary. Six months previously she had been under my care on account of a scissors-blade injury of the right eye, which destroyed the vision and left a scar extending almost entirely across the cornea. On her appearance at the infirmary she complained of intense supraorbital neuralgia and pain in the left eye so severe that she had been unable to sleep but little for forty-eight hours. The conjunctiva was deeply injected, and there was a ciliary tenderness and diminution of the power of accommodation. So distressing were the symptoms that sympathetic ophthalmitis at once suggested itself, and the patient was put under careful observation. The following day a slight swelling of the left cheek was noticed; the patient was sent to a dentist with the result that on proper treatment being applied to several upper teeth the ocular symptoms were promptly and permanently relieved.

### A New Treatment Proposed for Myopia

While speaking about the treatment of asthenopia before the Ophthalmological Society of the United Kingdom, Dr. C. Brooksbank-James detailed a plan of treating myopia which is quite peculiar. He had noticed how rare it was to see myopia develop in watchmakers and those who used a single eyeglass for magnifying their work. Applying the same principle to the treatment of myopia he had come to the conclusion that the development of myopia might be arrested by similar means. He mentioned the case of a patient who had - 1.5 D. myopia and for whom he ordered a glass of + 1.5 D. to be used for one eye only, so that convergence might be prevented. The myopia did not increase during many months while using

this method, though it increased 0.5 when ordinary glasses were used.

The reviewer must state that the use of convex glasses for the treatment of myopia is not quite new; for more than twenty years ago Javal advocated the use of convex glasses for myopes whose defect was less than 4 D. His intention was to suppress the accommodation as much as possible; but he employed the convex glasses for both eyes, while Dr. Brooksbank-James uses them only for one eye, his idea being the suppression of convergence. The reviewer, however, is convinced that the method of Dr. Brooksbank will be accepted by the profession as little as was that of Javal. For it is very probable that the use of only one eye will not prevent the convergence of the other eye, even if the latter was closed, which point was made already, at the meeting, by Dr. Bishop Harman. But if the convergence cannot be prevented then also the myopia cannot be arrested, because, in the opinion of the speaker, the myopia is caused by convergence. That in his case the myopia did not increase during many months cannot be accepted as a positive proof for the efficiency of the treatment by convex glasses, as a similar arrest is frequently observed with the usual full correction. But even admitted that the treatment was effective, and would be so in every case of progressive myopia, what would be the result? Would not the patient develop more and more exophoria and be in danger of losing binocular vision? He certainly would not use both eyes for his near work which would be a great disadvantage. The reviewer believes therefore that the treatment should not be recommended in general, though there may be a few cases in which it might be of temporary benefit.

### Interesting Experiments with Ultraviolet Light in its Relation to the Human Eye

At the last meeting of the German Ophthalmological Society at Heidelberg, Dr. Hertel, of Jena, described his experiments which were undertaken to determine whether ultraviolet light would be useful in the treatment of superficial bacterial diseases of the eye, what strength of ultraviolet light would be borne by the eye and whether this quantity of light was sufficiently bactericidal for practical purposes. He used the ultraviolet light given out by magnesium electrodes, because the magnesium lines in the ultraviolet are very strong and so few in number that the wave length of the light used could be determined with relative ease. Hertel found that the effects he described were produced by rays ranging from 309 to 280 in wave length.

These ultraviolet rays were found to be highly bactericidal, for the bacteria coli were



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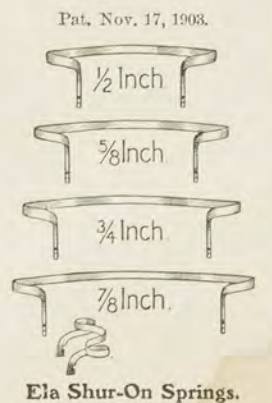
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## Reviews of Current Ophthalmological Literature of the World

(Continued from page 963)

killed in twenty seconds and the bacteria of typhoid and cholera in a little longer time. The statements of Finsen and Widmark that blood and fat permitted few of these rays to pass were confirmed in these experiments.

Of the media of the eye the lens was found to be almost impermeable even in the thinnest layer, while the vitreous and the cornea were somewhat less so. This was verified even for the living eye. In order to see whether the rays which had passed through these tissues retained their physiologic power, bacteria in quartz receptacles were introduced into the anterior chamber and behind the lens in living animals. It was found that the bacteria in the anterior chamber were killed after an exposure of about twenty-five minutes, but that those behind the lens continued to live even after an exposure of sixty minutes. Finally, the doctor produced artificially a series of corneal suppurations and then treated them successfully by means of these rays. His belief, therefore, that it would be justifiable to treat ulcers of the human cornea with these ultraviolet rays appears quite reasonable and hopeful.

### New Experiments about the Influence of the Ultraviolet Rays on the Retina of the Normal and the Aphakic Eye

Dr. Birch Hirschfeld, of Leipzig, Germany, lately investigated the influence of the ultraviolet rays on the retina with special reference to the presence and absence of the crystalline lens. The conclusion from the first set of experiments was that the ability of the eye to perceive ultraviolet rays is increased by the removal of the lens, which is quite in agreement with the researches of Hertel, who found that the crystalline lens is almost impermeable to these rays. In the second set of experiments the doctor endeavored to determine whether ultraviolet rays can cause pathologic changes in aphakic eyes, but not at all or to a less degree in eyes with lenses. For this purpose the doctor removed the crystalline lens from one eye of eight rabbits, and then subjected both eyes of each rabbit for the same length of time to the ultraviolet rays. For purposes of comparison even a third series of experiments was executed, in which the eyes were subjected to the action of sunlight and the electric light after each kind of light had been deprived of their ultraviolet rays. It was observed that, after an exposure of from half to three-quarters of an hour to the ultraviolet rays of an electric light, retinal changes appeared in the aphakic eyes of the rabbits, the chief characteristics of which were solution of the chromatic substance, diffuse blue coloration of the interstitial substance and the formation of vacuoles. These changes, however, were repaired after some time and were quite different from those produced to the exposure to light from which the ultra-

violet rays had been excluded. In eyes in which the lens was present, little or no changes could be observed after exposure to the ultraviolet rays.

In this connection it is interesting to remark, that in 1898 Dr. Herzog had made some experiments to determine the influence of sunlight and electric light on the retina and lens. He had found that in three old rabbits, cataracts were developed after an exposure of two hours to electric light; one of which was less dense three days later and finally cleared up finally.

### A Large Piece of Glass Imbedded in the Orbit for Twenty Years Without Causing Symptoms; Removal

How long sometimes a foreign body may lodge in the eye or its immediate neighborhood, without any appreciable irritation, is again shown by a case of Dr. J. H. Evart; who, in the *Lancet*, reports the case of a woman that came to him with "a small sinus situated about two centimeters above the inner canthus of her left eye. The injury had originally been caused by a clock falling on her head, the glass of which made a deep cut across, and to the outer side of her left eyebrow. This was sewn up and with the exception of a slight pricking about eight years ago which quickly passed off and a puckering of the skin over the inner side of the upper eyelid, there were no symptoms until about three weeks ago when the skin broke and there was a slight watery discharge.

"Probing the small opening, a large triangular piece of glass, measuring 3 centimeters in length, 1 centimeter in breadth, and 1.75 millimeters in thickness was found deeply imbedded transversely above the eye; the apex, lying on the nasal bones, being easily felt under the skin.

"It is remarkable that this foreign body should have remained in situ so long a time without causing symptoms or damaging the eyeball, upon which it might easily have encroached, the edges being quite sharp. 'It was much cracked.' I was therefore glad that after a trial with a pair of forceps I removed it digitally, or it would most certainly have splintered and caused great trouble."

### The Development of Myopia

In his recent book, "Myopia, Its Development and Importance," Stilling defends the view that school myopia is due to the strain of the eyes in reading and writing and not so much to the unfavorable external conditions under which the work is done. The cause of myopia is not a disease of the eye, but simply an increase in the antero-posterior diameter, brought about by the mechanical pressure of the extrinsic muscles which are employed in the act of reading. One must sharply differentiate this form of myopia from that serious, usually progressive, condition in which there is a pathological enlargement of the eye in all diameters and which has nothing to do with near work.

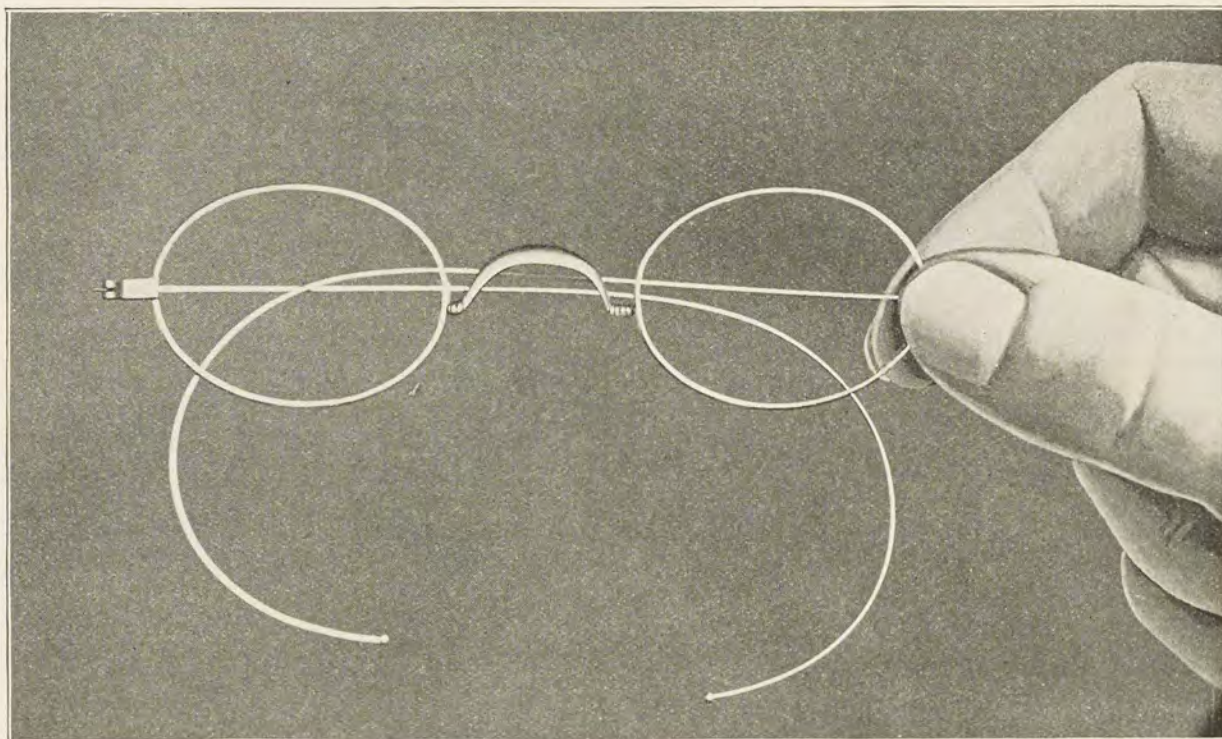
### A New Book on Diseases of the Eye

Although there is no dearth of good books on diseases of the eye, there is always room for a new one which, like that of Dr. L. Webster Fox, of Philadelphia, is the outgrowth not only of careful research, but also, and that perhaps to a greater extent, of many years of practical experience. The book, which is published by D. Appleton & Company, of New York, is a fine specimen of the typographic art, both as to the paper and to the print and the illustrations, contains about 580 pages. In twenty-one chapters the author treats the development of the eye, its anatomy, the diseases of the eyelids, the lachrymal apparatus, the conjunctiva, the cornea, the sclera, the iris and the ciliary body, the chorioid, the retina, the optic nerve, the crystalline lens, the vitreous and the orbit. Glaucoma and sympathetic ophthalmia are discussed in separate chapters, and the Roentgen rays and their application in ophthalmology are well described in the sixteenth chapter. Twenty pages are devoted to the relation of the ocular affections to general diseases and five to the pupil in health and disease. The two last chapters treat of refraction and the ocular muscles in 105 pages, while an appendix describes the general operative technique.

In the preface the author calls his treatise "a digested summary of the known facts for use of students who in after life become practitioners of medicine." This claim is certainly quite justified; indeed the detailed description of many operations like those on the lids would almost appear too full for the general practitioner, while the subject of refraction is dealt with not quite thoroughly enough from the standpoint of the ophthalmologist. The illustrations are usually excellent, but it would seem to the reviewer that some might be added, especially in the diseases of the retina, where, for example, one for the pigmentary degeneration of the retina could be easily given in black and white. The proof-reading has been very good, although in the very first plate, opposite the title page, two errors have escaped attention. The one is *lobuli adipis* for *loculi adipis*, and the second *subrasclerale* for *suprasclerale*. The book can be heartily recommended to our readers. It can be had from THE KEYSTONE on receipt of publisher's price, \$4.00.

### "A Manual of Diseases of the Eye"



Of less pretensions than the book of Fox, but nevertheless of great practical value is the "Manual of Diseases of the Eye," by Dr. Clarence A. Veasey, of Philadelphia. In the nineteen chapters, with about 400 pages, the author avoids all theories or doubtful procedures, and succeeds in giving a clear and concise statement of the symptoms and treatment of all important diseases of the eye. The subject of refraction and accommodation is treated in only forty-two pages, but nevertheless fully enough to give the student a good view of the practical side of refraction. The illustrations, print and paper are excellent, as is to be expected of a book published by a house like Lea Brothers & Co. The book can be had from THE KEYSTONE on receipt of publisher's price, \$2.00.



## Geneva Special, No. 1136.

**T**HE above illustration represents a new ten-karat solid gold riding frame placed on the market May 1st. This frame is the best value for the money that we have ever offered, and that is a large statement, as we have given the trade many good things in the past 30 years. It carries the Geneva Guarantee of being full 10 karat fine and bears the Geneva stamp of superior quality in finish and workmanship. Is made in 1, 0 and 00 eye sizes, and assortment of SS bridges in each dozen, as follows:

1 Pair M1,	$2\frac{1}{4} \times \frac{1}{8}$ plus $\frac{1}{16}$ .	( $\frac{1}{16}$ outset.)	2 Pair N1,	$2\frac{3}{8} \times \frac{1}{8}$ plus $\frac{1}{16}$ .	( $\frac{1}{16}$ outset.)
1 " M1, L. S.,	$2\frac{1}{4} \times \frac{1}{8}$	0. (On plane.)	1 " N1 $\frac{1}{2}$ , L. S.,	$2\frac{3}{8} \times \frac{3}{16}$	0. (On plane.)
1 " M1 $\frac{1}{2}$ , E. L. S.,	$2\frac{1}{4} \times \frac{3}{16}$	— $\frac{1}{16}$ . ( $\frac{1}{16}$ inset.)	1 " N1 $\frac{1}{2}$ ,	$2\frac{3}{8} \times \frac{3}{16}$ plus $\frac{1}{16}$ .	( $\frac{1}{16}$ outset.)
1 " M2, L. S.,	$2\frac{5}{16} \times \frac{1}{4}$	0. (On plane.)	1 " N2,	$2\frac{3}{8} \times \frac{1}{4}$ plus $\frac{1}{16}$ .	( $\frac{1}{16}$ outset.)
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1 " N1, L. S.,	$2\frac{3}{8} \times \frac{1}{8}$	0. (On plane.)			

**Price is only \$21.60 per dozen net cash.** Sample pairs, postage paid, \$1.95. Orders for less than one dozen, or for different assortment of bridges than above, will be charged 10% additional. Note the construction and finish of end piece. Temples always close flat. You can get this end piece on no other frame. Note weight and stiffness of bridge. Order one dozen or one pair, weigh them, assay them, and compare them in price with any solid gold 10 K. frames  you may have in stock, and you will use them permanently for your fine trade. Note trade-mark  in bridge.

This frame is not in the hands of Jobbers or Wholesale Opticians, and can only be procured direct from our Geneva Office, or through our travelers, and as it is impossible for our representatives to call on every Optician, we make THE KEYSTONE carry the message to all the Optical trade, giving dealers in every part of the world the advantages possessed by those who are able to call in person at our office.

## Geneva Optical Co.,

## Geneva, N. Y.

N. B.—“Geneva R. Work is accurate.”

Geneva Superior Binoculars are used by the U. S. War Dept.

General Catalogue sent on request.



OPHTHALMOSCOPY

(Continued. Part II)

This serial is the well-known exposition of the principles of ophthalmoscopy and the practical use of the ophthalmoscope, which forms one of the chapters in Dr. Tscherning's celebrated treatise, "Physiologic Optics," which can be had from this office on receipt of the price, \$3.50 (14s. 7d.)

The ophthalmoscope is the only practical means of illuminating the eye. Nevertheless, a different method may sometimes prove serviceable. We place the lamp behind the observer so that the light reaches the observed eye by glancing along the head of the observer; we concentrate the light on the eye with a lens. When the pupil is dilated we can thus see the fundus of the eye feebly illuminated, and we often distinguish very distinctly details situated far forward in the vitreous body (tumors of the ciliary body, detachments, etc.).

**Examination by the Erect Image (Helmholtz).**—The conditions for seeing the pupil luminous were known, before Helmholtz, by the researches of Cumming and Bruecke, and Babbage seems to have already illuminated the pupil with a mirror from a small portion of which the coating was removed for observation purposes; but none of these scientists thought of studying the conditions under which this ocular glow can form an image of the fundus of the eye.

When preparing the lectures, in the course of which he was to illustrate for his class the methods of making the pupil appear luminous, Helmholtz proposed to himself the problem to be solved, not a difficult task for an experienced physicist. He easily succeeded in solving it theoretically, and then constructed the first

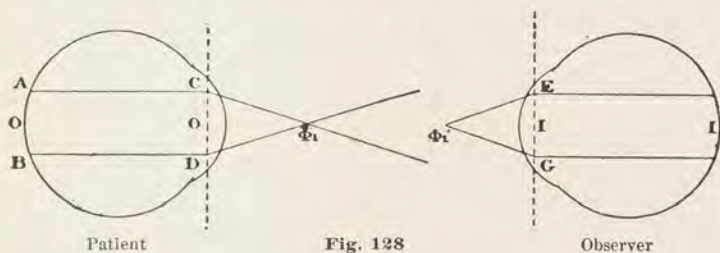


Fig. 128

ophthalmoscope by combining some glass plates with the lenses of a test case; after some days of hard work he succeeded in seeing the fundus of the living eye, which no one had ever seen before.

Helmholtz used examination by the *erect image*. Suppose that the observer is emmetropic (if he is not, he must correct his refraction): he can then see the fundus of the eye of another emmetrope without any further aid, since the rays emerging from the observed eye are parallel. If the observed person is not emmetropic he must be made emmetropic. We, therefore, look for the strongest convex glass or the weakest concave glass with which we can see the fundus of the eye distinctly: this glass indicates at the same time the refraction of the eye; but the observer must cultivate the habit of not using his accommodation, otherwise the results will be false. The refraction which we find with the ophthalmoscope ought to be in agreement with that found by subjective examination. It must be noted, however, that the glass of the ophthalmoscope is generally a little farther away from the eye examined than a glass placed in a frame. We find, therefore, as by the subjective method, too low a number for hypermetropia, too high a number for myopia, and the error is more pronounced in the case of an ophthalmoscopic examination on account of the greater distance. For low degrees of ametropia it is insignificant; for high degrees, especially of myopia, it is sufficient to make the determination fallacious. Latent hypermetropia is generally disclosed by ophthalmoscopic examination, because, in the dark room, the patients do not fix.

**MAGNIFICATION.**—To obtain a numerical expression of ophthalmoscopic magnification, we may compare the retinal image, formed

in the observing eye, of an object (the papilla of the fundus of the examined eye) with the retinal image which the observing eye would have of the same object, placed free in air, at the working distance of the observer. We often make this distance 20 centimeters.

Let us suppose that both eyes, that of the observer and that of the observed person, are emmetropic.

Let  $O = AB$  (Fig. 128) be the object of the fundus of the observed eye; we draw the rays  $AC$  and  $BD$  parallel to the axis. These two rays will intersect at the anterior focus  $\phi_1$ , and all the

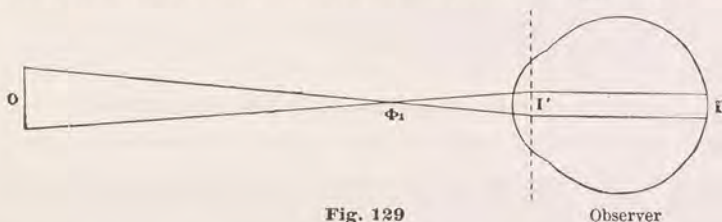


Fig. 129

other rays proceeding from  $A$  and  $B$  are parallel to either of these; among other rays  $\phi'_1 E$  and  $\phi'_1 G$  which, prolonged, pass through the anterior focus of the observing eye. After refraction in this eye these rays are parallel and determine the size of the image  $I$ . Designating by  $F_1$  the anterior focal distance of the observed eye, by  $F'_1$  that of the observing eye, the two similar triangles,  $CD\phi_1$  and  $EG\phi'_1$ , give the relations:

$$\frac{I}{O} = \frac{F'_1}{F_1}$$

We see that, if the optic systems of both eyes are alike,  $I$  is equal to  $O$ . The papilla of the observed eye forms in the observing eye an image equal to itself. By placing the fundus of the eye free in the air at the working distance, equal to 20 centimeters, the retinal image  $I_1$  of the object  $O$  (Fig. 129) would be found by the formula.

$$\frac{O}{I_1} = \frac{200}{F'_1}$$

By multiplying this formula by the preceding one, we obtain the magnification in the erect image:

$$G = \frac{I}{I_1} = \frac{200mm}{F_1}$$

By supposing 15 millimeters for  $F_1$ , the magnification would be about 13, but this number is arbitrary, since the working distance has been chosen arbitrarily.

If the observed eye is myopic, the magnification is greater, supposing that the correcting glass is beyond the anterior focus of the observed eye, as is always the case. The construction is the same as in the preceding case, but on meeting the concave glass the rays  $C\phi_1$  and  $D\phi_1$  (Fig. 130) are made more divergent. The

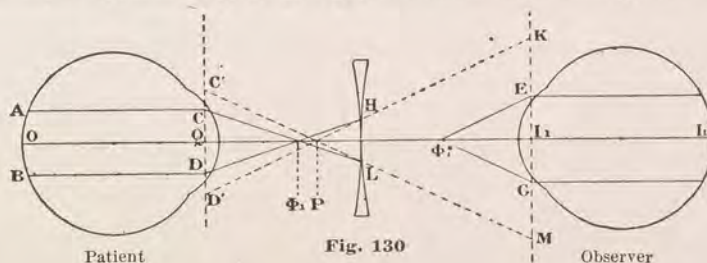
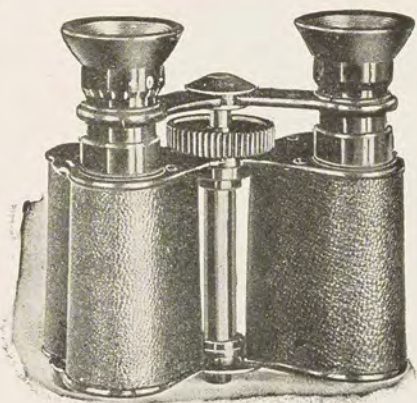


Fig. 130

rays  $\phi'_1 E$  and  $\phi'_1 G$  which are parallel to them diverge, therefore, more than in the preceding case, which makes the image  $I_1$  greater. If there is a case of a myopia of curvature the magnification is still greater; the point  $\phi_1$  is, in fact, situated nearer the observed eye, which causes the rays  $HK$  and  $LM$ , and consequently also the rays  $\phi'_1 E$  and  $\phi'_1 G$  to diverge still more. In the hypermetropic eye the reverse takes place. It follows that in an astigmatic eye we see the papilla elongated in the direction of the meridian of greatest refraction.

[TO BE CONTINUED]



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From the original prescription of the late Dr. Agnew.

This wonderful remedy has been on the market for twenty-five years, and is sold by thousands of Jewelers and Opticians throughout the United States and Canada with **great satisfaction**. This is the **ONLY** Eye Remedy from the formula of any **eminent oculist** ever put upon the market. Its immediate effect in cases of chronic or acute conjunctivitis, blepharitis or scaly eyelids, burning, smarting or itching of the eyes, or inflammation from **any cause**, is phenomenal. It contains nothing poisonous, therefore is perfectly harmless to use freely in any case.

This Eye Water **WILL NOT** prevent a person's eyes from growing old, restore the sight of a person that is blind, or remove cataracts, but it **WILL CURE** or prevent more diseases of the eyes than any other preparation **ever compounded**.

Beware of imitations that are inferior or perhaps injurious. **Remember**, Dr. Agnew's portrait is on every box.

Price, \$19.50 per gross; \$1.63 per dozen.

Customers' business card on each bottle if six dozen or more are ordered. Order from your jobber or direct from the proprietor.

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**WHAT IS A REMEDY?** Any substance or preparation used with the view of curing or allaying morbid action. As it would require many of the valuable pages of THE KEYSTONE to publish the testimonials received from dealers and users of THE GREAT GERMAN EYE WATER, I refer dealers in optical goods to a few of the leading opticians in different parts of the country, selling this remedy, some of them for more than 20 years. This remedy is **NOT** for sale in drug stores, but by the optical trade **EXCLUSIVELY**. **NO COCAINE** in this formula.

### REFER- ENCES:

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E. W. Folsom, Somersworth, N. H.	J. S. Jenson & Sons, Salt Lake City, Utah.
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The Following Jobbers in Optical Goods are Selling Agents for The Great German Eye Water:

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Jos. Friedlander & Bro., 8 Maiden Lane, New York.	Chinn-Beretta Optical Co., San Francisco, Cal.

## Annual Convention of American Association of Opticians

**T**HE various committees charged with the responsibility of perfecting arrangements for the annual convention of the American Association of Opticians have been working diligently, and it is safe to predict that the Milwaukee convention will be an unqualified success both in numbers and results. The convention will be held August 1st to 4th, and a most instructive and entertaining programme is being arranged for the occasion.

For the benefit of those unacquainted with the great city in which the convention will be held it can be truthfully said that Milwaukee enjoys a national reputation as a most admirable convention center. This accounts for the fact that it is the Mecca of hundreds of thousands of convention visitors annually. From the dawn of each new year until its close conventions, national and state—great and small—follow in close succession in Milwaukee. In the summer months, the hey-day of excursionists, conventions assemble there in such close order that it frequently happens that there are from three to four organizations, separate and distinct, meeting in the city at the same time. And there is room and a greeting for all.

Many things have combined to secure for Milwaukee its reputation in respect to conventions. Dame Nature predestined this as a rendezvous

for pleasure-seekers, and has greatly favored the city in beauty of location and environment, in delightfulness of climate and the health-giving qualities of the soil and atmosphere. Enterprise, energy and capital took up the work so well begun and has created a city of handsome streets and residences; a wealth of parks; artistic and stately public buildings, including Federal, city and county structures; an art gallery; a public library and museum and countless private institutions; all of which help to give Milwaukee a reputation for the things that contribute to enduring greatness in business, in education, in æsthetics, in civic stability and in home building.

As a bidder for conventions, **Central and Easy of Access** Milwaukee is particularly favored in those indispensable requirements of central location, easy access and hotel accommodations. Situated in the heart of the continent, with unequalled rail and water transportation facilities, it has been demonstrated countless times that Milwaukee conventions are always banner conventions in point of attendance. No hotels, collectively or individually, have a better reputation for the reception and care of large numbers of visitors than those of Milwau-

kee. They are many in number, exquisite in their appointments, unexcelled in their cuisine, and managed with particular reference to the greatest comfort and pleasure of the largest number of guests. Complaints of extortion, crowding and ill treatment are never made concerning Milwaukee hotels.

Milwaukee is easy of access from all points of the North American continent *via* leading railroad trunk lines and their connections.

Milwaukee is the legal home, and one of the principal points on the great system of the Chicago, Milwaukee and St. Paul Railway. From Milwaukee, as a center, extend many of its branches tapping the gateways to the east, southwest and northwest. Its diverging routes out of Milwaukee reach the leading lake resorts in and about the city, thus rendering them very easy of access.



Scene on White Fish Bay, Four Miles from Milwaukee

Our illustration shows a view on White Fish Bay, four miles north of the city limits, which is regarded as one of the most beautiful spots on Lake Michigan. Here is located the Pabst White Fish Bay resort, which is annually visited by hundreds of thousands of Milwaukee people and their visitors. Approaching White Fish Bay is a drive of the same name which has become famous for its scenic environments. Every afternoon and evening during the summer season may be seen along this drive hundreds of fashionable equipages, many of them en route to the Country Club, which is half way from the city to the bay. Street cars also run at short intervals direct to White Fish Bay. This is but one of many pleasurable resorts in the immediate vicinity.

As was stated in our last issue the committee on transportation has secured railroad rates of one and a third fare for all who will attend the Milwaukee convention. It is also announced that the St. Louis Exposition has named August 9th, the Tuesday following convention week, as Opticians' Day. An auditorium will be placed at the disposal of visiting opticians on that occasion, and it is safe to predict a large attendance, a large number having already signified their intention of being present.

Though we cannot, in this issue, announce the authorized programme, we can offer the assurance that a great intellectual treat is in store for those who will journey to Milwaukee, and an abundance of physical enjoyment as well. The lady opticians will take a more active part than heretofore in making the convention a success, and their presence will add to the *eclat* of the occasion. In our next issue we will give information in greater detail in regard to the programme and other convention arrangements.

## Iowa State Association of Opticians

The following circular-letter has been issued by the Iowa State Association of Opticians:

*Dear Sir:*—You are practicing optometry in Iowa, but you are not a member of the Iowa State Association of Opticians. Why? The association is working for your benefit. It is elevating the profession in which you are engaged and interested, yet you are not aiding the association. Is this fair? We desire your presence in our meetings; we want your endorsement of our purposes; we would like your counsel and influence.

It may be that our methods are not altogether perfect, but you have no right to sit on the outside and criticize. Come in and be a part with us; shoulder your portion of the responsibility.

It's possible that you are one of those that have no knowledge of the subject of optometry except from home study or a correspondence course, and on that account feel that you are not wanted. It's a mistake. Many home students are doing better work than others who are graduates from our best

colleges; but in either case if you attend our meetings, you will go home with new inspiration, and you will do better work and more of it.

Our next meeting will be at Des Moines, June 21-22, to which there will be reduced railroad rates on the certificate plan. You will receive fuller details of the meeting a little later; but we can assure you of a very interesting and instructive programme, and also quite full particulars of a test case that will come before the September term of the Supreme Court, which is of grave importance to the optical profession in Iowa.

We enclose a copy of the constitution and by-laws of the association, as well as a blank application, which we trust you will feel it your duty to fill out and send with the necessary fee, \$3.50, to our secretary, so that you may be admitted to membership before our session.

Since the printing of our by-laws our association affiliated with the American Association, entitling each member of the Iowa Association to a certificate of membership with the American Association, and which accounts for the fee being \$3.50 instead of \$2.50, as the by-laws sent herewith give it.

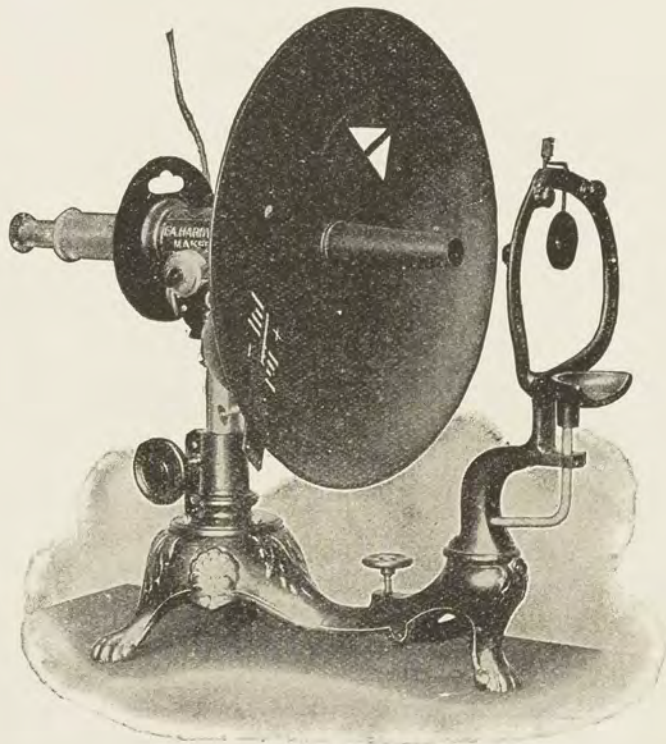
Whether you send in your application now or not, we extend to you a very urgent invitation to be with us at the coming meeting.

Very respectfully,

W. B. ANKENY, President,  
G. E. BOYCE, Secretary.

## The Ophthalmometer Examination is Not Guess Work.

It tells absolutely the meridians of greatest and least curvature of the cornea. It places the axis of the correcting cylinder without having to ask your patient any questions. When placed with the ophthalmometer it is placed right, so that there can be no mistake and after-correcting of the work.



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## Optical Questions and Answers

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. Questions will be answered in the order in which they are received. No attention will be paid to anonymous communications.

To enable us to answer questions satisfactorily and give proper advice in the management of cases submitted to us, it is essential that we be furnished with a complete history of each case and accurate information on the following points:

1. Age. (If not possible to give exact age, always approximate).
2. Have glasses been previously worn? How long and what number?
3. Visual acuteness of each eye, and what improvement glasses afford.
4. Range of accommodation (without glasses and with them).
5. Evidence of astigmatism (as shown by radiating lines).
6. Test for muscular insufficiency.

"W. S. & Co."—We have recently had a peculiar case in our optical department which we are unable to solve. Will kindly ask you to give us some information as to the cause and whether it can be corrected in any way, either by medical treatment or lenses. A gentleman, twenty-seven years of age, married, was born without full vision. He cannot distinguish any object, only like a white mist. He is able to go about without the aid of any one and has proven to be a successful cattle dealer. From features of face and size of eyes has the appearance of hyperopia. His eyes are also clear. We have tried lenses + .75 sph., and with these he was able to distinguish the different colors of cloths. This was accomplished by placing the lens at an angle to the temporal side of the eye with the pupil directed forward. Vision at all distances was blurred.

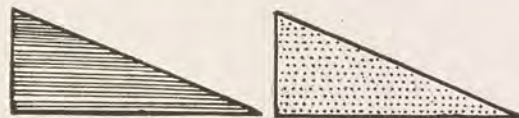
The fact that the features of face and size of eyes indicate hypermetropia, and that imperfect vision has existed since birth, would lead us to suspect microphthalmos, a congenital condition in which the eyes are noticeably smaller than normal, due to an arrest of development, or to some unexplained pathological process in utero. In these cases the vision is always seriously impaired, and in the higher grades it is entirely absent. In microphthalmos the cornea is much smaller than normal, and without the excess of curvature that causes the normal cornea to project slightly. The anterior chamber, iris and pupil are correspondingly diminished. Sometimes strong convex lenses afford improvement in vision, but in many cases no help can be afforded on account of the degenerative changes in the interior of the eye. If our correspondent had not stated that eyes were clear, we would have suspected ophthalmia neonatorum, a disease of infancy which is a prolific cause of blindness on account of the opacity of the cornea caused by it, and which is not amenable to treatment.

"C. H."—I came across a very peculiar case in optics recently. Lady, about sixty years, came in to have her eyes examined. Her right eye required + 2 D. for reading, and when I covered the right eye she declared she could see but half of an object, the other half being entirely shut out from her vision. Nothing would improve it; could distinguish nothing unusual in the appearance of the eye. Has been having quite a severe nervous trouble but was in very good health at the time. It seemed to make no difference in what position you placed the object she could not see the half on the side nearest her nose.

A condition of vision like this where there is partial or total loss of vision in one-half the field, is known as hemianopsia, or hemiopia. When the trouble is uni-ocular, as in this case, it generally depends upon detachment of the retina or a large retinal hemorrhage. Hemianopsia usually occurs in the binocular form, and then it indicates disease at or behind the optic chiasm. Sometimes hemianopsia is transient, but when caused by organic disease it is of course permanent. In this case, perhaps, it is functional or hysterical, due to the severe nervous trouble mentioned by our correspondent. But as a case of this character lies manifestly outside the domain of optometry, we think it would be well to advise the lady to consult a medical man in order that if any organic disease is present it may be detected.

"E. C. K."—In buying an ophthalmometer what is the difference between a glass prism and quartz prism—is it more exact and how? Is there any way to use a glass prism so it will give just as exact reading as a quartz? Would it be advisable to pay the difference and get a quartz one? I gave a patient the following O. D. — 3.50 ax. 180°; O. S. — 3.50 ax. 180°. Combined it with + .75 for reading and it was perfect. They went to an eminent oculist in New York who changed the reading to — 2.00 ax. 180° combined with + 1.00. Why did he lower the cylinder?

Quartz is considered preferable for making the prisms of the ophthalmometer, so that the desired bi-refractive power can be obtained by grinding them in a certain direction with regard to the axis of the quartz. One of the prisms is ground with the grain, while the other is ground at right angles to it, as illustrated in diagram:



Showing direction of axis of quartz in the bi-refractive prism of an ophthalmometer

In the correction of astigmatism complicated with presbyopia, the rule is to correct the astigmatism first and then combine the necessary convex sphere for the presbyopia. The only reason we can suggest for the change ordered by the oculist is that he must have considered the — 3.50 cyls. an over-correction, but they should be the same in both distance and reading glasses.

In order that a correct and definite understanding may be had of each case submitted, it is necessary that correspondents should give ALL the particulars asked for at the head of this page.

"A. E. B."—I happened to run across a queer and surprising case in optics the other day, which, if you will publish and answer in your next Keystone, I will be very thankful. Lady, about forty-five years old, came to the store with four pair of glasses, ranging all the way from + 10 to + 20; was using a + 1.75 sph. for reading for over a year, now wanted something for distance. Vision, O. D.  $\frac{2}{30}$  faint; O. S. the same. By using fogging system found that no plus sphere would improve, but rather blur; with a — .50 sph. party could read all of  $\frac{2}{30}$  and also part of  $\frac{3}{30}$ . Test for astigmatism by stenopaic slit and also clock dial showed no astigmatism. Can this be the right correction? Found that + 1.75 was the best for reading. Did not make any muscle test, as time was limited. Party seemed well satisfied, but I hesitated in giving prescription.

In a case of this kind, where the vision is  $\frac{2}{30}$ , we would be inclined to suspect astigmatism. If our correspondent uses only subjective methods of testing, he should by all means try cylindrical lenses. The fact that the stenopaic slit and clock dial show no astigmatism is not conclusive. Place a convex cylinder in the trial frame with axis at 90° and rotate through the various meridians; if constantly rejected, try a concave cylinder in the same way. If the rotation of the cylinder makes vision markedly better in one meridian and markedly worse in other meridians, astigmatism is probably present; but if the rotation of the cylinder produces but little effect or if the patient is unable to decide in what position of axis vision is most improved, the existence of astigmatism is doubtful. In the former case compare vision obtained by a sphere with that obtained by the cylinder in its best position, and the patient will quickly be able to make a choice. By following this method our correspondent may be able to find something better than the — .50 mentioned. The fact that this lady had four pairs of spherical lenses, none of which were satisfactory, would strengthen the suspicion of astigmatism and the need of cylinders. At any rate, the optometrist should be slow in placing

concave spheres on a patient of this age, unless he can satisfy himself beyond a doubt that myopia is actually present.

"O. O."—May I ask your valued advice in a case in which I am unable to give a child the desired near and distant vision so that she can get along in school? The measurements given were repeatedly and carefully taken. Though not expecting much from the orthoptic exercises of the externals I raised the abduction to 1½. What puzzles me is that in a case of myopia like this there should be any esophoria at distance. Full correction would force the child to bring reading matter to four inches from her eyes. Girl, ten years, very bright. Acc. of vision O. D.  $\frac{1}{200}$ , O. S.  $\frac{1}{200}$ . P. P. four inches, P. R. nine inches; add. 8, abd. ½, supra. 2, infraduction 1. 4° esophoria at distance. 5° exophoria at twelve inches. O. D. with — 4.00 C — 1.00 ax. 90°  $\frac{2}{30}$ ; O. S. with — 3.50 C — 1.00 ax. 90°  $\frac{2}{30}$ . Both eyes together  $\frac{2}{30}$ . These lenses are rejected for reading. A reduction of 2.50 D. of the sphericals for each eye enables the patient to read smallest test types at twelve inches, but reduces distant vision to  $\frac{2}{30}$ .

We are inclined to think that perhaps the formula mentioned is a little too strong. It is so easy to over-correct a case of myopia that before one is aware of it, the patient's acceptance of one glass after another results in a stronger glass being placed before his eyes than is really necessary, and when once there the accommodation is called into action (especially in a young case like this), and then a weaker lens will be rejected. The fact that vision in each eye can be raised only to  $\frac{2}{30}$  causes us to question the correctness of the cylinders as to their strength and position of axes. When the proper lenses are finally decided upon, in a patient of this age and with no higher defect, they must answer both for near and distance. Of course, a little difficulty is to be expected at first in reading, but as the accommodation strengthens with use this will speedily become unnoticeable.

"V. H."—Kindly give me any information you can on the following case: A man aged forty-nine years sees double occasionally. R. V. =  $\frac{2}{30}$  poor; + .75 cyl. ax. 180° =  $\frac{2}{30}$  good, and some on  $\frac{2}{30}$ . L. V. =  $\frac{2}{30}$ ; + .50 cyl. ax. 180° =  $\frac{2}{30}$ . Impossible to improve with any lens. With the Maddox rod in front of the right eye he sees the vertical streak to the left of the light; 4° prism base in brings streak through the light. With the rod turned in he sees the horizontal streak above the light; 2° prism base down brings streak through the flame.

The first step in this case, as it is in every case that applies to the optometrist, is a careful investigation into the condition of the refraction. The result of our correspondent's examination shows simple hypermetropic astigmatism as the error of refraction; but as the cylinders mentioned fail to raise the acuteness of vision to normal, the question arises whether these lenses accurately represent the optical defect. If they do, and if this degree of vision is the best obtainable, then there must be another disturbing element in the case, possibly an amblyopic condition of the retina. Are these cylinders in the position that affords the best vision? Does the addition of a — .25 cyl. or a — .50 cyl., with axis at right angles, afford any further improvement in vision? The fact that this man has reached forty-nine years of age without having worn glasses, suggests the possibility of a myopic meridian in the case, which can be determined by placing a concave cylinder over the convex. If accepted, the error of refraction is then proven to be mixed astigmatism.

After the exact condition of the refraction has been patiently worked out, we would advise the indicated lenses to be worn constantly. A second pair, somewhat stronger, to provide for the presbyopia—usually present at this age—will probably be necessary.

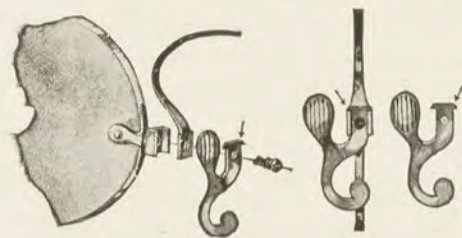
If, after wearing these glasses two or three months, relief is not obtained, then the muscular imbalance may be looked into. There seems to be an exophoria and a left hyperphoria; if these insufficiencies are verified by several examinations, we would advise a correction of the hyperphoria in combination with the other lenses,



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## Eyestrain and Brain-Fag

By GEORGE M. GOULD, M.D., in the Booklovers' Magazine



BIRD without webbed toes will hardly prove as good a swimmer as one with them. A person whose sense of hearing and musical tone is so faulty that a discord is as pleasant and natural as a concord will make a poor professional musician. Many such analogies rise in the mind when one sees that thousands of people choose a literary or studious calling with eyes far less adapted to the work they are forced to do than a barn-swallow's feet are for swimming, or a tom-tom player's love of noise for conducting the Boston Symphony Orchestra.

### Literary Men and Eyestrain

If you glance through the biographies of any twenty-five great literary workers you will find a strange and striking difference between the personal lives of perhaps half of the number, and of the others—twelve or fifteen will be found to be comparatively healthy, while the others are constantly afflicted, and endure lives of intense suffering. Of this class are George Eliot, Huxley, De Quincey, the Carlyles, Parkman, Browning, Wagner, Spencer, Whittier, Margaret Fuller, Lewes, Darwin and Nietzsche.

If we examine carefully the biographies and letters of the fourteen geniuses just mentioned, it will be found that they all suffered in much the same way. They had headache, sick-headache, dyspepsia, nervousness, indescribable misery, irritability, insomnia and dejection. Moreover, all of them learned every day that the use of their eyes in their occupations caused these symptoms, and that the only cure was non-use of the eyes in such work. But not one of them, nor one of their many physicians, ever put the matter exactly that way. They thought it was either fate that so afflicted them, or that it was the effect of intellectual work. Why the walking, the touring, the trips to Italy, gave relief, none ever saw. The mystery of the disease baffled them all.

### Limited Capability for Work

The result in lost time and opportunity alone is most noteworthy. If De Quincey's opium-eating, as I have no doubt, was due to his eyestrain, then a large part of his life was certainly wasted from that cause. Surely three-fourths of Carlyle's working time and ability were spent in horseback riding, walking, and in recovering from the exhaustion of writing. He produced during his working life about half a page a day. Darwin was able to read or write only about two hours a day, and his literary product was less than that of Carlyle. Just at the climax of Huxley's sufferings, at the zenith of his powers, he was compelled to resign and take to the moors. For forty-five years his life and power of work had been greatly crippled by his sick-headache.

Browning avoided suffering by avoiding eye-work, by going to Italy, by living in the open air, and, when he could not do this, by living, as his biographer says, "upon the surface," and by "countless social engagements." Wagner came near committing suicide many times owing to his tortures. He also squandered a large part of his life in hydropathy, diet and walking, until relief came all at once from three apparently supernatural sources. Parkman estimated that seventy-five per cent. of his life had been wasted by his inability to use his eyes. He avoided the agonies of others by simple renunciation. Parkman's output for fourteen years was about six lines a

day. The hideous waste of his superb powers and valuable time was, I think, fully ninety per cent. All the newspapers which Whittier edited until he had to give up all literary work, except verse-making, had to be discontinued because of his bad health. He was forced to renounce the use of his splendid abilities as a statesman and reformer, and for the rest of his life retire to the farm to nurse his health and write a little poetry. Spencer avoided suffering by cunning precautions in non-use of his eyes. More deftly still he hid his lack of scholarship in such things as German and metaphysics, which were denied him because he could not study.

### Much Time Wasted

The record of the large portion of their lives wasted in travel, walking and exercise, by George Eliot, Lewes, Nietzsche, Parkman, Huxley, Carlyle and others is most pathetic. Even had it been impossible for these patients to have stopped the ocular source of their troubles and diseases, as it now is in the United States—not in Europe—they could have prevented them by the natural method of using other people's eyes. Nowadays those who are caught in this mysterious wretchedness get stenographers and amanuenses.

The so-called "brain-fag" is a silly myth. The brain does not tire; intellectual work does not hurt under normal conditions. It is eyestrain that causes all the brain-fag which the newspapers have been exploiting of late. Spencer learned this lesson and escaped the tragedy of Nietzsche and Carlyle by dictating his writings, getting others to do his research work for him, and by being willing to go without vast realms of accurate knowledge. Parkman was driven to similar expedients. But all the rest groaned and suffered even while they wrote little notes and postal cards instead of letters to their best friends.

### Intense Suffering

The result in suffering was incalculable and horrible. There are biographies of these people which do not allude to it. Physicians and medical editors have been known who smiled ironically at the "exaggeration" of "vivid imaginations," and there are numberless fools who think they are excused from all sympathy with a Carlyle or a Nietzsche. They do not know that the misery of the pain of one attack of the nausea of sick-headache has not been equaled except in some mediæval or oriental torture chamber. When, for some profound reason, the dominant and oldest instinct of the organism—that for food and nutrition—is violently reversed, it should be plain even to the stupidest mind that the deepest wrong exists and that the very springs of life are being drained. Add to this another symptom almost equally terrible, intense pain in the brain, the organ controlling both character and life-processes, and what disease could be more desperate? How many of our patients had sick-headache it is impossible to tell, owing to the disinclination, especially in letters and biographies, to speak of vomiting. Probably most of them did suffer from it more or less. With Mrs. Carlyle, Huxley, Wagner and Darwin it was almost constant when the eyes were used in close scrutiny. Whittier, Nietzsche, De Quincey and Carlyle suffered from it also. Spencer, Browning and Parkman escaped, undoubtedly by means of not driving the eyes to the degree of use that would produce it. But headache alone, without the thirty or sixty-hour retching, is bad enough. Then it must be remembered that for geniuses like these, upon whom was laid the heavy duty of world regeneration and enlightenment, the mental anguish from knowing

their lifework frustrated was greater than any merely physical suffering could be. This comes out with tragical emphasis in a hundred quotations that I must omit. Until cerebral paralysis came to his rescue, the mental and physical agony endured by Nietzsche was one of the most terrible spectacles imaginable.

### Continued Loss of Sleep

There were only two or three of these patients who were not extreme sufferers from inability to sleep. Of some it seemed the chief complaint, and the bitterness and reiteration of the trouble with most was so great as to make this symptom of exceptional interest to physicians and physiologists, and to demand a scientific explanation. For thirty or forty years, one would judge, several could get on an average but two or three hours of sleep daily. A full night of sleep was hardly ever or never secured, and the attempt to rid themselves of noise constituted their greater trials and expenses of practical life and dominated all plans and methods of domestic economy. Oriental cruelties and physiologic laboratories have demonstrated the absolute necessity of sleep, the fatality of enforced wakefulness; and everyone knows from personal experience how all health and happiness is dependent upon that strange lapsing of consciousness. The indigestion, the dyspepsia of most of these sufferers was a constantly-emphasized complaint. Their physicians could not even suspect that these far-away symptoms were caused by the morbid function of their eyes.

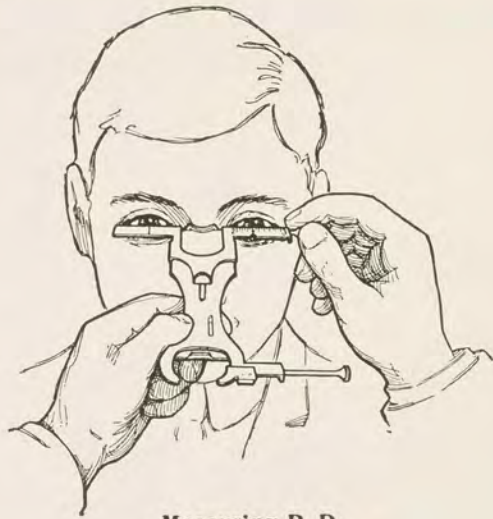
It is noteworthy how frequently proverbial and empiric wisdom forefelt the lessons here emphasized. One of Lincoln's maxims was: "Keep your digestion good; steer clear of the biliousness." Sir Benjamin Ward Richardson said that the would-be centenarian, among other things, should "work as little as possible by artificial light." Von Moltke, Sir James Sawyer and many others have strongly advised regular out-of-door exercise. Dr. Diet, Dr. Quiet and Dr. Merryman are old and famous physicians. The existence of a large number of spas, health establishments and resorts, cures, hydropathic institutions, sanitariums and the periodic migrations to Italy, Switzerland and sunny climes where out-of-door life is encouraged, are all to some extent the products of eyestrain.

### Rest for the Eyes

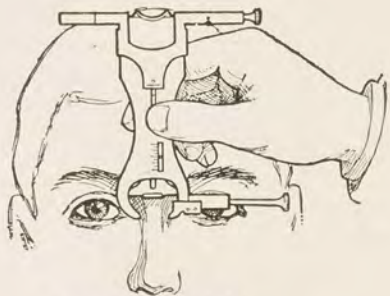
Most suggestive is the fact that these establishments, whether frivolous and fashionable, or scientific and curative, are based upon a regime which stops close scrutiny by the eyes. How fashion does this need not be set forth. Take the best instance of the best class of these "waters" or "cures"—Karlsbad. In the first place the old superstition that there is anything mysteriously or miraculously therapeutic in the water itself, is worthy of the days of opera bouffe; and it is far more wonderful that the humbuggery has been accepted by the world, lay and medical, so long. The spring water is the sugar-of-milk placebo which fixes the attention while several other really important things are demanded with military authority: 1. A diet which lessens the stored energy of the organism. 2. Baths and other measures which increase metabolism. 3. An amount of walking and exercise that increases the outgo of force in normal or physiologic methods.

But note the ignored and revelatory fact implied in all this: All three methods reduce the overstock of fat and the excess of nervous energy which are the basis of "gout" and the like; but

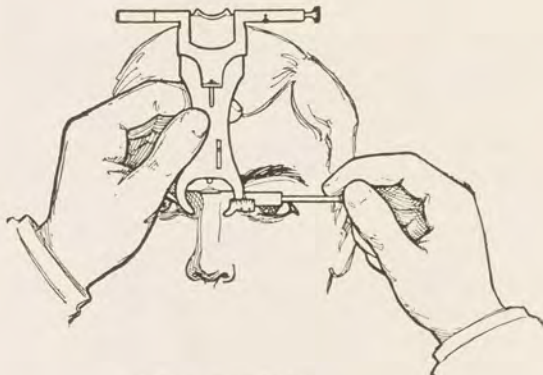
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Measuring P. D.



Measuring Height.



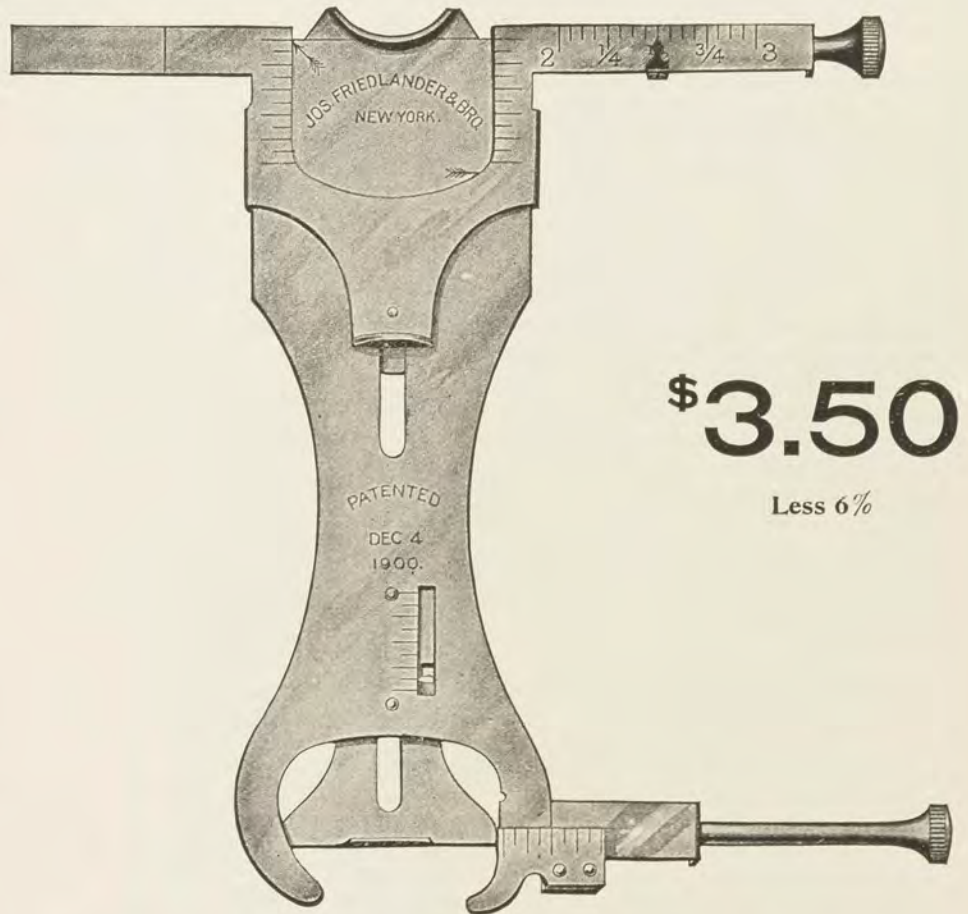
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## Eyestrain and Brain-Fag

(Continued from page 973)

while they do this they absolutely prevent close scrutiny by the eyes. The "walking cure"—or rest-of-the-eyes cure—that every poor eyestrain and migrainous patient has found by bitter experience so necessary, is the *sine qua non* at Karlsbad.

The diseases of eyestrain show an excess of nervous energy, and all are dependent upon close scrutiny by the eyes. All are cured by draining off the excess of innervation through physiologic channels—walking and athletics—and stopping close scrutiny by the eyes. It is most suggestive and noteworthy that what cures "gout" cures the hundred sequels of eyestrain, and vice versa.

### Nervousness and Eyestrain

The biographies and letters of these geniuses I have cited are filled with expressions and facts going to show cerebral and emotional irritability—what, for want of a better word, may be called nervousness. The passion for activity, the desire for change and movement, is often uncontrollable, and the words used to express it are painfully intense. It rises to morbid extremes just in proportion to the amount of eyework demanded or completed. In every one it took the form of physical exercise, usually of walking. Carlyle walked numberless miles, and rode one horse twenty thousand miles. De Quincey walked around his "measured circuit" a thousand miles in ninety days; during his life he averaged fifteen or twenty miles a day in walking, often far into the night. Darwin trudged about his "sandwalk" all the time he was not hydro-pathizing. Huxley's only relief was ten or fifteen miles a day. Browning, Parkman, Wagner, Nietzsche, even Whittier, were forced to the same plan of life, each in his special way. Even Mrs. Carlyle says she walked from six to ten miles a day for ten years. Parkman's early fiery athleticism is positively morbid in its intensity. In his youth De Quincey ran to vagrancy for years, and Darwin's devotion to sports in his college days was the despair of his father, and so on. There can be no doubt that this commanding impulse made Darwin take the *Beagle* voyage, made Huxley join the *Rattlesnake* expedition, and turned both from other studies to natural history and science.

When Parkman was denied the power of reading and writing, and when he could not live among the wilds or go into the army, he devoted himself to horticulture for fourteen years—by means of low stools and rolling chairs—and when he could not do this he rowed or practiced sedentary gymnastics. Spencer avoided danger by recreation. Nietzsche denied the need of walking and action so much that, forcing his eyes to a relentless fury of study, he positively went insane. Wagner felt he would literally go mad unless he should relieve himself by exercise, and he deeply cursed the "damnable organ of sitting still." That they lived to ripe old age, that their health improved as they grew older, that when very old most of them could outwalk all the young men—all this shows that their hearts were not organically diseased, that they were essentially sound physically, and that their ailment was truly functional. The demand and ability to carry out life-long physical exercise also point to an overplus of nerve force and an undeniable necessity of draining the surplus innervation to the large muscles of the body. But this also points more surely and clearly to the fact that only by this means could the eyes be rested and the source of reflex irritation shut off.

### Varied Results of Eyestrain

It is impossible, says George Eliot, for strong, healthy people to understand the way in which sick-headache and suffering eat at the roots of one's life. It is at first sight strange that eyestrain may produce in some patients sleepiness and dullness—pure inhibitory effects—while in others the nervous system may be driven to a fury of irritation. Thus in the cases of George Eliot, Whittier and Darwin there was the most painful lassitude and exhaustion; while in Carlyle, Wagner and Nietzsche there was a morbid hyperesthesia and activity. Often both conditions may alternate in one patient. Although George Eliot was usually dejected, depressed and tired, she speaks of "the excitement of writing"; and the mechanism is seen in many sentences, as: "My idle brain needs lashing." In Wagner, eye-work usually produced feverish intensity and irritability; and yet he says: "Sometimes I stare at my paper for days together." But it is true, as he says, that exaltation was the rule and ordinary calm was abnormal. Hundreds of poignant quotations would vividly demonstrate this. In the same way Carlyle had to work with his "nerves in a kind of blaze," "in a red-hot element," "with his heart's blood in a state of fevered tension," "in a shivering precipitancy." And yet sometimes it was inhibition instead of hyperesthesia; and he sat at his desk, stared at his paper, his imagination would not work, and so forth. Writing stirred Mrs. Carlyle's head to "promiscuousness," and always finally exhausted her. It "stirred up" Parkman's head, produced a "highly irritable organism," and he stopped to avoid greater troubles, as did also Spencer. But in Nietzsche it drove the sufferer to "a horrible earnestness," "a nervous excitability," "an unendurable *Spannung*," "a subterranean fire." To use his own words: "The vehemence of the interior vibrations was frightful." It drove Darwin to the sandwalk and De Quincey to opium. In almost all it produced melancholy, helplessness and despair.

### The Case of Nietzsche

The youth who at twenty-four was a German professor of philology, who had so splendid an organization, physical and intellectual, as had Nietzsche, who was forced to give up that professorship in ten years because of suffering of eyes, head and digestive organs, and who at the age of forty-five was steadily and fatally driven into insanity by his ingratescent, atrocious eye defects coupled with love of knowledge, just at the time presbyopia was beginning its cruel exaggeration of misery—such a man and such a fate is the very limit of the tragical. There can be little doubt that the over-driven intensity of Nietzsche's thoughts and writings was the indirect result of his terrible struggle to see. And there can be no doubt at all that his later aphorism style of writing was the direct result of the device to which he was driven by his eyestrain. He had to walk most of the time in the open air, and did his thinking and composition while doing so. He carried a notebook in his hand and jotted down the detached sentences. These he then gathered into essays, but he could not see well enough, or long enough, to fill out the gaps or mold them to homogeneous and harmonious unities. Hence the disjointed and exaggerated aphorism.

We should not fail to note the universal complaint, in all modern literary criticism, of the pessimism which seems, with its gloom and dejection, to color half the literature of our time. Melancholy, morbidity and despair are the confessed results of "migraine."

## Congenital Absence of Both Inferior Recti Muscles

That frequently one or more of the six muscles which move each eye are not properly developed and that this gives rise to disturbances of the ocular balance is a fact well known to our readers. But that sometimes even a whole muscle may be absent altogether is a rare fact which may be new to many of us. Such a case has been reported lately in *American Medicine* by Dr. E. Stieren, of Pittsburg, Pa., who there described his case as follows:

Wilber S. A., a healthy, well-developed child, aged six, was brought by his father, upon the recommendation of Dr. S. H. McKibben, to have his eyes examined preparatory to beginning school. His parents suspected "weak eyes," for the reason that the child would bend over and bring his face quite close to his picture book and toys. In other respects he appeared to possess good vision, recognizing distant objects as readily as did his parents. However, he would not run races nor romp with other children, and in this respect only did he appear different from his brothers and playmates. His parents attributed this to an aversion to becoming overheated, as he had suffered when four years of age an illness lasting about a week, said to have been due to a "sun-stroke," in which he had not lost consciousness but had been rather apathetic for a few days, with some nausea and vomiting.

He had whoopingcough when two, and measles when three years of age. There are two older and two younger brothers and a baby sister. All are healthy and sound in every respect, as are both parents.

*Examination.*—External inspection and palpation of the eyes reveal nothing abnormal. Globes are moderately prominent, lids have long curling lashes, irides are hazel brown, sclera, conjunctiva, and cornea are clear and glistening. Movements of both eyes inward, outward and upward are perfect. *When asked to look down, however, the patient flexes his head upon his chest, his eyes not making the slightest movement below the horizontal plane.*

The flexion of the head is not accomplished in one movement, but in several jerky nods, until the line of vision is sufficiently depressed to include the object sought, when the last nod centers his vision upon the object. Repeated commands to look at and name different objects (patient being illiterate) ranging in size from a silver dime to a felt hat, placed upon the floor from four feet to eight feet in front of him, result in the same succession of downward nods, the article in every instance being correctly named. Ophthalmoscopic examination was negative, with about 0.50 D. hypermetropia in each eye. Pupils react normally to light and accommodation.

A local anesthetic (a solution of equal parts of adrenalin chlorid 1-1000, and holocain H Cl 1-500) was instilled into each eye several times and the conjunctiva grasped with fixation forceps at the lower corneal margin. Each eye could be drawn downward freely, but the upper lids, with the patient making efforts to look down, did not follow the downward movement of the eyeballs. The lower ocular conjunctiva was freely incised and retracted in a bloodless field, revealing a total absence of the inferior rectus in the right eye, nor could a small strabismus hook introduced find the slightest rudiments of an inferior muscle. A similar search in the left eye was refused by the child's father, but the conditions must be without doubt the same; at any rate, there is no reason to suppose the existence of a paralyzed muscle in the left eye.

In presenting this case attention is invited to the rare occurrence of congenital absence of the extrinsic muscles of the eyeball. In the literature at my command I am unable to find a record of a similar case. A few of the text-books make mention of congenital absence, but the absence of the same muscle in both eyes must always be a most remarkable anomaly. Yet, while its binocular occurrence is rare, it is more kind than monocular absence, since with the latter there would be troublesome diplopia with all its concomitants.

## A Thermometer Catalogue

SOMETHING NEW. JUST OUT. A CATALOGUE FROM WHICH YOU CAN DO BUSINESS IN A LINE YOU MAY NOT CARRY IN STOCK.

Our new catalogue is the only complete one published, listing and illustrating

**Thermometers, Barometers,  
Hydrometers, etc.,  
Artificial Human Eyes,  
Hypodermic Syringes and Needles,  
Sundries of All Kinds Related to Above Lines.**

If interested, send us your name, as we wish to complete our mailing lists

### The R. Hoehn Co.

Manufacturers of Thermometers, Barometers and Hydrometers,  
I. MAYER & CO., Proprietors,

80-82 Chambers Street, NEW YORK.

*We Have the ONLY  
Exclusively Wholesale  
Optical House  
In the Entire South.*

This means that we give all our time to optical business and can give you the very best of service. We have a large stock and a complete grinding plant for turning out all kinds of lenses on the day the work is received.

TRY US AND SEE.

We will gladly send our Catalog and R Book upon request.

### F. A. Hardy & Co.

Wholesale Opticians,

Prudential Building, ATLANTA, GA.



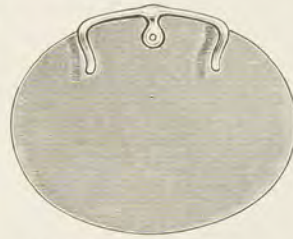
WE ARE LEADERS, AS USUAL.

A Few of Our Winners—

**Fine French Enamel Pins and  
Highest Grade Chain.**

Our 20-Year Frames are the best yet. Stamped B. S. O. Co. Ask for them.

BAY STATE OPTICAL CO., Attleboro, Mass.



## The Glare Shade

This is the time of year that every dealer in optical goods should replenish his stock of smoked glasses. No stock is complete without the **GLARE SHADE**.

**THE GLARE SHADE SLIPS OVER** distance glasses. No annoying conflicting temples and bridges to irritate the nose and ears. Made in all sizes and shades.

In Nickel Silver Mountings, \$4.75 per dozen pairs.  
Mountings only, - - - 3.00 per dozen pairs.

Order from your jobber or send direct to

**Clafin Optical Co., Washington, D. C.**

## Rochester School of Optometry.

A Thorough and Practical Optical School.

It teaches not only the theory, but how to practice, and how to conduct the practice. It considers the profession of Optometry one that is worth while to spend sufficient time and study to master it, and believes that there is a large field of usefulness for the successful practitioner. The aim of the Rochester School is to make the student understand his limitations, as well as his opportunities and possibilities.

If interested, write for terms and outline of Course.

A. H. BOWEN, M. D.,  
President.

B. B. CLARK,  
Secy.

Triangle Building, ROCHESTER, N. Y.

## Optical Organizations

## NATIONAL

## American Association of Opticians (1898)

JOHN C. EBERHARDT, President, Dayton, Ohio.  
E. L. JONES, Secretary, Sandusky, Ohio.

Meets annually. Next meeting to be held at Milwaukee, August 1 to 4, 1904.

## Worshipful Company of Spectacle Makers (England) (1629)

HON. ALBAN G. H. GIBBS, M. P., Master.  
COL. T. DAVIES SEWELL, F. R. A. S., Clerk, Guildhall, London, E. C., England.

## British Optical Association (1895)

M. W. DUNSCOMB, F. R. O. A., President.  
J. H. SUTCLIFFE, F. R. S. L., F. B. O. A., Secretary, 17 Shaftesbury Avenue, London, W., England.

## Canadian Association of Opticians (1896)

SAMUEL S. GRANT, President, Montreal.  
ALEX. MOFFAT, Secretary and Treasurer, Brantford.

## Scottish Optical Association (1903)

JAMES CHALMERS, President, Springburn, Glasgow.  
JOHN LAMONT, Secretary, 514 Victoria Road, Glasgow.

## INTERSTATE

## New England Association of Opticians (1894)

EBEN HARDY, President, Boston, Mass.  
G. A. BARRON, Secretary, 2 Winter St., Boston, Mass.

Meets third Tuesday of each month, except July and August.

## Northwestern Optical Association (1901)

J. W. GRAINGER, President, Rochester, Minn.  
E. C. ROBERTS, Secretary, Red Wing, Minn.

Next meeting, June 22 and 23, at St. Paul, Minn.

## STATE

## Pennsylvania Optical Society (1895)

A. MARTIN, President, Philadelphia, Pa.  
C. A. LONGSTRETH, Secretary, 228 Market St., Phila., Pa.

## New York State Optical Society (1896)

B. B. CLARK, President, Rochester, N. Y.  
P. A. DILWORTH, Secretary, 1032 Third Ave., New York City.

## Indiana Optical Society (1896)

C. M. JENKINS, President, Richmond, Ind.  
MISS MARGARET J. ERISMAN, Secretary, Lafayette, Ind.

## Michigan Optical Society (1896)

E. W. E. PATERSON, President, Grand Rapids, Mich.  
E. EIMER, Secretary and Treasurer, 105 Western Avenue, Muskegon, Mich.

Next meeting, August 18, 1904, at Bath Creek.

## Iowa Optical Society (1897)

W. B. ANKENY, President, Corning, Iowa.  
G. E. BOYGE, Secretary, 202 Syndicate Block, Waterloo, Iowa.

## Illinois Optical Society (1898)

GEORGE A. ROGERS, President, Chicago, Ill.  
O. J. HALBE, Secretary, 501 Trude Building, Chicago, Ill.

## California State Association of Optometrists (1899)

CHAS. H. WOOD, President, Oakland, Cal.  
WILLIAM E. HESS, Sec., 505 Kearny St., San Francisco, Cal.

## Oregon Association of Opticians (1899)

J. O. WATTS, President, Eugene, Oregon.  
C. L. HAYNES, Secretary, Portland, Oregon.

## Washington Association of Opticians (1899)

H. CLAY EVERSOLE, President, Seattle, Wash.  
LEANDER BUTT, Secretary, 715 First Ave., Seattle, Wash.

## Granite State Optical Association (1900)

GEO. H. BROWN, President, Manchester, N. H.  
W. E. BURPEE, Secretary, Manchester, N. H.  
Meets third Wednesday of January, March, May, September and November.

## Wisconsin State Optical Society (1900)

ALVA SNIDER, President, Beloit, Wis.  
I. M. ADDLEMAN, Secretary, Tomah, Wis.

## North Carolina Optical Society (1900)

F. W. MAHLER, President, Raleigh, N. C.  
SAMUEL RAPPORT, Secretary, Durham, N. C.

## Minnesota Optical Association (1900)

J. M. CHALMERS, President, Lake City, Minn.  
C. A. SNELL, Sec'y, 608 Nicollet Ave., Minneapolis, Minn.  
Next meeting, June 14 and 15, 1904, at Minneapolis.

## Maine Association of Opticians (1901)

H. E. MURDOCK, President, Portland, Maine.  
ROBERT B. SWIFT, Secretary, Portland, Maine.

## Tennessee Optical Society (1901)

A. H. WENNING, President, Nashville, Tenn.  
GEO. R. CALHOUN, Secretary, Union and Summer Sts., Nashville, Tenn.

## Colorado Optical Association (1901)

R. B. FINCH, President, Denver, Colo.  
R. H. BIEGEL, Secretary, 636 Sixteenth St., Denver, Colo.  
MISS E. H. CHAPMAN, Cor. Sec'y., 1655 Welton St., Denver, Colo.

## Kansas Association of Opticians (1901)

THOMAS GOWENLOCK, President, Clay Center, Kans.  
F. W. REED, Secretary and Treasurer, Wichita, Kans.

## Missouri Association of Opticians (1901)

LEON BAER, President, Kansas City.  
J. W. TALBOT, Secretary and Treasurer, Nevada, Mo.  
Annual meeting, June 14 and 15, 1904, at St. Louis.

## Virginia State Optical Association (1902)

A. F. JAHNKE, JR., President, Richmond, Va.  
J. W. BUCHANAN, Secretary, Petersburg, Va.

## Ohio Optical Society (1902)

F. W. WALLIS, President, Columbus, Ohio.  
EDWIN L. JONES, Secretary, Sandusky, Ohio.

## Kentucky Optical Society (1902)

O. R. KING, President, Lexington, Ky.  
J. M. IRMEN, Secretary, 336 Fourth Ave., Louisville, Ky.

## North Dakota Optical Association (1903)

E. P. SUNDBERG, President, Fargo, N. Dak.  
W. R. BLAKELY, Secretary, Grafton, N. Dak.

## New Jersey Optical Society (1903)

GEO. F. APPLGATE, President, Trenton, N. J.  
J. J. HARTMAN, Secretary, 16 Howard St., Newark, N. J.

## South Dakota Optical Association (1903)

WILLIAM H. FRITZ, President, Sioux Falls, S. Dak.  
D. G. GALLET, Secretary, Aberdeen, S. Dak.

## Texas Optical Association (1903)

W. W. CHAMBERLIN, President, Houston, Texas.  
F. M. TAYLOR, Secretary, 328 Live Oak St., Dallas, Texas.

## Rhode Island Society of Optometry (1903)

WALTER BLAKE, President, Providence, R. I.  
FREDERICK LEWIS BLAIR, Secretary, 90 Broad Street, Providence, R. I.  
Meets first Monday of each month.

## South Carolina Optical Society (1903)

W. E. AVERY, President, Columbia, S. C.  
M. R. ABBE, Secretary, Columbia, S. C.

## Quebec Optical Association (1904)

R. DE MESLE, President.  
P. G. MOUNT, Secretary.

## LOCAL

## Central New York Optical Society (1895)

WM. D. OERTEL, President, Syracuse, N. Y.  
JAMES HOLDEN, Secretary, Syracuse, N. Y.  
Meets second Wednesday of January, March, May, July, September and November.

## New York City Optical Society (1897)

E. LEROY RYER, President.  
R. M. LOCKWOOD, Rec. Sec., 119 W. Fifteenth St., New York.  
Meets second Wednesday of each month, except July and August, at College of the City of New York, 17 Lexington Avenue.

## Rochester Optical Society (1897)

HARRY M. BESTOR, President, Rochester, N. Y.  
HENRY C. MIELKE, Secretary, Rochester, N. Y.

## Utica Optical Club (1901)

RICHARD PERLEN, President.  
C. T. EVANS, Secretary, Utica, N. Y.

## Chicago Optical Society (1902)

W. F. NEWCOMB, President, State and Adams Sts., Chicago, Ill.  
O. J. HALBE, Secretary, 501 Trude Building, Chicago, Ill.

## Niagara District Optical Society (1902)

JONAS HOUSE, President, Welland, Ont.  
F. G. DUNLOP, Secretary and Treasurer, St. Catharines, Ont.

## Buffalo Optical Society (1903)

ERNEST V. SYRCHER, President.  
ROGER F. WILLIAMS, Secretary, 455 Main Street, Buffalo, N. Y.

## Seattle Optical Society (1903)

CHARLES G. HOLCOMB, President.  
LEANDER BUTT, Secretary and Treasurer, 715 First Ave., Seattle, Wash.

## Los Angeles Association of Opticians (1903)

FRED. DETMERS, President.  
F. LEE FULLER, Secretary, Los Angeles, Cal.

## The Pueblo Optical Association (1903)

OREN H. HENRY, President, Pueblo, Colo.  
JAMES A. HOWARD, Secretary, Pueblo, Colo.

## Lowell Optical Society (1903)

W. E. HICKS, President.  
J. A. McAVOY, Secretary, Lowell, Mass.

## Swindlers in the Optical Field

**S**PECTACLE selling is a fruitful specialty for swindlers, and it behooves all opticians to forcefully exploit this fact in their advertisements. The nondescript who poses as an eye specialist and sells a twenty-five-cent pair of spectacles for as many dollars is not only a parasite on the optical profession, but also a most mischievous impostor who merits suppression in the cause of humanity, if for no other reason. One way in which the fraud is worked is revealed in the following letter from Marshall, Texas, addressed to the Philadelphia Optical Co., Philadelphia, Pa., there being no such concern in this city:

DEAR SIR:—I hold receipt for one dollar for photo. enlargement and frame which your agent failed to deliver. If not delivered soon please remit me one dollar.

The name of the lady imposed on and the alleged name of the agent are then given. This swindle seems to be extensively practiced in the South, sometimes spectacles being offered and sometimes photographs or photo. enlargements. The credulity of the public in such matters is pitiable, and the only effective way to combat the imposition is through the press. At the solicitation of an advertising patron newspapers will readily publish a warning free of charge, and opticians will find such swindlers a profitable subject for advertisements. Not only do these fakirs take money that should be the optician's, but they also bring discredit on the profession. The prices which some of them can secure from unsophisticated people is beyond belief, and evidence a startling guilelessness on the part of the rural population. Enlighten your community on this imposition.

## Opticians' Newspapers

**A**N excellent way to keep the public posted and to exploit the work of the refractionist is through the medium of a little newspaper published and distributed at regular intervals. Quite a number of opticians have adopted this form of advertising and find it very effective. We have before us a little bi-monthly entitled *The Optometrist*, published by C. F. Cushing, Niagara Falls, N. Y., which seems to excellently serve the purpose intended. The *raison d'etre* of the little paper is thus stated:

The object of this little publication is to give its readers information concerning the proper care and use of the eye, the organ of the most used and most valuable of the senses, sight.

It is now a firmly-established fact that the eyes have to do with more than the sight alone. On the condition of the eye, its nerves and muscles, is often dependent the general health of a person, and the correction of any malformation, strain or affection of these parts will in such cases restore one fully to health. We desire to instruct our readers along these lines, and will in each issue

(Continued on page 979)

# MURINE EYE REMEDIES

"THE OPTICAL AID FAMILY"—JUST EIGHT—COUNT THEM.

## MURINE EYE REMEDY.

Cures Eyes, Granulation, Redness, Itching and Burning, Scales on Lids, Makes Weak Eyes Strong, Dull Eyes Bright. A Favorite Toilet Requisite. An Eye Remedy for the Home, Safe in Eyes of Infant and Adult. Does not Smart. Soothes Eye Pain. Endorsed by the Medical and Optical Professions.

The Medical Profession is supplied in following sizes:  
 One Pound—opaque—Shelf Bottle, \$6.00  
 One-half Pound—opaque, 4.00  
 Special Size 1.00

Each package contains Dropper, Corkscrew and Eye Book.

For Home use we supply  
 Special Size \$1.25  
 Regular Size (the most popular), .50  
 Trial Size (for sample only, this size is too small for regular uses), .25

## MURINE EYE SALVE.

(Unguentum Hydro-Murine.)  
 A Remedy for Diseased Eye-Lids.  
 Promotes Growth and Prevents Loss of Eye Lashes.

Promptly allays Inflammation (redness) and Irritations of the Eyes and Eyelids. Removes Scales from Eyelids. Cures and prevents Styes, Cysts and Ulcers. Is a soothing application to eyes that feel dry and smart. It stops the growth of a Pterygium. Conjunctivitis, Red Eyes and Pink Eye also yield promptly to the influence of Murine Salve.  
 Price per package (put up in collapsable tubes) \$1.00.

## BANENE.

An Internal Treatment for Cloudiness of the Transparent Media, Sluggish Circulation, Cataract, Floating Spots, Anæmia of the Retina, Congestion of the Retina, Affections of the Choroid, Optic Nerve Diseases, Sluggish Action of Pupil, Hæmorrhage in the Eye, Weakness of Ocular Muscles, Weakness of Accommodation, Dimness of Vision.

**MUSCULAR WEAKNESS.** The muscles of the eye curtain (the iris) and of the pupil are liable to become relaxed from general debility or age, and thereby lessen the visual action of the eye. BANENE is the Systemic Remedy indicated (8 drops in water taken internally three times daily). Murine, one or two drops in each eye hourly, for its local strengthening effect. Dimness of Vision accompanied by an INABILITY TO WEAR GLASSES WITH COMFORT. Murine and Banene should be in the hands of every individual who wears glasses, and they should be promptly used at the first indication of discomfort. Price, per bottle, \$1.25.

## GRANULINE.

For Old and Chronic Cases of Sore Eyes, Granulated Lids, Etc.

Old and stubborn cases which have resisted the ordinary methods of treatment, and where most positive action is desired. GRANULINE is TONIC, ANTISEPTIC and ASTRINGENT, is a valuable collateral remedy to MURINE, "2 drops" in above condition. Price per bottle, \$1.50.

## HYDRONE.

An Eye Bath.

For cleansing the eyes where there is a discharge of matter, it will relieve the inflammation that causes the discharge and prepare the eye for the application of two drops of Murine, which should be used every two hours, will restore the eye to a healthy condition. Hydrone is an excellent lotion for the socket where an artificial eye is worn. It prevents the formation of matter, and with the daily use of Murine keeps the parts in a healthy condition. Price, large bottles, each, \$1.10.

## SULPHO=FERRINE.

A Highly Concentrated Tonic Used During Eye Treatment, Makes Rich, Red Blood.

Is a general tonic of the very highest character. It improves the appetite, assists the digestion, enriches the blood, and should be taken in all cases where a debilitated or nervous condition exists, and continued during the local treatment. Sulpho-Ferrine is highly appreciated, both by the medical profession and the people, as a safe and effective tonic for professional men, students and all brain workers. Price, per bottle, \$1.00.

## OLIN'S RED CLOVER COMPOUND.

Pink Tablets. For Sore Eyes Resulting from Blood Disorders.

We prepare this remedy in tablets for diseased conditions of the blood, and it is a very effectual remedy for Scrofulous and Syphilitic taints. This remedy together with Murine is acknowledged as the best treatment for sore eyes resulting from blood disorders. (One bottle is sufficient for one month's treatment.) Price, \$1.50.

## HYDRARGYRINE.

A Powder.

Will remove spots (opacities) of the eye (cornea) which are the results of inflammation or injury. It is the only application we have used with satisfaction with Murine in the destruction and removal of Pterygium. It also exercises a general tonic effect on all the tissues of the eye. Price, \$1.15.

SOLD BY DRUG AND OPTICAL DEALERS EVERYWHERE.

We supply attractive Optical-Murine literature with your card nicely printed, also Lithographs, Celluloid Easels and Show Cases for advertising display.

WRITE YOUR JOBBER FOR WHOLESALE PRICES AND SPECIAL OFFERS.

## Opticians' Newspapers

(Continued from page 977)

present valuable information concerning the preservation and care of the eyes.

We will be pleased to receive inquiries concerning any defect or affection of the eyes, and will answer the same in the next issue for the benefit of all.

**T**HE optician takes care to substantiate his statements by quotations from unimpeachable medical authorities, and we find throughout the little paper such articles as the following:

To assert that the eyes alone are sometimes responsible for chronic stomach and intestinal diseases that have failed to yield to medicinal treatment may seem, at first thought, to some of our readers as incredible. Such is frequently the case, however, and as evidence we quote the eminent Ambrose L. Ranney, A. M., M. D., late professor of anatomy of the nervous system in the New York Post-Graduate Medical School and Hospital, as follows:

"Eyestrain (either from errors of refraction uncorrected or from some abnormality of adjustment of the eye muscles) may, and often does, cause chronic and intractable disturbances of the stomach, liver and intestines.

"Chronic intestinal and gastric disturbances may be, and often are companions in much graver disturbances of the general nervous system that are due to the same condition, viz., eyestrain."

If it can and has been scientifically demonstrated that a leakage of nerve force is produced by eyestrain and causes functional disorders of the stomach and other organs, is it not best to stop the leak?

"Directly and indirectly this functional disease (eyestrain) is the cause of more suffering than all the organic diseases combined."—George M. Gould, A. M., M. D.

**T**HE spectacle peddler is the subject of an article, simple in its terms and forceful in its reasoning. There is no high-sounding talk, but such simple statement of fact as will appeal to the reason of the average reader. We reprint the article which may be useful to other advertising opticians:

People should be aware of so-called "doctors" who canvass from house to house in search of victims. Your eyes are of too much value to you to entrust them to that class of fakirs. You would not trust them with your pocketbook; why should you with that which is of more value to you—sight? They may guarantee their glasses to be as good as anyone's, but in a short time when you see how you have been fleeced, of what value is the guarantee? Where will you find the man who is to make it good? He has departed with your money, leaving you some cheap, ready-made glasses and a supply of valuable experience.

But don't give him the chance. Consult an established optometrist of acknowledged ability, who will give you an honest opinion concerning the condition of your eyes. If we find on examination that glasses will benefit you, we will recommend them, but if in our opinion you do not need them we will plainly tell you so.

Our refracting room is equipped with all that is modern in the way of instruments for the thorough examination of the eye. You may depend upon an honest opinion every time, and also on finding us here at any time to make good our guarantee.

**S**HORT articles are devoted to the different kinds of lenses, a simple, interesting explanation being given in each case. The attention of parents is called to their children's eyes, and the following timely warning given:

Nothing is more common than for defective sight of children to be regarded as obstinacy, and

the existence of a visual defect seems to be the last thing that ever suggests itself to the mind of teacher or parent.

An eminent educator says: "I have long since learned to look upon obstinacy and stupid children as mainly artificial productions. There is something pitiful in the manner in which children are not unfrequently punished for unavoidable but perfectly remediable defects. I hold that these apparently bad traits of character should lead to inquiry, especially among parents and teachers, as to whether the child can see perfectly."

The serious matter of the little paper is interspersed with optical jokes, rhymes and other light reading which makes it more interesting to the public. There is also the regulation amount of advertising with appropriate illustration. Altogether the little paper is highly instructive and well calculated to advance the interests both of the optician himself and the profession generally.

## Pennsylvania State Optical Society

A smoker of the Pennsylvania Optical Society was held in Parlor 4 of the Continental Hotel, Philadelphia, on Tuesday evening, May 10, 1904, when there was a good attendance of the members and their friends. The subject for the evening was "Diseased Eyes—How to Recognize Them and when to Send Them to the Oculist."

The association has had specially prepared a number of colored lantern slides, showing the appearance of the fundus of the eye in different diseases, and these were thrown on the screen and explained by the president; while the questions asked and the discussions which followed were very helpful to all.

Patients having chorioiditis and optic neuritis were shown, so that the members might have an opportunity of examining such with their ophthalmoscopes and learning about these diseases from personal observation.

## New Jersey State Optical Society

The New Jersey State Optical Society held its annual meeting and first annual banquet on Monday evening, May 2d, at the Continental Hotel, Newark. There was a large attendance, all sections of the State being represented and the members showed a keen interest in the pertinent questions dealt with in the various addresses. E. Le Roy Ryer, president of the Optical Society of the City of New York; R. M. Lockwood, secretary of the Optical Society of the City of New York; Frederick Boger and Louis Kahn were guests of the meeting, and they, together with Wm. J. Benn and P. A. Dilworth, were elected honorary members of the society.

The banquet was a very pleasant affair, the menu consisting of a choice series of dishes. When these had been done justice to the speaking commenced. F. C. Leaming, ex-president of the society, officiated as toastmaster, and the first toast of the evening was "Higher Education," to which George F. Applegate, the newly-elected president responded. Other speakers and the subjects to which they responded are as follows: E. Le Roy Ryer, "Local Organization;" Louis B. Hilborn, "What Are We Here For;" C. H. Sullivan, "Help One Another;" Frederick Boger, "Progress of the New Jersey Society;" Robert G. Smith, "Charge for Examinations;" R. M. Lockwood, "Profession-

alism vs. Commercialism;" Jos. J. Hartman, "The Welfare of Optical Societies;" Fred. H. Hewlett, "Increased Membership and Originality;" L. A. Rochat "Frequent Meetings;" Louis Kahn, "Standard of Prices;" A. Wenzel, "Electrical Treatment of Ocular Opacities." H. A. Stiles created not a little amusement by the relation of a humorous story, and the closing toast was "Health, Wealth and Beauty; an Optical Bill and an Opportunity."

The executive are to be congratulated upon the manner in which the function was arranged and conducted.

Dr. Geo. F. Applegate, who has been elected president of the New Jersey Optical Society, is among the best known opticians of America. Dr. Applegate is a native of New Jersey, and was the first student in the United States to send his application and fee to Dr. C. A. Bucklin, of New York City, who started the first class to teach optics in the United States, and made a specialty of optics for over twenty years.

He is a charter member of American Association of Opticians, serving as a member of committee on preliminary organization and by-laws. He also served as vice-president and in other offices. Of late years he has persistently declined to accept the nomination or appointment to any office, but has attended the meetings of the association. He was formerly a member of the Pennsylvania Optical Society and was elected one of the directors.

He is successfully conducting a professional and manufacturing optical business in Trenton, N. J., occupying one of the principal corners, handsomely fitted up for exclusive optical purposes and is much interested in the welfare and future of optics.

Dr. Applegate has further qualified himself by taking a thorough course in anatomy, neurology and physiology of the whole human system and makes a specialty of nervous affections. He has addressed the American Association and other societies at different times, and took a leading part in the organization of the New Jersey Society.

While Dr. Applegate has closely followed the professional art of the opticians he is also an inventor, and has been granted five patents for improvements in eyeglass mountings. He lives in a handsome home in the residential portion of Trenton, and is justly proud of his family of four fine boys, the youngest two being twins. His wife and himself are accomplished musicians, and most agreeable and entertaining hosts.

Dr. Applegate has further qualified himself by taking a thorough course in anatomy, neurology and physiology of the whole human system and makes a specialty of nervous affections. He has addressed the American Association and other societies at different times, and took a leading part in the organization of the New Jersey Society.

## Rhode Island Society of Optometry

The regular monthly meeting of the Rhode Island Society of Optometry was held recently in Slocum Post Hall, Providence. There was a large attendance of members and much interest was displayed in the questions discussed. W. P. Wilson, of Providence, was the principal speaker of the evening, his paper dealing with scientific methods of frame fitting being fruitful of a very instructive subsequent debate. The meeting afterwards adjourned until June 6th.

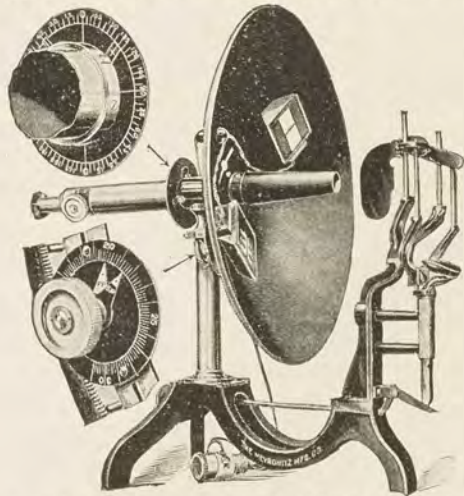


Dr. George F. Applegate

## The Meyrowitz Ophthalmometer

Patented  
April 24, 1900.

MODEL C.



An accurate, well-made, finely-finished instrument, with new and valuable features. Sold at a popular price.

A new adjustable headrest, variable to distance between chin and forehead.  
Improved Self-Recording, transilluminated, movable mires, by which the exact axis as well as the amount of corneal curvature can be readily determined.  
Illumination of mires effected from the street current direct; no rheostat is interposed.  
PERMANENTLY MOUNTED PRISMS, focusing eye-piece with rack and pinion movement.  
The supplementary dial for axial readings is in full view of the operator.  
All adjustments are within easy reach of the operator.

Price, complete, \$60.

Discount to  
the Trade.

Made by

**The MEYROWITZ M'FG. CO. Incorporated**

WHOLESALE MANUFACTURING OPTICIANS

104 EAST 23D STREET NEW YORK U.S.A.

Optical Prescription Work a Specialty.  
Manifold Prescription Book and Illustrated Catalogue  
of Ophthalmological Apparatus sent on request.

FOREIGN BRANCH:  
Paris, 3 Rue Scribe.



**FINCH RIGID  
SPRING  
EYEGLASSES**

## The Finch Mounting.

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## New England Association of Opticians

The annual meeting of the New England Association of Opticians, held at Young's Hotel, Boston, May 17th, was the most successful in the history of this pioneer organization. At the afternoon session over eighty names were registered, and this number was swelled to 113 at the evening session. The papers read and discussions were all of a practical character and the topics well chosen for their application to present conditions. The local wholesalers did themselves credit in the manner in which they looked after the comfort of out-of-town dealers and, in addition, lent greater interest to the gathering by making a good display of instruments, with capable assistants to demonstrate their workings. The Murine Company, of Chicago, through their New England agents, distributed sample packages, advertising easels and leadpencils to make notes with. Mr. Barber, head of the Globe Optical Co., ably assisted by his hustling corps of assistants—Drisko, Thompson, Nagel and Wilkens—and President Hardenberg, of the Boston Optical Co., with Eben Hardy and Charley Waugh, all personally looked after the visitors and local dealers and made them feel glad they came. As each arrival registered he was furnished by Chairman Palmer with a neat satin badge appropriately lettered in gold and his name inscribed in a space provided on a celluloid strip across the top, so that his fellow opticians might be able to address him by name, whether hitherto acquainted or not.

### Afternoon Session

President Hart called the afternoon session to order at three o'clock, after an hour had been devoted to greeting the arrivals and examining the exhibits in the meeting room. A temporary dark room had been erected in one corner to permit the operation of the instruments used in the objective examinations. After the minutes of previous meetings had been read and approved, the treasurer made his report, showing a balance of \$274 on hand. The trustees of the defence fund also reported a comfortable working sum in the treasury, about \$259. They announced that the Granite State and Maine societies had served notice that they would withdraw from participating in this general fund, and if so, there would still remain about \$222 to withstand any attack that might be made against the legitimate rights of the members.

The applications of R. M. Cook, Marblehead, Mass., for active and R. M. Mansfield, Wallingford, Conn., for associate membership were then balloted on and both elected. The application of Geo. A. Breal, of Fall River, Mass., was received and referred to the membership committee. An acknowledgment of thanks was read from Secretary Blair, of the Rhode Island Society of Optometry, to an invitation that had been sent to them to participate in both the recent banquet and present yearly meeting. A letter was read from T. D. Hoyt, Marblehead, stating he wished to join the association.

Secretary Barron then gave notice of an amendment to the constitution and by-laws, article 4, section 3, as follows: "No member shall display or advertise his membership in this association in any other way or manner than by the display of the certificate issued to him by this association." This went over to next meeting, under the rules.

On motion, seconded by several, Mrs. Alice D. Sanborn, of Boston, was made an honorary member of the association "as a mark of respect for the great work done for the association by her late lamented husband, John W. Sanborn."

The secretary then read the result of the mail ballot for election of officers for the ensuing year, which resulted in the choice of the following:

President, Eben Hardy, Boston; first vice-president, Albert A. Carter, Boston; second vice-president, William L. Thomas, Boston; treasurer, Walter W. Slade, Boston; secretary, George A. Barron, Boston. Executive committee: Clarence S. Hart, Lynn; M. J. Atherton, Boston; Howard C. Doane, Boston; W. R. Donovan, Boston; Herman L. Klein, Boston. Trustees of funds: Briggs S. Palmer, Boston; A. G. Barber, Boston; William D. Ward, Hyde Park; William E. Hicks, Lowell; George H. Newell, Lynn. Membership



EBEN HARDY

Eben Hardy, the newly-elected president of the New England Association of Opticians, was born in Nova Scotia and came to the United States in 1886, locating in the city of Boston. Since the time of his arrival in this country he has been directly connected with the optical manufacturing trade. He worked with the firm of A. J. Lloyd & Co., Boston, for seventeen months and then with George H. Lloyd & Co., of the same city, for nearly three years. In January, 1901, he started in business for himself as a manufacturing optician at 5 Province Street, Boston, subsequently removing to 21 Bromfield Street. This enterprise has developed with gratifying uniformity, due, no doubt, to the practical experience and general business aptitude of the proprietor.

committee: Frederick P. Simmons, Boston; W. E. Titus, Brockton; Fred. M. Drisko, Dorchester; Carl N. Quimby, Boston; Charles H. Bennett, Malden. To represent the New England Association at the convention of the American Association in Milwaukee, Clarence S. Hart was named, with Briggs S. Palmer as alternate.

### President Hart's Address

President Hart followed with an admirable address, closing his work for the year, which was punctuated and followed by warm applause. After extending a formal welcome to the members and guests Mr. Hart said:

#### Interesting Reminiscences

History tells us that from the earliest times associations have been formed for the promotion or accomplishment of special objects, but to no one was the need of an organization ever more apparent than to those opticians who assembled in this house ten years ago the twenty-fourth of next July, and organized the first optical association in the United States, and I am proud to state that the names of eight are still enrolled as active members of the New England Association. From this small beginning others have been formed from time to time until nearly every State in the Union has its optical association. We have also a large international body, and a number of cities have their clubs and societies. The object of all these organizations is identical, namely, the protection of our brother optician, to

encourage and assist optical education and the building up of a new profession.

When we ask ourselves what has been accomplished I am reminded of the manner in which the business was conducted a quarter of a century ago. At that time Boston could boast of but twenty-two optical establishments, and not half of that number devoted their whole time to optics, and it was a rare thing to find one in cities of less than 75,000 inhabitants, most of the spectacles being sold by the jewelers.

As I was apprenticed to a jeweler about this time to learn watchmaking, and incidentally the optical business, I can tell you just how it was done. On one side of the store there was a ten-foot show case filled with open boxes, in which the goods were kept, each containing a certain number. We always kept a full line of two-eye spectacles ranging from No. 60 to No. 5. One of the first duties I was asked to perform was to measure and mark a lot from which the tags were missing.

#### A Meagre Equipment

We did not have a lens measure, a focusing box or trial lenses to neutralize them with, but had to depend upon a five-foot stick marked in inches. This we held against the wall and made use of a convenient widow-sash across the street in the following manner: We held the stick against the wall with one hand, and with the other we would slide the spectacles back and forth on the stick till we came to the point where the image of the sash was most clearly defined, and note how many inches it was from the wall and mark them accordingly.

To test the eyes we made use of the sliding optometer, and our most difficult cases were saved for Mr. Lazarus, who came once a month, for we were the sole agents for the celebrated Lazarus & Morris perfected spectacles.

Shortly after this there seemed to be an awakening to the necessity of better education among the jewelers, and they began to devote more time to the study of optics. As they gained in knowledge they wished to let the prospective buyer of spectacles know of it so that they might discriminate between the fellow who had just as good glasses but was not possessed of as much skill, and one after another they began to display cards to that effect, and at the same time letting them know that it was free until finally nearly all had them.

#### Results of Organization

The increasing desire for optical education finally led to the formation of these associations, since which time the advancement has been more rapid, and we note that the signs began to disappear at about the same rate as they came, until to-day there are but few left, and the opticians are beginning to realize the value of their skill and to ask the public to pay for their services. Those who are making a specific charge for their examinations find their patrons are perfectly willing to pay the same and to accord to them the respect which is due a diligent and conscientious practitioner.

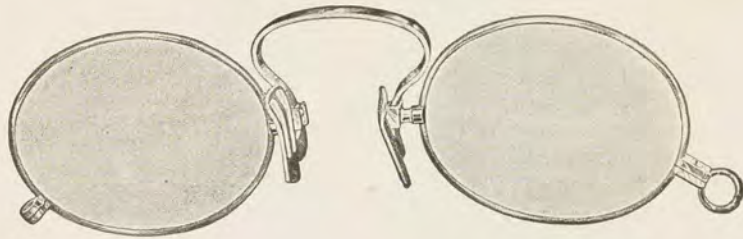
This meeting was suggested that the opticians of New England might come together and by that means become better acquainted and more effectual co-workers in the future, to give manufacturers an opportunity to exhibit their instruments and show us the improvements which have been made along this line of helps to aid us in making more rapid and accurate examinations, and the speakers who are to follow will present some new theories for our consideration.

This body is known as an association of opticians, but as a matter of fact the individuals of which it is composed do not all style themselves as such, but choose a name which to them seems best suited. I find that this applies to all sections of our country, for in looking over a package of twenty-five letters which were recently sent me from different parts of the United States, they made use of nine different titles. Refracting optician leading off with seven to its credit, the next in favor being optician with five, and the balance was about evenly divided between the other seven.

To my mind this is a serious error, and the sooner we come together and decide upon a title to be universally adopted, the better it will be for our professional standing. It ought not to be a difficult matter to agree upon a name, for it makes but little difference what it is so long as it is logical. The American Association

(Continued on page 983)

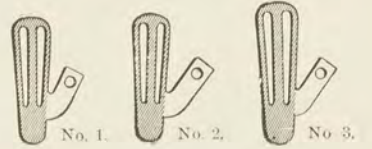
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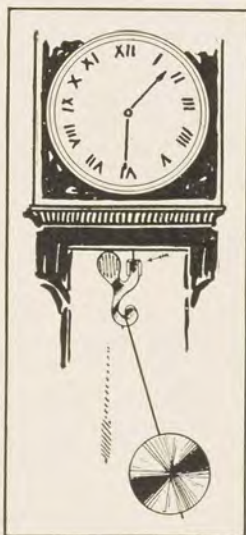
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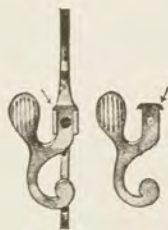


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## New England Association of Opticians

(Continued from page 981)

of Opticians have taken the initiative step and should receive the support of all. If they choose one at the coming convention I hope it will be adopted by other bodies, and that individuals will make use of it in every manner possible, so that the general public may soon learn to discriminate between those who deal in optical goods and those who measure the refractive media of the eye and correct errors of refraction.

The New England Association of Opticians has at times allowed some of the younger organizations to outnumber her, but has always striven to maintain her position as an educator. When the executive committee met at the beginning of the year they first gave their attention to the matter of providing a suitable course of lectures for the season, after which they began the task of letting those who were not identified with us know of the work which we were doing and to give to them an opportunity to aid in its success. To this end nearly fifteen hundred letters were sent out, as a result of which the membership has increased over 25 per cent., and the average attendance at our monthly meetings has far exceeded that of former years.

While we have made an effort to increase our membership we have not done so at the expense of quality. We feel that this organization should embrace every earnest student of optics in our jurisdiction. By this I mean all who are anxious to add to their store of knowledge and at the same time are willing to assist in the building up of the profession.

I wish to impress upon every one in the practice of optometry the fact that to our associations more than to any other source can be attributed the advancement which has been made toward that high standard of capacity which we hope to attain in the future, and each of our members should realize that he is a part of this corporation and do all in his or her power to strengthen it.

### Reading and Discussion of Papers

The first paper of the session was read by Fred. A. Barber, entitled "Shall we have a Minimum Price-List?" This practical and timely address will be found on another page of this issue. In the discussion that followed, Mr. Palmer stated that he had interviewed several of the largest opticians of Boston, and all expressed themselves willing to join in a movement to fix on a minimum price-list. Mr. Barron stated that he had already acted in that direction by adopting the list of his big immediate neighbor. Mr. Carter, who conducts the optical department of one of the big Boston department stores, told how successfully he maintained prices in even such an establishment, where low prices are thought to prevail; besides, he was very much inclined to go further and make a separate charge for examinations. On motion of Mr. Palmer, the chair was authorized to appoint a committee of five, two from Boston and three from outside points, to draft a minimum price-list and report at the next meeting.

The next address was by Henry L. De Zeng, of Philadelphia, the inventor of the Refractometer, Luminous Retinoscope, Luminous Ophthalmoscope and other instruments that bear his name. His topic was "Objective and Subjective Optometry, with Retinoscope, Ophthalmoscope and Trial Case." The speaker said that he had always been impressed with the fact that the New England Association was the most representative body of refracting opticians of all the societies. Some others might be greater in number, but this association seemed to keep in the vanguard in all educational and scientific lines; and, moreover, the members manifest a most commendable spirit in working for the advancement of their calling and

professional standing. He then explained his method of making an examination: first using the retinoscope, then proving its findings and working them out by use of the trial case, and finally examining the eyes carefully and thoroughly with



H. L. De Zeng

the ophthalmoscope. The speaker laid stress on the value and advantages of the fogging system, explaining his method of using it and the ease and certainty with which it accomplished results. The operator, he said, lost much time and was often led into error by his inability to control the accommodation of his patient during the examination. This could be overcome, he claimed, by use of the fogging system. Referring to prisms, which he designated as requiring the highest skill of all lenses to prescribe properly, he contended that they should never be prescribed without an exact and intelligent examination, and only when the operator was sure they were called for. He also contended that every refractionist should be skilled in the use of the ophthalmoscope, so that he could recognize diseased conditions, though not attempting to treat them, of course. He predicted that when they did acquire the proper knowledge to make a thorough and complete examination of the eye and to determine just what it needed to correct any refractive error and also to detect diseased conditions, they would take from the oculist much of his refractive work and cause him to restrict himself more to surgery and treatment of diseases. When that time comes, his standing will be recognized by the public, by law and by the medical profession. This address lasted an hour.

The last address of the afternoon session was an extremely practical paper by Briggs S. Palmer, on "Shall We Charge for Examinations?" Mr. Palmer placed himself strongly and unequivocally in the affirmative and recited all the well-known arguments why such a charge should be made, not only with profit and gain in business, but in raising the standing of opticians in the estimation of the public. He raised a hearty laugh by referring to what he classed as "bull's-eye opticians," describing them as the fellows who never made a miss, who had three thousand cases and never a one to come back—probably because they were afraid. This paper created considerable interest and the most discussion of any on the programme. Mr. Dey agreed with the arguments advanced in favor of making a charge, although he had not definitely done so. He compromised by telling his patients that the second pair of glasses or separate lenses would not cost as much as the first, thus conveying the impression that some additional



Briggs S. Palmer

charge had been made at the first. Fred. A. Barber said the tendency in Lowell was to make a distinct charge, and the free-examination fellows were neddging and the whole drift was the other way. Geo. W. Messier, of Holyoke, stated that he had been charging a separate fee for several months and had a sign up to that effect, and it worked well. Geo. A. Barron, of Boston, said he had charged a dollar or more for the past three years; at first without a sign, but recently with one displayed. He also referred to a Boston optician who guaranteed his glasses and went so far as to refund the money paid and took back glasses that the patient claimed were not correcting or helping his vision. He said this practice was building up his friend's business, even if it seemed somewhat radical to some. Mr. De Zeng stated that he had for some time been making a separate charge of five dollars for examinations and found no trouble in getting it. Dr. A. A. Klein, the well-known optical instructor, said he always advised his pupils to make a charge for examination if they were competent to make a proper examination. If they proposed to merely slap glasses on and did not or could not make an intelligent examination, then they had no right to charge. He argued against the possibility of anyone guaranteeing the glasses they prescribed, owing to the changing condition of patients under the various mental and physical changes that all, especially women, were subject to. He thought opticians should charge \$5 rather than \$1, as the latter was too small remuneration for the work when the optician understood his business.

### Guaranteeing Glasses

Mr. Palmer explained what this system of guaranteeing glasses was. If the first were not satisfactory they made a second examination, and if necessary changed the glasses. If that was not satisfying they had a third examination made by a different operator in their place. If his findings were different they made the change, and if this did not suit the patient they offered to place in the frames, without additional charge, glasses from any prescription that the patient might obtain elsewhere. This certainly appealed to all as the limit in trying to suit the public, but Mr. Palmer said it was by just such methods that their business had acquired its present dimensions. Their charge for examinations, plainly announced, was \$1 and \$2.

Mr. Simmons explained under what difficulties he labored, owing to the previous go-as-you-please management of the business he now conducted, but he believed in the examination charge, for it added dignity to the business and gained the confidence of the public. He believed it must be universally adopted and also a uniform price-list.

H. Fellman, of Woonsocket, R. I., told of conditions in his locality—a mill town—and did not believe with such a trade an examination charge could be made successfully.

The meeting then took a recess till the evening session.

### Evening Session

The first address of this session was by Franklin T. Kurt, Ph. B., of Boston, on "Special Education for Opticians and Dealers in Optical Goods; Its Possibilities and Limits." The speaker began with a reference to the loss the association and the cause of optometry in general suffered in the death of Mr. Sanborn, the first president of the association and of the New England Optical Institute, of whose staff Prof. Kurt had been a member. He said an educated man was one admirably

(Continued on page 987)

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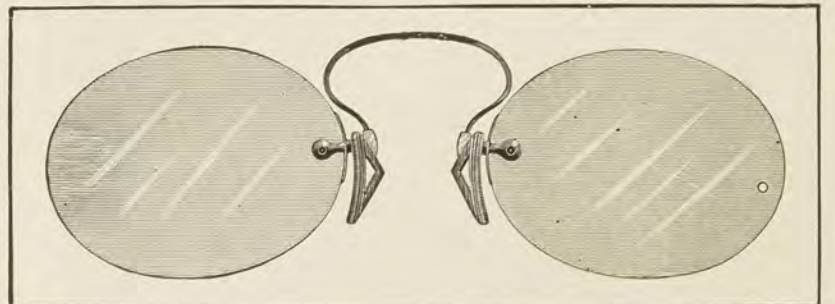
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## Clinics in Optometry

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[Each of these clinics is complete in itself, and one of them is published each month in this department. They cover all manner of eye defects, from the simplest to the most complicated, and give the most authoritative procedure in the diagnosis and correction of the various visual defects. In order to make these clinics of maximum benefit, we invite our readers to join in them by sending us any criticisms or suggestions they may have to make in regard to the treatment here given. The first clinic of the series appeared in the May, 1904, issue.—Ed.]

### A Case of Mixed Heterophoria

Mr. R. P., 29 years of age, bank clerk. The symptoms of which this gentleman complains are indistinctness of vision, especially at night, with occasional pain in eyes and head.

In answer to our inquiry as to whether he has ever worn glasses, patient replies that he was fitted with glasses about eight years ago, but he has never worn them much because they were of no benefit to him. We ask to see them, and on neutralization we find them to be +.50 D. spherical.

We now proceed to determine the acuteness of vision, and we find that each eye separately can read all the letters on the No. 20 line, and hence we record the visual acuity as follows: O. D.  $\frac{20}{20}$ , O. S.  $\frac{20}{20}$ . We then ascertain the range of accommodation, and we find that he can read the smallest type as close as 4 inches and as far away as 20 inches. This near point of 4 inches shows an amplitude of accommodation of 10 D. We recall that this corresponds to the conditions usually found at 20 years, while at 30 the near point normally recedes to 5½ inches, which represents an amplitude of accommodation of 7 D. This indicates a vigorous condition of the accommodation in this case when the eyes are used for close vision.

The symptoms complained of lead us to suspect hypermetropia or hypermetropic astigmatism. In order to get an idea of the condition of the refraction we make a hasty trial with convex lenses held before the two eyes at one time, and we find that a pair of +.50 are accepted. This indicates a hypermetropic condition of the refraction, and proves that there is no tonic spasm of accommodation in spite of the fact that the ciliary muscle is of excessive strength, as shown by an amplitude of 10 D. at 29 years of age.

We will now test each eye separately, and we find that the vision of the right eye is even better than  $\frac{20}{20}$ , and that some of the letters on the No. 15 line are legible. We try a +.50 D. sphere and it is promptly rejected. We then try a +.25 D. sphere which is accepted. We remove this sphere and replace it with a +.25 D. cyl., which we find is also accepted when the axis is placed at 180°. In comparing these two lenses and quickly changing from one to the other, patient is unable to choose between them. We therefore make a note in our record book that the refraction of right eye is represented by +.25 D. S. or +.25 D. cyl. axis 180°.

On examining the left eye we find the vision is not quite  $\frac{20}{20}$  full. A +.50 D. sphere is rejected, but a +.50 D. cyl. axis 90° is accepted. We rotate the cylinder towards the left and patient says letters on the test card are made worse. As we rotate back towards 90° they begin to improve,

and keep on until patient again says the letters begin to blur, which does not occur until the axis has passed 20° or 25° to the right from the vertical. After a few trials we find that 110° is the best position for the axis of the lens.

We next make an examination with the ophthalmometer. The right eye shows an overlapping of half a step in the vertical meridian. Now, it will be remembered that in the normal cornea there is an excess of curvature and of refraction in the vertical meridian of about this amount, and therefore in astigmatism with the rule the same allowance must be made; consequently this eye, as far as the curvatures of the cornea indicate, is devoid of astigmatism.

The left eye shows an overlapping of one and a quarter steps (1.25 D.) in the vertical meridian; after making the usual deduction of .50 D. or .75 D. the ophthalmometer indicates an astigmatism of at least .50 D. with the rule.

We feel safe now in deciding that there is practically no astigmatism in the right eye, and that its probable refraction is represented by a +.25 D. sphere.

The left eye is undoubtedly astigmatic to the extent of +.50 D., the excess of curvature being at or near the vertical meridian. The ophthalmometer shows the axis of the cylinder at 90°, while the test with the cylinders calls for the axis at 110°. We would feel better satisfied if both tests agreed as to the location of the axis; but this is a discrepancy that often occurs, and in such a case we must be guided by the answers of the patient who, if of average intelligence, after a few trials will be able to decide in which position the cylinder affords the best vision. We therefore repeat the test with the cylinder by rotating it from one position to another, when we find that Mr. P. adheres to his statement that the axis at 110° affords the best vision.

What is the result of our examination of the refraction? O. D. +.25 D. S., O. S. +.50 D. cyl. axis 110°.

The next step in the examination is the use of the Maddox multiple rod to determine the condition of the muscular equilibrium. We place it in a horizontal position over the left eye and ask the patient if he sees a red streak of light running vertically, and if so what position does it assume with regard to the light seen by the uncovered eye. He replies that he sees it and that it is about one inch to the left of the light. This indicates esophoria of low degree. We try a prism of 1°, with base out, and find this brings the red streak of light directly through the flame.

We turn the Maddox rod around to the vertical position, when the patient sees the red streak running horizontally, and we ask him what position it assumes with regard to the light, whether above or below or through it, and he replies that the red streak runs directly through the center of the light. This indicates a proper balance of the vertical muscles, and we conclude there is no hyperphoria. The dot and line test shows 2° of exophoria in accommodation.

This concludes the examination for the day, and in accordance with our usual custom we ask the patient to return for a further

examination, telling him we think it advisable to make at least three examinations before prescribing glasses.

On the second visit we get exactly the same result as on the first day.

But on the third day we uncover a condition of latent heterophoria. We measure the power of convergence and of divergence as a part of our routine method, and find the former is equal to 28°, which is normal, while the latter is equal only to 3°, which is considerably below normal.

For the benefit of our less experienced readers we will say that the power of convergence is measured by the strongest pair of prisms, bases OUT, which the eyes are able to overcome and maintain the light single at a distance of 20 feet. The normal power is from 20° to 30°, but which can be trained up to 60°.

The power of divergence is measured by the strongest prisms, bases IN, which the eyes are able to overcome and maintain the light single. The normal standard is from 6° to 8°.

These tests show in this case a weakness of the divergent muscles, the eyes being given over to the stronger convergent muscles, which causes a condition of esophoria.

After these duction tests, when each muscle is called upon to exert itself to the utmost, any existing spasm of a single muscle is likely to be broken up, and the true condition of the several muscles can be better determined. We now try the Maddox rod on this case, and instead of the 1° of esophoria which we found on the first two examinations, there is now an esophoria of 10°, and a right hyperphoria of 1° has become manifest.

Instead of prescribing glasses on the third examination, as we expected, we tell our patient that there have been some new developments in the case which make it more complicated, and that several more examinations will be required in order to clear it up.

These tests resulted as follows:

Oct. 31, 1903.	Esophoria 10°.	Right hyperphoria 1°.
Nov. 2, " "	" 4°	" " 1°.
" 3, " "	" 15°	" " 2°.

The first test showed an exophoria of 2° at the reading point, but the later tests of the muscular balance at the near point showed the following results:

Oct. 31, 1903.	Esophoria 20°.
Nov. 2, " "	" 5°.
" 3, " "	" 13°.

It is a well-known fact that the muscular balance or imbalance is a variable quantity, and no two days show exactly the same results. It is also a fact that there may be a spasm of one of the extra-ocular muscles, which masks the true condition, as in this case the test of the muscles at the reading point at first showed an exophoria, when really the condition is one of esophoria.

The later developments in this case lead us to suspect that the symptoms are perhaps as much due to the heterophoria as to the error of refraction. Ordinarily we think it proper to correct the refractive error first. Oftentimes such glasses will afford perfect

(Continued on page 987)

# "NEVERWIGGLE-EYEGLASS"

*This is a new "Lock Stud Screw" Eyeglass, which we guarantee "Never-to-Wiggle."*

Our guarantee is good for a new pair if stud screw loosens. Any style of guards can be attached to the "Neverwiggle-Eyeglass" and the "Bridle Stud" locks them all. The "Bridle Stud" looks neater and more finished than the old style. Send for sample pair at dozen rates. Patent pending.

## JOHNSTON OPTICAL CO.

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NO GOODS SOLD AT RETAIL.

### Improvements

such as the new corrugated pad will make the

### U. S. GUARD More Popular

than ever.

The pad moves with the skin of the nose in its every movement—it rests just where the skin moves most freely, and compensates for the natural difference in movement of the skin under the upper and lower portions of the guard.

### U. S. Guards Will Not Slip—Creep—or Pinch.

They move with the skin.



### U. S. TEMPLES

with their broad bearing surfaces give certain comfort to aching ears and insure permanent adjustment.

**Far Better and Cheaper Than Cables.**

WRITE FOR SAMPLES IF YOUR JOBBER DOES NOT HAVE THEM.

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103 East Adams Street,

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### A GREAT NEED SUPPLIED.

We have just issued a new booklet, which tells very fully the advantages of becoming an



**OPTICIAN**

—and also how our school supplies this need in the most practical way. It contains testimonials that are most convincing of the superiority of the **AMERICAN OPTICAL COLLEGE** over all others. In it you can learn how proprietors of stores, clerks, doctors and others have increased their incomes **MATERIALLY** by taking our course.

**REMEMBER** the course is entirely by correspondence, and you do not have to neglect your regular daily duties. On completing the course and answering the examination questions you receive a handsomely engrossed **DIPLOMA** with degree "Doctor of Optics."

We are now giving our regular \$25.00 course for \$8.00 (\$2.00 down and balance \$1.00 a week). Write to us at once.

**AMERICAN OPTICAL COLLEGE,**

(Only Exclusive Correspondence Optical School in America.) **DETROIT, MICH.**

**OPTICIANS!!** Before you buy, see the **BOSTON OPTICAL COMPANY'S** line of

### FIELD AND MARINE GLASSES.

Our assortment of these goods is complete, and we are confident the **PRICES** will suit you.

All styles of Auto Goggles carried in stock.

Our **R** Work is kept to the same high standard, with Promptness and Accuracy still our motto.

We will gladly supply the trade with handsome **MURINE** booklets, with name printed thereon, upon request.

Send us your mail orders.

### Boston Optical Company,

Jewelers' Building,

373 Washington Street, Boston.

## Clinics in Optometry

(Continued from page 985)

relief to all the symptoms, and by relieving the strain on the accommodation the heterophoria gradually passes over into a condition of orthophoria. If, however, the symptoms continue unabated in spite of the spheres or cylinders that have been worn, then we advise the combination of prisms for the correction of any existing muscular insufficiency.

But in this case there is such positive evidence of spasm of the external recti, and such a high degree of esophoria after this spasm had been removed, that we think it best to give him a prismatic correction at once.

The amount of esophoria varied considerably from day to day, and therefore we hardly feel justified in prescribing a prism stronger than  $3^\circ$  for its correction. The hyperphoria was constant after it first made its appearance; on three days it was  $1^\circ$ , and on one occasion it reached  $2^\circ$ . We will therefore prescribe a  $1^\circ$  prism for the correction of the vertical deviation.

The right eye is patient's best eye, and as the amount of hypermetropia is so slight we will not correct it. We will place the  $1^\circ$  over this eye, a plane prism without any spherical or cylindrical curvature.

The astigmatism in the left eye cannot be ignored, and therefore we will prescribe the indicated cylinder combined with the  $3^\circ$  prism.

Our prescription reads:

O. D. Prism  $1^\circ$ , base down.  
O. S. + .50 D. cyl. axis  $110^\circ$   $\ominus$  prism  $3^\circ$ , base out.

Perhaps some one may wonder why we place the weaker prism over the right eye. We have a very good reason for this; we want to interfere as little as possible with the good eye, and this we do by placing the  $1^\circ$  prism over it. The  $3^\circ$  prism causes a more marked displacement of objects, which would be much more noticeable, and hence more annoying, if placed over the good eye than if placed in front of the other eye. If a single prism is prescribed it should always be placed over the eye with the least acuteness of vision. If the optometrist will keep this in mind he may save himself annoyance and his patient discomfort, and he may be able to get more satisfaction out of the use of prisms.

These glasses were prescribed, and they seem to have filled the bill completely. It is now six months and more since Mr. P. commenced to wear them, during which time we have seen him on several occasions on account of breaking of the left lens, and he always speaks in the highest terms of the comfort and relief afforded by the glasses.

Perhaps it might be well to say that prismatic lenses should not be set in frameless mountings on account of the liability to breakage at the apex end of the prism, which is very thin. We advised this patient to have frames, but he preferred frameless mountings with the result of two broken lenses since he has been wearing them.

## A Subscriber's Suggestion

ED. KEYSTONE:—As to treatment of the patient in the clinic in your May number, he undoubtedly received great benefit from the glasses prescribed, but the question in my mind is, "Did he receive all the benefit possible?" I am inclined to think he did not, because of the element of doubt present and, owing to that doubt, an insufficiency of test. In place of stopping at +.50 should you not have continued with stronger lenses until the patient could say positively that vision was worse? By use of +.50 you established the fact that hypermetropia existed. Now we know that in hypermetropia it is possible that the accommodation is being used for distant vision and if so, that in placing a weak plus lens before the eye the patient will see no better and will in many cases be in doubt as to whether vision is better or not. The lens merely takes the place of the accommodation, which relaxes to that extent, making no change whatever in vision. By continuing to increase the power of the lens so long as best vision is maintained we finally reach the lens which makes vision worse, the patient now being artificially myopic.

The last lens which maintained best vision had caused the ciliary muscle to relax all it was possible (under present conditions) and had corrected one meridian. If at this time the astigmatic chart be used and a difference be found in the lines, astigmatism is present and we proceed to correct it by, in this case, concave cylinders, which we add until the lines appear alike and the type is clear. Now, with the correcting glass before the eye, again try plus lenses in an effort to cause the ciliary muscle to still further relax. The above procedure I would consider necessary on account of the doubt expressed by patient, for in accepting +.50 D. it is, of course, possible that he would accept more and this we could ascertain only by trial.

Yours truly,

May's Landing, N. J.

J. A. LAMBERT.

[It is true that when a weak convex lens is accepted, it is proper to try a stronger and still stronger until they are rejected. But on account of the doubt in the patient's mind whether to accept the +.50 D. sphere, we were justified in allowing him to compare its effect with that of a +.50 D. cyl. ax.  $90^\circ$ , and his immediate preference for the latter indicated astigmatism. The reason the +.50 D. S. was not rejected was because it corrected one meridian; and the reason it was not accepted was because it made the emmetropic meridian myopic. Instead of removing the +.50 D. S. and replacing it with a +.50 D. cyl. ax.  $90^\circ$ , we could have placed a -.50 D. cyl. ax.  $180^\circ$  in front of it: the same result is attained in each case.

Theoretically, we want to pile up the convex lenses as long as the ciliary muscle does not absolutely reject them; but practically, it is not well to force too strong convex lenses on young people who have not been accustomed to wearing glasses.—ED.]

## Chicago Optical Society

The Chicago Optical Society met on May 5th, when, upon motion, Professor G. A. Rogers presided. The minutes of the regular meeting held April 7th was read and approved. It was moved and carried that the secretary send a letter to THE KEYSTONE, thanking them for donating a subscription to their paper. There was a discussion on the peculiar cases of astigmatism fitted by members present, after which a motion was made and carried to adjourn to September 8th.

## North Dakota Board of Examiners

E. A. Nelson, secretary of the North Dakota State Board of Examiners in Optometry has announced that the first examination under that body will be held at Devil's Lake, N. Dak., July 11th. It is hoped that as many opticians as possible will participate in the oral and clinical work before the examination is over, so as to benefit by their attendance.

## New England Association of Opticians

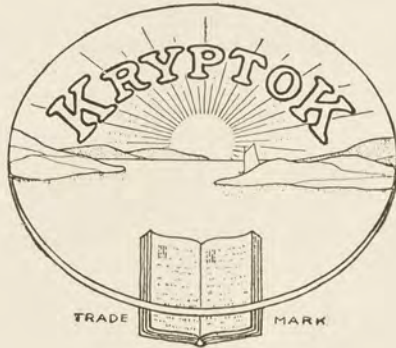
(Continued from page 983)

described by Pat, an Irish laborer, as "a man who is onto his job." He referred to the difficulty in young men acquiring an education in many lines of special study they might be anxious to take up. This applied to the young man who wished to acquire a thorough optical education, for nowhere outside of Jena, Germany, was a thorough course of instruction to be acquired. This called for, in his opinion, first, a high school education and a mind qualified for the special studies needed later; second, a good foundation in pure mathematics. Two years in this study would be sufficient. He found in his experience in the optical institute that men of middle age could acquire this as well as the younger men without its becoming irksome. Third, he should have a grounding in elementary chemistry. The refractionist course itself could be acquired in two years, thus making four years in all. He advocated the selection of medical men as instructors so as to win the confidence and support of the medical fraternity. The speaker pointed out the inadequate instruction given on ophthalmology in the medical colleges. In the three leading medical colleges of the country only sixteen lectures at the end of the whole course were provided for on this subject, and he had yet to see the curriculum of a single medical course that would make a man expert in mathematical work, such as refraction required. He contended that it would be well for the optician if there was some law to compel him to acquire proper knowledge before practicing refraction work, as this would soon raise him to the proper educational standard. Now there is no criterion to enable the public to judge whether the optician he goes to has studied a week or years. He did not believe the local optical association could allow this state of things to continue, but should strive to place their calling on a more permanent and satisfactory basis. He believed the solution was in the university evening courses. That it would be feasible to reorganize the New England Optical Institute and map out a course that would give a thorough optical education. In answer to a query as to the probable cost of such a course, Prof. Kurt said the Boston Y. M. C. A. was giving such evening courses in different branches at a cost of \$30 a year, and further that some of these courses would answer for the first two years' instruction in mathematics.

The last address was made by E. LeRoy Ryer, president of the New York City Optical Society. His topic was "The Practical Demonstration of a New Method of Correcting Astigmatism." This consisted of a new astigmatic chart, in which the lines of the clock dial chart were carried out across the space covered, instead of leaving a circle blank in the center. The lines are made to revolve until the straight line indicated the proper axis, while the other part of the lines on chart would present a blurred appearance. Mr. Ryer has built a special instrument to operate these special charts, and he demonstrated the workings by a model that only lacked a few minor details. After the lecture Mr. Ryer was kept busy for half an hour showing the workings of the instrument and chart, both of which created a very favorable impression, as did the modest young inventor, who appeared before the association for the first time.

# THE KRYPTOK LENS.

Pat. May 23 and Nov. 21, 1899.



## THE ONLY "INVISIBLE" BIFOCALS.

Some projected general advertising and a special St. Louis exhibit will stimulate inquiries throughout the country for Kryptok Spectacles and Eyeglasses. Opticians everywhere should get the benefit of this advertising. It is only necessary to have "Kryptoks" and show them. Every bifocal eyeglass wearer is a probable purchaser.

Write the manufacturer controlling your territory; or any one of them if your State is not designated.

A. S. ALOE CO., 513 Olive St., St. Louis. STATE OF MISSOURI.

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COLUMBIAN OPTICAL CO., Denver, Colo. TEXAS, MONTANA, NEBRASKA, KANSAS, COLORADO, UTAH, OKLAHOMA, CALIFORNIA, WASHINGTON and OREGON.

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## Shall We Have a Minimum Price-List?

Paper Read at the Annual Meeting of the New England Association of Opticians, by FRED. A. BARBER

**S**OME say that a man's heart is in his stomach; others, that it is in his pocketbook. If the latter be true, this subject is one that is near to the hearts of us all. The subject of prices comes to us almost daily, as customers tell us that our prices are higher than they have been paying or something of that sort. We all try to have regular prices and stick to them, but it is a hard thing to do when you know that your competitor across the way will sell glasses or replace lenses for any price he can get; so I venture to say that that either expressed or unexpressed, the wish has come to every one here that some uniformity of price prevailed. Perhaps the best way to help the association to answer the question put in the title of this talk will be to tell how the Granite State Optical Association, one of the offsprings of this association, adopted a minimum price-list and why they did so.

About a year ago the opticians of Manchester, N. H., met and discussed the question of a minimum price-list, finally adopting one that was used in the city successfully until about the first of this year, when the subject was again brought to our attention by the rise in prices of optical goods. It seemed a good time to extend the use of the price-list, as several opticians in different parts of the State had asked for a copy and expressed the wish that more uniformity prevailed in their section; so a circular letter was sent out by the Granite State Association, inviting all the opticians of the State to attend a meeting to discuss the subject. At this meeting the value of such action was unanimously urged, not only by every one present, but by letters from a large number of the opticians of the State who could not attend.

The same price-list was adopted which had been used by the Manchester opticians up to that time; it was reprinted with the title, "Minimum Price-List Adopted by the Opticians of New Hampshire," and a copy mailed to every optician in the State, with a circular letter urging its adoption. I quote the following paragraph from the letter:

The list gives, as you will understand, the minimum prices; there are many times when higher prices should be charged, but this is always left to the discretion of the refractionist. The optical business is such that bargain sales do not induce people to wear glasses who don't need them. The only legitimate way for an optician to increase his clientage is to do such good work that his patients recommend it. Too low, or cut, prices always prove expensive in the end; it means careless and indifferent work—you know the rest. Our code of ethics needs strengthening, and nothing does more harm than cutting prices on repair work. The fact that all kinds of prices are charged for an article that needs to be so scientifically and mathematically correct as a compound lens for instance, does not tend to the good name of our profession."

A number of the blanks sent out with this were returned, signed, and a large number of letters were received saying that while the writer did not care to bind himself, he would concur in the adoption of the list and use it as far as possible.

About this time several Lowell opticians became interested in this subject, and after one or two meetings at the Board of Trade rooms, a local society was organized called "The Lowell Optical Society," with W. E. Hicks,

president, and J. A. McEvoy, secretary. The New Hampshire price-list was adopted with a few changes. The idea of organizing a society first came from the suggestion that a price-list would have more force if adopted by a society, of which the user of the list was a member. And in order that every optician might be induced to join the constitution was made very simple. The officers are four in number, the dues are fifty cents per year; the membership consists of active members only, and may include opticians from the surrounding small towns. While the society was first thought of principally as a means to back up the price-list, so to speak, its scope will prove broader, as it bids fair to fulfill its object of promoting good fellowship among its members in business and social relations. Surplus money in the treasury will be used for a supper or entertainment of some sort as often as desired. Such things cannot fail to make business relations more harmonious, and thus help in building up the profession at large.

Within the past few weeks, as I have opportunity, I have called on many of those to whom we sent lists and asked how they were liked. While



Fred. A. Barber

some have criticised a few of the items as being too high and others as being too low, all without exception have agreed that as a whole the list was very satisfactory, and that they considered it a very good thing. The criticism that it is too low has been met by the fact that the optician can get as much more as he desires, and it is much better to have a list that will be lived up to than to have one which is so high that it is sure to be cut by first one and then another. We do not claim our New Hampshire list to be perfect. Only by actual use can it be told what are fair prices to all. It may be advisable to revise it after it has been in use a year, according to the suggestions received. But we are not here to discuss this list; the question is not on the adoption of the New Hampshire list, or of any other particular list, but on having one of our own.

So much for the "how" of what has been done in New Hampshire and Lowell, and with what measure of success. Now for the "why," and that brings me to a direct consideration of the title of this talk—"Shall We Have a Minimum Price-List?" I will vote "yes" decidedly, as I believe that what can be accomplished successfully in a small association can be done in a large one. There may be more difficulties in the way, but there are more to cope with them.

Some of the reasons why I believe a minimum price-list should be adopted by the association may be outlined as follows: First and foremost,

because the members want such a list; the opticians of New England want it. I have taken every opportunity to get representative opinions regarding the matter, calling on or corresponding with many opticians throughout New England, and all, both refracting and dispensing opticians, including some of the largest optical houses in New England, have agreed in their desire for some such list and belief in its practicability.

As an association we are trying to advance our profession. Advance must be made by organized forces; lack of harmony among opticians is the greatest enemy of organization, and the diversity of prices is the greatest factor in this lack of harmony. Harry M. Bestor, in his address before the annual meeting of the New York State Optical Association a year ago, said that he knew of no one thing that caused more contention among refractionists than the great diversity of prices prevalent. I believe that is generally true of all sections. An optician in one of our larger New England cities, in a letter on the subject we are discussing, said: "I am in favor of uniform prices, but the situation here is very bad, as the majority of the opticians are not on good terms." The adoption of uniform prices in other cities, notably in Rochester, N. Y., has created harmony among opticians and has done much to advance the reputation of the profession.

It stops optical shopping, and by averaging between the exorbitant charges of some and the non-profitable cuttings of others, has protected the public and at the same time has given to the optician a fair profit on his goods. It may be said that the expense of carrying on our various places of business varies greatly, but as a rule, the amount of business done is in ratio to the expense. The following incident will illustrate how a minimum price-list stops "shopping." Soon after the adoption of our price-list in Manchester, a customer who had been used to getting a compound lens put in by one of the jewelers for \$1.00 called with a broken lens. The jeweler said the price would be more than formerly, as the price of material had gone up and the opticians of the city had adopted a minimum price of \$1.25. The customer went out and returned after some time, saying that she had visited every optician in the city and had been quoted the same price everywhere, so had returned to patronize her usual place.

A price-list lying on the counter where people can see it, with the title, "Adopted by the Opticians of New Hampshire," or "of New England," and referred to when quoting a price is sure to make an impression. It adds to the reputation of the profession among the public, and public opinion will prove a great factor in getting legal recognition of our profession.

From a business point of view we find similar plans used and endorsed in other lines of trade and also in the wholesale optical line. Those of you who deal in photographic as well as optical goods know the advantage of uniform prices which are regulated by the manufacturers of the goods.

The success of any list that may be adopted will depend upon how universal its use becomes. The membership of this association is only representative of New England opticians, so I believe all the opticians of the various States should be invited to participate in any action through their local societies or as individuals. Furthermore, it might be advisable in many cases to organize small local societies, as was done in Lowell, to back up the list; create an interest in all such work for the advancement of the profession, as this association

(Continued on page 991)

# An Ophthalmometer is a Necessity for the Careful Refractionist.

It Saves Time and Insures Accurate Work.



## REMEMBER

The Ophthalmometer gives valuable information in regard to astigmatism that cannot be found in any other way. It shows the presence of corneal astigmatism and the meridians of greatest and least curvature.

Can be supplied with attachment for city electric current or with battery.

The **C.I. Ophthalmometer**, shown above, is in use in over a thousand offices and has met with the greatest success. It is scientifically built, well finished, and besides its acknowledged utility as an instrument of precision that no refractionist can afford to be without, gives a professional tone to the office that is invaluable.

**For Sale by All Jobbers.**

June 1, 1904.

Please mail me pamphlet descriptive of the **C. I. Ophthalmometer**, together with price, etc.

Name, \_\_\_\_\_

Address, \_\_\_\_\_

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CUT HERE AND MAIL TO YOUR JOBBER. IT WILL PAY YOU



### Shall We Have a Minimum Price-List?

(Continued from page 989)

and similar ones are undertaking, and at the same time to arouse an interest in this association itself which shall increase its membership and its effectiveness.

Earnest co-operation along these and similar lines will result in a uniformity of prices and a harmony among opticians that will rival that of other sections of our country, and that will help all organized effort along ethical, educational and legislative lines.

### Minimum Price-List Adopted by the Opticians of New Hampshire

#### Lenses—Frame or Frameless

##### Spheres

.25 to 8 D.—\$1.00 per pair, 50c. each.  
8 to 14 D.—\$1.50 per pair, 75c. each.  
14 to 20 D.—\$2.00 per pair, \$1.00 each.  
Toric spheres—\$3.00 per pair, \$1.50 each.  
Extra for smoke or blue, 50c. per pair.  
Extra for lenticular, \$1.00 per pair.

##### Cylinders

* Prescription	With Examination
.25 to 4 D. . . . . \$2.00 per pair	. . . . . \$3.00 per pair
4.25 to 8 D. . . . . 2.50 " "	. . . . . 3.50 " "
Toric cyls . . . . . 5.00 " "	
Cross cyls . . . . . 4.00 " "	

Extra for smoke or blue, \$1.00 per pair.

##### Sphero-Cylinders +, -, or -

* Prescription	With Examination
.25 to 4 D. . . . . \$2.50 per pair	. . . . . \$3.00 per pair
4.5 to 6 D. . . . . 3.00 " "	. . . . . 3.50 " "
6.25 to 8 D. . . . . 3.50 " "	. . . . . 4.00 " "
8.25 to 10 D. . . . . 4.50 " "	. . . . . 5.00 " "
Toric sph-cyl . . . . . 5.00 " "	

Extra for smoke or blue, \$1.00 per pair.  
Extra for +, -, or - + sphero-cylinder to 4 D., 50c. per pair.

##### Prisms

1/2° to 4° . . . . . \$2.00 per pair	. . . . . \$1.00 each
4 1/2° to 7° . . . . . 2.50 " "	. . . . . 1.25 " "
8° to 13° . . . . . 3.00 " "	. . . . . 1.50 " "
14° to 20° . . . . . 4.00 " "	. . . . . 2.00 " "

When prisms are combined with other lenses, \$1.50 per pair, 75c. each is to be added to the price of such lenses.

##### Smoke or Blue

Plano, MI. coq., or blown coq . . . . . \$0.75 per pair  
Ground coq., first quality . . . . . 2.50 " "

##### Cement Segments

Add to above price of lenses  
Fitted on pec., plano ex., or cyl . . . . . \$1.00 extra per pair  
Fitted on dex., dec., pec., or sph-cyl . . . . . 1.50 " "

Re-cementing segments, 25c. per pair, 15c. each.

#### Frames, and Frameless Mountings

##### Gold

10 K. riding bow (716 1/2 weight) . . . . .	\$4.50 each
10 K. straight temple (721 weight) . . . . .	5.00 " "
10 K. riding bow mountings . . . . .	4.00 " "
10 K. eyeglass frame . . . . .	4.00 " "
10 K. bar spring frame . . . . .	5.00 " "
10 K. eyeglass mountings . . . . .	3.00 " "
10 K. bar spring mountings . . . . .	4.00 " "
10 K. Peerless mountings . . . . .	3.50 " "
10 K. Shur-on or Finch mountings . . . . .	4.00 " "

For 14 K. add \$1.00 to above prices.  
For larger than 00 eye frames add 50c.  
For 7-inch temples add 50c.  
For cable temples add \$1.00.  
Add 50c. for lens-lock studs.  
Add 50c. for countersunk studs.  
Add 25c. for offset studs.  
Add 50c. for anchor, lasso or anatomical guards.

##### Gold Filled

Riding bow frame, A. O. Co. grade . . . . .	\$1.75 each
Riding bow frame, Stevens grade . . . . .	2.00 " "
Straight temple frame . . . . .	1.75 " "
Riding bow mountings (1599) . . . . .	1.75 " "
Riding bow mountings (1901) . . . . .	2.00 " "
Eyeglass frames . . . . .	1.75 " "
Eyeglass mountings (1793) . . . . .	1.50 " "
Stevens eyeglass mountings . . . . .	1.75 " "
Shur-on mountings, all styles . . . . .	2.50 " "

For gold end pieces add 50c.  
For gold bridge add 50c.  
For cable temples add 50c.  
For larger than 00 eye frames add 50c.  
Add 50c. for lens-lock studs.  
Add 50c. for countersunk studs.  
Add 25c. for offset studs.  
Add 35c. for anchor or lasso guards.

#### Steel and Aluminco

All steel frames and mountings . . . . .	\$0.75 each
All best aluminco frames, 1338 grade . . . . .	1.00 " "
Best aluminco frames with gold bridge . . . . .	1.50 " "

For larger than 00 eye frames add 25c.  
For cable temples add 25c.  
Add 25c. for countersunk studs.  
Add 50c. for lens-lock studs.  
Add 25c. for offset studs.  
Add 25c. for anchor or lasso guards.

#### Material and Repair

##### Guards

Regular cork or zyl . . . . . \$0.15 each	Filled . . . . . \$0.25 each	+10 K. \$0.50 each
Anchor or anatomical . . . . . .35 " "	.50 " "	.75 " "
Lasso or pivot . . . . . .25 " "	.40 " "	.60 " "

Cork or zyl. on guards 25c. per pair, 15c. each.

##### Temples

Riding bow . . . . . \$0.15 each	Filled . . . . . \$0.35 each	+10 K. \$1.00 each
Riding bow cable . . . . . .25 " "	.50 " "	1.50 " "
Straight temples . . . . . .15 " "	.35 " "	1.50 " "
Temple and end pieces . . . . . .35 " "	.75 " "	1.50 " "

##### Springs

Regular springs . . . . . \$0.15 each	Filled . . . . . \$0.35 each	+10 K. \$0.75 each
Reduced springs . . . . . .25 " "	.50 " "	1.00 " "
Tilting springs . . . . . .25 " "	.50 " "	1.00 " "
Bar springs . . . . . .75 " "	1.00 " "	1.50 " "
Shur-on springs . . . . .	1.25 " "	2.00 " "

##### Studs

Frameless A, B, C . . . . . \$0.15 each	Filled . . . . . \$0.35 each	+10 K. \$0.50 each
Frameless Ajax . . . . . .20 " "	.40 " "	.60 " "
Frameless countersunk . . . . . .25 " "	.50 " "	.75 " "
Frameless lens-lock . . . . . .25 " "	.50 " "	.75 " "
Frameless offset . . . . . .20 " "	.40 " "	.60 " "

##### Miscellaneous

Solder . . . . . \$0.20 each	Filled . . . . . \$0.25 each	+10 K. \$0.35 each
Bridges, frame . . . . . .35 " "	1.00 " "	1.50 " "
Bridges, frameless . . . . . .50 " "	.75 " "	1.50 " "
End pieces . . . . . .15 " "	.35 " "	.50 " "
Frameless handles . . . . . .25 " "	.35 " "	.50 " "
Cork bridges . . . . . .15 " "	.25 " "	.25 " "

No lenses changed free of charge after three months.  
No discount allowable except to physicians or nurses, or in cases of genuine charity.

\*Prescription price is for replacing broken lenses, or when making up glasses from prescription furnished by customer.  
†25 per cent may be deducted from 10 K. prices when old gold is left.

### Rochester Optical Society

The regular meeting of the Rochester Optical Society was held in the office of Clark & Bowen, Rochester, N. Y., on May 17th. President Bissell called the meeting to order and Mr. Clark reported for the committee appointed to send flowers to Capt. Henry Lomb, and an expression of sympathy in his illness, that these functions were fulfilled and that a message was received from the patient expressing his appreciation of the society's action. It was moved by Mr. Newman, seconded by Mr. Bausch, and carried, that an order be drawn upon the treasurer in favor of Clark & Bowen for the use of their office to date. The society then took up the revision of the minimum price-list, the secretary having received some fifteen letters from different opticians throughout the country in reply to letters recently sent out by him.

As prices with the members are practically uniform in everything except toric lenses, it was felt that no change in the list would be necessary, unless it were on these. As new lists were to be printed, it was suggested that this should have immediate attention. Mr. Schmidt moved that Messrs. Clark, Bausch and Bissell be appointed a committee to consider and advise in regard to the price of torics. Mr. Mielke seconded.

Messrs. Clark, Kirstein and Mincer were then appointed a nominating committee and they reported that as Mr. Bissell had declined to accept the office of president for another term, the committee nominated for that office Harry M. Bestor, other nominees being as follows: Vice-president, Edw. Benedict; treasurer, Parry Newman; secretary, Henry C. Mielke. Executive committee: E. E. Arrington, chairman; Dr. Bowen, C. Sume-

riski, O. Widman and Mr. Bliss. Mr. Clark, for the committee, suggested a vote of thanks be given President Bissell for his efforts in behalf of the society during his term of office. Mr. Bestor made a motion to this effect, which was seconded by Mr. Newman and carried. Mr. Bausch moved that the secretary be instructed to cast one ballot for the officers as nominated, and Mr. Kirstein seconded.

The society then adjourned to the private dining room of the Whitecomb Grill for lunch, and indulged in an informal talk on matters of interest.

### Quebec Optical Association

The opticians of Quebec, Canada, have practically completed the work of organizing an association in that province, and now that the formative stage has been passed the utility of the newly formed body as a promoter of fraternal feeling among opticians and a guardian of their interests generally should soon begin to manifest itself. There are said to be four hundred opticians in the Province, and this number should certainly afford abundant material for a flourishing organization. The conditions of membership in the Quebec Association are generally similar to those of sister bodies in the United States. Traveling opticians, peddlers and all dubious practitioners in the optical domain are debarred from affiliation, a provision that is obviously essential if the organization is not to defeat its object-in-chief—the enactment and enforcement of a law that shall place the optician's calling on a par with other professions. To be eligible for admission applicants must have been engaged in optical work in a resident place of business at least one year prior to making application. The names of the association's officers follow: Prof. Samuel Grant, honorary president; R. De Mesle, president; Rod. Carriere, first vice-president; F. C. Cox, second vice-president; P. G. Mount, secretary; N. Beaudry, treasurer; H. Senecal, E. H. DeCelles, J. M. Devine, L. V. Gaudreau, committee.

### California State Board of Examiners

There was a meeting of the California State Board of Examiners in Optometry for the purpose of conducting examinations in Los Angeles, Cal., April 25, 1904. The following were able to satisfactorily pass the examinations, thereby obtaining a certificate entitling them to practice in that State: Hugh W. McLachlan, Chicago; Nicholas Van Kammen, Bakersfield, Cal.; Kyle McBratney, E. Hansell, L. G. Haffner, Arthur Sutton, C. D. Mueller, Theo. N. Dyches, Geo. A. Collins, of Los Angeles, Cal.

Notwithstanding the wide publicity that the California optometry law has been given, both before and after its passage, many opticians are wholly unaware of its existence. They go to that State, and while they have practiced optometry more or less, they are wholly unprepared and cannot pass the present examinations. This is particularly the case as far as practical objective examinations are concerned. The majority of the men who fail to pass the State Board examinations and though they have pretensions as far as the theoretical and practical knowledge of the retinoscope and ophthalmoscope are concerned, they know practically nothing about it when they are put on the witness stand.

The next meeting of the State board of examiners, for the purpose of conducting examinations, will be held in San Francisco, Monday, June 6th.

# “OPTICAL SPORTING GOODS.”

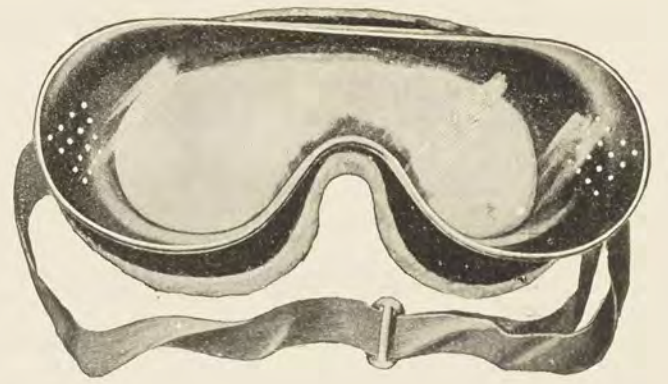
The opening of the “Touring-Car Season” means a big demand for *Automobile Masks, Goggles* and all kinds of *Eye Protectors*.

We have all the latest patterns in these goods right in stock; all prices; from the ordinary coquille to the luxurious aluminum, velvet and silk face-mask.

Send for our new list, giving illustrations and prices of all the desirable things in this line.

*Field Glasses* for the Tourist. He is apt to want them from you in a hurry. Remember, YOU can get them from US in a hurry.

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The Leading Optical College of the World.  
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G. W. McFATRICH, M. D., Secretary,  
Masonic Temple, Chicago.

## Mounting and Trimming Photographs

**W**E are indebted to the useful new magazine, *The Practical Photographer*, for the following instructive and masterly exposition of mounting and trimming photographs: As a rule, a photograph requires to be trimmed before any mounting or framing is begun. The exceptions are, for instance, when prints are masked or when it is desired to maintain some special effect by showing the border or edge.

### Trimming Tools

For cutting I use a firm-bladed pocket knife. A steel straight edge and hard-wood set square are required. For small prints in quantities a glass cutting shape may be used. For cutting, a pair of paperhanger's scissors is useful. The print, however, may be laid flat on a piece of straw board, hard wood, a sheet of zinc or glass, and the cutting shape placed in position on the top, a knife being passed round the shape to cut off the edges of the print. Large prints are best trimmed with a knife and steel straight edge.

### Zinc Shapes for Ovals

For ovals and circles the cutting shape is usually a sheet of zinc (as thick as a halfpenny), having the correct size and shape of opening made in it. This may be cut with a fret saw and finished off with a fine file. The dealers will supply any size or shape to order. For cutting ovals, a wheel trimmer with a small pivoted wheel is necessary.

### Guillotine

The guillotine trimmers are useful if large enough, but the toys made for quarter-plate prints are not very serviceable. Two card-board angles (see Fig. 33) are laid on the print and moved about

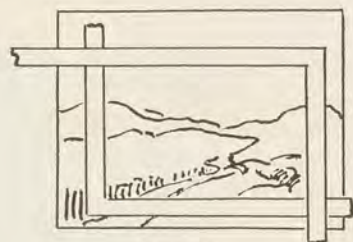


Fig. 33

so as to show more or less of the picture until it is seen just how much must be removed. The position is then slightly marked with pencil.

### Trimming

The bottom of the print is trimmed first, laying the steel straight edge upon the print and cutting clean across with the knife upon that side of the straight edge away from the center of the print.

### How to Hold the Knife

Care should be taken to hold the knife with its point into the corner made by straight edge and print, as in Fig. 34. If held as Fig. 35 the knife is in danger of catching on any slight roughness of the edge of the steel rule,



Fig. 34

Fig. 35

and running up, to the damage of either print or fingers. In addition to this risk the knife, held as

in Fig. 35, will give a bevel to the print, and unless held at exactly the same angle during the whole of the cut will not trim a perfectly straight edge.

### To Ensure Parallel Edges

Having cut the bottom edge, the opposite or top edge must be trimmed next. Loosely curve the print width-ways (Fig. 36), getting the two ends of the cut edge at *m* coincident, and nick with the knife point through both

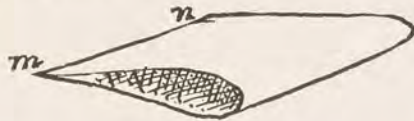


Fig. 36

thicknesses of paper at the previously determined point, say at *n*. Then lay the print flat again and adjust the rule so that the cut passes exactly through these two nicks. The top will now be trimmed perfectly parallel with the bottom.

### Square Corners

To trim the ends square lay the wooden set square on the print and the steel straight edge against it. The set square ensures a right angle, while the steel gives a hard edge to cut against. The opposite end may be treated in exactly the same way. If the trimming

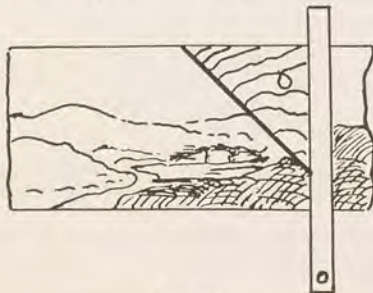


Fig. 37

has been carefully done, the print will be perfectly rectangular, and the edges straight from corner to corner. Large cutting glass shapes are apt to give slightly curved edges just at the corners (see Fig. 37).

### Seascapes Architecture

Always take care to have sea horizons level; and buildings and other objects one expects to be perpendicular appearing so in the print. In upright architectural prints, it is better to commence with one of the long sides; trimming by a principal upright line. Take care, however, that it is a line which was upright in the subject. In our English Cathedrals many lines are out of plumb. When exposing, note the truly perpendicular and trim by them subsequently.

### Trim Freely

Make it a rule to trim down regardless of the original size of the plate until the best proportions have been obtained and all the unnecessary parts cut off. A part is often greater than the whole. If an isolated bit of dark or light comes on the edge, it is better trimmed off. The margin should not attract attention. The essential parts of the picture should reasonably fill the print, and due regard should be had to the decorative effect produced by the principal lines and masses in the space enclosed by the edges of the print.

### Materials for Mounts

Anything may be used for mounting a print upon, which is flat and suitable in color and texture. Wooden panels, opal or plain glass, cardboard, canvas or other fabric strained on a frame or laid on cardboard, vellum, and various papers as Whatman, Creswick, Van Gelder, Japanese vellum.

### Adhesives

There is a wide range of available mountants. Our choice depends on the kind of print and mounting adopted. Pastes suitable for mounting any print on board or stretcher are supplied by the dealers. If kept well corked, these are always ready for use. Gelatine forms a good mountant, is easy to make and only requires melting in a water bath each time it is required. For mounting prints by the edges only glue or seccotine (fish glue) are both useful. The glue should be good, clean Scotch glue, and made about the consistency of thin cream and used hot.

### Gutta-percha

Gutta-percha tissue may be used. It is placed between the print and mount, and softened in that position by the application of a warm iron, a piece of clean paper being laid over the surface of the print. This mounting is not very durable.

### Indiarubber

Indiarubber solution is sometimes used, but as the rubber ultimately perishes, is not to be recommended.

### Shellac

Ordinary shellac dissolved in methylated spirit, forms a good mountant for prints which it is desired to place on thin mounts and to preserve perfectly flat. The solution should be as thick as good cream.

### Wet and Dry Mounting

The methods of mounting may be roughly classified as *wet* and *dry*. In wet mounting the prints are first soaked in water (after trimming, of course), and then laid on a sheet of glass or on a piece of waxed paper face downwards, so that the mountant may be applied to the back. If many are to be treated of fairly uniform size, they may be laid together, face to back, and the superfluous water gently pressed out with a roller squeegee. The mountant is brushed over the back of the top print with a soft hog-hair brush of suitable size. One corner of the print is then carefully raised with the point of a blunt pen-knife, the print lifted gently from the pile with the left-hand finger and thumb, taking care not to touch the extreme edge, or the adhesive will be partially removed from that particular place. The knife is then laid down, and the opposite corner taken hold of with the finger and thumb of the right hand, the print being face upwards. The pasted print may now be held over the mount, nearly but not quite touching, and when in almost the correct position it is slightly lowered in the middle, until the two corners not held by the fingers touch the mount. If the position appears nearly or quite correct, the other two corners may be dropped. The wet print may then be slightly slid on the mount, if necessary, until exactly in place. Starch and paste have the advantage over gelatine, in that the print slides easier into its exact place.

### Rubbing Down

To press the print close to the mount, two methods may be used. If a platinotype, a sheet of clean blotting paper may be laid over the print and a roller squeegee passed over.

### Sponging Down

In the case of papers with a sticky surface, *e. g.*, bromide or P.O.P., it is usually better to gently sponge the print into perfect contact with the mount. The sponge must be free from grit and used gently. Carbons, and especially double transfer prints, need very gentle sponging, or the surface will be rubbed off the support.

(Continued on page 995)

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Street.

# JOHN L. MOORE & SONS,

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## Wholesale, Manufacturing, Importing Opticians.

### "Double A One."

Optical dealers have a way of rating this Prescription Department.  
They rate it "AA1."

How do we know they rate it thus?

Because they do not hesitate to tell us so; and when a man is paying money  
for anything the compliments he gives are pretty generally sincere.

Unending energy and long experience have done all that's possible to make  
a Prescription Department that is worthy of this rating.

Every prescription this department sends out is a verification of this.

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Very Special in  
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Blind  
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## Mounting and Trimming Photographs

(Continued from page 993)

### Accurate Placing

With regard to getting the print truly on the mount, absolute certainty may be ensured by marking the mount with the cutting shape, passing a pencil lightly round. This line is covered by the print, which has, of course, expanded a little each way on being wetted.

### Dry Mounting

The print is laid face down on a piece of clean paper, firmly held in position, and paste is brushed over the back as quickly and evenly as possible. Then before the moisture of the mountant has expanded, the print is laid in position on the mount, and a piece of white blotting paper placed on the top. A roller squeegee is now used to rub it down, using steady but sufficient pressure. The mount may be previously marked by means of pencil dots, showing where the corners of the print come. In dry mounting the cockling of the mount is less, though not quite absent.

### Dry Mounting with Pressure

Another form of dry mounting, useful where large numbers are to be done, consists in brushing the backs of the prints with an aqueous solution of a soft and easily soluble sample of glue or gelatine. If the prints are enameled, this may be brushed over the backs while the prints are on the enameling glasses. When dry and stripped each print is trimmed, the face of the mount sponged over with lukewarm water, the print laid in position, and the whole passed through a rolling press with considerable pressure. Perfect contact and adhesion are ensured with no cockling.

### Mounting by the Edges

When prints are mounted on Japanese vellum or other papers, it is usual to attach them by the edges alone. Care must be taken to have sufficient adhesive to cause the edge to stick all round, but there must not be too much, or it will squeeze out and give a messy edge. Hot glue is serviceable. Experience will soon show how much must be applied. Use a small hog-hair brush, and apply the glue for only one-eighth of an inch all round. This must be quickly done, and the print at once placed on the paper precisely in the right place. No adjustment is possible. Lay on the top a sheet of clean plate glass, heavy enough to press the two into contact.

### Shellac Mounting

An alternative method of mounting on paper is by means of the shellac solution previously mentioned. The trimmed prints, quite dry, are laid face down and brushed over the backs with the thick solution of shellac, applied evenly with a hog-hair brush. This is allowed to dry. The print is then placed in exact position on the paper mount, a sheet of clean paper superimposed, and a hot iron passed over it two or three times. The heat causes the shellac to melt. Contact and adhesion are perfect.

### Mounting on Strainers

I have mentioned canvas on a strainer or frame as a mount. This is more generally used for very big enlargements, being cheaper than the large sizes of thick mounting board, and for photogravures and similar prints which have a plate-mark, the fabric giving slightly and preserving the plate-mark; whereas a more or less rigid surface like cardboard flattens this down. The print, photogravure or enlargement

should be laid face down and pasted thoroughly on the back, allowing it to lie until limp. The canvas strainer is then laid on the print, and the two are pressed into contact from the back of the strainer. To press the edges a stout paper-knife or table-knife, very blunt and smooth at the point, is used between the canvas and the frame.

### Surface of Mount

In determining what the print shall be mounted upon, there are several points to be thought of. First, the texture. Do not mount a tiny print with a very smooth surface on the roughest of papers. Very rough papers are best adapted for large prints. A rough print may be placed on a smoother paper and *vice versa*, but the contrast should never be so great as to call attention to either roughness or smoothness. Particularly, do not stick a thin print on to very rough paper. The roughness shows through the print unpleasantly. If the combination is desired, attach the print by the two top corners only.

### Tone

I use this term to indicate the darkness or lightness of the mount. A print may be helped by the mount very considerably. If rather light, do not place it on a black or very dark mount. It will only look like a light patch. If strong and dark, a light mount will make the shadows heavy; while a dark one will make them appear luminous and transparent, if they have any detail at all. Where prints have a fair scale of gradation, the lights or the darks may be accentuated as desired, by choosing an opposing mount, a dark mount forcing the high-lights and so on.

### Color

This is not to be confused with the "tone" or degree of lightness or darkness. When the whole of the mount is of one color, it is better of a neutral shade. This may harmonize or contrast with the print. Thus a brown carbon on a brown mount gives harmony, while a brownish print on bluish gray, or bluish green gives contrast. When mounts are built up of tinted papers, more pronounced colors may be introduced; but the more complex the mount, the greater the skill required to produce a good effect.

### Built-up Mounts

Any pronounced color should be merely a narrow band. A great variety of papers may be had, and a complete set of pieces, 8 in. x 6 in., should be kept and various colors tried until the correct ones are obtained. The width of each band may be determined in the same way, by experiment. The print should be laid on a sheet of the paper, the two top corners having a touch of gum or seccotine applied not quite at the edge. A sheet of plate glass may be laid on the top to press flat and keep the print in place. After a few minutes the outer margin may be trimmed to size with the knife and straight edge. Leave, as a rule, a rather wider margin at the bottom of the print. The whole may then be laid on the second sheet of paper in the same way, again trimming after the adhesive has had time to set. Proceed in this way until finished. Do not use many papers if few will give the desired effect. There is no merit in a number of sheets. Handle the papers carefully so as not to crack them.

### Passé-partout

The simplest method of protecting the print from the air, dust and fingers is the *passé-partout*. It is inexpensive and effective. A sheet of good glass the size of the mounted print, and a sheet of cardboard are required. With a penknife or a half-inch chisel make two slits through the cardboard, as shown in Fig. 38. Pass a piece of stout tape

through a ring and the ends of the tape through the slit, and paste or glue the ends down on the other side. When dry, lay the print on the cardboard and the well-cleaned glass on the top of

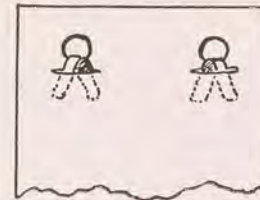


Fig. 38

the print. Now, cut some strips of tough paper (bearing in mind that these strips are virtually the frame), about two inches in width, two the length and two the width of the picture. These are to be well pasted till limp. They are then applied in the same way as binding strips to a lantern slide. Do the two sides first. Then with a sharp knife cut the corners to a miter (Fig. 39), and remove the little three-cornered piece. Now bind the ends, and cut these to fit at the corners. When the binding is nearly dry, rule a faint pencil line about three-eighths of an inch from the outside edge, as dotted in Fig. 39, lay the straight edge on this and with a sharp

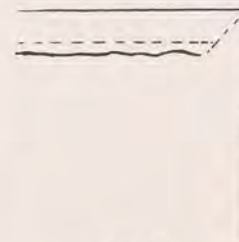


Fig. 39

knife cut through to the glass and remove the superfluous paper.

### Trimming Prints with Bevel Edges

Many a print is half spoiled, not only by untrue edges, but also by a narrow white bevel edge showing round some dark part. The cause may readily be seen by a glance at Fig. 40, where *A* shows us the magnified section of a paper print and the bevel edge of the paper. The dark upper line is supposed to indicate the upper edge of the picture. But if we turn the print face downwards when trimming, and cut with a slight bevel, we get the effect shown in *B*, when the print is mounted in the usual way.

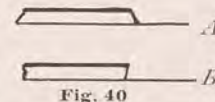


Fig. 40

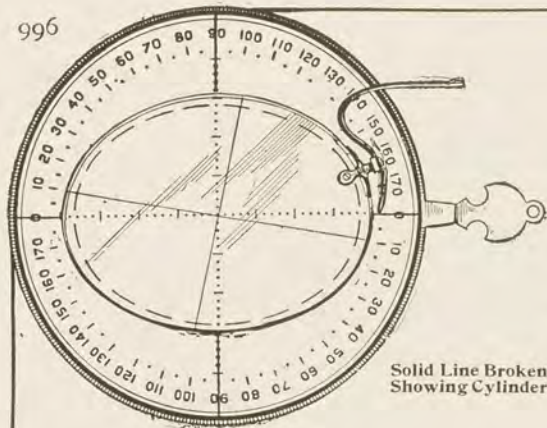
### Plugging Lenses

ED. KEYSTONE:—The phrase "plugging lenses" may sound strange to some opticians, but the plugging is occasionally done and, indeed, sometimes cannot be avoided. For instance, a lens may slip in drilling with the result that the hole is drilled too near the edge, or a workman may forget to turn the drill back after drilling for a short strap, or a lens ground to order may be chipped in mounting and when ground out the hole will be too near the edge, and then if the prongs of the strap are bent they do not look well and, after cleaning, will easily become loose. To plug a lens take a sharp rat-tail file and file the hole sufficiently far back to make it large enough for the screw to go through without touching the lens. Then take a soft piece of wood—a common parlor match will do—point it a little and wedge it in the hole, taking care not to press too hard. With a sharp knife cut both sides even with the surface of the lens and bend the strap so that it will fit snugly. Then with a needle (an old rat-tail file ground to a sharp point is better) make a hole starting at a point nearest the center of the lens, insert the screw and the strap will fit tight and not come loose unless taken apart.

Yours truly,

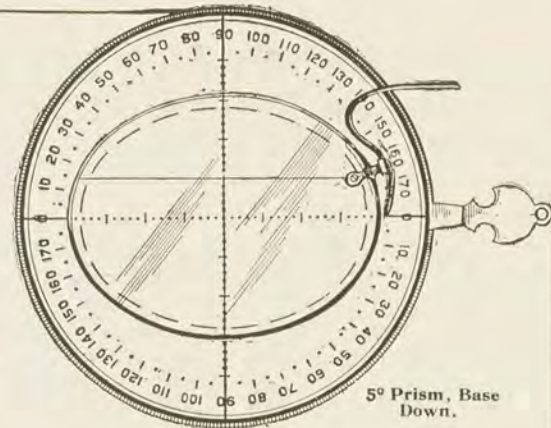
Philadelphia, Pa.

"A. B."



## NEW Axis and Prism Finder.

THE HAMILTON AXIS AND PRISM FINDER tells positively the Axis of any Cylinder. Also the power and direction of the Base of any Prism or combination of prisms, that is single prism, Base in, out, up or down; or double prism, Base in and down, out and down, up and out or up and in.



It figures at a glance the amount of prismatic power of decentered lenses and gives the largest-sized lens possible to obtain after uncut lens is decentered. It gives the axis of broken lenses without the necessity of cementing the parts together.

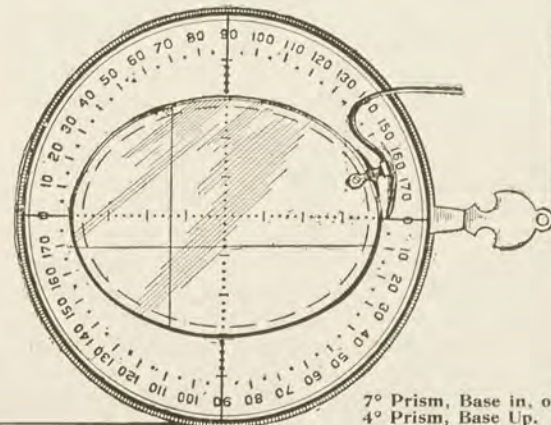
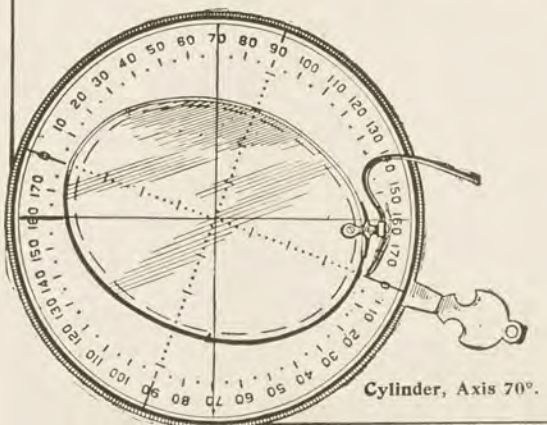
When used without stand, Axis Finder can be carried in vest pocket. (Size 3 mm. thick, 52 mm. in diameter.) A great time and money saver. No one who handles lenses can afford to be without it. All who have used it indorse it as indispensable. Descriptive circular with full directions for all uses will be furnished on application.

PRICE complete with Stand and Case,  
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Manufacturers of Optical Goods.



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if you take advantage of this opportunity offered by the Spencer Optical Company, of 12 Maiden Lane, who have arranged with R. H. Knowles, M. D., the well-known writer and instructor, to teach their students in Optometry; the latest and best known methods have been adopted, so that great things are in store for beginners as well as those who are more advanced in the science of Optics; this subject is taught in such a plain, practical manner that every student will become thoroughly proficient, and the knowledge he has obtained will enable him to correct all visual defects which can be corrected by glasses, thereby giving much better satisfaction to his patrons and reaping better profits as a reward. This course of instruction is absolutely free if carried out as stated in our annual announcement. Each graduating student can obtain a handsome, engrossed diploma. For further information send for our annual announcement.

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## The Spring Suction Clamp

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possesses many advantages where a Spring Clamp should be used. It is a valuable addition to the Suction Family.

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Work for the Trade.

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185 Summer St., Boston, Mass

The only Optical School in the world where students serve a regular apprenticeship on bench and in office. All instructions are practical. Fees, \$75.00 for whole course. No correspondent courses. Address,

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Do you know I have the best equipped R department in the country—all orders can be filled same day as received. My case lettering plant is complete in every way. My stock is the best assorted. Should you need anything in my line write for samples and prices before buying elsewhere—it will pay you.

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**\$3750**

Will buy one of the oldest and best-paying RETAIL OPTICAL BUSINESSES in New York City.

Established in present store twenty years, over 22,000 R records. This is a chance of a lifetime for a competent refractionist.

The fullest investigation invited.

"A 118,"

care THE KEYSTONE,  
19th & Brown Sts., Philadelphia.

## Optical Notes

✿ C. C. Freeland has removed from Conneaut Lake, Pa., to Saegartown, Pa. He has opened new optical parlors in Meadville, Pa.

✿ C. W. Lowe, who has charge of the optical department in the jewelry store of J. S. Luckey, Eugene, Ore., has gone to New York to take a post-graduate course in optometry.

✿ Dr. S. M. Hardman, eye, ear and throat specialist, Clarksburg, W. Va., has purchased the jewelry store of Lee Pabst, of that place, and will open up a first-class jewelry and optical business in connection with his office. The doctor has been connected with the jewelry business for many years.

✿ H. L. De Zeng, inventor of the De Zeng luminous retinoscope and other optical instruments, has opened an optical college at 1321 Walnut Street, Philadelphia. The college is under the management of Mr. De Zeng, and its courses will be comprehensive and practical. A number of students have already been enrolled.

✿ F. A. Hardy & Co., Chicago, recently purchased from the old firm of J. M. & A. C. Johnston, of that city, the patents on the "Peerless" eyeglass mounting. The distinguishing feature of this mounting, as most of our readers are aware, is that it is made from a single piece of metal and has no screws to get loose or make trouble.

✿ A sweeping advance in rentals in Minneapolis, Minn., has suddenly upset the calculations of many opticians of that city. In one case the rental of an optician was raised from \$40 per month to \$75, the space occupied by him being only 8 x 15 feet. A removal is the result. Several have decided to remain in their present location even at the greatly increased rentals.

✿ The Globe Optical Co., Boston, Mass., has issued a new illustrated optical catalogue of some 200 pages, in which will be found valuable information on all manner of goods and apparatus in which the refractionist is interested. A number of pages are devoted to trial cases, opera and field glasses, etc. The book is very handsomely compiled and will be a useful work of reference. A copy will be sent free on request to any refracting optician.

✿ In the suit, brought some time ago by E. Kirstein Sons Co., Rochester, N. Y., against the Ely Eyeglass Co., of Middletown, Conn., the rights of the complainant were recognized by the defendant. E. Kirstein Sons Co. have now exclusive control of the patent under which the Ely Eyeglass Co. was manufacturing, and will hereafter sell under the trade-mark "Ela Shur-on," the springs and mountings formerly made by the Ely Eyeglass Co.

✿ Wm. Wood, of Townsend, Mont., has opened an optical business there. He was located in Two Dot for a couple of years, having gone there, not to remain permanently, but for the purpose of erecting some buildings there to sell or rent. He has been located in Townsend twenty-one years, having put up one of the first stores in that place, and this he owns together with his own dwelling and several tenement houses. His store, however, is leased up to October 1st, and at the expiration of that date he expects to open in the old stand with a nice line of watches, jewelry and optical goods.

✿ The Julius King Optical Company has adopted an excellent way to make the trade familiar with the merits of the Bonschur scroll anchor guards. They will send a sample sterling guard to every optician, free of charge, on receipt of a two-cent postage stamp to cover cost of mailing.

✿ The Spencer Optical Company, 12 Maiden Lane, New York, has issued a handsomely compiled catalogue and price-list, illustrating and describing the latest productions in optical goods. A special feature consists of thirteen pages devoted to lenses and so arranged that any kind can be referred to instantly. This catalogue is tastefully printed throughout, and the illustrations are very good specimens of half-tone work. Prices are tabulated carefully and the general arrangement is such as to make it a ready and convenient means of reference for the optician.

✿ The committee having charge of the arrangements for the annual banquet of the Optical Society of the City of New York have decided upon Wednesday evening, June 15th, as the date, and Mouquin's, 149 Fulton Street, as the place for the holding of that function. There will be vocal and instrumental music and other entertainment, and there is every indication that it will be a most enjoyable feast. The arrangements have been made upon the assumption that members will bring ladies, though this is optional. The price of the dinner tickets will be \$1.50 each, and there will be no extra charges.

Free sample pages of lectures and lessons of the Correspondence Course in Optics will be mailed to readers of THE KEYSTONE on application to The National College of Optics, Cedar Rapids, Iowa. Ask for special price for June. —Adv.

## Buffalo Optical Society

At the last meeting of the Buffalo Optical Society the question of "Minimum Prices" was discussed and will be again considered at the next gathering. J. W. Jarvis was elected a member of the society. The next regular meeting will be held Friday, June 3d, at eight P. M., in New Gruener Hotel, Washington and Huron Streets, at which time it is hoped that there will be a large attendance.

## Central New York Optical Society

The annual meeting and election of officers of the Central New York Optical Society was held Wednesday, May 18th, in the Yates Building, Syracuse.

Messrs. Watts and Holden were appointed a committee to arrange for the entertainment of opticians attending the annual meeting of the New York State Optical Society, which will be held in Syracuse, June 28th.

Messrs. Watts, Golder and Holden were appointed a committee to revise the constitution and by-laws.

The election of officers resulted as follows: President, H. C. Watts; vice-president, C. J. Fuller; secretary and treasurer, J. Holden; librarian, A. G. Golder.

The following were elected members of the society: W. I. Haynes, H. L. Marqusee, F. A. Tuerk and D. W. Bull.

A vote of thanks was tendered to F. A. Davis

& Co., of Philadelphia, for books donated to the society.

Those in attendance were: W. D. Oertel, H. E. Watts, D. Snyder, W. B. Gorham, J. Holden, W. I. Haynes, H. S. Fuller, F. A. Tuerk, E. Wilcox, H. L. Marqusee and A. G. Golder.

## "The Practical Photographer"

The most thoroughly practical and highly instructive publication devoted to photography which has yet come under our notice is the excellent monthly magazine, *The Practical Photographer*, published by the Photo. Era Publishing Co., of Boston, Mass. In its plan the new magazine is unlike any other magazine on the market. Each number treats of a certain definite branch of photography and tells all that is known on the subject in a series of articles by the best authorities. In this way a fuller and more rounded view of the field is gained than any one point of view could give. The first, or April number, was a comprehensive treatise on "Trimming, Mounting and Framing," and treated these subjects in a broad and logical fashion. This question is of timely interest, and the number is the best practical guide to the solution of these difficult problems that has yet been placed before the public. The method of multiple mounting on papers is fully considered from both theoretical and practical standpoints, and directions given which will enable the novice to successfully practice this difficult art. The second, or May number, covers the subject of printing on bromide and gaslight papers, and is as practical and interesting as its predecessor. The illustrations in each number are handsome and numerous. The subscription price is \$2.50 a year or 25 cents a copy.

## Philosophy of a Traveling Salesman

An old traveling man recently consented to give some advice, born of his experiences, for the benefit of his younger brethren. There is sound philosophy in the following suggestions:

A salesman who seeks to establish himself on a good footing by unfair means is soon "spotted" by his fellow salesmen. He loses the confidence of the first and the friendship of the latter. He is not a salesman, but a bribe-giver or something worse.

Work hard, intelligently and perseveringly on your own line of goods. Never fear competition; do not see it, hear it nor feel it—that's the way to make competition fear you.

Too much time is lost in watching for possible evil to ourselves resulting from another's methods. "Let the other fellow lose it."

Competition is like the weather, it's different on different days, but it's always with us. The man who fears the weather is sure to "catch cold."

The man who knows the most is not always the best salesman, nor does the man with the oiliest tongue sell the most goods.

He who does all the talking is generally less effectually persuasive than if he gave the other an opportunity to express himself.

One of the hardest men to sell is he who always agrees with you. Sometimes it is a good plan to force him to disagree. It warms him up and gets him interested.

Cultivate good cheer. There is no more potent factor in salesmanship than the pleasant smile, the hearty laugh and a strong, true feeling of "good will toward all mankind."

# The Best Opticians Are Our Graduates.

**The lists for our next class will close June 21st. The Course itself will start promptly on the 27th.**

The Opticians and Oculists who are doing the most skillful work to-day are graduates of our college.

They do the best work because their optical training has been the most thorough.

We cover thoroughly every point that will be of value to the man who intends to fit glasses scientifically.

We drill our students upon every subject in the course until they know it perfectly.

We do not leave them until they are competent to pass the most thorough examinations and tests.

We continue to instruct them until they are perfectly qualified to receive the highest degree that is conferred by this institution.

We prepare them for expert work and make them competent to handle the most difficult and complicated cases systematically and intelligently.

Our 64-page prospectus, "How to Become a Good Optician," tells all about our system of instruction and our course of study.

It contains letters of reference from the leading men in the profession in every State and Province in the United States and Canada and in nearly every English-speaking country in the world.

We will mail you this book free if you will send us your name and address

A postal will do—do it NOW.

## The South Bend College of Optics

(Incorporated),

No. 1 McDonald Building,

South Bend, Indiana, U.S.A.



### Kansas Association of Opticians

The fourth annual meeting of the Kansas Association of Opticians was held on May 17th, in the mayor's office, City Building, Wichita, Kans. About fifty optometrists from various parts of the State were present.

Dr. S. W. Lane, president of the Southwestern Optical College, of Kansas City, delivered an address on "Advanced Methods of Practical Opticians," and W. J. Lewis, former president of the association, spoke on "Retinoscopy."

President Thomas Gowenlock, of Clay Center, and Secretary F. W. Reed, of Wichita, were re-elected to their respective offices. The question of legislation to govern the practice of optometry in the State of Kansas came up for discussion. This will form the chief feature of the next meeting, which will be held in Topeka during the session of the State Legislature, when the opticians will make a strong effort to secure the legal recognition they desire.

### Missouri Association of Opticians

The fourth annual convention of the Missouri Association of Opticians will be held in St. Louis on June 14th and 15th. Special rates will be available on the railroads and at the Christian Endeavor Hotel, and an excellent programme has been arranged. This will no doubt be the largest meeting in the history of the society so far, and the executive are to be congratulated upon the manner in which they have prepared for it. Dr. E. J. Brown will deliver his lecture on "Diseases of the Eye, with which the Optician should be Familiar;" this will be illustrated with powerful electro-stereopticon. Other speakers include Louis Megede, of Richmond, whose subject will be "Optical Legislation;" Elmer H. Schmidt, who will lecture on "Hyperopia," and Claud M. Wheeler, who will talk on "The Necessity of Uniform Schedule of Prices."

### New York City Optical Society

The regular monthly meeting of the New York Optical Society was held on Wednesday evening, May 11th, at the Fifth Avenue Hotel. The College of the City of New York has been the meeting place for some time past, but a change was decided upon out of consideration for the college management, upon whose good nature the society deemed itself trespassing, when, as has been the case, the members remained long after the close of the scientific session. With the hotel, naturally, it is different, for discussions can there be prolonged as long as the members desire, and no one will be discomfited in consequence. Then again, the business session at the meeting under notice, was somewhat extended, owing to the necessity for making arrangements regarding the coming banquet of the society, and the anticipation of this was a further reason for the change.

President Ryer formally opened the business of the meeting, and the scientific session began with an illustrated lecture by Frederick A. Bates, on "Astigmatism and Its Phases." A paper was read by John E. Meyer, on "Eyeglass Guards and Their Adjustment," and another by A. M. Frankel, on "Methods of Measurement for Frames."

The business session was opened by Secretary Lockwood, who read the minutes of the previous meeting. Mr. Berger, proposed for membership at that gathering, was formally admitted, and Mr. Frankel, chairman of the banquet committee, made a report to the effect that the committee

needed more time to complete the arrangements. It was decided to hold a regular meeting in June, at which a further report would be heard. At this writing the date for the holding of the banquet has not been definitely fixed, but it is known that it will take place during the latter part of June. The committee having charge of the preliminaries is making satisfactory progress in its work.

### Kentucky Optical Association

The annual meeting of the Kentucky Optical Association was held at the Louisville Hotel, Louisville, Ky., on Tuesday, May 17th. The following officers were elected for the ensuing year:



President J. M. Irmen

President, J. M. Irmen, Louisville; first vice-president, F. A. Pieper, Covington; second vice-president, S. S. Van Hoy, Campbellsville; third vice-president, William A. Metzger, Lexington; secretary and treasurer, C. H. Bowen, Winchester. A. K.

King, of Lexington, was elected delegate to the American Association Convention, to be held at Milwaukee, and J. M. Irmen as alternate.

The board of directors appointed by the president is composed of: F. A. Pieper, Covington, chairman; A. R. Baldwin, Winchester; W. C. Ward, Winchester; S. S. Van Hoy, Campbellsville; W. A. Metzger, Lexington; Mrs. Jos. Kerns, Louisville; L. J. Bachus, Louisville.

A number of interesting papers were read, and at the conclusion of the meeting the members adjourned to the banquet room and partook of an enjoyable feast. The next meeting of the association will be held at Winchester, in October.

### Utica Optical Club

The annual meeting of the Utica Optical Club was held at the Masonic Club, Utica, N. Y., on May 17th. There was a large attendance, and the reports of the officers showed the organization to be in a flourishing condition. The following officers were elected: President, Richard Perlen; vice-president, G. H. P. Stone, Iliion; secretary, C. T. Evans; treasurer, B. F. Clark; member of the executive board, G. W. Payne. Following the business session, the opticians enjoyed a banquet. Charles O. Biederman, Camden, and G. H. P. Stone, Iliion, were guests of the evening.

### Minnesota State Optical Association

The regular meeting of the Minnesota State Optical Association will be held at Minneapolis June 14th and 15th. The railroads offer a one and a third fare for the round trip, good from June 11th to 17th, returning good to June 21st. Meetings will be held on June 14th at 10 A. M., 2 P. M. and 7.30 P. M., and on the 15th at 10 A. M. There will be a series of four lectures by Clifford S. Friedman, late of Illinois College of Optics, which should prove very valuable to the members; also papers by Prof. Albert Myer, of Minneapolis, on "Psychology in Optometry;" E. S. Bugbee, of Minneapolis on "Optician Versus Oculist;" Prof. L. L. Demars, on "Elementary Optics," and

one by Fred. A. Lanctot, of Crookston. In addition to these the papers offered in the prize competitions will aid in making this a banner meeting.

For the afternoon of June 15th a trolley ride to one of the lakes, accompanied by a glee or mandolin club, is being arranged for the members and their families. This will be in conjunction with the Retail Jewelers' Association, the members of which having promised to join, thus making it a double pleasure for all.

### Optical Society of the State of New York

The ninth annual meeting of the Optical Society of the State of New York will be held in the assembly room of the Yates Hotel, at Syracuse, N. Y., June 28th.

The annual dinner will be served at 7.30 P. M., in the banquet room of the Yates Hotel, and will be free to all members of the society and its invited guests.

The Syracuse opticians are strenuous in their efforts to make the meeting a success, and in point of numbers, interest and enthusiasm this meeting ought to surpass all former meetings in the history of the society. Matters of interest, both financial and social, will be earnestly discussed. The efforts which the society has made during the past winter, to have enacted a bill regulating the practice of optometry, will be reviewed, and plans for the continuance of this work during the coming winter will be considered. Two papers of exceeding interest to opticians will be read by prominent members of the society. All opticians, not members of the society, are cordially invited to attend the meeting.

### The A. A. O. Convention Programme

On page 969 of this issue, we refer at some length to the annual convention of the American Association of Opticians. Some later particulars in regard to the programme are the following:

Among the lecturers will be George W. McFatrach, M. D., of Chicago, one of the best known lecturers on optometry in the country. His subject, "Accommodation and Convergence," deals with the most vital of the ocular functions.

Dr. Earl J. Brown, of Chicago, will present a paper entitled "External and Intra-ocular Diseases the Optometrist should be Familiar with." The complete programme will be published in our next issue.

"Physics and Mathematics in Optometry" is the title of a lecture to be delivered by Prof. R. M. Lockwood, of New York City.

The convention will be unique, in that there will be as much thought given to the entertainment of the ladies as to affairs seriously optic. There will be no evening sessions; these will instead be devoted to social functions, as follows: Monday evening—reception and promenade concert, with refreshments at the Hotel Plankinton. Tuesday afternoon—visits to the breweries "that made Milwaukee famous," entertainment and souvenirs. Tuesday evening—trip to Oconomowoc and other interesting points. Wednesday afternoon—ladies bowling contest for champion trophies. Wednesday evening—ladies will entertain the gentlemen, programme not to be announced. Thursday afternoon, 12.30—photographing members and their ladies; 5 o'clock, P. M., boat ride on lake returning to White Fish Bay; lunch at hotel, 7.30; glee club in musical selections, recitations, etc.; moonlight return on boat with music and dancing.

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**OPERA GLASSES, HOLDERS.** A full line in pearl, etc., in Mack Improved and Spencer style.

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**"OPTICURA"**—an Eye Remedy. A harmless and most efficacious general remedy known for weak, inflamed, sore and overworked eyes. An eye lotion par excellence.

**LENILENE**—a preparation to keep your glasses clean. One trial will convince. Price, \$1.00 per dozen.

**OPTICAL INSTRUCTION.** See notice on page 996 or send for prospectus. **You will make greater sales and better profits** if you are thoroughly proficient in optometry. Latest and best methods for beginners or advanced students.

**"EYE DEFECTS,"** How to Detect and Correct Them. By R. H. Knowles, M. D. \$1.00 book for 50c., or free with order of \$20.00 or more.

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"I find it indispensable."—Emil Riis, Philadelphia, Pa.  
 "I found almost instant relief."—Miss E. Lynch, Bridgeport, Conn.  
 "I never had anything help me as it has."—John Brophy, Belvidere, N. Y.  
 "Your eye remedy is all you claim for it."—Dr. A. W. Collins, North Porte, Wis.  
 "It is a wonderful remedy."—Fredrick Seleox, with Otis Skinner.

A large bottle of a better **remedy** that retails for 50 cents, and costs you even less than a mere eye **water**. Recommended by Oculists every-

where. Money refunded if it does not prove to be better than anything you have ever used before. Sample and testimonials sent free. **\$3.00 per dozen, sent prepaid.** Eyneed makes weak eyes strong—makes dull eyes sparkle—cures sore eyes and eyelids.

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 QUICK PRESCRIPTION WORK, 36-38 John St., New York.

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One Quart Gasoline  
 burns 18 hours in our

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**Watch Case Manufacturer and Repairer**  
 Everything in the line of Watch Case Repairing, Gold and Silver Plating, Satin Finish, Engraving and Engine-Turning. Changing Old English and Swiss Cases to take American S. W. Movements my specialty.  
**OLD CASES MADE NEW.**  
**Silversmiths' Building,**  
 131-137 Wabash Ave., CHICAGO.



## The Terrible Torpedo

The Most Destructive of War Weapons—Its Ingenious Mechanism—Its Operation

**S**INCE the outbreak of the Russo-Japanese war so much has been said and heard of the destructive character of the torpedo that there is considerable curiosity to know the manner of its construction. For the following description we are indebted to *Popular Mechanics*: "At its nose a small metal pin. Behind the small metal pin a little fulminate of mercury. Behind the fulminate of mercury a wisp of dry guncotton. Behind the wisp of dry guncotton a mass of wet guncotton. Behind the wet guncotton a braced chamber nearly bursting with compressed air. Behind the compressed air a set of panting cylinders. Behind everything a set of excited double-bladed screws. The whole little water mole burrowing through the waves at the rate of 30 knots an hour. The dark, stupendous interposing bulk of a battleship. A sudden jar. The small metal pin nudges the fulminate of mercury. The fulminate of mercury whispers to the guncotton. An explosion and an upheaval."

This is the torpedo and its mission, as has been told, in a nutshell. When the explosion comes it is all over with the battleship. The little mechanical "water mole" has worked the complete destruction of its giant object of attack. A great hole has rent the warship's hull. The vessel reels, tips, screams; the sailors and crew, amid pandemonium and death, wrought by the bursting of the oblong submarine shell, struggle wildly for the lifeboats; the ship gives a sudden lunge and down toward the bottom it goes. Above it curls the whirlpool, and then on the water calming, is the debris of the wreck and those that are not dead still struggling for life.

### Most Terrible of Weapons

This is the work of the torpedo and its life's mission is done. It is the deadliest, most stealthful, most ingenious instrument of war. It has been declared to display the most wonderful mechanical ingenuity of any machine ever constructed by man. The torpedo is so built that when fired it cannot swerve or deviate from an absolutely straight course, and the most powerful ship the world has ever built is as surely doomed as it is struck by a Whitehead torpedo.

Deadly, powerful and ingenious as they are, the use of torpedoes is so far restricted, because of the perils necessarily encountered in using them. The torpedo boat, from which they are generally fired, is the frailest of craft, a rifle shot being sufficient to sink most of them. England, however, has lately produced some remarkably substantial

torpedo boats. They have proved themselves seaworthy in a gale, a feat never accomplished before. Next to England the United States has the most substantial of the boats, several of which have been described in *Popular Mechanics*. Japan's torpedo boats were built in England, and represent a high efficiency of workmanship, but not England's best.

### Net is the Only Protection

The net is the only protection against the attack of torpedoes, and they, until recent trials before the Prince of Wales, at Portsmouth, England, have proved very unsuc-

cessful. No insurance company will take the risk of insuring their lives.

By seamen the torpedo is called the "baby." It is shaped like a cigar, and is from 14 to 18 inches in diameter at the thickest part, and from 14 to 20 feet long. The latest and largest size weighs 1150 pounds, and has a speed of 32 knots for 2000 yards. The 14-inch, or smaller projectile, has a speed of 30 knots for 2000 yards and weighs 706 pounds.

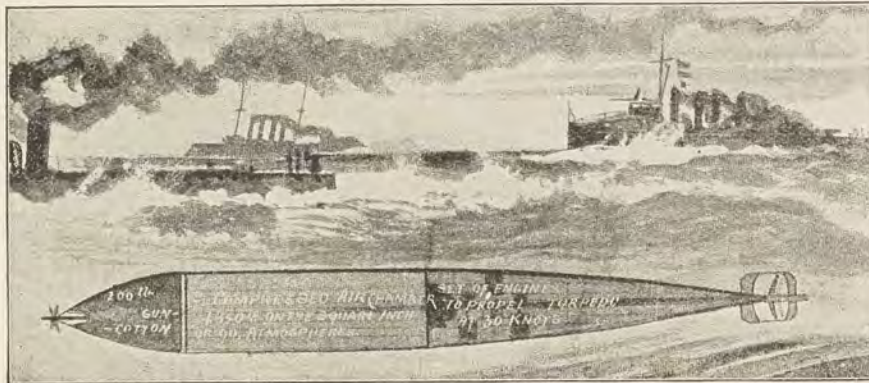
The torpedo is the most wonderful of all projectiles, if it may be called a projectile. It is a self-propelled, self-steering, self-operating mechanical projectile, that once fired, performs its duty of death with almost human skill. It is a kind of automatic submarine boat, built at a cost of \$3000, for a single trip on which depends its success or failure. It is built with utmost pains and carefully kept until the time for it to start on its one and final errand of destruction and give its puny life for the life of a ship. Thus the torpedo is the costliest as well as the most formidable projectile of war. The torpedo boat, as its name implies, is the craft

generally intrusted with the firing of torpedoes, although they are made part of the munition of all warships. Their success in the latter capacity, however, has never been satisfactorily demonstrated. There are several makes of the projectile, the most successful of which is the Whitehead, named for its inventor, a mechanic of Flume, Hungary, where the largest torpedo factory is now located. Torpedoes for the American navy are built at Brooklyn, under a license from the patentees. There are factories in England and Germany.

### Firing and Handling Torpedoes

Torpedoes are fired from torpedo tubes, above and below water, generally above. The torpedo, after striking the water, sinks itself slightly below the surface and then proceeds on a bee line for the object at which it was fired. The form of the tube now being issued to the navy for broadside firing is about 30 feet long. The lower section of the forward half is cut away, leaving a long overhanging spoon sticking out. Inside the cylinder, on the top, is a T-slot, extending from the breech to the end of the spoon. In this T-slot fits a small T projection on the top of the torpedo. Suspended by this projection the torpedo balances, so as it is sent out of the tube

the T carries it out to the tip of the spoon in a horizontal position, and slipping out of the slot the torpedo strikes the water nearly level. Without the suspension arrangements the nose of the torpedo would dive down as it slipped over the forward edge of the tube, resulting in a deep initial dive. The torpedo is blown out of the tube, either by compressed air, suddenly injected into the rear end, or by an impulse charge of powder.

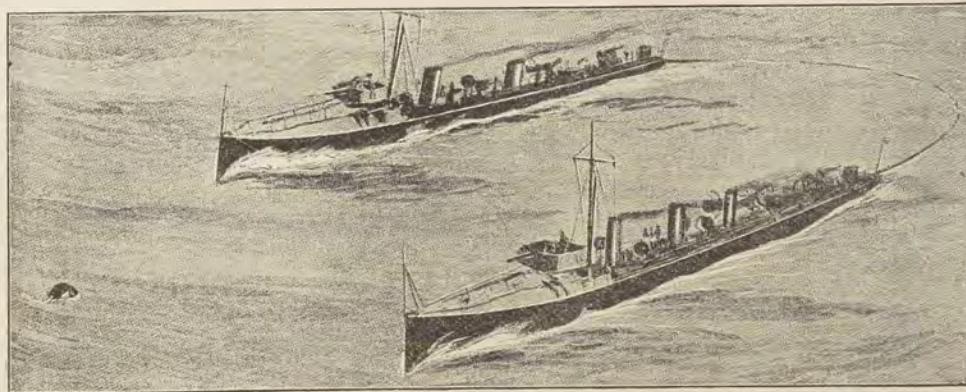


A Torpedo in Flight—Sectional View Showing Interior

cessful. In the mimic battle, in which submarines and battleships participated, a submarine torpedo boat was captured in a net by battleship picket boats. The ingenious expedient by which the boat was literally picked up out of the water was the conception of Admiral Wilson. The officers on the picket boats attached to one of the nets saw a periscope moving on the surface of the water, and they maneuvered so as to make the net bar its progress. A few moments later a straining at the hawser told them that they had stopped the progress of the submarine. Immediately the boat altered its course so as completely to envelope the unfortunate under-water craft in the net.

The poor little vessel found itself in the toils, and as the hawser had carried away the periscope, the sole means of seeing what was happening on the surface, the crew could do nothing but await developments. The submarine was raised to the surface and the crew had the most startling experience of record. The officers will not soon forget how they were caught like fish in a cleverly-planned steel sieve.

The torpedo is successful only when there can be found men ready to sacrifice their lives in operating it. The chances are about even that they who start out to torpedo a vessel will never return



Destroyers Capturing a Submarine in a Net, Guided by the Submarine's Periscope, which, as seen in the Picture, Looks Like a Ball Floating on the Water

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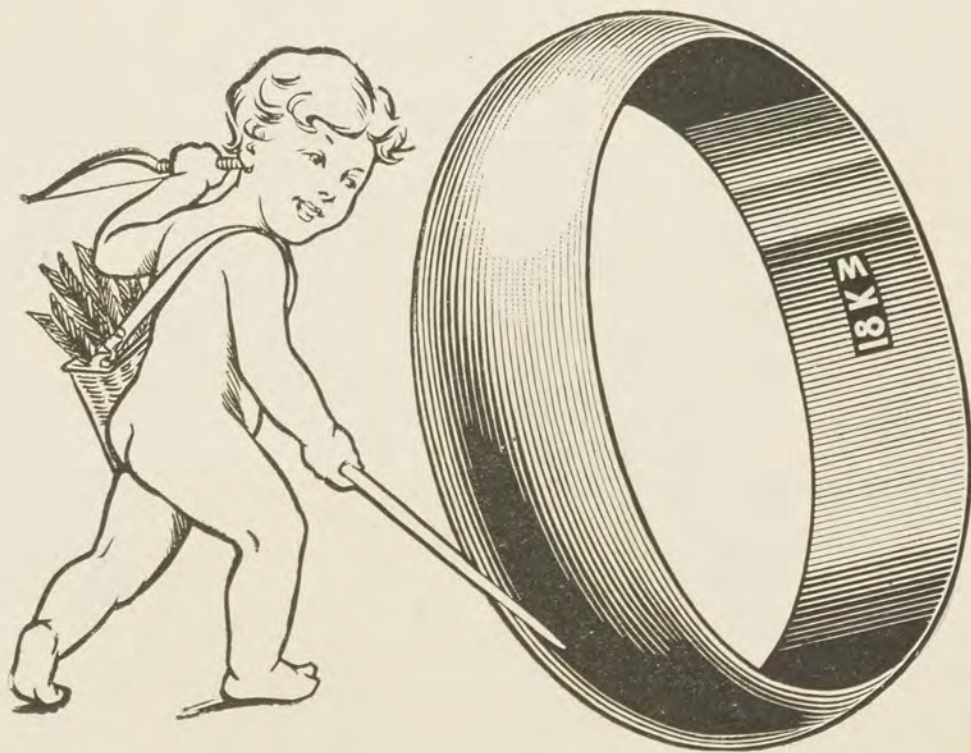


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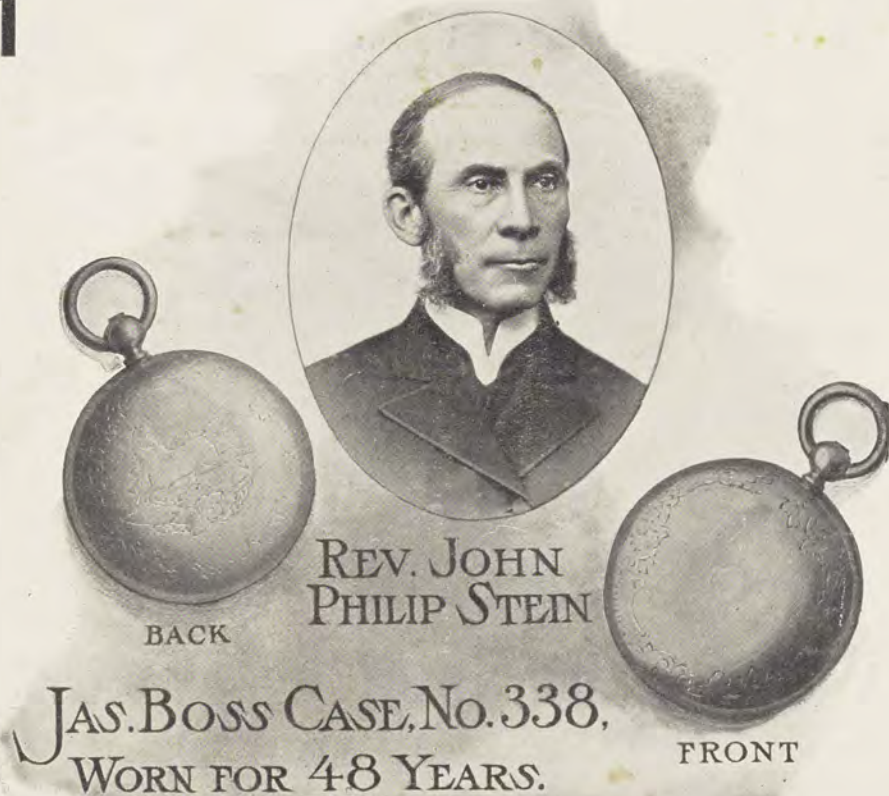
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### 3 Boss Filled Cases which were mistaken for Solid Gold, after having been worn from 30 to 48 years.

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1



Rev. John Philip Stein, pastor of St. Thomas Church, Reading, Penna., is still carrying Boss Case No. 338, after it had been continuously worn by relatives of Mrs. Stein *since 1854*. The history of this Case has been accurately traced from the original wearer, Leslie Hayward North, of Fairfield District, South Carolina, to Miss Arabell North, then to Alfred Trisvan Fable, then to John F. Fable, back again to Miss North, who married Rev. Stein and presented it to her husband in 1878. The Case has always been in active use.

Each successive wearer always supposed that this Filled Case was solid gold until a jeweler informed Rev. Stein that it was a Boss Filled Case. The Reverend gentleman refused an offer to exchange it "even up" for a solid gold case (for advertising purposes), explaining that a Filled Case that *still* looked like solid gold after 48 years' continuous wear was *good enough* gold case for *him*.

2

Will J. Corbin, of Clinton, Iowa, carried until recently (when it was secured by the makers, for demonstration of quality) a Boss Filled Case which had been bought by his father, J. S. Corbin, in *July, 1860*. The Case "was constantly carried from date of purchase," writes Mr. J. S. Corbin; and "several jewelers, at different times, pronounced it solid gold" (the earlier Boss Filled Cases did not contain the present distinguishing trade-marks). Mr. Corbin adds, "Indeed, its strength and firmness make it preferable in many respects to a *thin* solid gold case."

3

Thirty years ago, two brothers in Cambridge, Mass., presented their father with a Boss Filled Case. One writes: "Father always supposed it was a solid gold case and we did not undeceive him. When he died, after carrying the Case for 20 years, it went to another brother; and *this* wearer believes it is a solid gold case. We let him think so; for after 30 years' constant wear it *looks* like a sure-enough solid gold case."

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The only way to tell the present Boss Filled Case from Solid Gold is to look for the trade-mark.

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