

# Christmas, 1896



As the time of year is at hand when all conservative business men are going over their stock, with a view towards replenishing it for the Holiday season, which is less than three months distant, we believe there are many who have stock enough to carry them through were it in the proper condition, and we, therefore, beg to announce that we are prepared to repolish and regild all manner of jewelry, rings, chains, charms, watch cases, etc. Our workmen are up to date, thoroughly acquainted with the mechanical part of the business. Our regilding solutions are regarded by those who have tried them to be the finest on the market, and many dollars could be saved by sending us your shopworn watch cases, finger rings, etc., for renewal. We have as good facilities as the best, and our prices have proven highly satisfactory to those who have dealt with us, and we are prepared to execute work as promptly as any house in the country. A trial order will convince you that you are not mistaken in the house. So much for the workshop.

Our material department will not be neglected by special attention to the workshop, but is under the same careful, conservative management that has always characterized it in the past. We are looking well after the material, and those "hard-to-get" things which are usually not found in stock can most readily be obtained here.

We have a large line of polishing lathes, foot-wheels and workbenches, which we have bought at rock bottom prices from the best known manufacturers in this country. If you are contemplating adding a new workbench to brighten up the fixtures, we would suggest your writing to us for photos. and prices.

We are paying the same attention to jewels that we have always done, and our stock of Junod jewels is complete. Our special mounted balance-hole jewel at half the price per gross of a No. 160 Elgin movement has no equal, and if we were to judge from the demands made for this class of goods should say it was most highly satisfactory to the trade, as they have shown their appreciation in a substantial way.

If you are considering the lathe question, and unless you have made up your mind to buy a genuine Rivett, we would ask you to keep an eye on this page of the November issue, as we have something interesting to say to you in lathe matters which will count for dollars and cents.

L. C. Reisner, Assignee of

**Ezra F. Bowman & Co.**

Importers, Manufacturers and Jobbers,

Watch Material, Tools and Supplies,  
Lancaster, Pa.

Repairers  
and Engravers  
for the Trade.  
We are leaders in  
Watch Case Repairs  
of all kinds.

Sole Agents  
U. S. and Canada  
for the L<sup>s</sup> E<sup>d</sup>. Junod  
Jewel Factories,  
Switzerland.

*The Ezra F. Bowman Technical School has the best instructors and the best discipline, and undertakes to turn out the best workmen, and such as will be able to get and HOLD positions.*

EZRA F. BOWMAN, Manager.

READ WHAT OTHERS SAY ABOUT

**CA** MAINSPRINGS. (We have been Sole Agents for 43 years).

**CA** MAINSPRING CABINET. (FREE TO ALL regular users and those who are willing to use the celebrated **CA** Mainsprings.)

Pilot Point, Tex., April 25, 1896.  
L. H. KELLER & Co.

The **CA** Springs are all O. K. Much obliged for promptness with which you filled our order. Enclosed you will find check for amount.

Very truly yours,  
MAURER & ELMORE.

Springfield, Mass., Aug. 29, 1896.  
L. H. KELLER & Co.

Gentlemen: The Mainspring Case came yesterday. We think we shall find it very useful, and are greatly obliged to you for it.

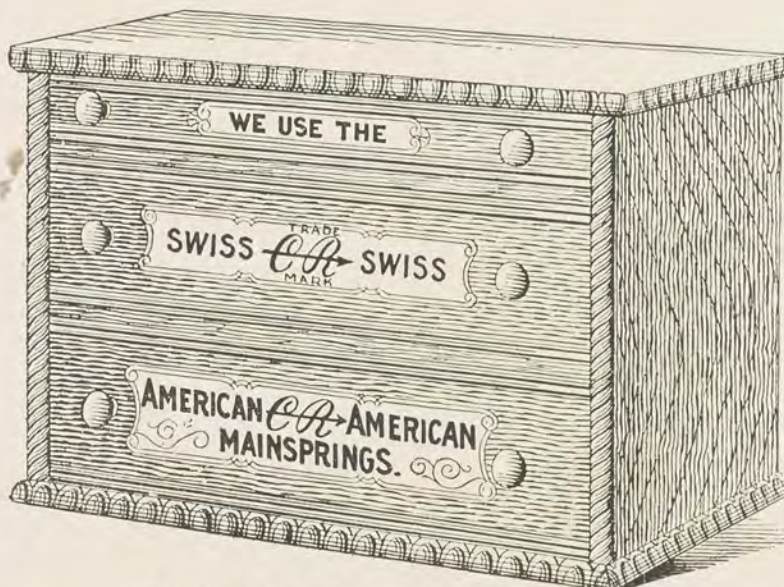
Yours truly,  
WOODS & HOSLEY.

Meriden, Conn., Aug. 15, 1896.  
L. H. KELLER & Co.

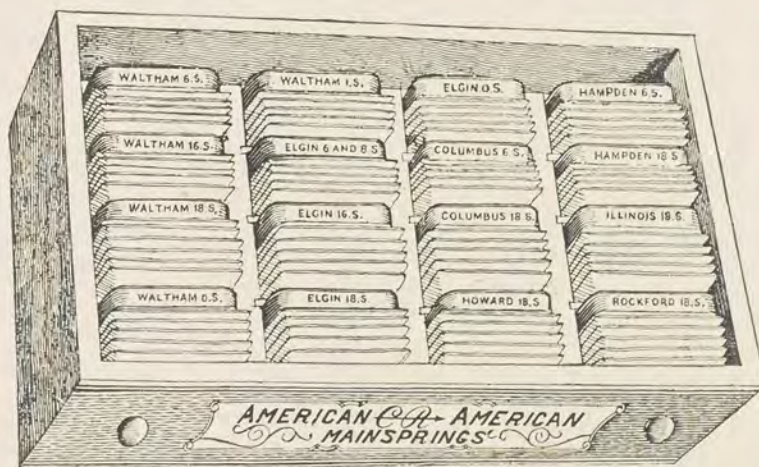
Gentlemen: Please accept my best thanks for the pretty and nicely made Mainspring Cabinet which I received to-day.

I appreciate it very much.  
Yours truly,  
OSCAR ZUBE.

These are only a few of the many hundreds of unsolicited testimonials we have received from some of the most critical watchmakers throughout the country.



Size, 15 inches long, 10 inches high and 9 1/2 inches deep.  
Capacity, 10 Gross American and Swiss **CA** Springs.



Interior view of drawer, showing our perfected arrangement for taking care of loose Springs.

Albany, N. Y., Aug. 15, 1896.  
L. H. KELLER & Co.

Gentlemen: I have received the pretty Mainspring Cabinet, for which please accept my best thanks.

Yours respectfully,  
H. HOBEND.

York, Pa., Sept. 8, 1896.  
L. H. KELLER & Co.

Dear Sirs: I received the Mainspring Cabinet and think it is a beauty. Please accept my many thanks for same. Will try and repay you for your kindness.

Very respectfully yours,  
HARRY E. BEMIS.

Bradford, Pa., August 17, 1896.  
L. H. KELLER & Co.

Gents: I received the Mainspring Cabinet, for which I thank you very much. It will enable me to keep my loose and other springs in good shape, and is very convenient.

Very respectfully yours,  
J. B. CROSS.

**CA** Mainsprings cost no more than other springs. Write to us for prices and how to get one of these handsome Cabinets FREE OF CHARGE.

## The **CA** Mainspring Cabinet.

The only Cabinet (given away) that provides for the Watchmaker's LOOSE American and Swiss Mainsprings.

The practicability of the interior arrangement is one of the special features of this Cabinet, as it not only provides for the full packages, but contains a series of twenty-six handsomely decorated metal boxes printed on cover and inside box, designating sizes, grades, number, class, width and strength by Dennison's gauge. These boxes go with each Cabinet, and are specially adapted for the loose mainsprings which naturally accumulate in every watchmaker's stock.

This feature alone will not only save valuable time to the watchmaker, but will save many dollars in preserving your springs from rust and unnecessary handling. The Cabinet is made of solid oak, is handsomely finished and decorated, and will be an ornament to any store or workshop.

# L. H. KELLER & Co.

Importers, Manufacturers and Jobbers

Fine Watch Material, Tools and Supplies.

64 Nassau Street, New York.

We have always done a large business in Silver Chatelaine Watches. After an exhaustive comparison of all the varieties in the market, we fixed upon the "Mignon" line for our stock, as offering the greatest value at the price. We ~~did not~~ rejected lower-priced varieties as not good enough for our trade. The standard "Mignon" is \$6.40 O. F., \$7.80 Mtg (according to KEYSTONE key) for the regular watch, which is 0.800 fine silver. We sell a great number of them, with universal satisfaction to the buyers.

Back in February we gave a large import order for these goods, to be made up according to our detailed specifications. The cases were to be 0.935 fine; of extra weight; richly engraved; and with many special features as to finish. The movements were to be very carefully selected, and every one to be perfect in action and timekeeping.

The Watches have just arrived. They surpass our requirements. The long time allowed for their manufacture has enabled the makers to put pains-taking care into their construction and adornment. The price is only about 20 percent higher than the regular 0.800 fine stock goods. They are a special value in Chatelaine Watches.

The season is at hand when these goods are most demanded. You should see a sample line of them before "stocking up" in little silver watches. We send selections to responsible jewelers, on request.

The Non-Retailing Co., <sup>(Jobbers in Watches)</sup> <sup>(Chambers & Spectacles)</sup> Lancaster, Pa.

## STERLING CYCLE INSURANCE

\$100 for a Sterling—no uncertainty—the protection of guarantee quality—other bicycles may be all right, but if you don't know it you can't trust them—certainty is worth a premium.

STERLING CYCLE WORKS  
274, 276, 278 WABASH AVE.  
CHICAGO.

A POSITIVE SUCCESS!

## Timekeeping Sign Clocks.

Artistic  
and  
Attractive



Governed by any clock having pinion revolving every minute, without possible injury to the finest regulator. Three cells of battery furnish the power. Simple and strong in construction. All clocks made with glass Dials and Bezels, and wired for electric lights. Not affected by the weather.

### GUARANTEE

Every clock shipped on ten days' approval, is carefully tested before leaving our factory, and we will repair or replace free of charge any part of Movement ever getting out of order.

Post and Bracket Clocks  
from \$40 up

Chicago, September 16, 1896.

Joliet Electrical Mfg. Co., Joliet, Ill.

Gentlemen: The Electric Clock which you hung in front of our store about eight months ago has given excellent satisfaction. It requires very little attention and gives us no trouble whatever. Can cheerfully recommend it to any jeweler contemplating purchasing a street clock, as it is the best advertisement one can have.

Yours very truly,

Benj. Allen & Co.

A Few of Our Customers Are:

Benj. Allen & Co., F. Lewald & Co., F. A. Dostal, Chicago; A. M. Endweiss, Monterey, Mexico; J. H. Hard, Seattle, Wash.; J. T. Roberts, East Liverpool, Ohio; J. E. Beck, Washington C. H., Ohio; William Day, Lexington, Ky.; E. C. Barlow, Georgetown, Ky.; C. J. Linden, Kankakee, Ill.; De Roy Bros., Pittsburg, Pa.; G. E. Feagans, Carl Oesterle, Joliet, Ill.; A. H. Richards, El Paso, Texas; Shepherd & Bennett, Malden, Mass.; W. M. Sheldon, Adrian, Mich.; J. H. Wight & Co., Spencer, Iowa; Youngdahl & Lilja, Chicago; Joseph Ruff, Chicago; Merritt Barnes, Avoca, Iowa; etc., etc.

JOLIET ELECTRICAL MFG. CO., Joliet, Ill.

## A POINTER - ON GOLD.



## No Use Fishing

unless the bait is right. No hope of great success in any business unless you have an honest purpose and your methods are right. Here is where our plan of buying Old Gold and Silver stands out bold and clear, and gives the greatest satisfaction to our customers. This plan of ours means that you are either satisfied with our cash offer, or your consignment is returned to you intact at our expense. It has brought us many words of commendation, very few of complaint.

We try to treat our customers as we would like to be treated ourselves. When you wish to realize on your Old Gold and Silver with promptness and satisfaction, send us your consignment.

## GOLDSMITH BROS.

REFINERS, SWEEP SMELTERS AND ASSAYERS,  
63 & 65 Washington St., Chicago.

## Public Replies to Some Private Questions:

**E. R. S.** No, we have no connection with any other firm or corporation doing business under a title in any way resembling our corporate name. One of the penalties of success is to breed a following of imitators who endeavor to reach success under the livery of a counterfeit title, hoping to confuse the unwary into buying what they *don't* want. All of our products are stamped "New York Standard Watch Co."; and all goods so stamped, made by us, are covered by our unqualified warranty.

**M. B.** We sold 263,427 Standard Cyclometers in 1895. You therefore win your wager, but you lose the second bet. Our output already this year is *far* beyond your figure—and the season is not yet over.

**Jacob B. C.** You ask whether we guarantee our Watches, same as the Standard Cyclometers. Yes, Jacob—*every* article bearing the name of this Company, made by us, is guaranteed without qualification. We are not surprised at *your* surprise, for it is "a liberal extent of guaranty"; but we know the quality of materials and workmanship that goes into the Standard Watch, and our guaranty is the measure of our faith in the quality of our product.

**Miss T. B.** Glad to have your flattering testimony concerning the performance of the Standard Watch which you are carrying. Your letter will be added to a great stack of similar voluntary testimonials of appreciation which have come to us from delighted wearers. While we seem to be at a great distance from the public which eventually buys our product, since the retailer and the jobber are successive steps which intervene in our acquaintance, yet it is inspiring to hear these far-off echoes of approval which have already been spoken by wholesale and retail dealers, and to have these tangible evidences that our efforts are entirely acceptable to "the middle ten millions."

**A. & F. N.** Our No. 1531 Complete Nickel Watch is probably what you are after. The No. 531 is the same thing *with snap bezels*; but if, as you say, your trade wants *jointed bezels*, No. 1531 will exactly fill the bill. The oval pendant bow and the *close casing* of this 18 size Watch (making it resemble a 16 size) will further justify your paying the 25 cents higher price for it than for the No. 531. But isn't the No. 531 a wonder at the price?

**R. C. D.** (and 27 others) If you did not *promptly* receive a Cyclometer in exchange for the broken one returned, it must be because you failed to put *your name on the outside of the package sent us*, and we were unable to *guess* who sent it. We are exceedingly prompt in making these gratuitous exchanges, and thus fulfilling our guaranty, but we can't guess the right name out of a possible seventy millions. Don't make us guess, but write your name on the outside of the package, and we will give you an example of prompt fulfilment of a published promise.

**K. D. & Co.** Order of a jobber—we do not sell direct to the retail trade. We can save expense by distributing our product through a few wholesale dealers, at a discount, as against the large executive cost (for bookkeepers, shippers, salesmen, etc.) of selling direct. We think it better that the cost of our product should be in *the processes of manufacture* rather than in *the processes of sale and distribution*.

**F. C. B.** The expression, "The Best Watch in the World for the Money," was original with us, in the early history of this Company. It has since become so closely identified with the New York Standard Watch that letters to us have been simply addressed "The Best Watch in the World for the Money, New York," and the postal clerks in the New York post office dropped them into our box without question as to correctness.

## The New York Standard Watch Co.

# V.T.F.



**V.** Means everything that is first quality in a Watch Glass.

**T.** Without V. T. F. on each and every label you are

**F.** in danger of receiving inferior quality. Can you afford to?

**V.T.F.** are made in larger quantities than all others.

**V.T.F.** are used by more watchmakers than all others.

**V.T.F.** are used by more case-makers than all others.

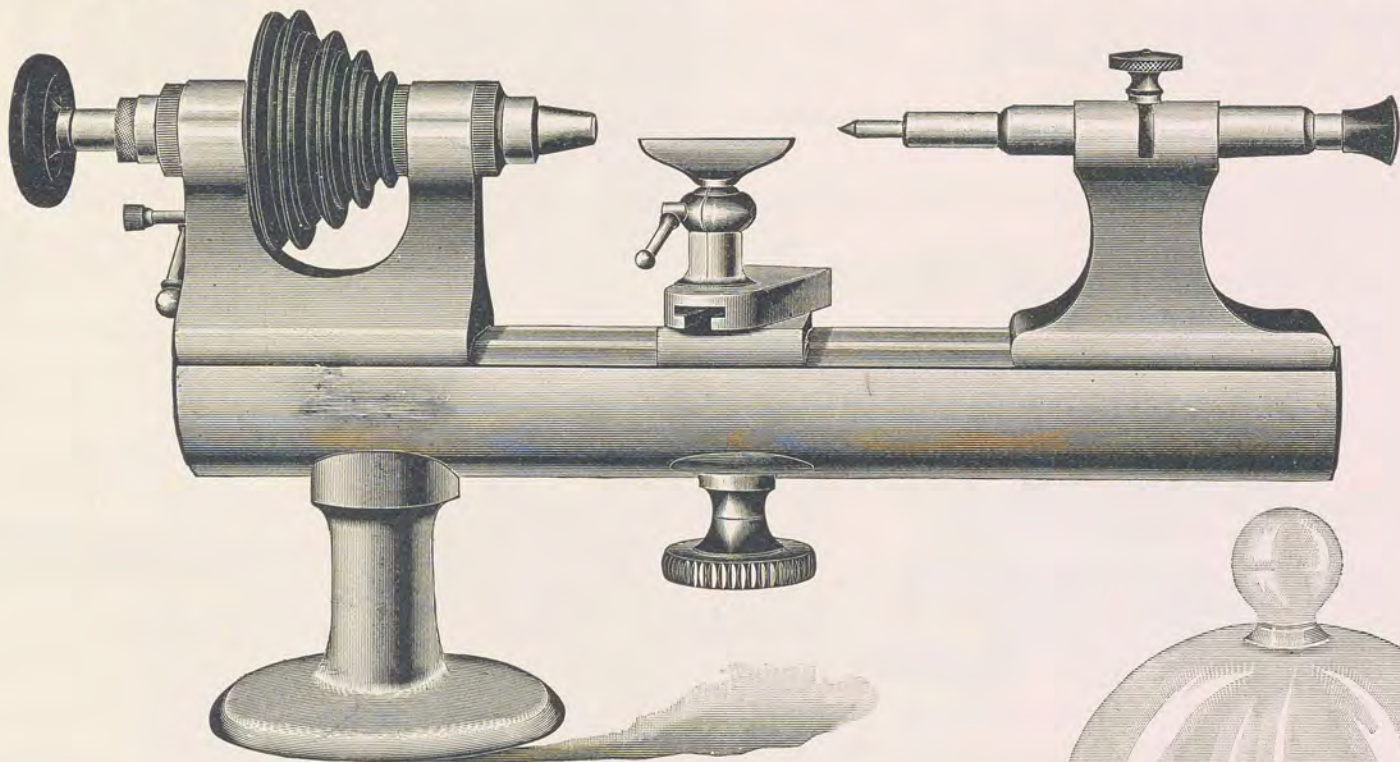
**V.T.F.** cost no more and are better than all others.

The success of the **V.T.F.** has induced others to copy the label, but not the quality. There is only one **BEADED BORDER LABEL WITH V.T.F.** and that stands alone as the perfect Watch Glass.

# V.T.F.

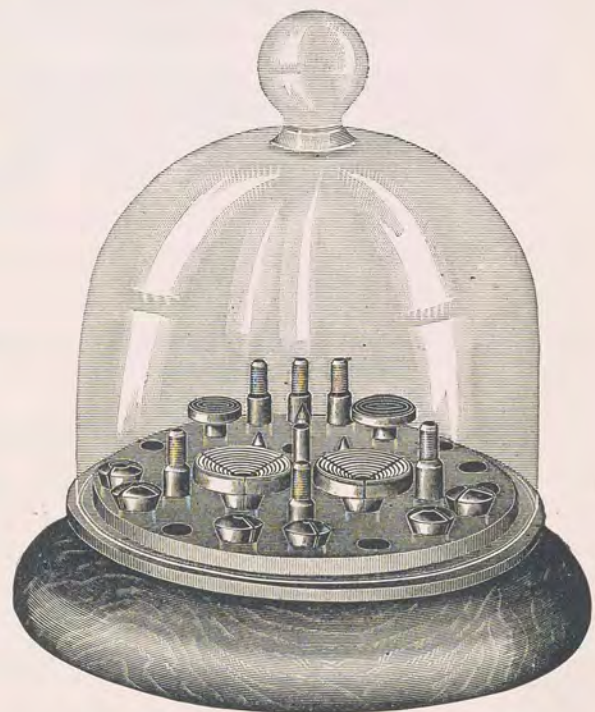
**\$21.15** Cash

buys Lathe same as illustrated until we have reduced our overstock. Every jeweler needing a good Lathe should investigate this one, as the price is remarkably low. **Your money back if it does not suit.**



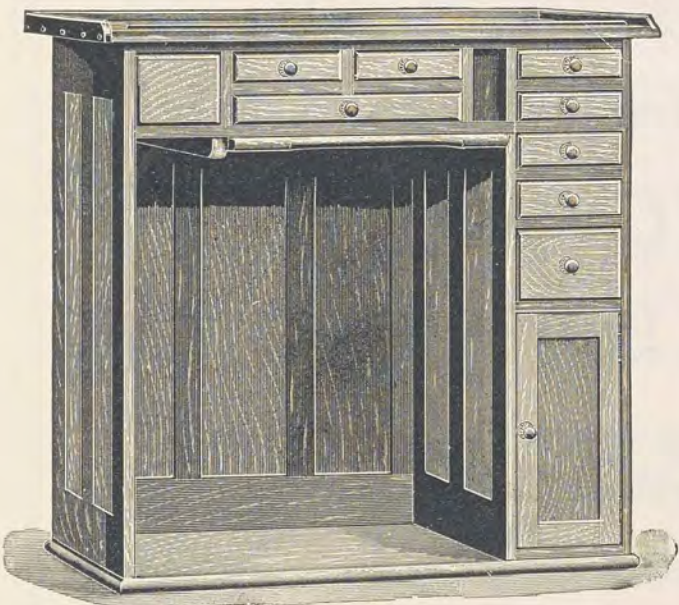
**E. & J. S. Lathe No. 2.**

Is full nickel-plated, with hard rubber pulleys and knob. Has hardened bearings, and chucks are tempered. Combination consists of six Split Chucks, two Step Chucks, one each Taper and Screw Chucks, Cement Brasses, Belting, and Chuck Stand, with cover.



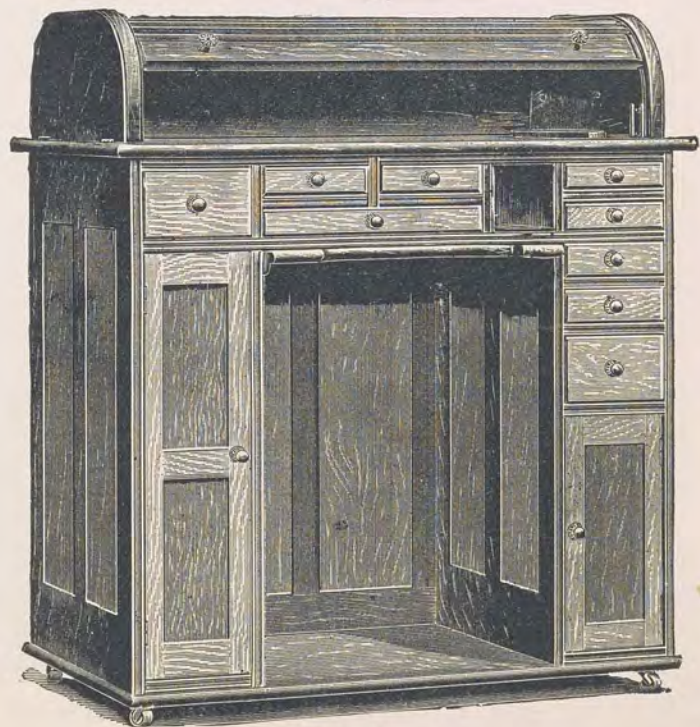
Attachments for No. 2 Lathe.

LATHE WHEELS.				Net Cash.
Regular Style, Good Quality,	.	.	.	\$2.35
Swing Treadle, " " 30 lbs.	.	.	.	5.15
" " " " 40 "	.	.	.	6.10



**Bench No. 2.**  
Solid Walnut, Cherry or Oak. Each, \$12.00.  
6 per cent. Discount for Cash.

Our Benches  
are made of  
well-seasoned  
lumber,  
and positively  
will not  
warp or split.



**Bench No. 1.**  
Solid Walnut, Cherry or Oak. Each, \$21.00.  
6 per cent. Discount for Cash.

**Our New Illustrated Book of Tools, Materials and Optical Goods**  
quotes latest prices on other Benches, Bench Stools, Lathes, Attachments, etc.  
Send us your address if it has not been received.

**E. & J. SWIGART, CINCINNATI, OHIO.**

*Fresh Honors for  
World-Famed Watches*

**GOLD MEDALS**

have been granted at the *Swiss National Exposition of 1896* to

Dubail, Monnin, Frossard & Cie, Porrentruy, Switzerland, Makers of the

**Star and Crescent Watches.**

Louis Brandt & Frere, Bienne, Switzerland, Makers of the

**Omega Watches.**

**EQUAL HONOR**

is due **Piguet, Guillaume & Cie**, Sentier, Switzerland, Makers of high-grade

**Complicated Watch Movements**, who had to forego competing, though certain of first honors, because a member of the firm was one of the watch jury.

THE AGENT IN THE UNITED STATES for these and others of the Highest Grade Swiss Watches is

**EDMOND E. ROBERT,**  
3 MAIDEN LANE, NEW YORK.



**Photo-Miniature Portraits on  
WATCHES,**

DIALS,  
CRYSTALS,  
AND  
BROOCHES  
—  
ARTISTIC  
FINISH.  
DURABLE.

**Miniature Portraits**

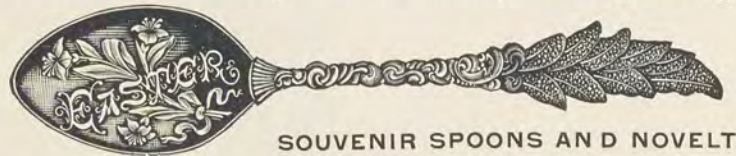
IN OIL OR WATER COLORS,  
ON IVORY AND PORCELAIN.  
ESTIMATES GIVEN ON APPLICATION.

FINE HAND ENGRAVING  
For the Trade.

LETTERING AND MONOGRAMS  
On Jewelry and Silverware.

Send us your jobs, and you may expect Good Work at Low Prices, Promptly Delivered.

*Ornamental and Landscape Engraving*



**SOUVENIR SPOONS AND NOVELTIES.**

Artistic engraving in the bright style, of views of buildings, landscapes, monuments, historical subjects, club and society emblems, inscriptions, ornamental lettering, etc., on souvenir spoons, match safes, stamp boxes, flasks, buckles, plates and silver services, presentation vases and prize cups, for regattas, bowling and tennis tournaments, and other sporting events. Estimates and samples furnished on application.

Artistic Etching of portraits, views of buildings and landscapes, inscriptions in ornamental raised letters, emblems, club and heraldic devices, and autographs.

Superior Work. Prices Moderate. Estimates Furnished.

Mail Orders will receive prompt and careful attention.

**The Goldstein Engraving Co.** No. 1 Maiden Lane, corner Broadway  
New York.

WRITE FOR BOOK, JUST OUT, CONTAINING INFORMATION RELATIVE TO AUCTION SALES,  
ALSO REFERENCES AS TO ABILITY FROM THE TRADE AND COMMENTS FROM THE PRESS.



ESTABLISHED 1879.

*Herman G. Briggs,*  
*Jewelry and Art Goods*  
**AUCTIONEER,**  
Howell, Mich.

*For Jewelers Established and Dealers in  
Art Goods.*

A FEW REFERENCES GIVEN BELOW OF SALES MADE LATELY, ANY OF WHICH WILL BE PLEASED TO GIVE YOU INFORMATION AS TO THE RESULTS OF MY SALESMANSHIP.  
I ALSO REFER WITH PLEASURE TO THE TRADE AND ITS REPRESENTATIVES IN MOST PARTS OF THE COUNTRY.

ROSEMAN & LEVY, New York.  
BOWLER & BURDICK Co., Cleveland, Ohio.  
S. H. IVES, Detroit, Mich.  
W. E. SMITH, Bellefontaine, Ohio.  
A. T. WARD, Saginaw, Mich.  
C. E. ETTINGER, Cleveland, Ohio.  
LANGE BROS., Dubuque, Iowa.  
ROBBINS BROS. & Co., Fostoria, Ohio.  
GEO. NICHOLS, St. Louis and Ithaca, 2 sales.  
CHARLES TAYLOR, Steubenville, Ohio.  
CHARLES YOUNGLOVE, Newberry, Mich.  
SIPE & SIGLER, Cleveland, Ohio, 5 sales.

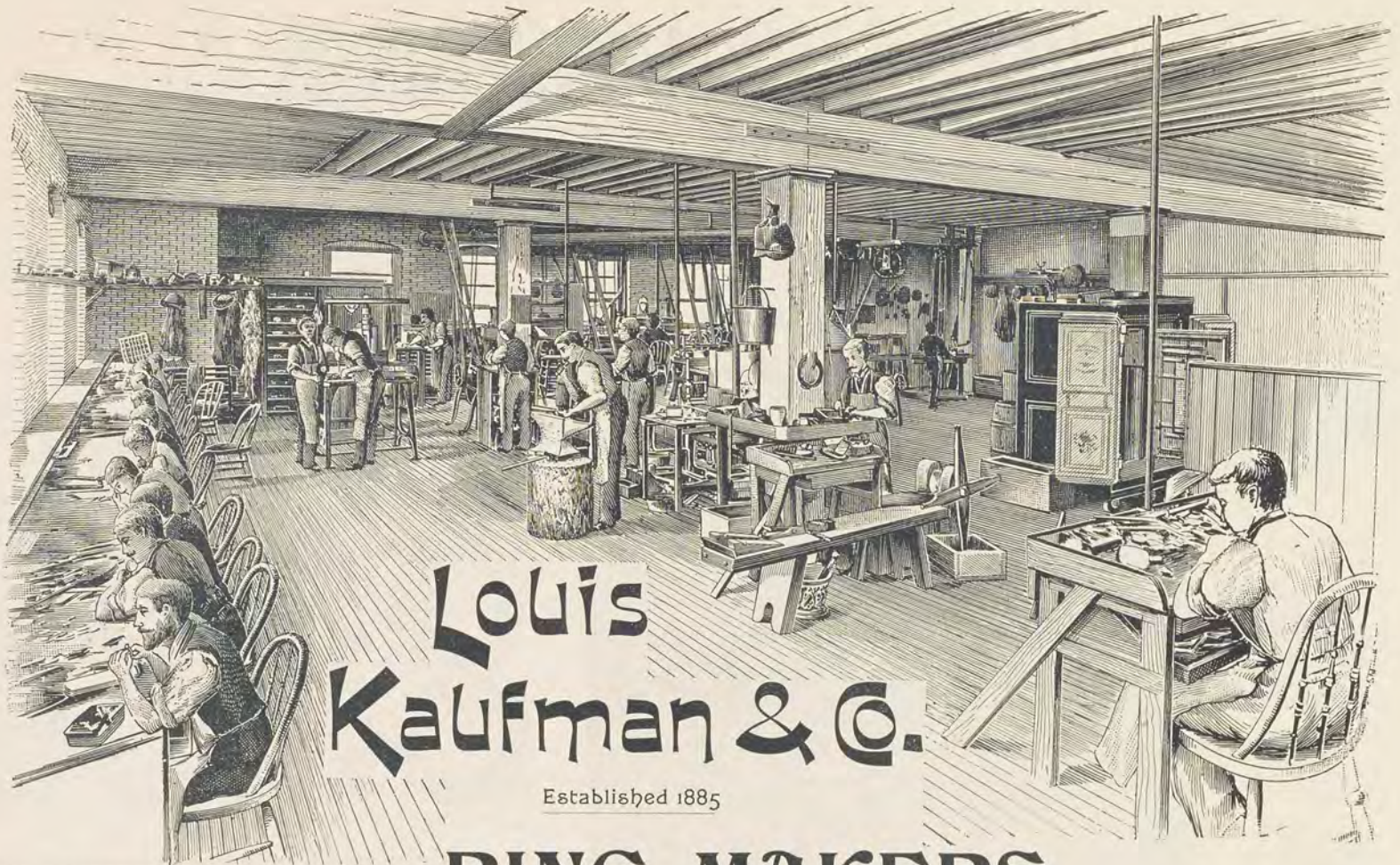
ALBERT SCHIRMER, Saginaw, Mich.  
C. E. BUHRE, Topeka, Kan.  
J. C. SIPE, Indianapolis, Ind.  
LEONARD KROWER & Co., New Orleans, La.  
H. J. YOUNG, Joliet and Kankakee, Illinois.  
C. E. SUMNER, Chicago, 3 sales.  
WOODWORTH, SMITH & RANDALL, Colorado Springs, Colo.  
KENNEDY & KOESTER, Detroit, Mich.  
OSCAR HENIZE, Quincy, Ill.  
HARRY HARRISON, Sault Ste. Marie, Mich.  
GEO. CLARK, Lorain, Ohio.

C. D. GARDNER, Manistee, Mich., 4 sales.  
F. B. LEWIS & Co., Cleveland, Ohio.  
W. K. LIPPITT, Norwich, New York.  
FRANK SUMNER, Cleveland, Ohio.  
F. M. YOUNGLOVE, Alpena, Mich.  
J. L. SIEBERT, Springfield, Mo.  
FREEMAN JEWELRY Co., Atlanta, Ga.  
ALFRED BOURGEOIS, Jackson, Miss.  
GEO. CHANTLER, Manistique, Mich.  
LION & KYLLING, Danville, Ill.  
C. W. ERNSTING, Gallipolis, Ohio.  
J. BOLLAND JEWELRY Co., St. Louis, Mo.

A. W. FORD, Freeport, Ill.  
J. M. WASHBURN, Celina, Ohio.  
WILBUR, LAMPHERE & TRAVNER, Galesburg, Ill.  
HOWARD Co., Boston, Mass.  
ALEX. MCPHERSON & Co., bankers, FIRST STATE SAVINGS BANK, Howell, Mich.  
R. E. SAMSON, Marion, Iowa.  
S. H. DODGE & SON, Ypsilanti, Mich.  
W. F. MAIN Co., Iowa City, Iowa.  
T. G. BURKHARDT, Jefferson City, Mo.  
A. SCHWANER, Beaumont, Tex.







SECTIONAL VIEW OF OUR FACTORY,  
BROOKLYN, N. Y.

# Louis Kaufman & Co.

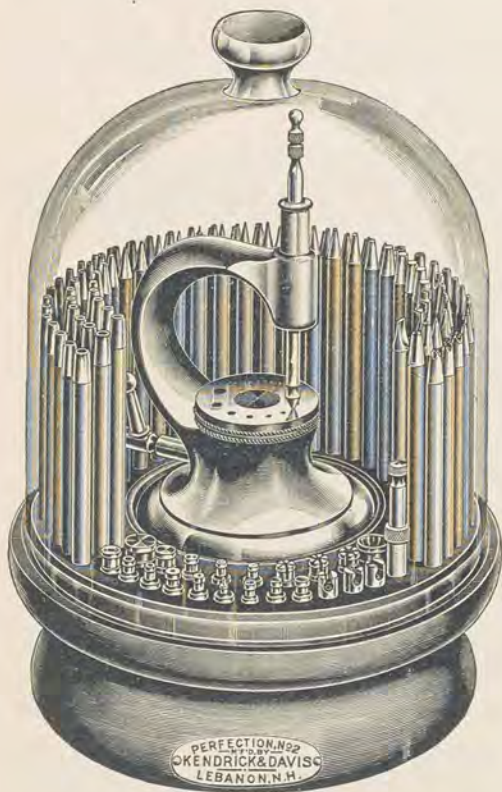
Established 1885

## RING MAKERS

Factory, Brooklyn, New York.

Offices,  $\left\{ \begin{array}{l} 54 \text{ Maiden Lane,} \\ 29 \ \& \ 31 \text{ Liberty St.,} \end{array} \right\}$  New York.

A line, and one of our TRAVELERS will call.  
MEMORANDUM PACKAGES sent on application.  
Separate and distinct department for REPAIRING of Gold Jewelry.



High Grade  
Watchmakers'  
Tools.

BIRCH'S  
Patent Watch Keys

Dust-Proof  
Watch Keys,  
Etc.



NEW PUNCH REMOVER AND REPLACER—will fit  
punches of any Staking Tool.

Our new 105-punch STAKING TOOL is the largest  
and most complete in the world.

**KENDRICK & DAVIS, Mfrs.,**

LEBANON, N. H.

## Red-Hot Bargains in MOVEMENTS

I have several hundred good second-hand ELGIN, WALTHAM, HAMPDEN, SPRINGFIELD and COLUMBUS Stem-Wind 7, 11 and 15 Jeweled Movements. Will sell them at the following prices:

7-Jeweled, 18 or 16 size, \$21.00 per dozen.  
11-Jeweled, 18 or 16 size, 30.00 " "  
15-Jeweled, 18 or 16 size, 37.50 " "

Will send C. O. D., subject to inspection. I will pay the charges *one* way if they do not prove satisfactory.

Good Second-Hand Key-Wind Movements, \$15.00 per dozen.  
Orders will not be filled for less than three Movements.

**I. SPEYER,**

65 Washington St., Chicago.

NOTE.—I have on hand a number of Pendant-Set 7, 11 and 15 Jeweled ELGIN, WALTHAM, SPRINGFIELD and COLUMBUS Movements in Silverine Cases, polished and like new. Will sell watches intact and in good order at the following prices:

7 Jewels, \$2.00.      11 Jewels, \$2.75.  
15 Jewels, \$3.25.

# Only the Best

and most attractive goods will sell now, and the prices must be low at that.

The "Washington" design in Manicure Files, Knives, Scissors, meets these requirements. Without question our Mirrors, Ladies' Hair Brushes, Cloth and Military Brushes (solid back), in this most beautiful pattern, are the readiest sellers that can be found.

Razor Strops and Lather Brushes, Cut-Glass Powder and Paste Boxes, also Pun-gents and Salt Bottles.



FULL SIZE  
No. 700. Puff Box, Cut Glass.



219/869. Gold Plate. 159/871. Sterling.

Bracelets, new and beautiful patterns. Sterling Silver and Rolled Gold-Plate, set with handsome stones, in chased or plain links. Quality perfect and prices low.

An immense assortment of Gold-Plated Locketts and Charms, Sleeve Links, and our well-known Mount Hope Buttons.

Chains and Fobs, Lace Pins, Brooches and Chain Mountings in great variety. Only one quality—the best.

**FOSTER & BAILEY,** Manufacturing Jewelers and Silversmiths,  
100 Richmond St., Providence, R.I.

# Something for Nothing!!!

During the next SIXTY DAYS for every cash or C. O. D. order of Tools and Material amounting to \$25.00 and upwards, we will enclose **ABSOLUTELY FREE OF CHARGE**, one **Booth's New and Complete Clock and Watchmaker's Manual**, published at \$2.00, comprising descriptions of the Various Gearings, Escapements and Compensations now in use in French, Swiss and English Clocks and Watches, Patent Tools, etc., with directions for Cleaning and Repairing.

If you find any difficulty in getting suited on Tools and Material, try us. WE ARE HERE TO PLEASE YOU.



No. 1972.  
Combination Jewel Bezel Openers and Closers, \$1.50.

## Our Watch Insulators

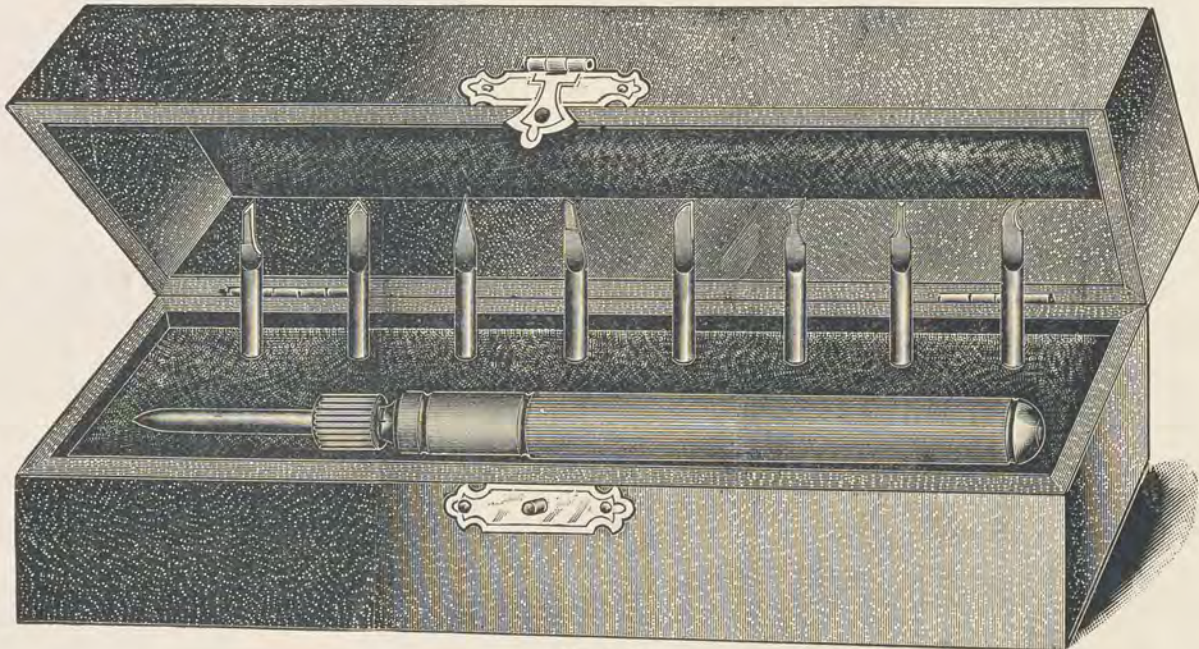
are reduced in price. See our Tool and Material Circular No. 5.

Watches are easy to regulate with

## Leader Timing Washers.

0, 6, 16 and 18 size or assorted. Per gross, 25 cts.

INSIST ON THE LEADER.



No. 4125.  
Set of nine Pivoting Tools, with adjustable handle, \$1.50.

## TRY THESE.

Gold and Silver Ferrules for Repairing Spectacle Temples. Per set, 75 cts.

Swiss, English and American Jewels in great variety. Prices the LOWEST.



No. 102. Cabinet of nine dozen Colleted, Hardened and Tempered Hairsprings, with nickel-plated tweezers, \$4.00.  
No. 103. Cabinet of six dozen Imitation American Uncolleted Hairsprings, with plain tweezers, in paper case, 1.25.

MATERIAL ORDERS OUR SPECIALTY.

LESS 6 PER CENT. FOR CASH.

# OTTO YOUNG & CO.

Importers and Jobbers in  
Watches, Clocks, Jewelry,  
Tools, Material and Optical Goods,

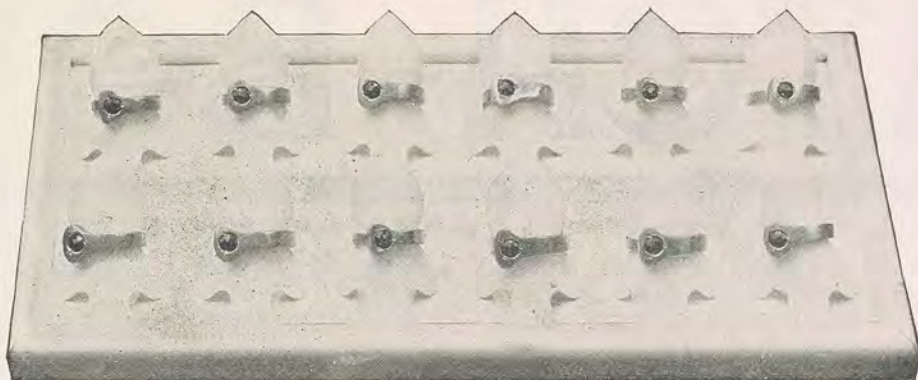
149, 151 & 153 State St., Chicago

# THE BOYDEN RING TRAY

745

PATENTED JULY 16, 1895

Made of Celluloid, in dull white, ivory white, and colors, and with border of white enameled wood. Style One comes with dull white tongues and ivory white, black or colored background.



## Tongues Better than Crevices,

Because they hold the rings at an angle best suited to window or showcase display. The Boyden Ring Tray has Tongues.

Manufactured by

**K. E. WALLACE & CO.**

134 MADISON ST., CHICAGO

### PRICE-LIST, Boyden Trays.

	Style One	Style Two
5 x 9 $\frac{1}{2}$ , for 12 Rings, . . .	\$7.00	\$4.50 per dozen
5 x 12 $\frac{1}{2}$ , for 16 Rings, . . .	8.50	6.00 " "
7 $\frac{1}{4}$ x 9 $\frac{1}{2}$ , for 18 Rings, . . .	9.00	6.50 " "
7 $\frac{1}{4}$ x 12 $\frac{1}{2}$ , for 24 Rings, . . .	10.00	7.50 " "

FOR SALE BY  
THE TRADE

**\$36.00** "Special Leader" **\$36.00**



No. 427. WALL CASE.

Length, 8 feet; height of base, 30 inches; width of base, 30 inches; height of top part, 6 feet 6 inches. Base has hinged doors and 3 drawers. Upper doors slide up. DSA glass. Good hardware. Back lined with black cloth. Shelves, bottom and top, painted black. Shelves on iron brackets. Upper part made knock-down. Well made; finely finished. Oak, cherry or walnut. Oak only in stock.

THIS IS ONLY A CHEAP ONE IN PRICE, NOT IN WORKMANSHIP AND FINISH, AS IT IS STRICTLY FIRST-CLASS IN EVERY RESPECT. WE HAVE OTHERS.

OUR SPECIALTY IS

High-Grade Jewelers' Fixtures and Fine Plate Glass Show Cases.

CATALOGUES AND ESTIMATES ON APPLICATION.  
SPECIAL DESIGNS AND SPECIFICATIONS FREE OF CHARGE ON COMPLETE OUTFITS.

**THE QUINCY SHOW CASE WORKS,**

ESTABLISHED 1876.

Mention Keystone.

QUINCY ILL.



**Notice to  
Watchmakers**

## BEWARE, when buying a lathe.

Do not ask your dealer which lathe he sells the most, but look him right in the eye and ask which he would buy for himself, and nine out of ten he will tell you the "Rivett," but they sell the cheap lathes because they can make more money out of them. Just as in your own business, if you have anything on hand you do not throw it away, but sell it the first chance you get.

It is for the watchmaker to look out for himself, and investigate thoroughly before buying.

## FANEUIL WATCH TOOL CO.

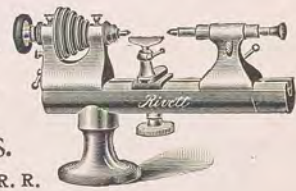


OFFICE:

474 Washington St.,  
BOSTON, MASS.

FACTORY:

Brighton, BOSTON, MASS.  
Faneuil Station, B. & A. R. R.



# HARDINGE BROS., 1036 Lincoln Ave., Chicago, Ill.

AS A ROLLER AND HAND REMOVER, this

Price,

eclipses them all.  
complete, \$2.50.

For



Roller Remover alone,  
\$2.00.

we make the finest quality ever made, AND GUARANTEE EVERY ONE. Price, 95 cents each (wire or wheel).

FOR LATHE REPAIRING AND FANCY OUTFITS, WE CAN PLEASE THE MOST CRITICAL BEYOND THEIR EXPECTATIONS.

Write for Catalogue, and send us your Jobbing. We make cones; put rubbers on draw-in spindles; true your lathes free with an order of ten chucks; true tapers in tail-stock spindles perfect; re-nickel and fix up anything.

# WATCH BOWS

All Shapes, Sizes and Qualities.

STANDARD SEAMLESS WIRE CO.

PAWTUCKET, R. I.



**R., L. & M. FRIEDLANDER**

30 Maiden Lane, New York

beg to state that their new

**Watch and Diamond Catalogue No. 53**

is now ready.

Have you our large Illustrated Catalogue of **Watches, Diamonds and Jewelry**, known as the **Monarch Catalogue No. 52?** This is a 512-page book filled with illustrations of the latest and most desirable goods for the Fall trade.

Send your business card and we will send you the above free of charge.

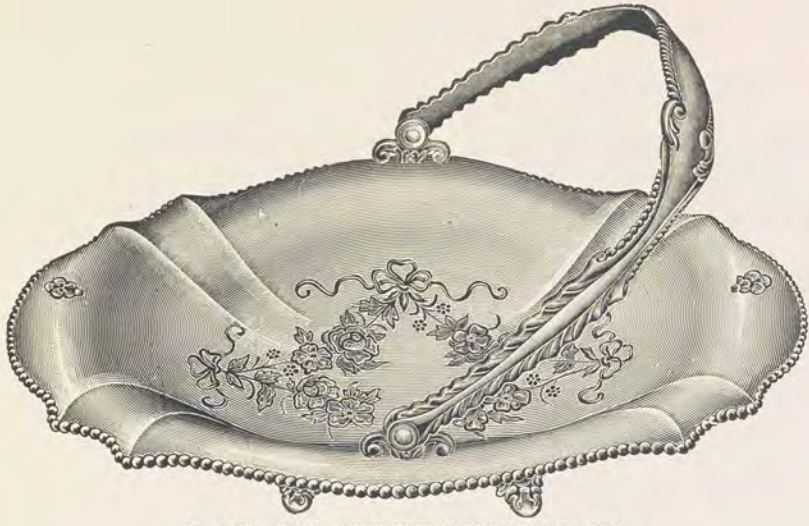
# SILVERWARE CUT GLASS FINE CHINA

ARE ALL GOING TO SELL THIS FALL, WHOEVER IS ELECTED.

WE CAN FURNISH ELEGANT LINES FOR SELECTION.

FULL LINES AT FACTORIES OR SALESROOMS, AND OUR BOOK,  
"NICE APPOINTMENTS,"

WILL FURNISH TIMELY SUGGESTIONS. WRITE FOR A COPY.



No. 1280 CAKE SATIN WITH BURNISHED FLUTES.



No. 346. 5-PIECE TEA SET ORNAMENTED, ENGRAVED AND GOLD-LINED.  
No. 1164. WAITER. 18-INCH TO MATCH ABOVE.

## PAIRPOINT MFG. Co.

FACTORIES  
NEW BEDFORD, MASS.

SALESROOMS  
46 MURRAY ST., NEW YORK  
224 WABASH AVE., CHICAGO  
220 SUTTER ST., SAN FRANCISCO  
TEMPLE BUILDING, MONTREAL



No. 2412. TUREEN.

“MAXIMUS.”

There are no more accurate timepieces made, whatever the price, than the “*Riverside*” movements made by the American Waltham Watch Company.

*The “Riverside Maximus”* is the most highly and artistically finished movement it is possible to make. By the use of Diamonds and very high colored Rubies in the jewels, very elaborate polish on the steel parts, the use of gold in various parts of the works and extremely delicate decoration of the nickel plates, the first cost of the regular “*Riverside*” movement is greatly increased. The pleasure of owning so perfect and artistic a watch amply compensates the wearer for the necessarily higher price.

*For sale by all retail jewelers.*

---

The foregoing advertisement appears in current issue of leading magazines.

“RIVERSIDE MAXIMUS” movements will be issued October 10th.

Manufactured and Warranted by the

**American Waltham Watch Company,**  
Waltham, Mass.





# THE KEYSTONE

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF THE JEWELRY AND OPTICAL TRADES.

B. THORPE, PUBLISHER.

**Subscription**—One Dollar per year, postpaid, to all parts of the United States and Canada; single copies, 15 cents. \$2.50 to Foreign Countries; single copies, 25 cents.

**Payment for THE KEYSTONE**, when sent by mail, should be made by a Post-Office Money Order, Bank Check, or Draft, or an Express Money Order. When neither of these can be procured, send the money in a Registered Letter. **All Remittances should be made payable to THE KEYSTONE.**

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

**Advertisements**—Advertising rates furnished on application. No advertisements but those of a reputable character will be inserted.

**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.

**Correspondence**—We invite correspondence on all matters of interest to the trade. Correspondents must invariably give their name and address. We do not, however, hold ourselves responsible for the opinions of our correspondents.

All communications should be addressed to

**THE KEYSTONE,**  
19TH & BROWN STREETS,  
PHILADELPHIA, PA.

CHICAGO OFFICE 103 STATE ST.

Index to Advertisers on page 819.

## CONTENTS.

	Page
AMONG THE TRADE, . . . . .	764, 766
EDITORIAL, . . . . .	749, 750, 751, 752, 753
HOW TO RUN A JEWELRY STORE, . . . . .	774
ITEMS OF INTEREST, . . . . .	813
MUSINGS OF A COUNTRY JEWELER, . . . . .	758
NEW GOODS AND INVENTIONS, . . . . .	756
NEWS LETTERS:	
Chicago, . . . . .	788 a, 788 f
Cincinnati, . . . . .	768
Cleveland, . . . . .	758
Los Angeles and Southern California, . . . . .	770
New York, . . . . .	760
Philadelphia, . . . . .	788 h
Providence and Attleboro, . . . . .	768
San Francisco, . . . . .	754
St. Paul and the Northwest, . . . . .	770
NUREMBERG, BAVARIA'S MEDIÆVAL CITY, . . . . .	773, 774
OPTICAL DEPARTMENT:	
Among the Opticians, . . . . .	787
Lens-Grinding for Prescription Work, . . . . .	785
Manual, . . . . .	781
Questions and Answers, . . . . .	783, 787
Reviews of Current American and English Ophthalmological Literature, . . . . .	777
Spectacles and Eye-Glass Frames, and How to Fit Them, . . . . .	777, 779
OUT-OF-SEASON ADVERTISING, . . . . .	760
POINTS ABOUT TRAVELING MEN, . . . . .	762
TECHNICAL ARTICLES:	
American Lathes and Their Attachments, . . . . .	788
Arts Allied to the Jewelry Trade, . . . . .	791
Clocks, . . . . .	789
Hairsprings, Springing and Adjusting, . . . . .	793
Watchmakers' Tools, and How to Use Them, . . . . .	795
Workshop Notes, . . . . .	801, 803, 805, 814
TO JOIN THE BIG PARADE, . . . . .	754
TWERZER'S TALKS, JOHN, . . . . .	797

OCTOBER is pre-eminently a stock-purchasing month, and as a serviceable preliminary to buying we would commend an exceptionally careful study of our advertising pages. They will suggest, instruct, and afford comparison of goods and prices that will redound to the benefit of the buyer, who can thus make himself acquainted in advance with what is most seasonable.

### Keeping Prices a Trade Secret.

WE doubt whether there is any longer a jeweler in the United States who does not know the meaning of the phrase "Prices according to Keystone Key," found in advertisements on these pages. This method of publishing prices was devised by THE KEYSTONE in response to trade solicitation, as an effective means of concealing net prices from the public while making them known to the trade. Advertisers in THE KEYSTONE who state prices in their advertisements as "according to Keystone Key" are as follows:

- Non-Retailing Co., Lancaster, Pa.
- Keystone Watch Case Co., Philadelphia.
- Benj. Allen & Co., 141-143 State Street, Chicago.
- Leys, Trout & Co., Prescott Bldg., John St., New York.
- Wm. I. Rosenfeld, 8 Maiden Lane, New York.
- W. O. Hutchins & Co., Providence, R. I.
- A. H. Pond, Syracuse, N. Y.
- Hobbs Bros., Buffalo, N. Y.
- A. C. Becken, 103 State Street, Chicago.
- Louis Manheimer, 103 State Street, Chicago.
- L. Witsenhausen, 37 Maiden Lane, New York.

If there is still any jeweler who does not know the meaning of the phrase "Prices according to Keystone Key," we will take pleasure in sending him an explanation on request.

### New Feature of Our Optical Department.

OUR optical readers will find in our Optical Department in this issue a new and most valuable feature. To give an idea of the excellence and practical worth of this new feature it suffices to say that it is in charge of Charles F. Prentice, president of the Optical Society of the State of New York and one of the best known writers on optics of the times. Mr. Prentice's duties in relation to THE KEYSTONE will be a careful perusal and critical digest of the optical literature of the month, as published in the various medical, ophthalmological and optical journals, and selecting therefrom for publication and review in THE KEYSTONE such articles or extracts as in his experienced judgment may be of maximum benefit to opticians. Optical science has become so rapidly progressive that almost daily we have some new development or invention, and to keep abreast of the times a knowledge of these is necessary. Mr. Prentice's monthly selections and comments will give such valuable knowledge, while saving our optical readers the expense which the purchase of the necessary volumes would entail and the time which might be uselessly spent in their perusal. Our Optical Department will thus cover the entire field of optical science as developed up to date, and make THE KEYSTONE more than ever indispensable to opticians.

### The Business Outlook.

WE are at last enabled to announce a material improvement in business. Even the political uncertainty could not withstand the enlivening effect of big crops, voluminous exports, hardening prices and the importation of some \$45,000,000 in gold, with more in sight. Confidence is daily strengthening, and, although an immense volume of business is being held back till after election, the present month promises to be comparatively active, and conditions are very favorable to such activity. As we write more machinery is being put in motion in the textile, iron and other industries, sales of raw material, wool, cotton, etc., to manufacturers are on the increase, and jobbers' sales of manufactured goods reflect a material improvement.

One of the chief features of the commercial situation during the past two months was a surprisingly big excess of exports over imports. Another was an improving foreign market for our securities. To these agencies is due the rapid and voluminous inflow of gold which has made the money market easier and rushed the Treasury gold reserve up to \$130,000,000. And this outward movement of agricultural products and inward movement of gold must, in the nature of things, expand and continue for some time to come. The basis of a good domestic business is thus being laid, and there is a general reference to election day as the date of our return to normal conditions. A general replenishing of stock during the present month is consequently a business duty without any appreciable element of risk.

THE latest official figures tell of good crops, and conditions at home and abroad favor good prices. While the wheat crop is not likely to exceed that of last year, which was 467,000,000 bushels, it is certain to prove much more remunerative. The wheat crop of Russia has disappointed expectations as to yield and quality, and exports from that country are likely to fall much below those of last year. India has had a smaller crop, and the shipments from that country have been comparatively light. Australia has had no wheat to spare during the present season, and the Argentine surplus has been nearly exhausted. New supplies from either country cannot be expected until after another harvest, which will not occur until January next. It will be seen, therefore, that the chief dependence of importing countries of Europe for nearly five months to come will be upon the United States. As a matter of fact, the shipments for the crop year to date have been fully fifty per cent. larger than they were during the

corresponding period last year. Remunerative prices for wheat would thus seem to be assured.

The corn crop is also large. While it is true that it deteriorated in condition to 91 in September against 96 in August and 96.4 in September last year, the deterioration implies no serious curtailment of the production of corn, which is likely to equal if it will not exceed that of any previous year. Reports speak equally well of the volume of the oat crop, and a falling off in the world's total militates in favor of good prices.

THE cotton crop shows a lower percentage of condition than for many years past, and reports indicate a short crop and high prices. In this connection it is worth noting that Secretary Hester, of the New Orleans Cotton Exchange, has completed his census of the Southern cotton mills, and shows that they are still increasing in number, capacity and production, in spite of the set-back the cotton industry has received in consequence of unfavorable financial conditions. In fact the South is rapidly gaining on New England in cotton manufactures, as the following figures of consumption for the past three seasons prove:

	Northern Mills.	Southern Mills.
1893-94 . . . . .	1,601,173	718,515
1894-95 . . . . .	2,083,839	862,838
1895-96 . . . . .	1,600,271	904,701

New England mills decreased their consumption last year 483,568 bales, and are actually using less cotton than two years ago, whereas the Southern mills are taking 41,863 bales more than in 1894-95 and 186,186 bales more than in 1893-94.

The reports of the tobacco crop are exceptionally favorable. The *New England Homestead* reports "the highest uniform quality and the largest yield per acre ever harvested," and says that the prospect for prices is better than it has been in any recent year. And reports seem to indicate the largest potato crop in the history of the country.

This synopsis of the agricultural reports is most encouraging. The farmers are in better humor than for some years past and will prove more liberal customers. It would be well for the jewelers to start in at once to enlist their attention by comprehensive stocks and advertising. Some sections, we regret to say, complain of yet another season of poor crops, but as a rule reports are of the kind that inspire confidence and promise a prosperous business.

#### Are Wholesalers Too Liberal With Credit?

WE recently heard it asserted by a retailer that the wholesalers are primarily responsible for many of the assignments of retail jewelers and the consequent forced auction sales that so demoralize retail trade. He said, in substance, that if the wholesale houses would restrict credits and not sell on such long time, fewer retailers would be tempted to overreach themselves and be compelled to sacrifice a great portion of their stock in order to meet their obligations. We take issue with the merchant who proclaimed this opinion. If we go back in spirit to the years prior to the present depression we find wholesalers liberal in credit-giving, but not more so, we believe, than a spirit of enterprise endorsed or competition made necessary; nor more so, indeed, as a rule, than business conditions justified. That numerous wholesalers have been too liberal with credit is an indubitable fact, but the grounds for a general charge are not apparent. It is true that the number of failures of retailers during the depression lends plausibility to the view that wholesalers were

not sufficiently conservative, that they were, in fact, recklessly eager to burden the retailer with an intolerable load, but it must be remembered that wholesalers are not prophets and could foretell neither the advent of the depression nor its length. As a result of the prolonged bad times and consequent failures, wholesalers are now ultra-conservative in giving credit and retailers are equally so in accepting it. In present conditions we are not justified in saying that both have gone to extremes in this regard; but as times improve a gradual loosening up on both sides would be in the line of good business.

#### Centenary of the "Farewell Address."

ON September 19, 1796, just one hundred years ago, was published the memorable Farewell Address of George Washington, and the present seems a peculiarly opportune time for Americans to read again in a patriotic spirit that historic document. To us who revere the memory and personality of the Father of Our Country, the history of certain events which preceded the publication of the Farewell Address is a painful story, but there is a moral in it for all statesmen who would have a lasting place in the hearts of their countrymen. Our readers who have read history will remember how unpopular Washington became with a faction during his second term, by reason of his policy of neutrality in the war between England and France, and how bitterly he was denounced for his dismissal of the French minister, who would violate such neutrality. The publication of the Jay treaty, negotiated with England in 1794, intensified the factional spirit and created a veritable storm of indignation. Washington was assailed with a malignity that is without parallel in American history. Newspapers were filled with scandalous articles about him, and the vilest calumnies concerning his private life and character were indulged in. "I would rather be in my grave than in the Presidency" was his own pitiful expression, and to Thomas Jefferson he wrote: "I am accused in such exaggerated and indecent terms as could scarcely be applied to a Nero, to a notorious defaulter, or even to a common pickpocket."

To the students of American history apologies for popular conduct will appeal in vain. We can well afford to be charitable, however, for history has done justice to Washington, and we return in spirit to that troublous time, not to pity the man or condemn his traducers, but rather to admire the stoical firmness and unselfish patriotism of the hero who refused to swerve from what he considered his duty to his country and who, from the depths of his heart, could have said to posterity: "Forgive my calumniators, for they know not what they do."

IT was under such vexing circumstances that Washington gave to the world his Farewell Address, and both the sentiments and the advice therein appeal to us with special force at this time. "As a very important source of strength and security cherish public credit," he said. And referring to the then existing factional spirit, the precursor of that now defunct sectionalism, the ghost of which is being so recklessly invoked during the present presidential campaign, he wrote the following words of truth and wisdom:

"The *North*, in an unrestrained intercourse with the *South*, protected by the equal Laws of a common government, finds, in the productions of the latter, great additional resources of maritime

and commercial enterprise and precious materials of manufacturing industry. The *South*, in the same intercourse, benefiting by the agency of the *North*, sees its agriculture grow and its commerce expand. Turning partly into its own channels the seamen of the *North*, it finds its particular navigation invigorated; and, while it contributes, in different ways, to nourish and increase the general mass of the national navigation, it looks forward to the protection of a maritime strength, to which itself is unequally adapted. The *East*, in a like intercourse with the *West*, already finds, and in the progressive improvement of interior communications, by land and water, will more and more find, a valuable vent for the commodities which it brings from abroad or manufactures at home. The *West* derives from the *East* supplies requisite to its growth and comfort, and, what is perhaps of still greater consequence, it must of necessity owe the secure enjoyment of indispensable outlets for its own productions to the weight, influence and the future maritime strength of the Atlantic side of the Union, directed by an indissoluble community of interest, as *one Nation*."

A century has revealed to us in all its completeness the wisdom of Washington's words and warnings, as it revealed the wisdom and patriotism of every act of this most noble character in history. As was written in his Napoleonic odes by that British poet-patriot, who died fighting for the liberty of a country other than his own:

Where may the wearied eye repose  
While gazing on the great,  
Where neither guilty glory glows  
Nor despicable State?  
Yes, one—the first, the last, the best—  
The Cincinnatus of the West,  
Whom envy dared not hate;  
Bequeath the name of Washington  
To make man blush there was but one.

THE Sultan of Turkey seems determined to maintain his right to the infamous title of "The Grand Assassin." Heedless of the indignation of the civilized world, he issues with fiendish frequency his murderous edicts, relying for immunity, with apparently good reason, on international jealousy. Outraged humanity has looked to England to stay the hand of the assassin, but she is powerless in the face of the open opposition of the other nations of Europe. Russia bluntly informed her that armed intervention to restrain the Sultan would mean an Anglo-Russian war, and the erratic Emperor of Germany reassured the Turkish potentate by forwarding him a photograph of his Imperial self.

This indifference of Russia, France and Germany seems in strange contrast with the eagerness of England, and is accounted for only by an innate distrust of British intentions. Nor is this distrust ill-founded. Years have elapsed since the Czar Nicholas I. described Turkey as "the Sick Man of Europe," and expressed a wish that his estate be at once disposed of, but England and France intervened. The Crimean war gave new life to the Sick Man and crippled Russia. In her present strength Russia, no doubt, remembers that trying period in her history. Another all-sufficient cause of European distrust of England's intentions is her continued occupation of Egypt. She went there avowedly for a temporary purpose, but all her subsequent acts, and her present advance up the Nile most of all, show that she means to remain in permanent possession. She thus compromised her reputation for fair dealing with sister nations, with the result that her government is now powerless to save the Armenians. The British press has been agitating an alliance with this country in the interest of Armenia, but

such a proposition has too much the appearance of an attempt to make the United States a catspaw to merit consideration, and it is, besides, contrary to our historic policy of non-interference in European international politics. The Czar is now on British soil, and the one hope for the unfortunate Armenians would seem to lie in the possibility of convincing him of England's utter disinterestedness. This may be a task of some magnitude, but an understanding that may lead to combined action is not unlikely.

AT the regular monthly meeting of the Missouri Retail Jewelers' Association, held September 9th, the following resolution was passed:

"As it has been the misfortune of several of the jewelers in the city of St. Louis and throughout the State of Missouri to make assignments and failures on account of the unusual depression in business, be it resolved, that we ask the aid of various creditors to assist us in preventing the stock of said jewelers from being disposed of by auction sales, as has been the case in the past, much to the detriment of the retail jewelers."

This resolution embodies a matter of much importance to the trade generally, and especially at this time which may safely be described as the darkness before the dawn. An auction, even of the clearance variety, the most harmless kind, though it may at times be the salvation of a particular jeweler, is always more or less of a trade demoralizer; but particularly hurtful is the auction sale of the forced variety, such as a failure or assignment may entail. Almost every article sold at a forced auction sale, mostly at a sacrifice, spoils a profit-making sale on some local jeweler, and, besides, the exaggerated idea of the cheapness of a jeweler's stock engendered in the public mind by such sacrifice sales militates for an indefinite period against the local trade and the prestige of their stock. In whatever steps may be taken to prevent, diminish the number or obviate the necessity of such sales the trade may rely, we think, on the help and co-operation of the creditors of the assigned concerns, for would not such creditors benefit equally with the trade?

#### Organizing Optical Societies.

THE organization of optical societies proceeds apace. The pioneer association, the New England Association of Opticians, has been followed in rapid succession by the Optical Society of the State of New York, the Optical Society of the State of Pennsylvania, the Optical Society of the State of Michigan and the Canadian Optical Association. There is a movement on foot to organize the Optical Association of the State of Ohio, and the question of organization is being agitated in Illinois, Alabama and California. The aims of all these associations are practically similar, viz.:

(1) The elevation and advancement of the profession, and the mutual intercourse and benefit of their members.

(2) The encouragement of opticians to perfect themselves in the study of optics and the scientific adaptation of lenses in correcting errors of refraction.

(3) The prevention of the haphazard and indiscriminate sale of spectacles by irresponsible and ignorant persons.

Worthy objects, these, and their attainment would be as much of a benefit to the public as to the opticians. That it is possible to attain them we have no doubt. There was a time when medi-

cal men looked upon dentists as parasites on their profession, as some of them look upon refracting opticians now, but the dentists soon succeeded in professionalizing their calling, to the untold benefit of dentistry and the public. So it will be with opticians. THE KEYSTONE will aid all it can in the work of organization, and the reports of the proceedings of each association as published in our pages will be a material benefit to the others. Such information will conduce to unity of action and more rapid progress.

#### Liability of Mercantile Agencies.

FROM being a vexatious inquisition into private affairs the mercantile agency has gradually developed into an established commercial institution of great value in the business world, and especially in this country of magnificent distances and widely scattered interests. As such agencies are no less fallible than any other human institution, and, of their very nature, more liable to be misled than many, their legal liability for reports made is a matter of interest to all. A decision recently handed down by the Supreme Court of Louisiana dealt with such legal responsibility. The office of mercantile agencies, the Court said, is to assist commerce, and facilitate as well as promote business, without injuring any one's credit. Their business is lawful. But their publications issued to subscribers generally are not privileged communications. If their reports, issued on printed lists, are erroneous, and thereby occasion damages, they may be held liable. Thus, publishing of a tradesman that he has been sued, if true, is not actionable; but if untrue, and is owing to negligence, it may give rise to an action. There must, however, be actual injury shown, and, ordinarily, only compensatory damages therefor will be allowed. And where an untrue report is published, simply by mistake, the party injured thereby should take seasonable steps to correct the error. It would only be reasonable for him to call on the agency for explanation and correction of the erroneous report. None the less, negligence on his part after the injury, by which it is aggravated, will not bar him from recovering damages for so much of the injury suffered prior to the negligence.

#### Color-Photography.

AFTER half a century of patient experiment and a vast expenditure of money, color-photography, the dream of many scientists, is at last a discovered art. And the achievement was well worth the labor and money expended, for, as a prominent scientist said, "it will revolutionize the art of photography and allow its use in hundreds of ways now impracticable." We have read for some years past of color-photographs in reds, blues and yellows by a complicated process, but the new process is simplicity itself, and by its aid no less than seventeen colors can be beautifully blended. The discoverers of the art are still experimenting, and it is expected that results will show that this process can be transferred to the art of printing. It will be only a question of time when a photograph can be taken and then printed from a half-tone plate on a specially prepared paper, so as to show up all the original colors true to life.

For the benefit of those who may be curious to know something of the process, we will say briefly that it requires a specially ruled screen and specially ruled paper. A multi-colored screen,

ruled by very fine lines, formed of dots or small particles, is employed. Fundamental colors of the spectrum are preferably used for these lines—say orange red, a yellowish green, and a violet blue. The screen is ruled with lines in these colors, about three hundred to the inch. This screen is placed in front of and in close contact with an orthochromatic plate, which is then exposed in the camera to the object to be photographed. The ordinary black and white negative is thus obtained in lines corresponding to the screen in register. From this negative a positive is made in the ordinary way on glass or paper. If now the screen, or a similarly ruled one, be laid on the positive, and moved until the positive and the screen are in register, the picture comes up in original colors.

Another discovery which makes more startlingly real the work of the photographer has also recently been patented. This is a peculiar finishing process, by which all semblance of the old flat-surfaced photographs is lost, and instead we have the dual roles of the photograph and cameo combined. All of the prominent parts of the features of the subject are accentuated in relief. The collar, necktie and coat lapel in a portrait stand out as if real, and the picture is singularly lifelike.

#### Mysterious Manifestation of Electric Force.

ALMOST daily we read of some wonderful discovery in electric science, and yet how strange it is that up to this time no one can answer the question, "What is electricity?" The men who make the dynamos and the men who operate them know how to produce electricity, but a Kelvin, an Edison or a Tesla, standing beside one of the big dynamos of the time, can only tell the "how"; the "why" is still a mystery. The purely experimental character of electric research is forcibly impressed upon us by Tesla's own description of his latest wonderful application of electrical force, which is said to solve definitely the problem of rapid transit motive power. "The whole secret," said Tesla, "lies in my discovery of what is known as the rotating magnetic field. What it is I cannot explain; neither is it explainable. I can only give the facts which have been discovered through experiment. The discovery of these scientific facts has done entirely away with the commutator, which has heretofore been necessary on all electric motors. This commutator, with its close adjustment, delicate and intricate parts, has been the cause of all the trouble. A slight injury to this commutator, which may arise even from the presence of a drop of water, may destroy the whole machine. The danger is now all done away with by discarding the commutator entirely. This result is accomplished by utilizing the rotating magnetic field, which simply means that if a circular metal disk is placed on an axle and brought near the electric coil it will revolve. The disk touches nothing except its own bearings, yet it revolves, and thus produces power. This power is what is used in the new motor."

Here is a force calculated to create a revolution in the industrial world, and yet Tesla himself confesses absolute ignorance of its origin. Great minds are now devoted to the development of electrical science and the investigation of electric force, yet the opinion prevails that the question, "What is electricity?" will be answered by some one yet unknown. The definition may, however, be the crowning achievement of the nineteenth century, and with such a basis for further research the mind is lost in wonder at the electric possibilities of the twentieth century.

### Some Oddities in Guaranties.

BEFORE the writer are three rolled-plate vest chains, fresh from three several factories. The pattern is the same in each, and to the untrained eye (their external appearance being the same) they are of equal value.

Let us suppose that he of the untrained eye is called Smith, and represents the Public—the final wearer of the chain which he will select from among these three.

If Smith were told to guess which of the three chains were the highest in price he would likely admit he was "up a stump," and would give it up. But the helpful man at his elbow catches sight of *the tags*, and nudges Smith. "Now Smith is all right," thinks the helpful one.

Smith reads the various tags as follows:

"Warranted for 7½ years."

"Warranted for 5 years."

"Warranted to give satisfaction."

"Which of the chains is the highest in price? Well, that's an easy one—ask me something hard! The one 'warranted for 7½ years,' of course. The longer the guaranty, the bigger the price—nothing simpler." And Smith pats himself on the back for a smart Aleck.

But Smith has never studied the vagaries of the modern guaranty. He is told this bewildering fact: The chain that is warranted for seven and a half years can be sold at retail, at a proper profit, for \$1.00; the chain that is warranted for five years, marked at the same percentage of profit, retails at \$1.25; while the chain that is warranted only "to give satisfaction," when sold at the same ratio of profit as the other two, must bring \$3.50 at retail! And Smith realizes his invincible ignorance and crawls away into obscurity.

When Smith gets his second wind it is likely that he will argue out the matter to himself in this way: "If, of three chains that look alike, the cheapest is the one that is warranted for longest wear, there must either be something the matter with the warranty of the cheap chain, or something the matter with the price of the expensive one." So he makes inquiry; he wants to fix a few more facts. He finds, maybe, that the manufacturer of the highest priced chain, who limits his guaranty only to the modest assurance that it "will give satisfaction," has been long established in a solid business, is backed by ample capital and enjoys the best reputation; and he further finds, maybe, that the maker of the cheapest chain, with the long-time guaranty, has only recently appeared in the manufacturing field, is sky-rockety in his methods and a speculator on "chances." He will argue to himself that if the old and abundantly responsible manufacturer, with an extended experience to guide him, feels that the furthest he can go in the way of guaranty on a \$3.50 chain (knowing the wide variety of *kinds* of wear to which chains are subject, on different wearers) is to warrant it in a general way "to give satisfaction" (such "satisfaction" to be properly measured by the *kind* of wear to which each particular chain is put), then the fact that another make of chain, costing only one-third as much, is guaranteed specifically for seven and a half years, does not necessarily argue in favor of the cheaper chain, neither on the score of value-for-price nor of price-for-value. As the chain that is guaranteed for five years must be sold at twenty-five per cent. higher price than the one that is warranted for seven and a half years, and the one that is only vaguely and indefinitely guaranteed "to give satisfaction" must be sold 350

per cent. higher than the seven and a half year chain, it begins to dawn upon Smith that *the strength of the guaranty is in the experience and the honesty of the guarantor*, his knowledge of values and his carefully-studied estimates of wear. And the fact that such a manufacturer continues to make and sell the higher-priced, indefinitely-guaranteed chain against the competition of the low-priced seven-and-a-half-year-guaranteed chain, is evidence to Smith that his conclusion is shared by a sufficiently large number of buyers to justify the continuance of the ultra-conservative warranty on the higher-priced chain.

But how about the maker of the chain which is guaranteed for seven and a half years, and retails for \$1.00? If the deliberate judgment of an older manufacturer, who puts stock of such quality into his chain that it cannot profitably be retailed under \$3.50, is that the guaranty on such a chain must be limited to the conveniently indefinite warrant that it "will give satisfaction," what is the foundation of a hopeful prospect of prosperity for the manufacturer whose chain retails for a dollar and is guaranteed by him for seven and a half years?

This is a staggerer for Smith, and he ponders it long and deeply. The truth then slowly percolates into the gray matter of Smith's brain: The guaranty is *printed on a tag*, and the tag will not wear seven and a half years, or seven and a half weeks, in the vest-pocket—the tag, in fact, is thrown away when the chain is fastened to the watch. Besides, memory is treacherous, and humanity is good natured and rather likes to be humbugged, and so "let it go at that."

And Smith thinks of these things, and in time becomes "a sadder and a wiser man."

WE have instanced rolled-plate chains, because the examples happened to be before us; but the same observations might have been written concerning other kinds of jewelry, silverware and kindred lines, and notably in the instance of Filled Watch Cases. Let the reader keep this in mind always, for his peace and comfort in the years to come: *The value of the guaranty is not so much in the liberality of the promise as in the character of the one who promises.* A hundred-dollar note of the Confederate government and a hundred-dollar greenback are the same in size, but the one is worth one hundred dollars and the other two cents a pound. A paper guaranty on a chain, a paper guaranty in a Filled Case, is thrown away or lost, and the reckless manufacturer fetches a sigh of relief; the manufacturer who is *confident* of the quality of his product, and who is gladly willing to secure to the ultimate buyer the full measure of the protection of the guaranty, *stamps on the thing itself* the extent of the guaranty, and thus forever fixes responsibility with identity.

The seven-and-a-half-year-guaranteed chain which retails for a dollar is not thus stamped; and only one manufacturer of Filled Cases has the courage to stamp 14 K. Filled Cases "Warranted for 20 years," 10 K. Filled Cases, "Warranted for 15 years," on the metal of the Case itself. It is a significant fact, in connection with relative popularity in cotemporary Filled Cases products.

IN connection with the foregoing, the following communication from a subscriber has pertinent interest:

—, July 18, 1896.

EDITOR THE KEYSTONE:

A few weeks ago I had a "scene" with a customer; and as the result of that controversy I resolved upon a practice which I hope will prevent similar controversies in the

future. I want to submit the matter to your judgment as to the question of business policy.

A customer brought a rolled-plate bracelet that I had sold her two years before and demanded another in exchange, as she claimed I had warranted it for five years and the plating was worn through. I knew I had *not* warranted it for five years, as I had always been skeptical of the quality of this make, because of its low price in contrast with similar patterns in other makes; but I finally exchanged the bracelet for her, fearing the injury from her sharp tongue among her friends. But it taught me a lesson; and now whenever I warrant a piece of jewelry for any length of time I scratch on it, in some place that does not hurt its appearance, "3. 5. 96-2"—which means *Mar. 5, 1896—2 years*. It prevents any question as to when the piece of goods was sold, and how long warranted; and it enables me to go back to the makers, in case *they* have guaranteed it for any specified time, with convincing evidence of my claim upon them.

I similarly mark all Filled Cases on the date of sale, on the flange on the "center," where the mark is hid by the movement. The guaranty papers are soon lost out, and there is no *certain* way to protect the buyer (and myself) except by thus recording the date of sale on the case itself; and inside of five, or fifteen, or twenty years, according to the manufacturer's guaranty, my customer "has" me, just as I "have" the manufacturer, and there is no getting away from it. What do you think of the plan?

Yours truly,

It is an excellent plan—the best possible; but if our subscriber's practice becomes universal among jewelers, we fear the making of 7½-year-guaranteed chains to retail at one dollar will suddenly cease—and what an improvement will be forced in the quality of certain makes of Filled Cases! Mr. —'s plan is one that all responsible and honest manufacturers will heartily encourage.

### Accuracy of Statement.

STATE the fact exactly. One of the most troublesome and annoying experiences with which the merchant has to do is the necessity for correcting or revising his own previous statement, or the effort to regain safe ground after having been misled by the slipshod and reckless statement of another. If all men took special pains to be absolutely accurate in their statements of facts, or in quoting conversations, or in their relation of determined purposes, an immense amount of trouble would be saved to themselves and to those with whom they do business.

Inaccurate statements are most frequently uttered by persons who are habitually inclined to exaggerate; who wish to make more of an impression, for the sake of sensation, than the actual facts would warrant; who desire to call attention to themselves, in a spirit of egotism and vanity. An exaggeration, or an intentional misstatement, whether the reason for such misstatement be deliberate deceit or merely a mental astigmatism, is just a step this side of a lie.

But only a few men who habitually make inaccurate statements deserve the accusation of habitual lying. Their fault, usually, is carelessness—not weighing their words—not observing correctly and reporting their observations photographically. The trains of their mental processes are not in gear; the wheels are dirty and need brushing out; the pivots need oiling. They do not have orderly minds. They do not *digest* the facts which come to them, in order that the nutrient portion may strengthen and benefit them; they do not see things except with a glancing and imperfect vision. Their utterances, their relation of circumstances, are in consequence "half baked"; the t's are not crossed, the i's not dotted, in their narrative.

The inevitable result of this practice of making loose statements, of speaking of facts in a haphazard manner, and of giving voice to half-formed opinions based on misinformation, is to unfavorably affect the credibility of the speaker. When it is found that he is habitually inaccurate in his statements his assertions are afterward discounted from their face value. His assurances are taken

with a mental reservation; his positive declarations do not positively *declare* to his hearer. With the best *intention* to be honest, the man deceives all who implicitly believe him; with the sincerest desire to deserve the good opinion of the people, he steadily descends in their estimation, and loses the public's respect which would be easily his except for his carelessness in stating the exact facts in all things.

#### The Commercial Value of a Cheerful Disposition.

THE cheerful merchant moves in a cheerful atmosphere, and all who come into the sunshine of his presence are more or less warmed by the sunny influence of his example. His clerks experience a thrill of pleasure at his approach; his customers are lifted for a moment out of the gloom of dullness and the sense of bad trade conditions, and they forget, temporarily, the hard grind of everyday cares. He is a missionary for good in his community.

Sourness and bluntness are not necessarily the outward evidence of mercantile wisdom and commercial ability. Gruff merchants have succeeded; but it was in spite of their gruffness, not because of it. When a man has reached a *very* great success he often puts on a frigid or severe manner, for the convenience which such a forbidding armor affords in repelling the professional "dead beat," the multitudinous schemers, the fake philanthropists and the habitual beggar; but the penalty of thus assuming "the frozen face" is that it cannot be as easily thrown off as put on, and his clerks, his customers and his family must endure the gruffness which has been acquired through habit.

But there are few very great successes. The vast majority of merchants are mediocre; and mediocrity needs to study ways and means to hold its place among the mass of the human average. If bluntness is ever justified to the eminently successful (which is doubtful), it certainly is bad policy with the average merchant, the everyday man.

Curtness, gruffness, sometimes pass for the marks of individuality, moral strength, integrity. Such a conclusion is a mistake. It is counterfeit theory—it is coin that will not pass, when human values are correctly estimated. There is no virtue in bearishness.

A cheerful manner is an invitation. It says, "Step up to the counter, and you'll be treated fairly." It says, "I would like to sell to you, and am confident that you will be pleased with your purchase." It suggests an easy conscience; and if the conscience of the seller is easy, the goods *must* be right in quality and price. It appeals to the universal preference for smiling instead of frowning; it appeals to that sentimental side of human nature which abounds with "goodwill to all men." It is the "touch of nature" which "makes the whole world kin."

It is a trite observation that molasses catches more flies than vinegar; but it is none the less true for its triteness. Many a halting buyer is moved on to the final step in the purchase by the pleasant manner of the salesman; many another decides to "look further" because of the cold, unsympathetic or over-solemn visage which faces him. The cheerful salesman leaves a present impression; stimulates a resolution on the part of the buyer to call again when in need; and in numberless instances sells the article at a higher price than it could be bought of The Bear next door. In such a case, cheerfulness is an asset of the business; is a form of capital; can be reckoned at a direct

commercial value in dollars and cents. The sour, grumbling salesman is tremendously handicapped in competition with his sunny rival.

In times like these it is especially desirable to cultivate a habit of cheerfulness. If your bills are due, and expenses are greater than profits, and the whole horizon of trade is dark and lowering, do not advertise these sad facts in your face and manner so that all your customers may read the unhappy tale. Keep them for your desk after store hours—and lock them behind you, in the store, when you go home to your family! It is depressing to buy of a man whose knit brows show a prepossessing anxiety of some sort, of any sort. "Nothing succeeds like success"; nothing is so helpful to failure as the *appearance* of failure. Be as cheerful, before your customer, as though trade was booming and profits abounding; and you may feel justified in your deliberate hypocrisy, for such a policy of cheerfulness, under all circumstances, is fundamental in the success of the average merchant.

#### Pegwood and Pith.

CAUTION the *joking* salesman. He will "just suit" a considerable number of customers, who will be entertained by his "That reminds me," etc.; but he will offend others who don't appreciate funny stories in the mouth of a clerk. When one can "joke" with another it implies a level in the social status of the two, or a right of the one to *assume* that such a level exists. However wrong such an idea in a democratic people, yet there undoubtedly exists a certain distinction of class in the minds of many people—a differentiation between the two sides of the counter; and to whatever degree the salesman may be irritated at such an unjust distinction, it isn't his business to correct the ethics of society at the expense of his employer. Put up with the wrong and manfully endure the injustice: you cannot really suffer if you retain your own self-respect. Guard against the familiarity which breeds contempt, and wisely secure the dollar while you may.

Personal cleanliness should be absolutely required of the salesman. If cleanliness is not next to godliness, as the maxim declares, it is at least not far off from success in the jewelry trade. From the very nature of his stock in trade, the jeweler should be presentable and neat, that he may suggest the fitness of his choice of vocation. He should live up to his surroundings; should shine like his diamonds and shimmer like his silver. Dirty finger-nails are an argument against the sale of the ring which is held out to the customer; for they discourage the fancy and put evil suggestions into the judgment. All other things being equal, the man who shaves daily will sell more goods to dainty women than he of three-days' growth of stubble. Soiled linen will do for the gardener, but not for one who deals in the flowers of art. "Look your station," wrote Chesterfield; and it is sound advice for the jeweler as for the social aspirant.

What is the reason that so many men who are really truthful in their every-day speech and perpendicularly honest in their business, are nevertheless perversely "crooked" when they are in the throes of advertisement-writing? "Unparalleled Reductions," "Greatest Value Ever Offered," "Largest Stock in Utopia," etc., differ in kind but not in degree from a simple, naked lie.

One would think, sometimes, that advertising was really destructive to the moral sense. It must be purged of these tendencies toward extravagant exaggeration and untruth. The advertisement should faithfully reflect the probity of the dealer in his every-day character.

Always keep something in reserve. Do not give the *whole* argument at once, but keep back a point or two, to answer objections and to push the hesitating listener over the edge of conviction. When you are engaged in making the sale, the little *additional* point, not mentioned in the first exhibition of features, will likely convert the buyer and effect the sale. Keep something in reserve. It isn't prudent to wholly depend upon one suspender.

"Solomon said in his haste, 'All men are liars.'"

Verily, had Solomon lived to-day, and listened to the shallow speeches of some political campaigners, he might have repeated the observation at his leisure!

Demand generally regulates supply, but not always. Sometimes a novelty in the supply creates a new demand. We have seen seven-jeweled movements so scarce that the mere *scarcity* created a demand, simply for the satisfaction of having the scarce thing. And the teller of a bank which was undergoing a "run" would confess, between his gasps, that alas! demand at the paying window did *not* regulate supply at the receiving window. It is a good rule which works half a dozen sorts of ways.

When you are selling an article, remember that the purchaser regards the *price* while he *is* buying, but the *quality* after the article is in *his* possession.

The initials "O. K." were first used by Jacob Astor, the founder of the family of millionaires, and were thus marked on bills that were presented to him for approval of credit. He *thought* he was affixing the initials of "All Correct," but a neglected education led him to think of the words as *Oll Korrekt*.

The great thing, the anxious matter, is not so much the question as to where we stand, as in what direction we are moving. Standing still is generally of negative value in the large concerns of life; it is only a point more commendable than going backward; it blocks the way of progress and advance.

The only failure a man ought seriously lament is failure in cleaving to the purposes he sees to be best.

If the 20-year Filled Case could talk, what a sermon it would preach to the Electro-Gilt Case on "The Folly of a Vain Imitation!"

Examine the methods of your rival who has achieved a quick success. You may learn something. Be candid enough to admit to yourself that you do not know it all, and study the successful examples.

One half the people pass their lives in thinking how they shall get a dinner, and the other half in thinking what dinner they shall get; and the former are much less injured by occasional fasts than are the latter by constant feasts.

## To Join the Big Parade.

**Chicago Jewelers Enthusiastic over "Chicago Day" Sound Money Demonstration.—Their Stores will be Closed and a General Holiday Observed.**

The Western metropolis will celebrate "Chicago Day," October 9th, the twenty-fifth anniversary of her great fire, with a grand parade and demonstration for sound money. All branches of trade and manufacturing will be represented. Conservative estimates put the number of men in line at 50,000, while the enthusiasts claim there will be 100,000. That it will be a splendid demonstration no one can doubt.

The executive committee of the Chicago Business Men's Sound Money Association have cordially invited the jewelry and kindred trades to participate in their demonstration on October 9th, and in response a meeting of all those interested was called for Wednesday afternoon, September 23d, in the rooms of the Chicago Jewelers' Association.

It was a representative and enthusiastic meeting, with a good attendance from all branches of the trade. President Hardy, of the Jewelers' Association, called the meeting to order and stated its object in a few well-chosen words. A permanent chairman was then chosen, in the person of Grove Sackett. H. M. Carle was next elected secretary.

The arrangements and the object of the parade were thoroughly discussed. It was the sense of the meeting that a committee of fifteen be appointed, to take entire charge of the arrangements and to have power to appoint as many sub-committees as they might see fit, so that all branches of the jewelry trade may be organized and represented. Lem. W. Flershem was the unanimous choice of those present for the chairmanship of this committee, and he was chosen amid his protests and with a deal of good-natured enthusiasm. Mr. Flershem chose the following list of gentlemen to serve with him:

### GENERAL COMMITTEE.

L. W. Flershem, *Chairman.*  
Col. W. B. Keeler, *Marshal.*  
F. A. Hardy, Sol. Kaiser, C. C. Offerman,  
W. H. Gleason, W. G. Prall, Will. Juergens,  
J. W. Talbot, M. N. Burchard, Morris Berg,  
Lloyd Milnor, T. Y. Midlen, Frank Lewald,  
H. M. Carle, *Secretary.*

### SUB-COMMITTEES.

*Finance.*  
Sol. Kaiser, F. A. Hardy, Morris Berg.  
*Membership.*  
W. H. Gleason, Morris Berg, H. M. Carle.  
*Literature.*  
F. A. Hardy, T. Y. Midlen, W. Juergens,  
W. G. Prall.  
*Conference.*  
M. N. Burchard, Col. W. B. Keeler,  
C. C. Offerman.

It was further decided to hold another meeting on Saturday, September 26th, at 3 P. M., to which all the jewelry and kindred trades should be cordially invited. A circular, signed by the leading jewelry concerns doing business in Chicago, was mailed to all the trade.

### Meeting of Saturday, September 26th.

The adjourned meeting for September 26th was called to order by L. W. Flershem, chairman of the general committee. There was a large and enthusiastic attendance. After stating the business of the meeting Mr. Flershem called for the report of the finance committee. Sol. Kaiser, the chairman, reported something over \$600

as having been subscribed, but thought it best to not make his full report until near the close of the meeting, as there were a number present who had not as yet made any subscription.

The conference committee were next called upon for a report. W. N. Burchard, chairman, responded by saying that a band had been secured and an order given for 1,000 uniforms. Also that they had secured the assurance from the chief marshal of the day that the jewelers should have one of the most desirable positions in the parade.

Secretary Carle was next called upon for a report. He reported that he had sent out to the trade 671 circulars, and that he had received 274 replies up to date. The number reported for the parade was 1029, of which 415 came from manufacturing, 207 from the jobbing trade, and 407 from the retail trade. The meeting voted this an excellent showing, and it was freely predicted that the number of marchers would easily reach 1,500 men on the day of the demonstration.

Another meeting was appointed for Saturday, October 3d, when the committee expected to be able to report the arrangements as completed.

*"The Keystone has given the best of satisfaction to our students, and they all look forward to its coming anxiously."—Parsons' Horological Institute, Peoria, Ill.*

### Railroad Indebtedness.

During this period of anti-corporation invective, those who make our railroad companies the subject of their philippics may find food for thought in the following information from the current number of the *Review of Reviews*:

"The railroads of the United States are mortgaged to the extent of about \$6,000,000,000, and they have other indebtedness (which it costs them as much or more to carry, and which must sooner or later be covered by bonds) to the extent of nearly \$1,000,000,000 more. It must cost them at least \$300,000,000 a year to pay interest on their indebtedness. There is no way to escape any of this burden of debt, except through the door of bankruptcy, with the sequel of receiverships and reorganizations. Already, within a few years, a great part of the railway systems of the United States have got rid of portions of their indebtedness by this very process. Otherwise, the total volume of railway bonds mentioned above would be considerably greater than it now stands. At present, the railroad companies of the United States are obliged to make each mile of road in the whole country earn and pay interest on an average fixed debt of about \$40,000—wages and other operating expenses having been met—before anything can be given to the stockholders." Under these circumstances sympathy rather than denunciation would seem to be the desert of the stockholders.

WHEN the jeweler, says *Brains*, said he had a clock that would run fifteen days without winding, the Cheerful Idiot wanted to know how long it would run if it were wound.

When a merchant says his business is running along all right without advertising, you may safely ask him the same question. And you may depend upon it that good advertising wound it up some time in the past, and that it is running down as sure as guns. Also that when a business clock is allowed to run without winding until it is completely run down and pegged out, no amount of expert winding can make it keep good time again.

## San Francisco Letter.

J. P. Trafton, the well-known jobber of Los Angeles, Cal., has found it necessary, owing to increasing business, to secure more commodious quarters, and in consequence is now fitting up a new office in the rear of his present building, 120½ South Spring Street. When finished it will be one of the finest on the Coast. Mr. Trafton has added a silverware department to his regular lines this year.

Mr. Klune, of Klune & Floburg, Sacramento, Cal., was in town last month, purchasing goods for fall trade.

Harry Nordman, of the Standard Optical Company, 121 Post Street, has withdrawn from the firm, which will move from its present location to Kearny Street, and there be conducted as a wholesale and retail company. Isadore Nordman has bought a half interest. The present proprietors are Adolph and Isadore Nordman.

Mr. Levy, representing Eppenstein & Co., of Chicago, was in town last month, and reported a fair trade.

C. H. Schnoor, a very competent watchmaker, who is now located at 126 Kearny Street, room 12, is doing work for the local trade. Previous to his location here he was leading watchmaker for Tiffany & Co., New York. Ill health was the cause of change of address.

Al. Ewert is the manager of the Ukiah Jewelry Store, successor to Sam. Moore.

Alphonse Judis has just returned from a trip on the road. He reports a fair business and a better feeling through the country.

Charles Hadenfeldt has returned from his trip East to purchase goods. He has a very fine line of silver-mounted goods, which he secured from Eastern houses.

John G. Fox, Carson City, Nevada, contemplates erecting a fine, large building on his lot, which is on the main thoroughfare of that city.

The Salinas jewelers feel highly elated over the fact that Claus Spreckels has decided to establish a large sugar refinery at that place, which will increase the population and therefore increase business.

Chas. P. Shellberg, of Los Angeles, Cal., has accepted a position with H. C. Warner, of Fresno.

John H. Prodder, Grass Valley, Cal., died the middle of last month. The deceased was the pioneer jeweler of that place. His son is carrying on the business.

H. F. Wichman, of Honolulu, is in this city for a stay of four weeks. He is buying goods for fall trade.

Stanley Glidden, of 120 Sutter Street, is the agent for Coddling Bros. & Heilborn, of North Attleboro, Mass. He has a complete line of samples at his office, and will call on all the trade on the Pacific Coast. Jewelers visiting San Francisco are invited to call at the office and inspect the new fall line.

On September 18th a thief deliberately walked up to the window of the store of H. Wachhorst, Sacramento, Cal., and when at a distance of about three feet hurled a rock at the big plate glass with all his strength. He then seized two trays of diamonds, but only succeeded in getting one of them out. With this he started up the street, passing through a crowd of fifty or one hundred people, until he fell. When captured he had no tray, and it is believed he passed it to a confederate during the race. A number of the diamonds that fell on the street were returned. A similar attack was made on this store three years ago.

The Chicago Ophthalmic College began a regular session in San Francisco on September 14th under the personal supervision of H. M. Martin, M. D., assisted by Miss Scofield, his sister, and W. D. Fennimore, of the California Optical Company. The opticians and oculists of the Pacific Coast, desiring the most thorough course possible upon the subjects of applied optics, ophthalmoscopy and the technique of the ocular muscular system, cast about to find the most thorough instructors, with the result that Dr. Martin and faculty were persuaded to give this course. The following oculists and opticians are in attendance: Dr. E. F. Card, Dr. H. W. Hunsaker, F. C. Chinn, J. W. Davis, B. M. Stevenson, J. G. Spicher, Chas. L. Hogue, San Francisco, Cal.; Henry Lissner, O. Granicher, Los Angeles, Cal.; C. H. Wood, A. E. Springborg, Dr. P. T. Carrington, Oakland, Cal.; H. C. Warner, Fresno, Cal.; L. P. Dorais, Eureka, Cal.; T. F. Farrell, Marysville, Cal.; C. P. Kryhl, Santa Ana, Cal.; Fred. Bars, Placerville, Cal.; B. R. Klune, Sacramento, Cal.; Ward McKim, San Jacinto, Cal.; John Hood, Santa Rosa, Cal.; A. J. Bailey, Ontario, Cal.; S. F. Ackerman, Yreka, Cal.; A. A. Schuchard, Salinas, Cal.; A. O. Gott, Alameda, Cal.; J. O. Watts, Eugene, Oregon; H. F. Wichman, Honolulu, Hawaiian Islands; Emil Schober, Port Townsend, Wash.; C. L. Luckey, Eugene, Oregon.

# Benj. Allen & Co.,

141 & 143 State St.,  
CHICAGO, Illinois.

755

The Lowest Price  
16-Size Adjusted Movement  
in the Market.



No. 107 Open-Face Elgin Movement.

16 Size, Gilded, 15 Jeweled, Adjusted, Patent  
Regulator, Breguet Hairspring, Compensated  
Balance, Open Face, Pendant Set.  
Price of Movement, **\$13.00**  
Reduced from \$19.00.

According to Keystone Key.

We have O. F. Cases to fit,  
in Gold, Gold Filled,  
Silver and Nickel,  
all Grades and Prices.

The "B. A. & Co." Catalogue of Watches, Jewelry, Clocks, Etc., for 1897, will be ready for distribution **October 15th**. Will be larger and more complete than any Catalogue we have ever issued. If you do not receive a copy, please write.

**BENJ. ALLEN & CO.** (Wholesale Only),  
CHICAGO, Illinois.

## The Queen Novelty

*of the Lamp Season of 1896.*

The

## Candelabra Banquet Lamp

Gold-Plated.



BEAUTIFUL SPECIMEN OF LAMP CRAFT, designed for high-class trade. To be "up to date" your assortment should not be without a sample of these goods. Candelabras have always been a feature of every high-class dealer's stock, and an increase of the illuminating power by the addition of the banquet feature will insure their popularity. Three styles made. WRITE FOR PRICES AND COLORED ILLUSTRATIONS. We will furnish electros for newspaper advertising.

## The American Lamp & Brass Co.

Factories—Trenton, N. J.

New York, No. 44 Park Place.  
Philadelphia, No. 930 Arch St.

Chicago, No. 5 Wabash Ave.  
San Francisco, No. 109 California St.



## 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.]



### Handsome Hall Clocks.

Our illustration shows a hall clock which is typical of an unusually large assortment of these clocks which Bawo & Dotter, 26-32 Barclay Street, New York, have put at the disposal of the trade. It is eighty-nine inches in height, and made with full door or bevelled glass panel. It strikes the hour and half hour on a gong, and can be had with or without moving moon wheel. The cases of the Bawo & Dotter assortment of hall clocks are in a great variety of beautiful designs, in oak or mahogany, carved, inlaid, or trimmed with bronze ornaments, and are all made in this country. The movements comprise Elliott's, and all other best English makes in weight, chiming and hour and half strike, loose, or fitted to fine and artistic dials. Always leaders in this class of goods, Bawo & Dotter seem to have this season surpassed themselves. Those of the trade interested in hall clocks will profit by an early acquaintance with the timepieces of this class illustrated in a catalogue just issued by the firm.

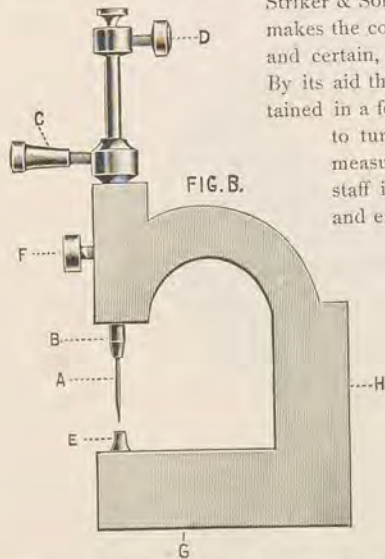
### Useful Little Ferrules.

A useful and convenient contrivance is the Schirmer ferrule for mending riding temples in spectacle frames, shown in our illustration. These ferrules are made in silver and gold, are seamless, and assorted in three sizes to fit any temple. They make a neat and durable job. In using them, taper the broken ends of the temples as shown in the illustration, put on the ferrule and soft-solder. It takes but a moment, and is an effective mending.



### A Balance-Staff and Pivot Length Gauge.

What seems to us to be a peculiarly efficient tool is shown in our illustration. It is Striker's balance-staff and pivot length gauge, patented and manufactured by Geo. H. Striker & Son, 1883 Niagara Street, Buffalo, N. Y. This tool makes the correct fitting of the balance-staff extremely simple and certain, and correctly locates the balance or roller seat. By its aid the length of a broken-off balance pivot can be obtained in a few seconds, and once the staff is placed in chuck to turn pivot, it need not be removed to make length measurements, as all measurements are taken while the staff is in chuck. In making a new staff, it is a simple and exact gauge for finding the extreme length the staff should be, and retaining that measurement, so comparisons can be made at any time during the operation of building a new staff. Its lightness and adaptability for gauging length and different seats on staff correctly without removing the staff from chuck, will appeal to every thorough workman who knows the objection of taking the staff out of the chuck to make measurements and trying to replace it. This tool has been pronounced a very admirable one by skilled workmen, and a veritable labor-saver. Any jeweler to whom the making of



measurements by this tool is not perfectly clear can get on request an explanatory circular from the manufacturer which will describe in detail the entire method of procedure. Such circular will impress still more forcibly the mechanical simplicity of the tool.

### Commercial Travelers' Fair.

One of the greatest fairs of America will be that of the Commercial Travelers' Fair. Its machinery is already moving in good working order, and the fair will be opened at Madison Square Garden, December 15th, and continue to and including December 28th. The object of this fair is to raise a fund of \$150,000 with which to complete the Commercial Travelers' Home, now in progress of erection at Binghamton, N. Y., by the Commercial Travelers' Home Association of America, of which George E. Green, mayor of Binghamton, is the president.

The scheme of the fair is being evolved by Colonel A. B. de Frece, its director general, who has promised to make this fair the crowning effort of his life. Director-General de Frece, with a large staff, is already busily engaged in offices engaged for the fair at the Twenty-Sixth Street side of Madison Square Garden.

An honorary committee of one thousand has been named, and cordial and hearty acceptances from hundreds have been received. This committee includes some of the best known men in the United States. The officers of the Honorary Fair Committee are: president, Chauncey M. Depew; vice-presidents, William L. Strong and Roswell P. Flower; secretary, R. G. Dunn; treasurer, George E. Green; counsel, Messrs. Hoadley, Lauterbach & Johnson; lady chairman, Mrs. Thomas C. Platt.

It will be the aim of Colonel de Frece to invest the Commercial Travelers' Fair with a distinct and attractive flavor of novelty and originality. As a public amusement it will be well worth visiting by the most disinterested.

In connection with the fair, December 1st has been designated as Commercial Travelers' Day throughout the United States. A committee has been appointed and is now making arrangements through which in every city of over

### New Watch Movements.

The latest addition to the watch movements now on the market are two new grades just issued by the Elgin National Watch Co. These are in three sizes, 18, 6 and O. One of the grades is a seven-jeweled nickel, and the other is a sixteen-jeweled nickel. The seven-jeweled movement (illustration No. 175) has a compensation balance, full finished regulator and breguet hairspring. The sixteen-jeweled (illustration No. 168) has micrometer regulator, gold index, compensation balance, Breguet hairspring, and soft enamel dial. These movements have all the qualifications, in excellence and price, of quick sellers, and the trade will find it profitable to make their early acquaintance.



No. 168.



No. 175.

### A Beautiful Banquet Lamp.

Our illustration shows what its makers have appropriately named the "queen novelty of the lamp season of 1896." It is a beautiful candelabra banquet lamp made by the American Lamp and Brass Co., Trenton, N. J. The illustration, however, gives but a faint idea of the great beauty and richness of this triumph of lamp manufacture. The design, which is manifestly the work of a thorough artist, is admirable both in its conception and execution, while a gold-plated finish lends an impressive luxuriousness of appearance. This is but one of the many novel and artistic creations in lamps which the American Lamp and Brass Co. is placing on the market, and the opening of the lamp season with such a display as can be selected from this company's products would seem to be a most profitable as well as seasonable exhibition of enterprise. Jewelers are yearly handling such side lines as lamps in greater quantity, and there are few that harmonize so well with the regular jewelry stock. The lamp season is now here, and delay in procuring a stock means so much loss.



### A Hunting Ring.

A timely and salable novelty is a finger ring, the design of which is emblematic of the gunning season. It is manufactured by W. O. Hutchins & Co., Providence, R. I., in sterling silver and solid gold, and should appeal to the tastes of all devotees of the dog and gun. As shown in our illustration, this ring represents a hunting scene, with a hunting dog just clearing a three-bar fence. By his sudden jump he has started a quail from cover. The shot-gun against the lower rail of the fence makes the scene a complete and typical one. The die work, chasing and carving are all beyond criticism.



### Another New Watch Movement.

Another new movement of American manufacture will be introduced to trade notice during the present month by Louis Manheimer, 103 State Street, Chicago. It is known as the "Atlas," and is a wonderfully cheap movement considering its merit. Our illustration shows this movement in six size. It is seven-jeweled, stem-wind, quick train, nickel, damaskeened and pendant-set. These movements, the price of which would seem to assure for them a good sale, will be ready for delivery by jobbers to the trade about the middle of the month, and it will pay the jewelers to get acquainted with them at once.



10,000 inhabitants the hotels, the theatres and leading stores will donate a percentage of their receipts for the day to the fair for the Home's building fund.

Merchants, recognizing the importance of the fair as a rendezvous for commercial travelers, merchants and buyers, are already anxiously inquiring for space and favorable locations in which to exhibit trade novelties for 1897.

### It Brought Results.

Bobbs: "You can say what you like about advertising, but I can tell you it has repaid me threefold."

Dodds: "Why, what are you talking about? What did you ever advertise?"

Bobbs: "About four years ago I put an ad. in the paper for a lady typewriter and I now have a wife and two children. Isn't that threefold?"



# ROYAL WORCESTER

757



SHELL PLATE 1416.  
8½ inches in diameter.



PAIR OF CANDLESTICKS.  
6 inches high.



RIBBED PLATE 1589.  
6¾ inches in diameter.



SUGAR & CREAM 1613.  
2½ inches high.



EMBOSSED PLATE 1588.  
8 inches in diameter.



BISCUIT BOX 1412.  
7¼ inches high.



COFFEE POT 1613.  
9 inches high.



TEA POT 1613.  
5¼ inches high.



CHOCOLATE POT 1613.  
9 inches high.



HEART TRAY 1792.  
5¼ inches high.

The line displayed above is done on a beautiful Stained Ivory Ground, the sprays of Flowers are delicately painted in natural colors, and the Edges and Mounts are richly gilt.

We have also in the same decoration a complete assortment of Butter Dishes, Cheese Dishes, Sardine Boxes, Compotes, Trays, Fruit Dishes, Salad Bowls, Tea Caddies, Kettles, Sugar Bowls, Creamers, etc., etc.

DOULTON DELFT, new shapes.

Beer Mugs and Steins, Loving Cups, Pots and Pedestals, Cigar Ash Trays.

Novelties in Coalport, Crown Derby, Royal Worcester, Doulton, Cut Glass, Crescent Ware, Minton, Copeland, Wedgwood and Pointon.

*Real and Imitation Bronzes, Jardinieres, Pedestals, Sevres Vases, Gilt Regulators, Marble Clock Sets, Real Bronze and Enamel Clock Sets, Lamp Shades, Ivory Paintings, etc., etc.*

## LE BOUTILLIER & Co.,

860 BROADWAY,

Northeast Corner of Seventeenth Street,

NEW YORK.

### Musings of a Country Jeweler.

Talking about dead beats, I must now relate how I was victimized on a diamond deal in a very sleek manner about a quarter of a century ago, when I first branched out in this line.

One afternoon a young fellow—to all appearances a successful traveling man—came into the store, satchel in hand, stating that he bought, sold and traded for diamonds. He displayed a variety of rings, pins, novelties, relics, etc., both old and new, which rather corroborated his statement, and which I examined with considerable interest. One ring especially attracted my attention, containing a magnificent pure white stone, to all appearances an old mine diamond. A nice stone always did have a fascination for me, and this one especially, because at his price I considered it a big bargain. But I refused to buy it, because, as I told him, it was too fine for my trade. In the meantime he got his eyes on some of my diamond jewelry, and also on a magnificent diamond-set watch case I had which cost me a hundred dollars. He said he would take this case and another piece of diamond jewelry and a small ring with a shoddy stone for his ring. This I refused, but finally offered to trade with him, omitting my ring. This, he insisted, he could not do, and after parleying for some time took his departure, leaving a rather favorable impression on my mind, and regrets that we did not consummate the deal.

After supper he came in again, apparently in a great hurry, saying: "Let me see that case and pin again." He glanced at them casually, opened his satchel and threw out his ring, saying: "I've got a place where I know I can get a hundred dollars cash for that case, so I'll trade with you, and I am in a great hurry to catch this train" (then due). I looked at the ring and recognized it as the same—was not afraid to buy a diamond in the evening—gave him the case and pin and bade him a cordial good-bye.

I have a liberal share of conceit concerning my inborn capacity to accurately judge a diamond, rain or shine, night or day. There are no imitations for me, and I have often bought a paper of loose stones, never asking a solitary question but the price. So that evening, after the stranger departed, I did not have the least idea or fear but that I had a genuine, beautiful old mine stone, until it occurred to me that possibly I had done wrong to consummate the trade by lamplight. I had heard of diamonds being whitened chemically by painting the lower half of the stone, and of many other tricks resorted to by unscrupulous dealers. So the first thing I did was to dampen my ring in alcohol and thoroughly clean it. True, it was the same mounting, the same two-carat size, the same brilliancy, the same old mine shape and cut, but when I had completed the cleaning process the feeling that I had done wrong, and, perchance, had been imposed upon by a villain, took a stronger hold upon me. I compared it with some other fairly white stones I had in stock, and sure enough I could discern a difference in color. The one I had traded for seemed a shade darker, though as brilliant as any of them. I was mad with myself, considering that, whatever the outcome, I was helpless and had no recourse. I put the ring in my pocket, determined at least to learn the verdict at the first appearance of daylight. Earlier than usual the next morning I jumped out of bed, and, regardless of my *negligee*, rushed with the ring to the window, and—imagine my consternation and disgust!—saw that instead of having a beautiful white diamond, worth at least \$150 per carat, I had an

ordinary African yellow stone not worth one-half of that price! The fellow had had two rings, one to sell ostensibly in the daytime, the other to deliver at night. Beside all the profit I thought I had made on the deal, I lost over fifty dollars. Beware!

Now, it is my painful duty to relate an even more humiliating experience I had only a very short time ago, and after having been a practical workman for forty years. A young man came in with an old watch and asked me concerning the number of jewels in it. I opened it and found it to be a Hampden, upper jewels set direct in plate, no screws, no patent regulator, and to all appearances an eleven-jeweled watch. My reply was accordingly. He insisted I was mistaken; that he knew it had fifteen jewels. I told him that no doubt he thought so, but that the dealer he bought it of had deceived him. Much more was said, but finally he went out, apparently in an ugly mood. Soon he came again, this time bringing a companion with him. He handed the watch to one of my workmen, asking him the same question he had asked me before. The prompt answer was eleven jewels. His reply was: "I'll bet you a dollar it has fifteen jewels." Always willing to defend my opinions with my cash, I said, pulling a dollar out of my pocket (I would have wagered \$100 as quickly): "I'll take that bet." He promptly covered it, and gave me the watch for examination. We took off the dial, and who can describe my humiliation and astonishment when we found the lower plate jeweled! I surrendered, and the fellow was so happy I had to go out and take a cigar with him. I think the whole town had a laugh at my expense that afternoon. His companion told one of my "boys" later that he was betting on a sure thing, and had had the watch examined before he came in the second time. In spite of my loss, however, I congratulated myself that I got off so easy, as I would have put up five dollars, ten dollars or a hundred dollars just as quick as one, had the fellow "worked" me right. It never then occurred to me (as I well knew at the time) that about ten years ago several of our watch factories made fifteen-jeweled watches, the outside appearance of which was precisely as the eleven-jeweled ones. So I felt happy, considering my loss was not greater—the experience to me was worth a great deal more.

Young man, heed the warning—don't bet! Remember, the party you are betting with is as certain of winning your money as you are of winning his. CLO.

### Cleveland Letter.

There has been a decided improvement in trade since the first of September. The return of the tourists and European travelers and the prospects of several large weddings for the last of the month have made the retailers happy. The wholesale houses have all their men out hustling for orders with considerable success.

A. T. Hubbard is taking a few days' vacation, tempting the finny tribe at Middle Bass Island and Detroit.

E. A. Meckes, the Paul Street jeweler, was in New York the first of the month, buying for the fall trade.

E. Gabriel, corner of Payne Avenue and Wilson Street, has removed to 355 Erie Street.

J. H. McMillan, with Cowell & Hubbard Co., is again able to be out, after a prolonged illness.

C. L. Ruth, Montgomery, Ala., was a recent visitor to the Forest City. Mr. Ruth is one of the leading jewelers in the South.

Mr. Bessire, watchmaker for Wright, Kay & Co., Detroit, Mich., recently visited old acquaintances in this city.

Geo. L. Hardy, 1505 Lorain Street, was recently made the victim of the bogus check swindle. The swindler secured some valuable jewelry and several dollars in change.

B. W. King, of the Julius King Optical Co., New York, has been renewing acquaintances in this city.

F. McHenry, of McHenry & Co., was in the East recently as buyer for the jewelry department.

Charles Gilbert, 1265 Euclid Avenue, has moved to 1143 on the same avenue.

At a special meeting of the board of directors of the Webb C. Ball Company on September 15th, Frank Brewster was elected president, vice Robert Blee. Mr. Brewster is a Standard Oil Company official, and recently purchased a large block of stock in the jewelry company.

C. L. Rodig, located at 55 Woodland Avenue, was married September 1st to a Cleveland lady. Mr. Rodig was recently burned out, and, as he expressed it, "his misfortunes did not come singly."

D. D. Clark, the well-known optician for the Julius King Optical Company and now of the Cowell & Hubbard Company, was married September 10th to Miss Carrie Brown, of Norwalk, Ohio. THE KEYSTONE extends congratulations, and begs to assure Mr. Clark that his idea of this "double standard" is correct.

Charles Bickford and John Murbach, Elyria, Ohio, were recent trade callers.

Ed. Rossel, Orrville, Ohio, called on the wholesale houses the middle of the month.

Fred Maynard, Gibsonburg, Ohio, left comfortable orders with the jobbers recently.

Max Wolff, Canton, Ohio, has opened a new store with wholesale and retail departments.

John Wight, Jr., Wellington, Ohio, was a recent buyer among the jobbing houses.

E. B. Foltz, Akron, Ohio, was in the East the first of the month, buying for the fall trade.

J. A. Zang, Alliance, Ohio, was here recently, calling on the wholesale opticians.

O. Starkweather, buyer for Sturtevant & Co., Zanesville, Ohio, was in New York the middle of the month.

J. C. Eberhardt, Dayton, Ohio, was in New York recently.

W. L. Brown, Hubbard, Ohio, met with a serious accident on September 8th by being shot with a revolver, which he had arranged trap-fashion to catch sneak-thieves. Mr. Brown was the victim of his own device, which he had forgotten when he entered the store.

The store of G. W. Gardner, Salem, Ohio, was burglarized the first of the month and jewelry valued at \$300 taken. Entrance was gained by a door in the rear.

E. H. Duttee, buyer for the jewelry department of the Webb C. Ball Company, was recently joined in wedlock to Miss Florence Haines Ehrhart, of Norwalk, Ohio. Mr. Duttee is well known to the trade and travelers, who wish him much happiness.

The detective force recently found about two hundred dollars' worth of silver in Silverman's pawn shop on Ontario Street, which they seized, believing it to be stolen. Later developments showed that it was stolen, and one John Ray, of Newark, N. J., was arrested as the thief. Ray broke down and confessed the crime. The silver had been stolen in Pittsburg and surrounding suburbs.

The jewelry trade received quite a surprise when Arnstein Brothers & Mier caused the arrest of their head salesman and manager of the retail department, Harry Levy, for embezzlement of diamonds and fine jewelry. The peculations had been going on for over a year, but the firm was unable to catch the guilty party; so a local detective agency was consulted and a man put on the track, who succeeded in landing the embezzler in a few weeks. Mr. Levy had grown up with the firm and enjoyed their full confidence. When confronted with the evidence he broke down and confessed to being the guilty one. The firm will prosecute and bring several charges against the accused for felony. Levy lays the blame for his downfall to a desire to be a "swift" young man. The firm has been unable to regain anything that was taken.

Frank Young and John Clark have purchased the store of Ward & Clark, Mount Vernon, Ohio, and will continue the business as Young & Clark.

### Best Proof of Circulation.

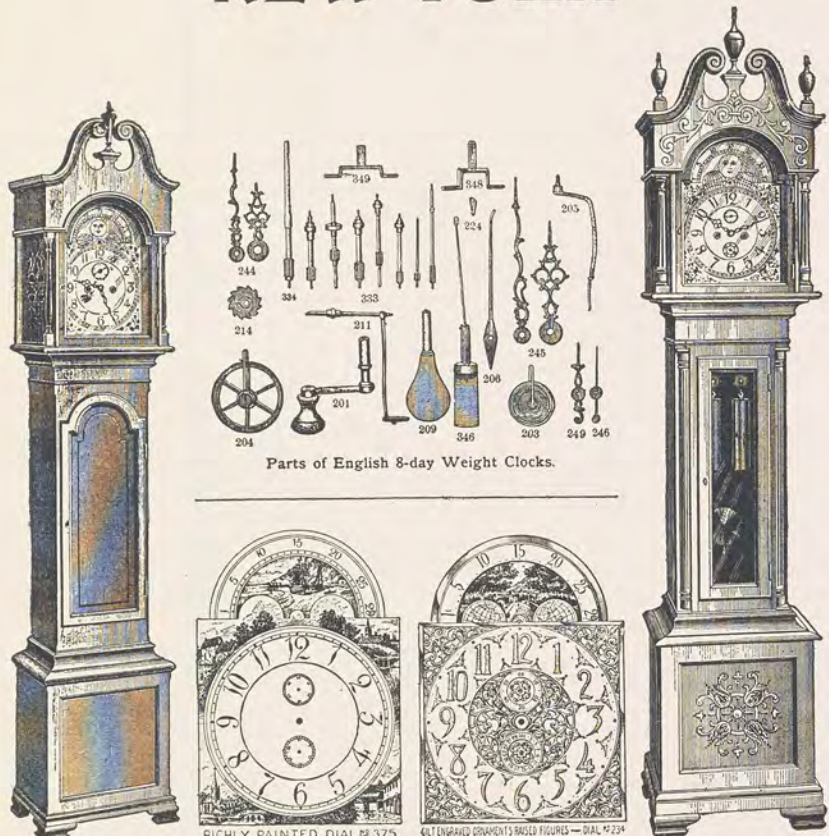
ED. KEYSTONE. TOLEDO, OHIO, September 18, 1896.

The little "Want" advertisement you inserted for me in your September issue brought me just sixty-one personal letters in reply. Your journal must certainly have a wide circulation, as the applicants for the position were from all parts of the United States.

Respectfully yours, W. E. CAWOOD.

# BAWO & DOTTER

## NEW YORK



**No. 15 Case.**  
Height, 89 in.; 11-in. dial.  
Made with full door or  
bevelled glass panel.  
Movement, 1408.  
Dial, 237.  
Iron weights.

**No. 12 Case.**  
Height, 93 in.; 12-in. dial.  
**No. 16 Case.**  
Height, 99 in.; 13-in. dial.  
Movement, 300; Dial, 237.  
Brass shells, 377.  
Cases 12 and 16 are also  
made perfectly plain, or  
plain with brass capitals  
and bases on columns.

Parts of English 8-day Weight Clocks.

RICHLY PAINTED DIAL NO. 375

GILT ENGRAVED ORNAMENTS BRASS FIGURES - DIAL NO. 234

We make a specialty of **Hall Clocks**, and offer now a larger and better selection than ever, in

**New Cases** in a great variety of beautiful designs, in oak or mahogany, carved, inlaid, or trimmed with bronze ornaments. The cases are all made in this country.

**Movements** Elliott's, and all other best English makes in weight, chiming and hour and half strike, loose, or fitted to fine and artistic dials.

ALSO A LARGE STOCK OF

REGULATORS and TRAVELING CLOCKS,  
QUARTER-STRIKE CLOCKS and MOVEMENTS,  
FRENCH CLOCKS of every description,  
MANTEL CHIME CLOCKS, CUCKOOS,  
PORCELAIN CLOCKS, with American Works, etc.

N. B.—We call attention to Hall Clock No. 15, striking hour and half on gong, arch dial, with or without moving moon wheel, which we offer at a very moderate price.

**Loose Movements and Clock Materials.**

Our Catalogue 1896-1897 is only sent on application.

# BAWO & DOTTER,

Importers and Manufacturers,

26, 28, 30 & 32 Barclay Street, NEW YORK.

# DIAMONDS



Does your Diamond stock need replenishing? or have you an order for some article you haven't in stock?

Write to us, and let us help you out.

We are Direct Importers and Cutters of Diamonds, and sell at lowest prices.

Our Fall stock of Loose and Mounted goods is now complete for your inspection, and we want a share of your trade.

All our Mounted stock is of the very best workmanship and the latest styles.

Selection packages sent upon receipt of satisfactory references.

**CROSS & BEGUELIN,**

43 Rue Meslay, PARIS.

17 Maiden Lane, NEW YORK.



# DIAMONDS

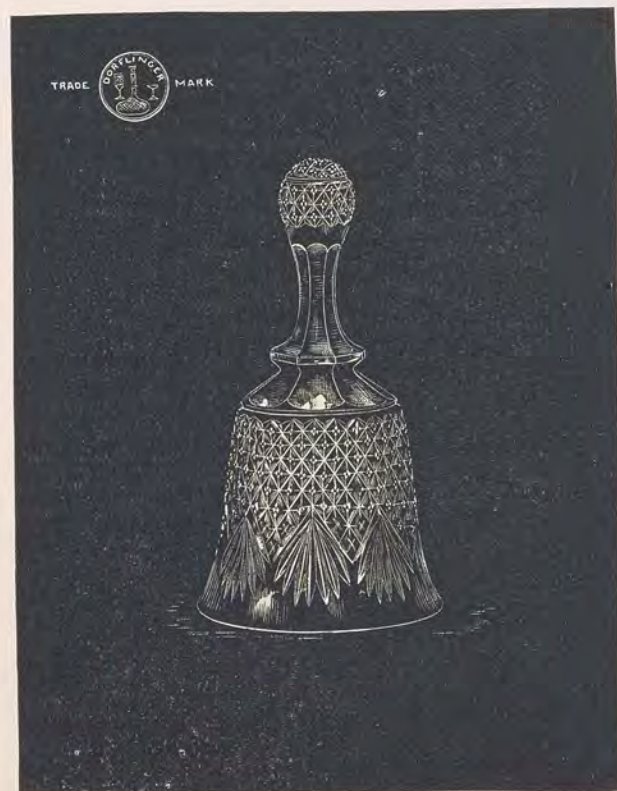


TABLE BELL.

A lot of Cut Glass is now being put in the market, polished by chemicals. Our ware is all cut and finished BY HAND, and will keep its brilliancy.

**C. DORFLINGER & SONS,**

36 Murray Street

NEW YORK

915 Broadway



# When You Want

**DIAMONDS**, it is best to go to headquarters. We import rough Diamonds, cut them in this country, and always have a large stock in both Loose and Mounted goods. If you rely on the house from whom you buy, we offer as a basis of confidence our forty years of uninterrupted business experience.

**WATCHES** you will want, for business is going to be better—much better, we think. Waltham, Elgin, Howard, and Cases in all grades to fit.

**JEWELRY**—We have in great variety fine gold Jewelry, comprising the most popular novelties as well as the leading staples.

**MAIL ORDERS** we give particular attention to. Each order is carefully filled, and by those who know how; and we insist on sending what is ordered. This is why our mail order business is large and continues to grow. Try us.

## Hayden W. Wheeler & Co.

Number Two Maiden Lane

New York

50 Holborn Viaduct  
LONDON



It means hunt, hustle and hammer in these times. Those who do the most of it are the ones that reach the successful plane. If it is unceasing the greater success comes.

Get into the swim, watch the phases of the times, keep in the middle of the road, just peg away, sell goods at good prices, collect sharp, keep your promises and insist on others doing the same, then you will have good times.

The winners these days are the persistent and courageous; the fighters for trade are always plucky. Hold your ambition high and strive for the top; there is plenty of room there for you.

The Michigan Tradesman says: It is not what you have been, nor what you have done, nor not even what you know, that makes you a valuable man on the road. Your value to the house you travel for is only known by results. If you lack application or are indifferent to results, the house cannot retain you in its employ, although you may be the best educated and most experienced of men in your line.

The Stove and Hardware Reporter: The commercial traveler of to-day is a representative business man in every sense of the word, and is recognized as such. His mind is broadened by his constant contact with men engaged in the production, jobbing and retailing of goods. He is an economist of the practical type, because he has to handle the problems connected with the production and consumption of goods in a practical way. He learns to be tactful in the course of his business experience, if he is not naturally so, and knows that a weak compliance with every view advanced by the men with whom he is dealing is neither necessary nor serves to increase their respect for him. He is possessed of a dignity which can bend without breaking, and is as intent upon preserving his self-respect entire as are men in any other department of business life.



C. L. Trout.

Keystone readers in the great Northwest and the country between the Mississippi and Pacific will readily recognize the portrait here shown as that of C. L. Trout, of the wholesale firm of Leys, Trout & Co., Prescott Building, John Street, New York City, who represents the firm in that territory. For ten years the great far Western country has been his happy hunting ground, and his friends there are equal in number to the jewelers visited. Mr. Trout was born in Maquoketa, Iowa, in the last year of the war, and after his school days, learned the trade of the watchmaker. He was for a number of years with the Minneapolis Jewelry Co., Minneapolis, Minn., and later with S. H. Clausin, of the same city, as traveling salesman in the Western States. Subsequently he represented in the same territory leading Chicago houses. On January 1, 1896, he formed the present partnership with Jas. D. Leys, and notwithstanding the quietness of the times the firm already enjoy a prominent place among the wholesale houses of the metropolis. They carry a most comprehensive stock and, besides, manufacture rings, chains, novelties, etc.

M. Freedman, representing L. W. Rubenstein, 54 Maiden Lane, New York, is out on a business trip through Pennsylvania and New Jersey.

Chas. E. Biller, well-known to the Western trade as a clock salesman, is now representing the Rockford Silver Plate Company, taking the place of Mr. Coulter.

In Geo. W. Pearce, one of the veterans who travel out of Attleboro and sell the jobbing trade, we have a courteous and affable gentleman. He is marking a path for himself with his new line (the Bay State Optical Co.'s) that will bring him something better far than to wear a crown, whether of gold or silver. The future has in store a position in the trade that will be his alone, simply because he earned it through worth and unceasing push.

B. F. Hodgens, the well-known Western traveler, formerly in the silver-plated ware line, but latterly with the M. Eisenstadt Jewelry Company, St. Louis, in their south-

western territory, is now championing the gold line of Geo. H. Cahoon & Co., Providence, R. I., among the jobbers in the Western and Middle States. Mr. Hodgens' many friends in the trade will wish him a full measure of success in his new position.

F. C. Somes, of S. O. Bigney & Co., is one of the hard-working and energetic manufacturers' agents who comes West from the jewelry manufacturing centers of Attleboro and Providence. He is zealous and faithful for and to the trade, hence his success.

J. D. Packard (H. F. Hahn & Co., Chicago) has been in the house the latter half of September, stocking up his trunks with the latest fall novelties. Mr. Packard will be showing his line among his customers during the present month.

Emil Despres (H. F. Hahn & Co. Chicago), has a wonderful capacity to make friends and hold them, thus making and holding trade. His methods are those of a winner in the battle of business life.

Jack Adler, of Seth Thomas Clock fame, has added the ring line of the Regal Jewelry Company, of Providence, R. I., to his trade repertoire, and that good results will follow is a foregone conclusion, for Mr. Adler is one of the untiring hustlers of the Western circuit.

Hubert Somborn (Albert Berger & Co., New York) has been calling on the jobbing trade in the West recently. Mr. Somborn is one of the smooth men of the profession, and always receives a cordial welcome wherever he goes.

C. C. Hoefler, of Woodstock, Hoefler & Co., Kansas City, who has been confined to his home for several weeks by illness, is again at business.

C. C. Offerman, whom everybody in the Western wholesale trade knows as "Gold Chain Charley," tells us that his friend, Eugene Deimel, of Detroit, entertains the boys with the most deliciously funny gingerbread that he ever met with, and what Charley says goes.

H. E. Farquharson, Texas man for Benj. Allen & Co., Chicago, is a young man who counts strict attention and fidelity to his firm's interests as his ambition and pride. He has the making of a successful salesman in him.

Jeweler B. L. Gates, of Sioux Falls, S. Dak., has gone on the road in the interests of the silverware line of E. G. Webster & Son and the clock line of the Ansonia Company. He is covering the Dakotas and adjoining territory.

C. A. Whiting, of Whiting & Davis, Attleboro, was making the Western circuit last month under peculiarly sad circumstances. His father has been very low most of the summer, and his recovery given up by attending physician. At Cincinnati Mr. Whiting received a telegram that his father was sinking but that there was no immediate danger of dissolution, so he kept on his trip, all the time looking for a message calling him home. Here is where the sad part of a traveler's life comes in. Mr. Whiting will have the sympathy of a large circle of friends in the trade in his trouble.

John T. Thornton, who covers the Northwest for J. T. Scott & Co., New York, is one of the up-to-date men of the profession. He never fails to capture his share of trade and is very popular.

J. A. Granberry (Cutler & Granberry) is a most affable and gentlemanly salesman. His success has been emphatic, gradually climbing to the top of the ladder, where he keeps in place with the best of them. He is a member of the Attleboro firm for which he travels and waits on the jobbing trade.

E. A. Tyler, of the Ansonia Clock Co., returned to Chicago recently from an extended trip through the Rocky Mountain country, and tells us that orders were better with him than he had expected, and that trade conditions in that country are encouraging for a good late fall and holiday business.

Bill Nye once made over a poor minister into a successful drummer. A Vermont minister wrote to him, offering him a lot of jokes and witticisms he had collected that were not quite the thing to "fire off" in the pulpit, but which would be invaluable to a humorist. He was willing to retail them at so much a dozen. "I wrote him up," said Bill Nye, "in one of my syndicate letters, inserting his letter anonymously, but just as it came to me. A week later came a furious epistle, saying his parishioners had read it and caught on, because of the mention of a certain hall; that war had been declared and he must resign. Two years later, while James Whitcomb Riley and I were on a reading tour, we struck St. Louis, and I hadn't been in my hotel an hour when a man's card was brought me. 'Show him up,' I said to the bell boy; then it dawned upon me that it was this minister. I am no coward, but I was un-

armed, so I rushed to Riley, crying, 'For heaven's sake, Riley, help me, help me! Hunt up a revolver, the poker, anything. Here's a man after my pelt.' Just then the door opened and a tall, smiling, fair-haired chap entered, who grasped my hand with a cordial squeeze, saying heartily, 'Mr. Nye, I've come to thank you for the kindest thing ever done to me. I was of no use in the ministry; now I'm one of the most popular and successful drummers on the road.'"

#### The Salesman's Expectations of Life.

Statistics furnished by the life insurance companies are quoted as showing that there are two classes of men especially conspicuous for longevity; namely, the traveling salesmen and the lumbermen. This is the result of an inquiry into the vocations of 70,000 insured men. It has been commonly supposed that clergymen, by virtue of their sobriety and presumably regular habits, were the favored class; but not so. Commercial travelers and lumbermen are the men of all men who live long and presumably live well; for good living is essential to long life.

Who would have thought it?

The much maligned traveling salesman—he of whose lack of sobriety, of whose irregular hours there have been circulated so many tales of woe—appears first in the list.

We know the boys are physically tough customers. We know that they are all blessed with good appetites, with physical endurance, with mental prowess and strength; and, come to think of it, there are very few cases of death among them. Once in a while a traveling man dies, but it is usually one of the kind that are not really traveling salesmen after all, but commercial tourists, or something of that description. This is truly an age of wonders.

—N. W. Merchant.

"I would as soon think of going through the winter without fuel as to do without *The Keystone*, and I am sure that every jeweler who gets it feels the same way. Enclosed find a renewal of my subscription."—Jas. B. Swindell, jeweler, Marion, North Carolina.

#### Andrew Carnegie and the Patentee.

A very important incident in my life occurred one day in a train. A nice, farmer-looking gentleman approached me, saying that the conductor had told him I was connected with the Pennsylvania Railroad, and he would like to show me something. He pulled from a small green bag the model of the first sleeping-car. This was Mr. Woodruff, the inventor.

Its value struck me like a flash. I asked him to come to Altoona the following week, and he did so.

Mr. Scott, with his usual quickness, grasped the idea. A contract was made with Mr. Woodruff to put two trial cars on the Pennsylvania Railroad. Before leaving Altoona Mr. Woodruff came to me and offered me an interest in the venture, which I promptly accepted. But how I was to make my payments rather troubled me, for the cars were to be paid for in monthly installments after delivery, and my first monthly payment was to be two hundred and seventeen dollars and a half.

I had not the money, and I did not see any way of getting it. But I finally decided to visit the local banker and ask him for a loan, pledging myself to pay at the rate of fifteen dollars per month. He promptly granted it. Never shall I forget his putting his arm over my shoulder, saying, "Oh, yes, Andy, you are all right."

I then and there signed my first note. Proud day this; and surely, now, no one will dispute that I was becoming a "business man." I had signed my first note and, more important of all, for any fellow can sign a note, I had found a banker who was willing to take it as "good."

My subsequent payments were made by the receipts from the sleeping-cars, and I really made my first considerable sum from this investment in the Woodruff Sleeping-Car Company, which was afterward absorbed by Mr. Pullman—a remarkable man who is now known all over the world.

—Andrew Carnegie, in *Youth's Companion*.

THE retail merchant should "tell the truth and shame the devil." Be honest in your newspaper statements. Be as frank and candid in your ads. as though you were personally talking to a customer; for an advertisement is a salesman. It is a salesman that speaks to a greater circle of hearers than does the preacher, lawyer or local magnate—and it pays to have that salesman as presentable and straightforward as you know how. An advertisement should be like a newspaper—a reflex of happenings.

# ALEXANDER H. REVELL & CO.<sup>763</sup>

431, 433, 435 & 437  
Fifth Avenue  
CHICAGO

Manufacturers of  
Strictly High Grade

## JEWELRY FIXTURES



C. D. PEACOCK'S STORE, CHICAGO. THE FINEST JEWELRY STORE IN AMERICA.

The accompanying cut gives a view of the rear of the Peacock store, showing one of our new style Upright SILVERWARE Cases, specially designed and manufactured by us.

By permission, we refer prospective purchasers to C. D. Peacock for information regarding our work.

## A. Wittnauer's Celebrated Specialties

obtained GRAND PRIZES and GOLD MEDALS at all PRINCIPAL EXPOSITIONS.



19  
Maiden  
Lane

New York

### Longines.

Medium price Watches, and Movements fitting all sizes of ready-made Cases.

### Agassiz.

Plain adjusted Movements in several grades, fitting all sizes ready-made Cases. Specialty in Chronographs, Splits and Minute Repeaters, at medium prices. ABSOLUTELY CORRECT and RELIABLE.

### Jules Monard.

Extra grade plain Movements, fitting ready-made Cases.

### Audemars, Piguet & Co.

Superior grade plain and complicated Watches, conceded to be mechanically and artistically the most perfect productions in their line. (The thinnest Watches made.)

### Fancy and Enameled Watches

(Our Own Creation.)

A superb line and most profuse display of enameled and decorated Watches. Unique designs set in pearls and diamonds, at all prices, constantly on hand.





765  
C. H. Knights & Co.

---

Diamond Merchants

---

Columbus Memorial Building

---

Chicago, Ill.

---

~~~~~  
Tools and Material

---

Everything Needed by Watchmakers

---

C. H. Knights & Co.

---

Chicago, Ill.

---

## Among the Trade.

(Continued from page 764.)

### Montana.

Albert Stamm, Dillon, has moved into the National Bank building.

### Nebraska.

Fess, the Kearney jeweler, has transferred to his store the Hawthorne stock recently purchased by him, with the result that his patrons have an unusually large array of goods to select from. Fess's enterprise is refreshing in these out-of-joint-times.

Joseph Schott, a young man, aged twenty years, an employee of Jeweler Fred. Michelsen, of Grand Island, was found dead in his bed on the morning of September 9th. A revolver lay by his bedside. One load had been discharged, the bullet being found in the wall after having passed through the chair. The doors leading to the room back of the store, wherein the young man slept, were all still closed from within, though there were some circumstances that looked as if he had tried to get out and returned. A post mortem examination was made that night and showed that the cause of death was rupture of the heart. An inquest was held, the jury bringing in the verdict in accordance with the doctor's testimony, supposing such rupture to have been caused by fright. The general belief is that some one tried to enter the store, but was frightened away by the shot, and that the young man himself died of fright.

### New Mexico.

H. E. Fox, of Albuquerque, has remodeled his store and added to his stock bric-a-brac and cut-glass ware.

### New York.

W. B. Joseph, Hudson, has opened a branch store at Catskill.

C. B. Sanford opened a jewelry store in Hamilton on September 1st.

Rome, in this State, has seven jewelry stores.

Steuber & Graves, of Leroy, have dissolved partnership, Edward J. Graves withdrawing. Frederick A. Steuber will continue the business.

Fifteen handsome bronze electric clocks have been placed in the Court House at Rochester.

Geo. D. Kendall, of Rochester, sold his jewelry business to F. E. Spooner, and has removed to Pueblo, Colo.

Henry A. Williams, formerly of Syracuse, has opened a jewelry store in Rome.

Jas. E. Betteridge, who for several years was engaged in the jewelry business in Rochester, has retired. He is succeeded by Chas. A. Wagner, an experienced jeweler.

Jas. J. Ernise is now conducting the jewelry business at 124 State Street, Rochester, where Van Bergh Bros. were located for some ten years past. Van Bergh Bros. have opened a large silver-plating establishment under the name of the Van Bergh Silver Plate Co., in the new J. Hungerford Smith Building at the corner of West Main and Elizabeth Streets. This industry is the first and only one of its kind in Rochester.

Edward Spangle, of the firm of Spangle & Son, jewelers, Canandaigua, has been obliged to suffer the amputation of a leg. He is improving.

John J. Bauscher, president of the Bausch & Lomb Optical Works, Rochester, has returned from a three months' trip to Europe.

La France & Swarthout's jewelry store at Elmira was injured by fire to the extent of \$9,000. Insured.

### North Carolina.

During the visit of Wm. J. Bryan to Charlotte the firm of Garibaldi & Bruns displayed in one window one gold brick and sixteen silver ones. In the other window were 600 silver dollars and 30 gold dollars. It took several policemen to control the crowd.

### Ohio.

R. D. Macdonald, formerly with the Gate City Jewelry Co., Denison, Texas, and for some time an instructor in Parsons' Horological Institute, recently bought out M. U. Basinger & Co., of Lima, this State, and is continuing the business under the title Macdonald & Co.

E. P. Armstrong and J. J. Vernier have opened a store in partnership on Adams Street, Toledo.

W. H. Grottendick is a new jeweler at Xenia.

J. A. Brooker, formerly of C. J. Brooker & Son, 2244 Euclid Avenue, Cleveland, is now located in room 821, the Cuyahoga Building, Superior Street, where he is making a specialty of repairing fine and complicated watches.

Fred. J. H. Schell, of Xenia, moved into his new store the middle of last month. He now has one of the prettiest stores of his section, modern and up-to-date.

J. W. Helfrich, of Carrollton, who was recently burned out, has opened up in good shape in another location and is already doing a nice trade. Mr. Helfrich was a heavy loser by the fire, and his enterprise is all the more commendable on that account.

### Oregon.

Charles L. Gray, Coquille, has been succeeded by J. E. Adcox.

### Pennsylvania.

Lewis J. Henise, of York, presented the Pioneer Club of that city with a beautiful prize silver cup, which was raced for on September 15th.

Rothstein & Lippman Bros., Altoona, have moved into larger quarters at 1410 Eleventh Avenue.

C. A. Schock has opened a jewelry store in Williamsburg.

New Castle has a new jewelry firm, the title of which is Schmidt Bros.

Heeren Bros. & Co., of Pittsburg, furnished the 40,000 medals in twelve different designs, ordered for the recent Grand Army encampment in St. Paul, Minn. The entire consignment weighed nearly three tons. This firm will also furnish the medals for the National Encampment of Sons of Veterans, to be held in Louisville, Ky.

H. R. Brown has opened a store in New Brighton.

The marriage of Miss Jessie N. Norton, daughter of H. M. Norton, Corry, and James Wright was celebrated on August 12th.

P. T. Shirkey has moved from Dunkirk, N. Y., to Bradford.

### Tennessee.

L. Gauchat, of the L. Gauchat Jewelry Co., of Clarksville, died some weeks ago. The deceased was born in French Switzerland, April 4, 1835, and in August, 1866, emigrated to the United States. He went South in 1868, and in 1876 became a resident of Clarksville. He was a man who always attended to his business strictly, building up a fine trade and accumulating considerable property.

Martin Bros., Union City, recently sold out to Porter & Radebaugh.

### Texas.

W. L. Gantt, Rockport, has gone out of business.

J. C. Leibel, formerly of 310 Main Street, Denison, and George McLagan have begun business as the Denison Manufacturing Jewelry Company, at 326 West Main Street.

## A Good Watch-Checking System.

S. W. Risien, an enterprising jeweler of Mexia, Texas, writes: "Thinking it might be of interest to your readers, I enclose you a sample of my watch check. It has proven such a satisfactory scheme that others, perhaps, would like to avail themselves of it. I have a lot of brass checks numbered. When a watch is left with me, I snap in the brass check with the number on the form, scratching out the lines on the left that would describe the particular watch, and with my dating stamp I date it, though the date can be about as easily written. It gives it a better appearance to stamp it. The advantages of this check are these: First, it pleases your customer and inspires his confidence. Second, it obviates the danger of giving the watch to wrong party. Third, it gives you a legal right to dispose of the watch for charges should it not be called for in thirty days (however, I generally keep them six months or so). Fourth, the check, in case of loss, costs you nothing. When I am satisfied that

the right party, in such an event, calls for the watch, I deliver it, taking a receipt covering the check, which I hold on file for thirty days. By that time the check expires by limitation, and the watch cannot be claimed on it. Fifth, when check is presented it gives you a complete description of the watch without having to ask a lot of questions of the customer as is usually the case, as to what kind of a watch it is, when it was left, etc. Such questions are apt to raise a doubt in the customer's mind of how much attention you have been paying to his job and how careful you have been in taking care of it. Sixth, the watch can be found in a moment. Where you have seventy-five or one hundred repair watches, it saves some time and vexation on this score. Seventh, it takes but a moment to fill out the check, there being no words to write. I have been using this system for two or three years and it has proven a decided success in every way." Below is found a fac-simile of the watch check used by Mr. Risien:

|                                                                                                                                                                                                                                                                                          |                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| GOLD<br>GOLD-PLATED<br>GOLD FILLED<br>SILVER<br>SILVERINE<br>SILVER-PLATED<br>NICKEL<br>BRASS<br>HUNTING<br>O. F.<br>STEM-WIND<br>KEY-WIND<br>WALTHAM<br>ELGIN<br>AMERICAN<br>CHEAP AM.<br>IM. AM.<br>ENGLISH<br>SWISS<br>CYLINDER<br>LEVER<br>ENGRAVED<br>POLISHED<br>LADIES'<br>GENTS' | <b>GOOD FOR ONLY THIRTY DAYS</b>             |
|                                                                                                                                                                                                                                                                                          | <b>S. W. RISIEN, JEWELER</b><br>MEXIA, TEXAS |
| <i>Check for WATCH left for repairs.</i>                                                                                                                                                                                                                                                 |                                              |
| No. _____ Date _____                                                                                                                                                                                                                                                                     |                                              |
| <b>NOTICE.</b> —I am not responsible for any article left longer than thirty days. If left longer, it is at owner's risk. This check will not be honored after thirty days. All valuables are kept in a fire and burglar-proof safe, protected by the Jewelers' Security Alliance.       |                                              |
| <b>NOTICE</b> —WATCH WILL NOT BE DELIVERED WITHOUT CHECK                                                                                                                                                                                                                                 |                                              |

# New Patterns

STERLING SILVER INLAID.

Our Salesmen will show samples of both patterns.

**The Marina.**



Design Patented June 16, 1896.

TEA SPOONS,  
DESSERT SPOONS,  
TABLE SPOONS,  
MEDIUM FORKS,  
DESSERT FORKS,

Are Now Ready.

**The Lincoln.**



Design Patented Dec. 31, 1895.

Made only in special quality plate. Ask for prices and particulars. You can guarantee the quality of these goods to your best trade.

THE HOLMES & EDWARDS SILVER CO.,  
BRIDGEPORT, CONN.

NEW YORK.

CHICAGO.

ST. LOUIS.

SAN FRANCISCO.

## REMOVED to Larger Quarters.

We have recently moved into a larger and more convenient factory in the new

**Jesse Metcalf Building,  
144 Pine Street,  
Providence, R. I.**

where we have 5,000 square feet of floor space, and every facility for making goods economically and quickly. The natural growth of our business compelled this removal.

Our Specialties:

## GOLCONDA GEMS

MOUNTED IN GOLD AND PLATE.

These gems have the genuine diamond fire and finish, and are so perfectly diamond-like in every respect that their identification, when mixed with real diamonds, has puzzled accomplished stone experts.

10 K. GOLD SET RINGS and SCARF PINS,  
and the  
LATEST NOVELTIES IN PLATED JEWELRY.

**R. L. GRIFFITH & SON,**

144 Pine Street, Providence, R. I.

Orders Solicited from the Jobbing Trade

## A Great Novelty!

PAT.  
APPLIED FOR.



PAT.  
APPLIED FOR.

Sterling Silver <sup>ONE</sup>/<sub>TWO</sub>, \$2.75 each.  
Solid Gold 10 K., 9.00 each.

Prices according to Keystone Key.

As the cut clearly illustrates, this ring represents a hunting scene with a hunting dog just clearing a three-bar fence, and by his sudden jump has started a quail from cover. The shot gun against the lower rail of the fence makes the scene a complete and typical one. The die work, chasing and carving are worthy the attention of the most critical.

Taken altogether, with the novelty, price, etc., it is a very superior article, and will be awarded the patronage that a high-class novelty always receives.

Sold by All Reliable Jobbers.

**W. O. HUTCHINS & CO.**

Samples,  
No. 176 Broadway,  
New York.

Providence, R. I.



There is perhaps more confidence here in the business situation than in the opening days of September. Hopefulness is a dominant feature. Were it not for that the trade outlook would be indeed gloomy. Since the beginning of the month business has somewhat improved, although its volume is not equal to that of the early days of September of the recent years of depression. A round among our jobbers shows that there is a moderate business in all departments, but there is no crowd in any of them. Collections continue slow in most cases, but there is a more cheerful tone to the general business.

All eyes in this market are turned toward the Southern field this fall, for it presents the really most prosperous section of our Cincinnati territory. Though Southern dealers are buying conservatively, as a rule, so far this season, our wholesalers have found their best business coming from the South.

R. A. Kettle, Chicago and Western manager for the Waltham Watch Company, was in town recently, accompanied by Mrs. Kettle. They together called on our leading jobbers and were warmly welcomed.

A. G. Schwab remarked to THE KEYSTONE representative the other day that he would start out on his October trip with the feeling that the outcome of the election was as good as settled, and that happily for the business interests of the country. He further said that there was already an improvement noticeable in trade, which he believed would grow from now on until Christmas.

A. Herman, after a month's respite from road life, resumes his occasional "pleasure trips" among the trade early in the present month.

The friends of Sol. Fox, member of the firm of Fox Bros. & Co., will sympathize with him and his family in the loss of his youngest son, George Fox, whose recent death has been announced. Young Fox is well known among the Western and Southern trade, having traveled for the above firm in this territory for several years. He was a promising young man of business and had a bright future. His malady was Bright's disease, and he had been ill for some time. His age was twenty-five years.

The death of Lillie May Hellebush, daughter of Lucia and the late Clemens Hellebush, is announced. She died from typhoid fever. Her death removes from society and charitable fields a sweet and accomplished personality, a generous and unostentatious giver. The family will have the sympathy of the trade in their sad bereavement.

E. & J. Swigart have received a great many compliments from jewelers the country over upon the practical usefulness, handy arrangement and handsome appearance of their new catalogue, which they have recently sent out to the trade, and which they continue to send to dealers who request it.

Oscar Keck has recently returned from an extended business trip among the larger cities of the Western circuit.

All of D. Schroder & Co.'s travelers have been off the road most of September. They are out again over their territories the present month.

Ed. Maass and wife have returned from an extended vacation spent in the East.

Rudolph Jacobs is still confined to his home by a severe case of pneumonia.

C. W. Battey, of Waite, Mathewson & Co., Providence, was in town recently, showing up his new fall line among our jobbers.

Ed. Pfaffle and Eli Gutmann, who compose the traveling force of L. Gutmann this season, have finished their early fall trips and report a fairly good business.

Adolph Muehlmann, the toolmaker, has lately put on the market the Simplex Watch Cap Stencil. It is a very practical and simple device for assisting engravers in their work on watch caps.

Mrs. J. P. Diller, wife of Jeweler Diller, of Lebanon, Tenn., has returned home after a several weeks' visit at the home of her parents in this city.

I. N. Pollock, of Ashland, Ky., was among our recent trade visitors.

Clay Henry, of Ironton, Ohio, was in town last month, purchasing fall novelties.

Ed. De Voss, of Wilmington, Ohio, was among the out-of-town jewelers who bought goods in this market last month.

L. P. Brockman, of Augusta, Ky., was a recent trade caller here.

D. A. Lamb, of Wilmington, Ohio, visited Cincinnati on a purchasing trip last month.

G. W. Meyer, the well known Southern jeweler, who has stores at Chattanooga, Tenn., and Meridian, Miss., was one of the most recent buyers in this market. Mrs. Meyer accompanied him.

One of the events in jewelry circles for the present month will be the meeting of the wholesale jewelers and manufacturers of Cincinnati. The regular monthly meeting in October will be made the occasion for a banquet of the members of the Association. There has been an attempt made by the Association to have A. & J. Plaut, who gave notice of withdrawal, reconsider the action. The committee, consisting of H. C. Walton and C. A. Sanders, has waited on the firm, and it is understood that it is likely the efforts of the committee will be successful.

*"No watchmaker or optician can keep up to date without The Keystone."—V. F. Cantwell, jeweler and optician, Doniphan, Missouri.*

#### Chainless Bicycles Next Season.

Next year one of the largest bicycle manufacturing concerns in the country will put on the market a chainless bicycle, and two of the models for 1897, one for men and one for women, will be operated by bevel gears instead of the usual chain and sprocket. While the manufacturing concern referred to does not see fit to announce at this time the exact form in which it will use the bevel gear, a glance at the accompanying cut will give a fair idea of the thing.



The usual crank shaft carries, instead of the ordinary large sprocket, a beveled gear of suitable size, meshing with which is a smaller gear, the shaft of which passes either through or over the right rear fork; the rear end of this shaft carries another small gear which meshes into a corresponding gear on the rear hub, instead of the usual rear sprocket. At each end this shaft is carried on ball bearings, which are arranged in such a way that wear can be taken up without affecting the meshing of the gears. The bearings for the hub and crank are of the usual form. Once adjusted, there is seldom occasion to change, and when necessary it can be done as readily as with any simple bearing.

The great difficulties to be conquered in the perfection of the chainless bicycle were the cutting of accurate bevel gears in quantity and securing ball bearings that would withstand the strain that came from the radically different method of transmitting the power. The old chainless machines ran hard up hill, not because there was increased friction in the gears, for it has been proven that the friction is less, but because the ball bearings were not properly constructed. But the cutting of the gear proved the chief difficulty. Except in the very finest experimental machinery a theoretically perfect bevel gear has heretofore been unknown to mechanics.

In the heavy machinery where bevel gears have been used friction did not usually have to be considered, and so approximate accuracy in cutting would do, while in sewing machines, typewriters and the like the power needed to operate them was so slight that little attention was paid to making the teeth absolutely true. All this is different in the modern bicycle, where every item tending toward easy running is sought after, regardless of expense. If a bevel gear is to be used in a bicycle it must have no imperfections anywhere.

To make such absolutely accurate gears by thousands, all just alike, was another problem to be solved before the chainless bicycle would be practical to a manufacturer putting out a large number of wheels, for all the gear-cutting machinery in the world could not produce anywhere near sufficient gears for a maker.

Gear-cutting machinery had, therefore, to be devised that would produce bevel gears in which the pitch and lines of each tooth would be theoretically and mechanically accurate at every point. It is said, however, that it will only be possible even with these machines to produce a limited quantity of bicycles with this equipment, and that the great majority of the wheels turned out by this firm next year will be on the generally accepted line, equipped with a chain.



The uncertainty surrounding the result of the presidential election is still clogging the wheels of business in this section. Nevertheless a better feeling prevails. We are informed by the Providence News that "for a long time the jewelry industry in the vicinity has been almost at a standstill, and the workers have not anticipated much of a change in general conditions. They will be agreeably surprised to know that the trade is likely to have a healthy revival this fall. Of course the holiday demand will make business good for a short time, but there is a feeling that the improvement will be permanent. Several of the large shops are notifying their help to be prepared to go to work, and many of the smaller ones have nearly their whole force employed."

The North Attleboro Chronicle says: "The amount of business in the various lines of jewelry manufacturing continues very small. Many of the factories are closed entirely for want of orders, while others continue to receive light orders, which of course they are more than willing to fill. Makers of campaign goods of different kinds appear to be having the best end of the game, with a good prospect of increasing their labors in the near future. With the advent of cool weather, there must undoubtedly be an increase in business of all kinds. Perhaps the end of this unusual prostration is not quite in sight, but so near that it is safe to assume that it will soon be reached."

R. L. Griffith & Son, Providence, who have been located at 129 Eddy Street for fifteen years, have removed to the fourth floor of the new Jesse Metcalf Building, with entrance at 144 Pine Street. The new factory comprises 5000 square feet of space.

Simmons & Page, Providence, the well-known engravers, have moved to 129 Eddy Street, where they have better facilities for attending to their growing business.

Lenzen & Rueckert, makers of jewelry and silverware cases, Providence, have moved into fine quarters in the new Jesse Metcalf Building, which is now completed.

Orrie W. Hawkins and William Macdonald have begun the manufacture of novelties in R. Blackinton & Co.'s shop on North Main Street, North Attleboro.

C. A. Wilkinson & Co. is the name of a new firm at 53 Aborn Street, Providence. They will manufacture spectacle and eye-glass frames. The members of the firm are C. A. Wilkinson and Dutee Wilcox.

P. C. Kellett has bought out the interest that Joseph F. Ortiz had in the What Cheer Pencil Case Co., 95 Pine Street, Providence, and is now the sole proprietor.

McRae & Keeler, Attleboro, are now in their new quarters in the shop formerly occupied by W. H. Wilmarth & Co., at 31 Union Street. They are quite busy on catchy campaign goods, for which they find a ready sale.

E. C. Reynolds, Jr., has begun the manufacture of rolled plate at 158 Pine Street, in the new Jesse Metcalf Building, Providence.

The Mossberg Mfg. Co. have made formal announcement that their business has been sold to the Mossberg & Granville Mfg. Co., incorporated under the laws of the State of New York. The rumor that the concern will be moved from Attleboro has not been confirmed.

Samuel H. Bugbee, of the firm of Bugbee & Niles, died recently from heart failure at his home in North Attleboro.

J. L. Sweet, of R. F. Simmons & Co., Attleboro, was a delegate from Massachusetts to the sound money convention at Indianapolis, Ind.

The firm of Kirby, Mowry & Co., Providence, has dissolved, Delmont E. Mowry disposing of his portion of the business to H. A. Kirby. A charter has been granted to the H. A. Kirby Co. The incorporators are Henry A. Kirby and Charles H. Perkins, of Providence, and Archibald Rutherford, of Yonkers, N. Y. The capital stock is \$150,000. The business will be continued along the same lines as before.

The directors of the Manufacturing Jewelers' Board of Trade will hold their monthly meetings hereafter on the third Friday forenoon of each month.

C. A. Vanderbilt, of Coddling Bros. & Heilborn, North Attleboro, is making a tour of New York State with new fall samples, and reports remarkable success.

The Rhode Island School of Design, Providence, began another year of usefulness on September 28th.

**Leys Fruits & Co.**  
MANUFACTURERS  
Prescott Building - John St.  
"NEW YORK"

STERLING SILVER (according to Keystone Key and less cash discount). Cuts furnished free upon application.

Items shown include: spoons (Nos. 8002, 8016, 7960, 7987, 9399, 9394), rings (Nos. 8861, 8690, 8671, 9214), watches (Nos. 8345, 8304), a pipe (No. 8468), a photo frame (No. 8398), a watch case (No. 9388), a watch band (No. 9146), a watch face (No. 9214), and various other decorative pieces.

**MARINE CHRONOMETERS AS**  
**Show-Window Attractions.**

A reliable Chronometer is one of the best. It keeps your name before the public and will bring you trade. We have a number for sale at very moderate prices, for cash. All in good order and guaranteed.

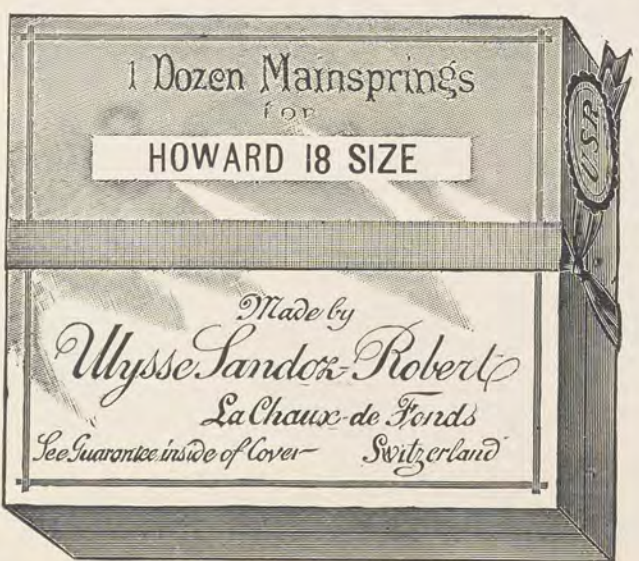
**RIGGS & BROTHER,**  
Chronometer Manufacturers, 221 Walnut St., Philadelphia, Pa.  
ESTABLISHED 1818.

18 K. .87  
14 K. .71  
10 K. .55 NET.

**L. B. & L. Smith**

MANUFACTURERS OF FINE WEDDING RINGS. FULL QUALITY GUARANTEED.  
SUCCESSORS TO HILDRETH MFG. CO. ESTABLISHED 1860. WRITE US. 53 Maiden Lane, NEW YORK.

**THE BEST MAINSPRING for American Watches ever manufactured.**



FOR  
**Watches**

Waltham  
Elgin  
Howard  
Springfield  
Rockford  
Columbus  
Standard  
Seth Thomas  
United States  
Trenton  
Hamilton  
Hamden

N. B.—These springs will be distributed to the jobbing trade as quickly as possible, consistent with the already large demand. Should your jobber be unable to supply you, write to the importers. Price, \$15.00 per gross.

In placing this spring on the market it is my honest intention to manufacture an article above reproach and thoroughly trustworthy in every respect; a high standard of quality will be maintained consistent with the best grade of steel and most experienced hand labor.

Should any breakage occur, my authorized agents or their customers will replace broken springs, either by new springs or their full value.

Ulysse Sandoz Robert  
Successor to Jules Robert & Co.

**STATEMENT OF THE MANUFACTURER:**  
The guarantee in the inside cover of each box of my mainsprings, I will strictly adhere to. A personal trial of the springs will give more information about them than I could say in volumes.

Ulysse Sandoz Robert  
Successor to Jules Robert & Co.

**STATEMENT OF THE IMPORTERS:**  
We have induced Mr. Ulysse Sandoz Robert, successor to Jules Robert, manufacturer of the world-renowned "Gravier" and "J. R." Lepine Springs, which are the most celebrated, to manufacture springs for American watches of all makes, sizes and grades. Knowing, as we did, the high class of Lepine Springs made by this manufacturer, we felt no risk even in his initial efforts. The results have been more than satisfactory to us, as we have received a perfect mainspring, and one which we know will be indorsed by all watchmakers who use high-class mainsprings.

A fact we wish to impress is, that this is the first imported mainspring where the manufacturer gives his own name, and is willing to stand by the quality of the goods he manufactures.

**HAMMEL, RIGLANDER & CO.**  
35 Maiden Lane, New York.

## St. Paul and the Northwest.

September business for Twin City jobbers started in with a rush. All the travelers were called in to take care of their customers, a great many of whom took advantage of the low excursion rates to the National G. A. R. Encampment at St. Paul the first of the month to visit the cities, see the sights, and at the same time place orders for what was necessary to keep business moving at home. Facts are not enlarged on when we say that at no time have there been so many buyers in the Twin City markets at one time as there were the fore part of September, and, while the individual buying was light, the aggregate was very pleasing to the jobbers, and all feel as though these occasional meetings are of benefit to retailer as well as jobber. The general report of the retail trade was very satisfactory, and all look for a good fall business, as crops are all safely housed and out of danger. Travelers are out again, catching customers that did not get to the cities. Collections continue about the same, a little slow. Twin City retailers report good sales, but mostly confined to the cheaper class of goods, souvenir spoons taking the lead.

John N. Sinclair, of S. H. Clausin & Co., Minneapolis, Minn., is out on his Southern trip, after spending Carnival Week at home, entertaining his customers.

P. Dougall, of Eastern, Ontario, Canada, now has charge of the jewelry department of Smith Brothers, Hastings, Minn.

Fred Wiethoff, formerly with W. C. Leber, Minneapolis, Minn., is now with O. C. Hustad, Tower City, N. Dak.

Harry U. Rogers and family, Luverne, Minn., have returned from a ten-days' vacation spent at the Lakes, near St. Paul, during the G. A. R. Encampment.

Albert J. Metzger, St. Paul, has gone to Owatonna, Minn., where he takes charge of the repair department of Julius F. Young.

Charles Beard, of Sischo & Beard, St. Paul, has returned from a business trip through central Minnesota, his first since becoming a Benedict. He reports good trade.

Fred. H. Eickmeir, North Branch, Minn., reports a new member of the firm September 1st. THE KEYSTONE congratulates.

E. A. Masters, Pine City, Minn., has quit business.

A. Leyin has opened a repair shop at Cologne, Minn.

Jesse Foot, for a long time watchmaker with M. L. Finklestein, St. Paul, has accepted a position with Geo. R. Holmes.

C. D. Calhoun, of McGuire & Calhoun, Northfield, Minn., was married August 25th to Laura B. Johnson. After a trip to the Lakes, they are now at home to their friends. THE KEYSTONE extends its best wishes.

Chris Henningsen, Stillwater, Minn., has sold his stock to August Gfrerer, his watchmaker, who will continue at the old stand.

Hattenbach Brothers, Sioux City, Iowa, failed August 22d. Reported assets, \$15,000; liabilities, \$7,500.

The base ball game on Labor Day at St. Paul resulted in the defeat of the Seventh Street Jewelers by a team composed of jewelers selected from the rest of the city. Score, 17 to 5.

H. L. Weaver, Minneapolis, has removed from 207 Bank of Commerce Building, to 232½ Temple Court.

M. C. Boice, Aberdeen, S. Dak., recently had considerable damage done to his store by fire.

A. J. Rost, St. Peter, Minn., recently had the misfortune to have a watch mainspring slip while taking it out of the barrel and strike him in the eye. He has been confined to a dark room since, but has hopes of saving the optic.

E. E. Spaulding, of the E. E. Bassett Jewelry Company, Newark, N. J., in charge of the Minneapolis office, is off on his coast trip.

J. M. Bennett, of the Reed & Bennett Company, Minneapolis, has returned from a business trip East. While away he also visited his old home at Manistee, Mich.

Nick Wagner, St. Paul, has quit the jewelry business and is now managing a saloon there.

A. C. Campbell, Sheldon, Iowa, has returned from a trip to Northern Minnesota, where he was visiting friends.

I. R. Bunker, of Sischo & Beard, St. Paul, after a week's work in the home office, is again on the road.

E. E. Esterly, Duluth, Minn., has recovered sufficiently from his recent bicycle accident to once more attend to business.

J. T. Ellingboe, Minneapolis, owing to continued ill health has sold his manufacturing plant to M. Thourin, who has consolidated it with his already large plant.

Louis Martin, formerly with Eustis Bros., is now with M. L. Cohen, Minneapolis.

A. E. Mellgren, St. Paul, engraver and die-sinker, has placed a nice line of campaign pins and buttons on the market, comprising miniature silver dollars and gold and silver bugs.

Julius F. Young, Owatonna, was one of the few visitors to the trade, wearing a G. A. R. uniform. He says it made him feel young again.

S. Quint, who removed from Cumberland, Wis., to St. Paul, Minn., last spring, thinks city life does not agree with him, and has now opened a store at Shell Lake, Wis.

Benj. Marx, of D. Marx & Son, St. Paul, is out on his northwestern trip. Ben says things must move.

Theo. Schaal has started in business at Hastings, Minn.

Twin City jewelers showed their respect for their visitors during the G. A. R. encampment by doing their full share of store decoration. There were so many excellent displays of flags and bunting that it is hard, and would be unjust, to call especial attention to any. All can say, now that it is over, "Twas well done."

Adolph Smith, of Smith Bros., Hastings, Minn., has decided to quit the jewelry business and has accepted a road position with the American Rubber Co. His friends will be sorry to lose Dolph, but wish him success in the new venture.

A. E. Paegel, Minneapolis, while out driving last month with his wife met with a serious accident. His horse, becoming unmanageable, backed on the street car track and was run into by an electric car, which smashed the buggy and threw Mrs. Paegel twenty feet. She was badly injured and Mr. Paegel's hands were cut. His body showed several bruises. Both will recover.

T. B. Myers, of Myers & Co., St. Paul, recently had a narrow escape from serious injury while bicycle riding, he being run over by a horse and buggy. Fortunately, it resulted only in his being compelled to stay at home for a week, nursing bruises.

Frank Hyde, lately with W. R. Lasham, Grand Forks, N. Dak., has gone to Beaver Dam, Wis., his former home.

L. Schaefer, Shakopee, Minn., has greatly improved the appearance of his store by re-papering and painting. He has also put in a plant for the manufacture of acetylene gas, which he will use as a lighting power.

The State Fair, Thirtieth National Encampment of the G. A. R. and the Knights of Pythias Convention, with their low excursion rates, resulted in plenty of visitors to Twin City jobbers the fore part of September. While THE KEYSTONE representative is sorry he could not see all of them, and offers the excuse that the crowd was too large, and there are only twenty-four hours in a day, the following were either seen personally or reported themselves present from Minnesota: C. D. Taylor, Mankato; C. C. Thurston, Montgomery; Albert Asleson, Dawson; R. G. H. Scott, Dassel; J. D. Schroeder, Mountain Lake; A. P. Brobeck, Kenyon; Will C. Kayser, Marshall; L. P. Sandberg, Red Wing; Mrs. Nick Locken, Bird Island; H. L. Gates, Rochester; Harry U. Rogers, Luverne; A. L. Mealey, Delano; J. S. Stadsvold, Crookston; Lucien Diacon, Chaska; C. L. Ekberg, Red Wing; Fred. Giehler, Norwood; J. Fuiks, Lyle; Julius F. Young, Owatonna; L. J. Korstad, Zumbrota; W. G. Hauenstein, Red Wing; S. G. Clifford, West Concord; H. L. Waldron, Staples; C. J. Odell, Windom; E. M. Schwenke, New Richland; J. H. Reiner, Glencoe; John Donohue, Faribault; Wm. Krohn, Annandale; S. B. Millard, Litchfield; S. E. Betts, Little Falls; S. Anderson, Willmar; A. M. Harper, Renville; I. Reiner, Hutchinson; J. S. Crandell, Austin; John Anderson, Wadena; John C. Marx, Shakopee; Chris. Arveson, Sleepy Eye; C. R. Holman, Cannon Falls; Thor Erickson, Red Wing; Adolph Smith, Hastings; U. F. Lemire, Barnesville; F. W. Hauenstein, New Ulm; Fred. Willman, Harry Stein, Albert Mellin and W. J. Stein, Stillwater; L. Kramer, Wadena; John Fredell, Center City; Fred. H. Eickmeir, North Branch; J. Hames, Arlington; F. F. Nelson, Willmar; H. O. Schlander, Springfield; E. A. Masters, Pine City; Al. E. Winter, Owatonna; P. F. Larsen, Litchfield; J. P. Smith, Hastings; Herman Fredell, Center City; H. B. Lund, Morris; E. C. Bennett, Zumbrota; C. Sherdahl, Montevideo; W. G. Gould, Glencoe; C. P. Hedenstad, Albert Lea; Nels Johnson, Staples; J. H. Steen, Albert Lea.

From South Dakota: Thos. S. Sharp, Olivet; Henry Buck, Garretson; M. C. Boice, Aberdeen; E. F. Latsch, Chamberlain; B. L. Gates, Sioux Falls; Wm. Peterman, Lake Preston; L. E. Sasse, De Smet; C. B. Collins, Groton; O. Larsen, Bowdle; F. F. Baker, Aurora; J. Matthews, Pierre.

From Iowa: H. Kunath, Spencer; H. J. Bentley, Waukon; O. H. Bergland, Lake Mills; J. P. Parrott, West Union; C. Lee, Sioux City; W. E. Siddall, Spirit Lake;

A. C. Campbell, Sheldon; W. Parshall, Clearfield; F. A. Robinson, Tripoli; G. T. Frazee, Osage; S. R. Kelbom, Riceville.

From Wisconsin: E. E. Meacham, Prescott; H. P. Turner, Spring Valley; A. J. Demeres, St. Croix Falls; J. Segerstrom, Rhinelander; George Koberstein, Baldwin; C. H. Todd, New Richmond; Geo. B. Johnson, Martel; L. W. Keyes, Hammond; A. J. Lee, Hudson; A. B. Fink, Ashland; C. A. Houghtaling, Menomonie; E. E. Church, Clear Lake; T. J. Thompson, Amery; J. H. Quinlan, Rice Lake; Samuel Lasky, Ashland; S. Landauer, Ashland; Mrs. M. Seewald, Grantsburg.

From North Dakota: A. L. Bostwick, Neche; R. W. Main, Cando; C. H. Pratt, Fargo; Emil Nelson, Park River; J. B. Kessler, Edgeley; W. F. Rust, Milbank; B. W. Boyd, La Moure; N. C. Pabst, Fargo; Frank Hyde, Grand Forks.

We also noticed H. A. Skusa, Hare, Mont.; Joseph Hermann, Calumet, Mich.; Harry C. Vanderberg, Ironwood, Mich.; J. F. Jones, Yellow Springs, Ohio; Geo. W. Bleeker, Newark, N. J.

"Enclosed find one dollar for renewal of my subscription to *The Keystone*; each copy is worth the price of a year's subscription."—W. B. Lawson, jeweler, Jamestown, Tennessee.

## Los Angeles and Southern California.

Business is very quiet at present, and it will likely remain so till the political battle is over.

Meyer Lissner, of M. Lissner & Co., Los Angeles, returned recently with his bride, nee Miss Greenwood.

G. J. Isaacson, Los Angeles, has removed to South Spring Street, from his former stand on West Fifth Street.

Isador Marshutz, of the Pacific Optical Company, Los Angeles, writes from Europe that he will soon return home. He has purchased large quantities of new goods for his firm for the fall, and established business relations with many of the leading manufacturers in the optical line, thermometer line and mathematical line, etc. This firm will henceforth carry, in addition to their complete line of optical goods, a full line of chemical glassware, hearing instruments, drawing instruments, and mechanical toys for the holiday trade.

Chas. H. Brown, jeweler, Los Angeles, removed to better quarters on Broadway near Fourth.

J. P. Trafton, the well-known and enterprising wholesale jeweler of Los Angeles, returned a few weeks ago from his eastern purchasing trip. He made extensive purchases of novelties and bargains.

W. E. Doty, who only recently had opened in San Diego, sold out there and moved to Cloverdale.

Miss Mary Donovan, sister of J. G. Donovan, the well-known jeweler of Los Angeles, has recovered from her long illness and is able to attend to her duties again as secretary and treasurer of the J. G. Donovan Company.

Dr. F. L. Fuller, with the Pacific Optical Company, Los Angeles, will shortly open the second class for the study of the optical science. His last year's class terminated most successfully. Applicants should address him direct, or write to the Pacific Optical Company for particulars.

It is reported that shortly a new watch material house will be opened at Los Angeles, with a very large stock of watch material and supplies. This is a good field for such an enterprise.

## A Tribute to Waltham Watches.

The American Waltham Watch Co., Waltham, Mass., recently received the following communication:

Office of District Clerk,  
BURNET, TEXAS, August 17, 1896.

WALTHAM WATCH COMPANY, WALTHAM, MASS.  
*Gentlemen*:—I have been reading your ad. in the *Scientific American* of August 8, 1896, and I appreciate all that you say therein; and I just want to say that not disputing any of said statements, yet it would take considerable proof to convince me that your "Riverside" and "Royal" are any better than the movement in a watch I have carried for more than twenty-two years. Early in the year 1874 I purchased through Messrs. Barnes Bros., of Louisville, Ky., a four-ounce silver case watch, No. 690374, Crescent Street Waltham movement, which I have carried steadily and continuously (save on three occasions that I sent it to be cleaned) as a cowboy, as a teamster on the road, as a mechanic and as a farmer, and I must say that for an all-around hard service and strictly first-class timekeeper neither Waltham nor any other watch company ever made a better timekeeping machine; and although I have carried it for twenty-two years, I would not part with it, and as I say, it would take considerable proof to convince me that a better timekeeper can be made than the watch I carry to-day.

\* \* \* \* \*  
Very courteously yours, etc.,  
WM. M. SPITLER.

## Enamel Photos. on Watch Dials and Caps.

BEAUTIFUL and LASTING. Send for samples.

We're finally settled in our new *enlarged quarters*, and ready to do business on the same old lines that have made our enlargement necessary, viz.: *Low Prices, Artistic Work*, and most important of all, *Quick Delivery of Work*. Everything guaranteed.

We have sold thousands of our *McKinley* and *Bryan Real Photo Buttons*, but have plenty left at the low price of **35 cents** per dozen, \$4.00 per gross, net.

A Big Seller just now is the "PRESIDENTIAL SPOON."  
We put Photos. of either Bryan or McKinley on Sterling or Plated Spoons, at \$5.00 per doz., \$4.00 per half doz.



Photos. on Watch Dials or Caps, \$1.50 each.  
No extra charge for groups. Photo. returned uninjured.  
Our Enamel Coating prevents flaking.

The Elmore Co., 115 Dearborn St., CHICAGO.

# IT JUST COINS MONEY!

The Very Thing You Have  
Been Looking For.

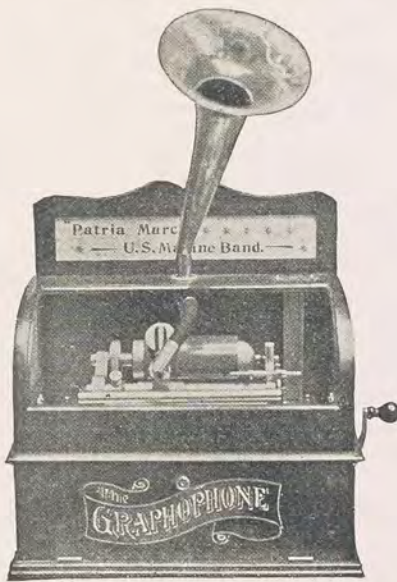
A Money Getter.

It Talks.

It Tells Stories.

A FULL BRASS BAND.

Reproduces EVERY-  
thing and Anything.



It is Simple.

It is Cheap.

No Batteries.

Clockwork Motor.

Gives BIG RETURNS.

**\$50.00**

Will Pay At Least One Clerk's Salary.

Will Pay A Traveling Man's Expenses.

One man writes us: "Machine paid for itself in less than two weeks." Another took in over \$30.00 the first week.

**CAN YOU AFFORD TO BE WITHOUT ONE OF THESE WONDERFUL MACHINES?**

We have everything known in Talking Machines, from \$12.00 to \$50.00.

Over 5,000 Records to select from, for from 50 Cents up.

Send full price of Machine with order, and a discount of 3 per cent. will be allowed; or \$10.00 with order, balance C. O. D.

## UNIVERSAL GRAPHOPHONE COMPANY,

J. A. FOSTER & CO.,  
Selling Agents.

Providence, Rhode Island.



**J. J. CLUIN,** MANUFACTURING AND WHOLESALE  
JEWELER.

**Society Emblems** A SPECIALTY.

CATALOGUE SENT ON REQUEST.

92 Central Street, Lowell, Mass.

**Campaign Buttons,** illuminated in colors, \$2.50 per hundred.  
Send five cents for sample and circular.



TO CONVINCE YOURSELF OF  
THE ADVANTAGES OF THIS

**Moroccine Watch Box**



MOROCCINE-COVERED, VELVET-LINED,  
SHAPE, SOLID BLOCK FOR WATCH.



DROP US A POSTAL CARD  
FOR A SAMPLE!

PRICE, \$3.50 A DOZEN.

NEATER AND CHEAPER THAN  
ANY BOX YOU EVER BOUGHT.



EXCELLENT CASE FOR THE JOBBING TRADE. SPECIAL PRICES.



# We Suppose

You have delayed ordering till times brightened up a little—that's why you have not heard from us before. We are glad to report good, liberal orders in our Fancy Goods Department. Our special lines of **HOLIDAY GOODS AND DECORATED CHINA NOVELTIES**, for Jewelers' trade, are unusually large and attractive this year.

We can give you lines you can retail at a popular price and still make a good, big profit—styles and decorations that will win your customers right over—every time. A single order from us will show you the way we make prices this Fall.

We suppose you know we carry the largest line of **CUT GLASS** in the West. Of course, the Cut Glass factories go after the retail trade pretty strong, but we want you to remember we have **SPECIAL LINES AND VARIETIES** that no single factory can show you, and we have the prices 'way down—**AT ROCK BOTTOM**. We simply guarantee you against any competition in the United States. You should have our Catalogue. *Let's hear from you.*



## PITKIN & BROOKS,

Importers of China and Fancy Goods,

CHICAGO, ILLINOIS.

### Special Terms on Holiday Goods.

On all orders for Holiday Goods purchased and shipped before November 1st, a discount of 5 PER CENT. will be allowed if paid within ten days from date of invoice. CUT GLASS NOT INCLUDED.



## Fifty Years is A Long Time

but for that period the



has met all comers and still retains the leadership.—Quality tells in time, and that's why the Rogers "Anchor" Brand of Silver-Plated Ware is still the favorite.—Designs always the newest and neatest.

Factories: { Hartford, Conn.  
Norwich, Conn.  
Wallingford, Conn.  
Taunton, Mass.

Wm. Rogers Mfg. Co., Hartford, Conn.



## Nuremberg, Bavaria's Mediæval City.

BY THE SPECIAL REPRESENTATIVE OF THE KEYSTONE.

No. 9.

NUREMBERG, Sept. 7, 1896.—This "little town of Nuremberg" does not, in appearance, give one an idea that its odd red roofs cover 150,000 inhabitants; nor while wandering through its crooked streets and narrow passages can you believe that it is an industrial, active, nineteenth century city. Down to 1806 it was a free city. In Napoleon's arbitrary rearrangement of a continent, Nuremberg was given to Bavaria. "There is probably no town in Germany still so mediæval in appearance, or so suggestive of wealth, importance, and artistic taste." It is a Protestant city. Melancthon founded its Gymnasium.

The present buildings, with their quaint, high-peaked gables, were built generally in the fifteenth century. Innovations crept in during this century, and a number of modern houses, with windows at regular intervals and roofs which no more than cover the walls, were allowed to jostle their hoary old neighbors, whose roofs sometimes carry six rows of dormer windows, beside little rooms built out on them. The city fathers have stopped this irreverence, however, and all modern buildings conceal, under the mask of age, the distressing fact of their newness.

The fortifications date from the middle ages. A high wall surrounds the city, and the moat is still there. It is thirty-five yards wide and thirty-three feet deep; dry now, with vegetable gardens where formerly the water made a favorable defense. There are many towers; four said to have been designed by Albert Durer. The river Pegnitz divides the town in two nearly equal parts, and is crossed by several picturesque bridges. One is called the butcher's bridge, and on a broad pedestal at one end is a life-size figure of a cow lying dead, but with an intelligent head raised to watch the people below. On certain days of the week a market is held on the bridge under large tents.

Among the notable buildings are the churches of St. Sebaldus, St. Lawrence, the Marienkirche, and the Jewish Synagogue. St. Lawrence is a Protestant church, built about 1290. The superb rose window in front is thirty feet in diameter. The finest work inside is the Ciborium, or receptacle for the host. It is elaborately carved in stone, and is sixty-five feet high. It rests upon three kneeling figures, of Adam Krafft, the sculptor, born about 1492, and two assistants, all of whom worked at it for seven years. In St. Sebaldus is the masterpiece of Peter Vischer, the celebrated artist in bronze. It is an architectural framework of bronze enshrining the silver coffin of the saint. The artist and his five sons spent thirteen years in making it. It was completed in 1519, weighs eight tons, and cost 3,145 florins. At one end is a statuette of the saint, and at the other Peter Vischer himself,

with apron and chisel. Opposite the church, and adjoining the chapel of St. Moritz, is the famous beer saloon, the Bratwurstglöcklein. It is a tradition that at one time the only entrance to the chapel was through this little inn. A bell hangs on the wall, bearing the date 1400. Two tiny rooms inside hold the large brick oven, on top of which the peculiar small sausages are cooked, a large barrel of beer, and narrow tables with narrower seats. Along the front of the house, on the outside pavement, tables are set; but it is all very small and no one lingers long—too many are waiting to take their places. It adds to the flavor of the good lunch to think that you may be sitting upon the same spot that the traveler sat who told his astounded listeners of the rumor which had just come up from Italy, of a man called Colombo who had discovered a queer land where the people had birds' heads and the mountains were made of gold! The old Rath House, or Council Hall, was built in 1616, and is still in use for offices and entertainments. A notable object here is a stone lion which, for a month during the rejoicing at the close of the Thirty Years War, stood above the street with streams of red and white wine flowing from his mouth. The old castle of the Hohenzollerns is also very interesting. It is in good preservation and still used by the Bavarian ruler during his occasional visits. These, fortunately, are not so infrequent as in some places. The custodian of a German palace showed us the royal rooms with great pride, and when we asked how long it had been since they were occupied, answered complacently,



NUREMBERG.

"Four hundred years!" One of the towers has five sides. It contains a torture chamber with many of the old instruments of torture, the "Spanish horse," pillory, whipping post, thumb-screws, racks, and many more, the worst being the "Iron Virgin," a hollow figure lined with spikes, which opens to admit the victim, and closing pierces him through and through. It is difficult in these days to believe that men could have been found willing to close it. On the parapet of the wall surrounding the castle are shown two deep hoof-shaped impressions made by one blow from a horse's feet about the year 1550! The story is that a robber-knight, Eppelstein von Gaillingen, was imprisoned in the tower, and, as usual before execution, was granted any three reasonable requests he might make—one of these was that he might be allowed to ride once more his own loved and beautiful horse. For some time he interested his jailers by his feats of horsemanship, but suddenly over the wall sprang both man and beast, and landing safely disappeared into the forests. This gave rise to a well-known sarcastic proverb, "The Nurembergers hang no man till they have caught him." In the courtyard is the dead trunk of a lime tree said to have been planted by the wife of the Emperor



OLD CASTLE OF THE HOHENZOLLERNS.

Henry II., who reigned from 1002 to 1024. The tree was alive until two years ago. There is also a marvellous well. It is so deep that anything thrown from the top is six seconds before striking the water. Lights are lowered and its depths made visible. Part way down are openings into passages leading to the palace. These underground devices for safety and flight were made by prisoners who lived there while at work, and were all killed as soon as it was finished!

Factories may not be beautiful to look upon, but after all these horrors it gives one a deep sense of satisfaction to look down upon the peaceful city and see beyond its walls the tall chimneys and large buildings of the Nuremberg Machine Co. (formerly Cramer-Kletts), the Unite Ultramarine Factories, Schuckert & Co.'s dynamo-electric machine works, Faber's lead-pencil factory, the immense breweries of Henniger, Tacher and Kurz, and many others.

Apart from its own attractions, Nuremberg has now an exhibition of Bavarian industries. The buildings are in a beautiful park, in the same style as those at Chicago—our lake city has evidently set a fashion—and though comparatively small, contain a great variety of articles, quite an amazing variety when one considers how little ground Bavaria actually covers.

One end of the main building is devoted to machinery; considerable space is given to locomotives and cars of all kinds, the palace cars and sleepers being particularly handsome. A movable iron bridge attracts much attention and interest. The ends rest on rails running along the sides of the lofty "Hall," and the bridge, with people walking about on it, moves quite rapidly from one end to the other of the long building. It would be easier to tell what is *not* here than what *is*, but we hunted in vain for watches. A Munich storekeeper exhibited a few among curiosities, but there is apparently no manufacture of them either by hand or machinery. The silver and goldsmiths' finest shows are of church articles. Many of these are marvels of beautiful design and fine workmanship. Others are interesting on account of their large size, such as silver-plated figures six feet tall. The Brewers' Union exhibits an exquisite silver box eighteen inches long, with repousse work in gold. What little jewelry there is, is of an inexpensive kind. The best show is made by Hans Gassner, from the little town of Mindleheim. The articles are of enamel on silver gilt, and of Bohemian garnets. The enamel is of bright colors, but shows taste and ingenuity.

The best work is done in brass, copper, steel and iron. Such things as door knobs, hinges (with ornamentation) which sometimes nearly cover the doors, candles, brackets and innumerable small articles, as well as ornamental gates, screens and many things which, with us, are made of wood, are unique in design and very beautifully finished. This work is taught in the schools, as is the wood-carving, and several of these schools have exhaustive displays of their methods and of their work.

(Continued on next page.)



BAVARIAN EXHIBITION

### Nuremberg, Bavaria's Mediæval City.

(Continued from page 689.)

Partenkirchen, a village in the Bavarian Tyrol, has a large, flourishing school, and the specimens of their work exhibited here should put wood carving among the fine arts. When we visited the school we saw a massive piece of carved furniture made for a certain German count who married an American heiress. Unfortunately—or perhaps fortunately—before the work could be sent to him his American wife had gone back home and taken the money-bags with her, and the school now prudently insists upon payment before delivery!

The toys disappointed us. Having all our lives heard that Nuremberg was celebrated for its skill in this line, we anticipated seeing wonderful sights. But any large store in America at Christmas time could show better, and when we said as much were told, "Naturally, our best toys are shipped directly there!" There is a goodly show of bicycles, rather heavier than ours, many tandems, a few tricycles, but no carriers, though we have seen a few of these in use. One musical box is new to us. A little man, with violin ready, sits above a music box on which is



THE BRATWURSTGLÖCKLEIN.

printed, "Drop 5 or 10 pfennigs into the slot." We dropped five, and the little man slowly shook his head from side to side; we tried another five with like result, and it took a ten to produce an air.

There is a large exhibit of musical instruments; of leather, which is cheaper than with us; cloth, blankets, muslin, cutlery, articles made of heavy tin which look like silver, enameled ware, stoves, carriages, porcelain—but there is no end. It seems to us that everything we have ever seen—except watches—is manufactured in Bavaria.

Peasants in their native costumes are interested spectators, and are themselves interesting. Both men and women of some districts wear large numbers of old silver coins as ornaments, and these are sometimes very valuable on account of their rarity. The women's head dress in one part of the Tyrol is a stiff, fur hat, like a man's "plug" without the rim, and this is worn all the year. Either they are very unconscious of the notice they attract, or they are good actors. Imagine the mind of a man who can walk imperturbably about among sane people in high-heeled, black velvet shoes, showily embroidered, with a full "frock" of cloth broadly trimmed with embroidery and iridescent spangles, and a large ostrich plume around the crown of his low felt hat, with a big, bright red ribbon bow at the back, with the broad ends falling to his shoulders! They are erect, handsome, and powerful-looking men, and nobody laughs at them.

"The Keystone has educated me how to run my store, and if it should cease to come I would think I had lost my best friend and adviser; so here enclosed is a dollar and keep her coming for another year."—I. Wartelsky, jeweler, Patton, Pennsylvania.

### How to Run a Jewelry Store.

#### Let Store and Stock Harmonize

The greater part of a jeweler's stock consists of articles of ornamentation. Even his watches and clocks, useful as they of course are, are largely ornamental—the cases often costing more than the works. For this reason, his store and its arrangement ought to be tasteful and artistic in the highest possible degree. Its exterior should be simple but very attractive, and its interior should be fitted up in the perfection of quiet elegance. I do not mean that it must be expensive; that must depend on the amount and character of the jeweler's trade. Real artistic beauty is not necessarily highly expensive.

The store should always be perfectly clean and free from dust and flies. The furniture should be solid and as handsome as possible, conveying the impression of substantiality and prosperity. Cheap-looking surroundings give the goods an air of unreliability, and jewelry, above all things, is judged by the uninitiated by the character of its surroundings. Everything should be encased by glass—a jeweler's goods are cheapened by being spread around like stuff in a junk shop. The arrangement of the store and the goods should be very carefully studied, and everything possible done to convey the impression of their great value and the necessity of their being kept and guarded with the highest degree of watchful care. Impressions go a great way with all of us, especially when we are buying something we know little about. You can sell coal and wood in almost any sort of a place, but when the ordinary citizen goes into a jewelry store one of the first things he does, although he often does it unconsciously, is to try to gather some idea of the soundness and reliability of the establishment. Of course, he has nothing by which to form his opinion except the general appearance of the store and the clerks. A carpet on the floor, and pictures and bric-a-brac judiciously selected and distributed, will add greatly to the effect. Clerks should not only be perfect gentlemen, but look it and dress it.

#### Good Points on Window Display

The windows of most jewelry stores have too many things in them, and are not changed often enough. There are so many beautiful and costly things in them that one looks, sighs a covetous and despairing sigh, and goes away. A jeweler's window should, generally speaking, be a "one-idea" window. There should be a central article, or class of articles, to which everything in the window naturally leads and points. The attention of the public should be focused upon one point, not scattered over a whole big window of diversified objects. The articles advertised in the newspapers should always be conspicuous in the window immediately upon the appearance of the ad. People often read an ad, that attracts their attention, and when passing the store look in the window for the article advertised. If they can't locate it, they go away; whereas, if it were prominently displayed, many a sale might be made. I remember once seeing a very striking and effective bracelet ad. in a Baltimore paper, but on passing the jeweler's store the next morning I was unable to locate the bracelet in the window, although very probably it was there. If the window had been properly trimmed those bracelets would have been the most prominent thing in it. Everything else should have been subordinated.

If watches or clocks are in the windows, they should always be running, and should always show the correct time. Every watch or clock of them should show absolutely the same time that the others do. When one stops to look at a window full of clocks, about the first thing he does is to look to see what time they say it is. If every one of them tells the exact truth about the time, it is an impressive sight—a sight one will long remember, because of its rarity. It gives one a very high opinion of the store, too, for, if one really wants to know the time, it's one of the most exasperating things in life to stop at a jeweler's window and find all his clocks and watches telling a different story.

Everybody in the town ought to be able to rely absolutely upon the correctness of the time shown by the timepieces in your windows. People should understand that they can always set their watches by your window, that the town clock may be wrong, but you, never. At night some timepiece should always have a bright light in front of it.

#### As to Advertising Jewelry

The newspaper advertisements of a jeweler should carry out the ideas that I have suggested above. Nearly everybody buys jewelry at a store that they know to be reliable, for the reason that not one man or woman in a hundred knows a good thing from a poor one. I think it would be a surprise to

most jewelers if they could know how few people really know a diamond from a rhinestone, or a ruby from a piece of a glass bottle. They pretend to, but they don't.

The jeweler must stand between his goods and the public. He cannot say, as most merchants can, "Here are the goods—judge them for yourself." He must make the public believe that his goods are the genuine thing *because he sells them*. He must continually harp on that point. He must say something in his ads. that will tend to make the reader understand that the fact he offers an article for sale is sufficient guaranty of its genuineness. I do not mean that he should boast of his honesty—that might cause people to suspect him. I mean that he should infer, and hint, and imply. He should make people understand that his reputation is a settled thing in the community, and that it has never been called in question. He should show that if he were to be dishonest he could not do business.

People will always believe you are honest if you prove that dishonesty would be a losing game.

A jeweler's ads ought to be seductive in the highest degree. Jewelry is a luxury—not a necessity. People can very well get along without it. Hence, the jeweler is obliged to create a demand for his goods. Old-fashioned, back-number advertising may still sell goods that people must have, but it won't sell things they can get along without. A jewelry ad. must entice people—convince them that they must have a thing they could very well do without. The goods must be described in the most attractive, tempting manner possible. This is not so very difficult, when you come to think of it. Surely there is nothing that can be described to better advantage than a pretty piece of jewelry.

The fact that jewelry is not a necessity is the strongest possible argument for the "one-idea" style of advertising. You may make a man believe that he needs and must have one thing, but you will make a mistake if you try to induce him to buy two. You may make him want them both, but he will feel that he can't buy them both, and he will halt between two opinions and try to sit on two stools until he forgets all about your ad., and you will wonder why it failed to "draw."

Take one thing at a time and talk about it just as if you had a customer before you who was trying a handsome ring on his finger or thinking how nicely it would become the pretty finger of his best girl, but didn't exactly see how he could afford to buy it.

That's the idea, exactly. You know he'll buy it if he is handled in the right way.

As a jeweler deals almost exclusively in things of beauty, his ads. should be things of beauty. They should be as near to typographical perfection as the types of his newspaper permit. They should not be long, but should be models of grace, elegance and beauty. Not only should they be attractively displayed, but the language should be well chosen and graceful. The price of the article should always be given. Commence with a bold, striking heading, describe the article, and tell the price. Do this with a little judicious horn-blowing, have it set up properly, and you'll have a good ad.

—Theodore Hamilton in Brains.

### Stumps for Staking Tool.

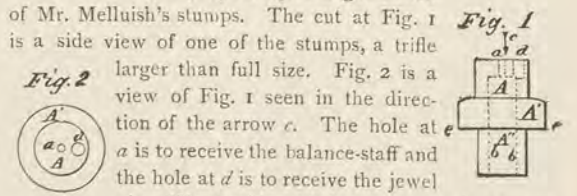
GARDEN CITY, KAN., August 20, 1896.

EDITOR KEYSTONE.

I send you two stumps for a staking tool which can be used for driving on roller table or for holding balance and staff in position while putting on hairspring. The idea came to me from seeing chucks made by Hardinge Bros., of Chicago, for holding balance while pivots are being operated on. They made these for me on my order, to fit a Rivett staking tool. I would like to have your expert's opinion on them after a practical test. One is 18 size and the other is 6 and 0 size. If the idea proves of any practical value, any of my fellow-workmen can make them, or Hardinge Bros. probably would make them for them.

Respectfully yours, A. E. MELLUISH.

The accompanying cuts give a good idea of Mr. Melluish's stumps. The cut at Fig. 1 is a side view of one of the stumps, a trifle larger than full size. Fig. 2 is a view of Fig. 1 seen in the direction of the arrow *c*. The hole at *a* is to receive the balance-staff and the hole at *d* is to receive the jewel pin. We consider this invention a valuable one, and think the invitation fellow-workmen will duly appreciate so useful an adjunct to the staking tool. We are glad Mr. Melluish refrained from patenting the device, not because it is not a useful invention, but because he would probably have lost money by it. We do not know of half a dozen inventions relating to watchmakers' tools, within the last decade, which have returned the patent fees to the inventor.

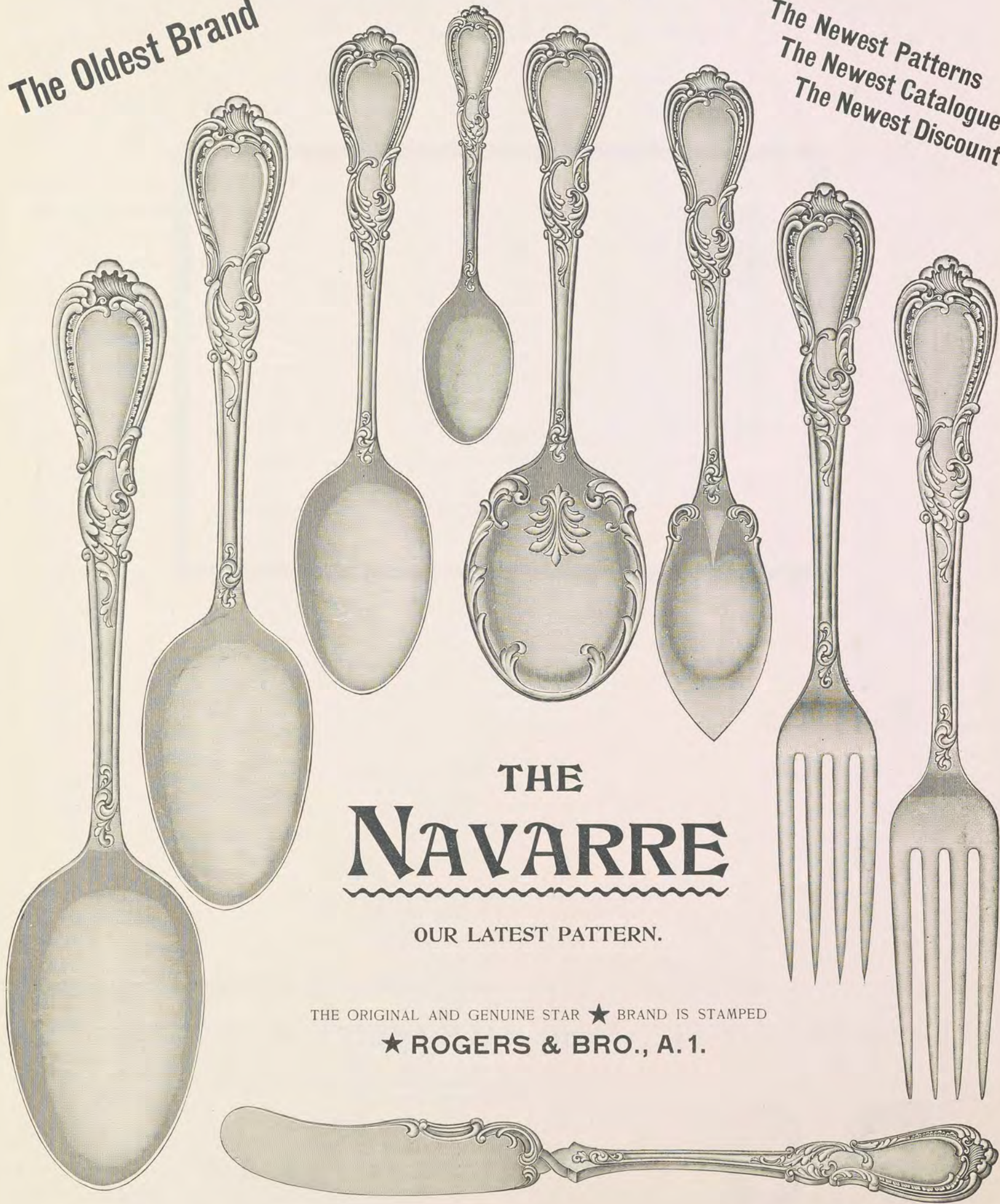


★ **ROGERS & BRO., A. 1.**

775

*The Oldest Brand*

*The Newest Patterns  
The Newest Catalogue  
The Newest Discount*



**THE  
NAVARRE**

OUR LATEST PATTERN.

THE ORIGINAL AND GENUINE STAR ★ BRAND IS STAMPED

★ **ROGERS & BRO., A. 1.**

AND IS MANUFACTURED EXCLUSIVELY BY

**ROGERS & BROTHER,**

**Waterbury, Conn.**

ANY REPUTABLE DEALER WHO HAS NOT RECEIVED  
OUR NEW CATALOGUE AND DISCOUNTS WILL  
BE SUPPLIED ON APPLICATION.

**16 Cortlandt St., New York.**



WE propose to issue our new set of Catalogues on or about October 1st. With the introduction of many improvements in optical goods during the last few years, we find our Catalogue growing too bulky for the requirements of the general trade. Goods which were popular and desirable years ago have been superseded by improvements which are now used to the exclusion of old styles. To continue to illustrate and price those styles of goods now seldom used requires space which might better be devoted to later improvements, a saving of time and of patience to our customers and ourselves. In our new Catalogue we shall try to retain all of the old that is staple, and add all desirable improvements which we can recommend. In former years our Catalogue has been regarded as standard, and we propose that the new issue shall be in no wise inferior to our former Catalogue which we issued to the optical trade.

All dealers desiring new Catalogue, please send address with business card

**Geneva Optical Co., Chicago, Ill.**

---

**EVERYBODY SATISFIED WHO HAVE USED P. O. FRAMES.**

**P. O.**

SEAMLESS GOLD FILLED SPECTACLES, EYE-GLASS AND  
FRAMELESS MOUNTINGS  
ARE FINISHED BETTER THAN GOLD,  
WILL WEAR AS LONG AS GOLD,  
WILL ALWAYS SATISFY YOUR CUSTOMER.  
ONLY LINE OF SPECTACLE FRAMES MADE WHERE THE  
TEMPLES WILL NOT BECOME LOOSE, EVEN AFTER  
YEARS OF WEARING.

**WE MEAN ALL THE ABOVE AND MORE IN OUR GUARANTEE TAG.**

If your Jobber does not handle our Mountings,  
write to us and we will inform you where you can  
obtain them.

**PROVIDENCE OPTICAL CO., PROVIDENCE, R. I.**

# OPTICAL DEPARTMENT

## Reviews of Current American and English Ophthalmological Literature.

By CHAS. F. PRENTICE, M. E., New York.

### The Prismatic Perimeter.

By JOSEPH E. WILLETTS, M. D., of Pittsburg, Pa. "Annals of Ophthalmology and Otology," July, 1896.

Dr. Willetts, in calling attention to the importance of determining the visual acuity of the peripheral portions of the retina by means of the perimeter, enters into the consideration of a fundamental error common to perimeters in general use. He claims that "to be scientifically consistent with the laws of physiological optics, the field of vision should only be taken after the error of refraction has been corrected." The practicability of ordinary perimeters is questioned, because they do not permit of application to corrected cases of ametropia, on account of the rim of the correcting glass interfering with the peripheral scope of vision, and because the obstruction occasioned by the brow and nasal bridge, as well as the position of the patient, are not taken into consideration. The records made from these instruments are claimed to be unreliable, as they rarely agree when measurements are successively made by different observers; this variability being increased through inconstancy of the reflected light, upon whose constancy and stimulus, moreover, visual acuity actually depends. The author dissents from Fuch, who claims that "the anterior border of the sensitive portion of the retina extends farther forward on the nasal than on the temporal side, in comparison as 65° is to 90°." Dr. Willetts claims that both sides of the retina are equal. He most censures the physiognomy for contracting the nasal side of the visual field, and the ordinary perimeter, which increases the contraction "by bringing its objective point inside of the point of infinity to 15 in., from whence all rays must enter the eye as divergent, thereby causing a restriction of the whole field to the extent of 0.57' on both sides." The accommodation for so near a point implicates convergence which adds 6° 38' to the temporal side, and which should properly belong to the nasal side. Any instrument which shows a contraction of the

normal field of vision in its appreciation of form or color is therefore considered by the author to be wrong in principle, and consequently of no scientific value. To obviate these and minor errors, Dr. Willetts has devised a series of polyprisms, six-sided glass pyramids, whose sides form such angles with their bases, when the latter are placed before the eye, as to refract parallel rays of light, incident from the vertex end, to correlative parts of the retina which correspond to the degrees of the ordinary perimetrical chart.

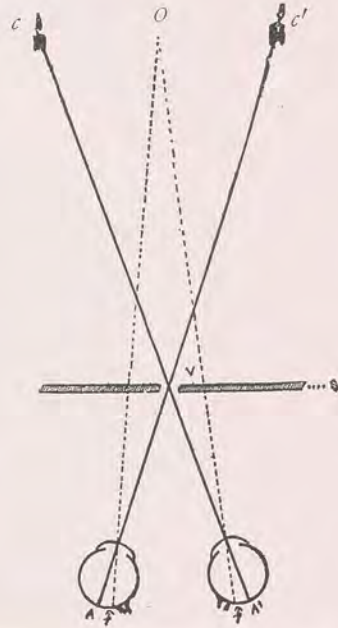
The hexagonal polyprisms, constituting the suggested set, are mathematically calculated to produce the deviations of 10°, 20°, 30°, 40°, 50°, 60° and 70°, respectively, so that, by the use of any polyprism, one of the corresponding concentric zones of the retina may be explored. A light, viewed through one of these polyprisms, projects six images upon the retina, with a band of light connecting each adjacent pair of them, thus creating a hexagon which covers the visual field of the zone for which the polyprism is intended to be used. By rotating a polyprism upon its axis, placed horizontally before the eye, the images undergo a corresponding rotation upon the retina. If, for all positions of rotation, all the images remain in view, the annular field of the polyprism's zone is unimpaired, but, if an image is missing, it indicates an impairment of the retina in the meridian in which the phenomenon occurs. In marked contrast to the ordinary perimeter, where rotation of 360° in each zone is necessary, it is possible, with each polyprism, through rotation of only 60°, to explore its entire apportioned zonal field. Thus less than twenty per cent. of the time is consumed in obtaining more accurate results than with the ordinary perimeter. By using a series of incandescent lights, red, green, blue, yellow, etc., the field and color sense in any meridian of any zone may be quickly determined. "All colors are recognizable with the prismatic perimeter at the periphery of the field as well as inside the color field as at present recognized." It is therefore claimed to have been demonstrated by this instrument that "there is no contraction of the normal field for any color, or any image." Each polyprism is mounted within a blackened metallic tube, which is graduated in degrees, with the 90° mark placed coincident with the vertical meridian of the eye, so that changes from this position place within the knowledge of the operator the exact meridional locations of the light images upon the patient's retina. Dr. Willetts' device is a practical application of the principle involved in a well known optical toy, the polyscope. The instrument is certainly most scientific, novel and ingenious, and should mark the beginning of a new era for accuracy in perimetrical measurements. The Wallace Optical Company, of Pittsburg, Pa., are the makers.

### An Apparatus Designed to Determine Convergence and Accommodation Without Prisms.

By W. F. SOUTHARD, A. M., M. D., of San Francisco, Cal. "Annals of Ophthalmology and Otology," July, 1896.

The principle involved in this apparatus is the substitution of two real images, from two objects at 20 feet, for the two false images of a single object, when prisms are placed before the eyes with their bases out. It is claimed by the author that, impulse strong enough to cause convergence of the two eyes to produce fusion of the real images can be attained by means of the apparatus, with as much facility as when prisms are used. From the author's description: "It is made of two parts, a screen and a stand. The screen, which is the working part of the instrument, is of oxidized sheet copper, 36 x 25 cm. in size. In the center of the screen is a vertical opening *V*, 14 cm. long and 1 cm. wide. This opening can be closed by a movable shutter, worked by a rack and pinion. In the middle of the shutter is a hole, 1/2 cm. in diameter, which can be used instead of the vertical opening. When this small hole is used, the two lights must be on a level with each other, else both cannot be seen at the same moment. The screen is made so that it can be removed and replaced with the opening *V* at right angles to its original position. The rod holding the screen is inserted into a tube so that the screen may be raised or lowered as may be required. The base is a heavy tripod of iron, giving steadiness to the whole affair."

Author's Descriptive Plate, Illustrating the application of the Prismatic Perimeter.



"Two candles *c c'* in place of a single object. Screen *s* between eyes and candles. Position of observer such that candle is seen by left eye at *c'*, and candle *c*, by right eye, at *A V*, the vertical slit through which the rays from candles come to the eye. Result: positions of candles coincide with the positions of the two false images at *A* and *A'* when prisms are used. To fuse or

bring the two candles together, accommodate and converge upon *V* in screen. The eyes now rotate inward to fuse the two false images. The dotted lines are for the purpose of showing that the two eyes could not focus upon *O* at the same instant. Opening *V* is in the median line. The right eye can only see objects to the left, and the left eye only objects to the right. Fusion of the two images, seen through the screen, must be at the intersection of the visual axes, namely, at the opening in the screen. "By placing the lights *c c'* a varying distances apart and moving the screen nearer to or farther from the eyes, we are able to demonstrate all degrees of convergence and accommodation possible, equally as well as with prisms."

"It is not intended to become a substitute for prisms, but it will be found, I think, a useful method for demonstrating in the class room."

[For a definite distance of the screen from the eyes calling for a known amount of accommodation, it is possible, however, to convert the maximum distance apart of the lights, for which fusion occurs, into an equivalence of prismatic power by using the prism-diopter as the unit of measure and comparison.—ED.]

### Spectacles and Eye-Glass Frames, and How to Fit Them.

From "The Human Eye," a Manual for the Use of Opticians. Queen & Co., Philadelphia, 1896.

The success of the optician will depend almost as much upon accuracy in fitting the frames in which they are mounted as upon skill in aiding his customer in selecting the proper lenses; for even the right lens will fail to give satisfaction if not properly placed before the eye.

In fitting frames care must be taken to place:

The centers properly before the pupils;

The glass just far enough from the eye to escape the lashes;

The glass at such an angle with the face, that when in use, the line of sight shall be perpendicular to it.

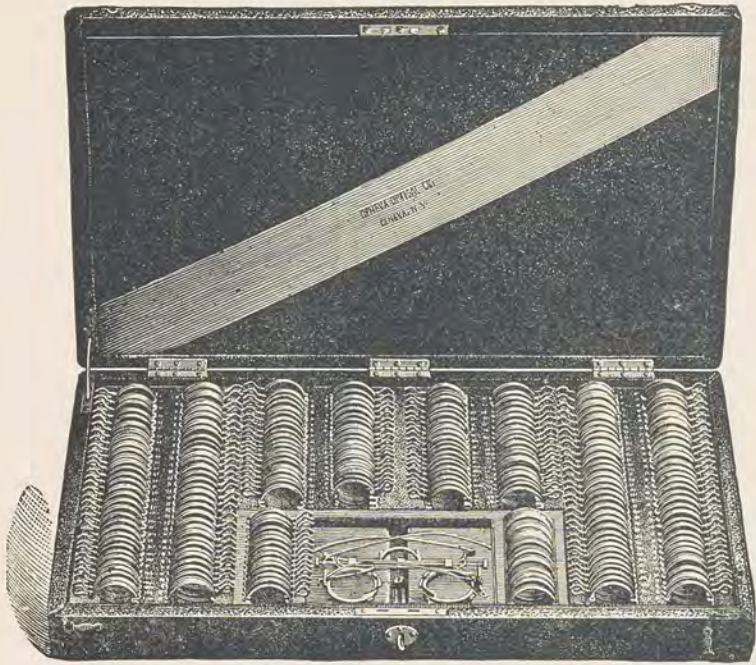
To adjust the centers properly before the pupils the lenses must be the right distance apart and the right height. The "eyes" of the frame should in general have their centers just in front of the pupils of the eye of the wearer. The distance between the centers of the pupils may be measured with an ordinary rule divided to millimeters or to sixteenths of an inch. The person to be measured is requested to look directly in front of him at some object across the room. You then place yourself in front of him, so that your head comes nearly in his line of sight, and standing at arm's length hold the rule across his face as close to the eyes as the bridge of the nose will allow in the position shown in Fig. 43 [see next page], with the end of the scale in front of the center of one pupil, and place the thumb-nail opposite the center of the other pupil. Then the distance indicated by the position of the thumb-nail may be read off as the distance between the pupils. As the lines from your

(Continued on page 779.)

Superior Quality

# GENEVA

Established 1873



*If the Jewelry business is dull,  
Work the Optical end of it.*

GENEVA GOLD FRAMES are accurate in size and are full weight and karat.

## INVESTIGATE TRIAL CASES.

GENEVA TEST-LENS CASES ARE THE LEADERS. NONE EQUAL THEM.

When you desire PRESCRIPTION WORK done accurately and promptly, send it to GENEVA.

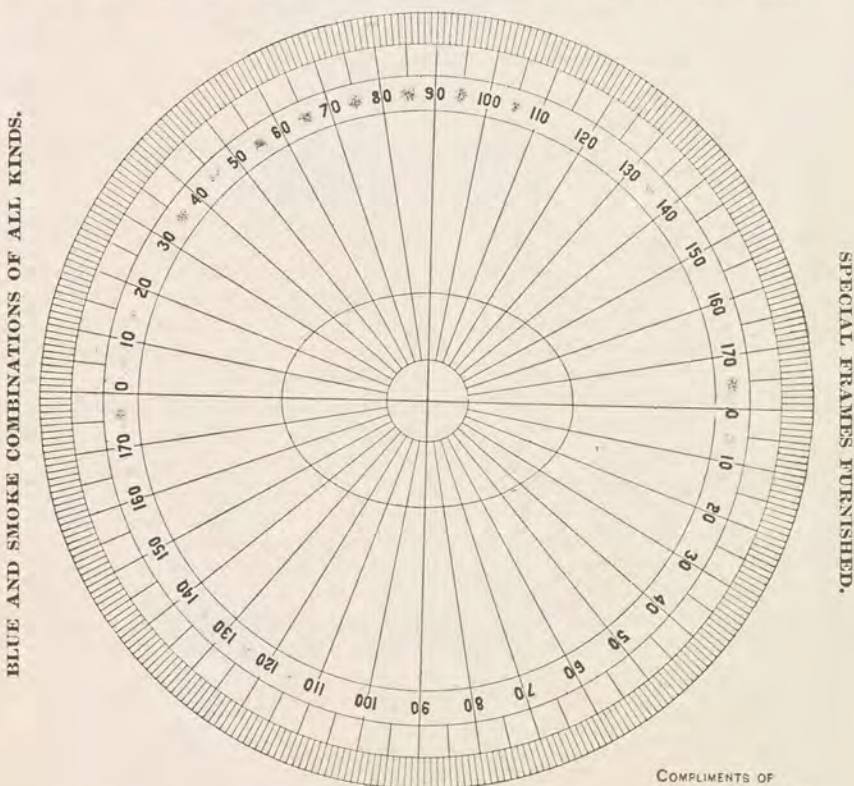
Geneva Prescription Work is Accurate.

We have a Catalogue. It's yours for the asking, provided you are a legitimate dealer and entitled to wholesale prices. Otherwise don't ask for it.

## GENEVA OPTICAL COMPANY, GENEVA, N. Y.

### Fine Surface and Edge Grinding for the Trade

Orders for special lenses filled and shipped same day received. Axes and centers marked and guaranteed. Send for wholesale price-list, job envelopes and protractors.



COMPLIMENTS OF  
C. E. DAVIS,  
OPTICIAN,  
2 PARK SQ., BOSTON.

### Artificial Human Eyes.

10,000 IN STOCK. Selection packages furnished.  
Single Eyes, \$1.50. Altered to Fit, \$1.00. Eyes Polished, 25 cents.

**C. E. DAVIS,** Manufacturing and Prescription Optician,  
2 Park Square, BOSTON, MASS.

## The South Bend College of Optics

ESTABLISHED, 1893  
INCORPORATED, 1896

(Talk No. 6)

Comparisons are said to be odious. That sentiment is wrong. It is only by making comparisons that it is possible to choose wisely. The person who expects to enter the optical profession must compare the different Colleges, or he can never know which one is best. We will say for his benefit that our College is not like any other in the world. Other institutions do little more than deliver class lectures. They go upon the principle that one human being is the same as another. They overlook the vital point that some are quick to absorb knowledge, and others are slow. It is easy to see that the slow pupil doesn't stand an equal chance with the quick. Our plan is to fit the instruction to the pupil. Each one gets individual notice and attention. If there is any point which is not readily understood, we explain that point a hundred times if necessary to make it perfectly plain. In the meantime the quick pupils are going ahead. A student progresses as fast as he ought to, but no faster. We have printed an interesting catalogue about our College, entitled "How to Become a Good Optician." We want every one who is interested to send for a copy, which is mailed free. Address.

**DR. H. A. THOMSON,** President,  
South Bend, Ind.

Personal and Correspondence Courses.

**Spectacles and Eye-Glass Frames, and How to Fit Them.**

(Continued from page 777.)

eye diverge toward the two eyes you are looking at, the distance thus obtained will be a little less than the real distance between the pupils. The error will be less the farther your eye is from the scale, and the closer the scale to the eyes measured, and for that reason you should make the measurement with the rule held at arm's length. But even in that case it is well to add a sixteenth of an inch, or a couple of millimetres, for the distance between the centers of glasses to be used for far-seeing, while for near-seeing the same amount may be deducted. Thus if the distance on the scale is found to be  $2\frac{7}{16}$  inches, we may give frames  $2\frac{1}{2}$  inches between the centers for distant vision, and  $2\frac{3}{8}$  inches between the centers for near work. In measuring the distance between the centers of the frames we do not have to determine the center of each "eye," and then measure between them, but can get the same distance by measuring from the right side of one "eye" to the right side of the other, or from the left side of one to the left side of the other.

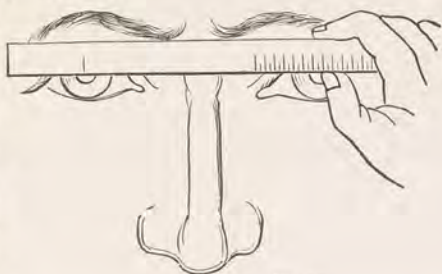


Fig. 43.

*Pupilometers* are special instruments for measuring the distance between the centers of the pupils. Different forms are shown in Fig. 44 and Fig. 45. They consist essentially

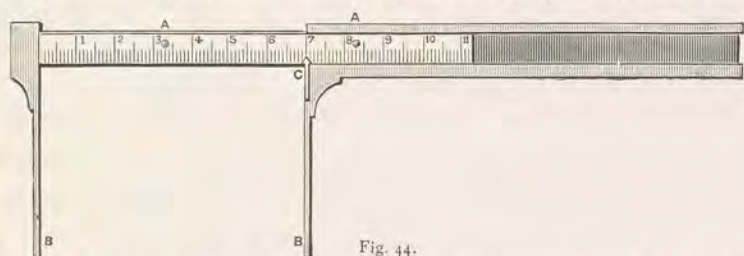


Fig. 44.

of projecting points, one of which can be placed at any desired distance from the other. To use them you take the same position as for making the measurement with a rule, place the fixed point before one pupil, and move the other until it comes before the other pupil; and the distance between them is read from a scale on the instrument.

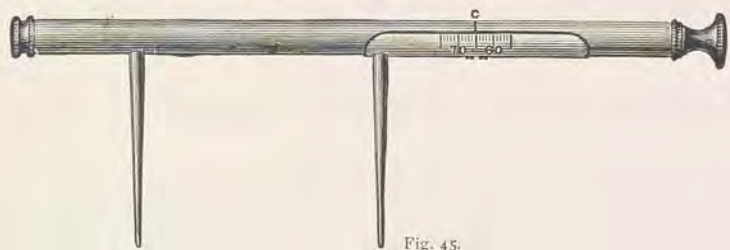


Fig. 45.

The width of front is determined by the width between the centers with the width of the bridge or nose-piece, and the size of the "eyes." The width of front should be proportioned to the width of the face. Illustrations of various sizes and forms of eyes, with directions for choosing among them, are given in the catalogues.

To adjust the glasses to the right height before the eyes. With spectacles the height of the glasses depends on the height of the bridge. On every nose there is a certain point (A in Fig. 46) where the center of the nose-piece will naturally come to rest. This is where the bridge of the nose, after coming down perpendicularly or nearly so, begins to jut decidedly forward. If placed here the bridge tends to remain where it is put; but if placed anywhere else, it constantly tends to slip into this position. Hence to have the glasses remain always at the proper height, and not ride up or slip down, where the eyes will look over them, this natural position for the bridge of the spectacles must be found, and then the height of bridge fixed on, which in this position will bring the glasses to the proper level. This is best done by placing on the face the spectacle frame that comes the nearest to fitting it among those at hand (sample fitting frames should be kept for this purpose) and carefully adjusting the nose-piece to its natural position. Then if the centers of the glasses are too high, note how much and add it to the height of the bridge used. This will give the height of the bridge that will bring them right. Or if the centers are too low note how much and subtract it from the height of the bridge used, to find the height of bridge required. Of course the higher the bridge the lower it lets the glasses fall before the eyes, and the lower the bridge the higher it will raise the glasses. When the glass before one eye inclines to ride higher than the other, the fault is generally in the temples, the temple of that side being bent too much down and so pushing the lens up.

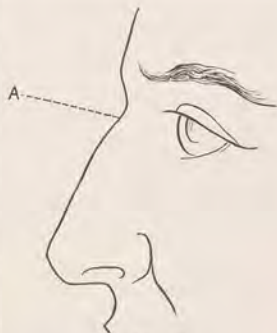


Fig. 46.

To place the glasses the right distance from the eyes. Generally the glass should be just far enough from the eyes to escape the lashes, which soil if they touch it. When concave lenses are used it is especially important to have them as close to the eye as possible. On the other hand, convex lenses used on account of old-sight may be worn farther from the eye, the principal inconvenience being that this makes the rim around the glasses more noticeable. The distance of the glass from the eye is determined mainly by the distance the center of the bridge is "in" or "out" from the plane of the glasses. This distance is shown by *H I*, in Fig. 47. To determine what this distance should be, place the frames that come nearest to fitting on the face, and when the bridge is in its natural position observe whether or not the lashes touch the glass. If they do touch, note how much

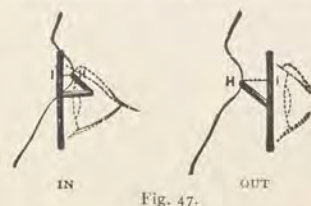


Fig. 47.

farther forward the glasses must be carried to escape them, and make the center of the bridge that much farther "in." If the lashes do not touch, note how much closer the glasses can be brought without touching, and put the center of the bridge that much farther "out." Of course, as the bridge is put "out," it allows the glasses to come closer to the eye, and as it is brought "in," it throws the glasses farther forward. Attempts have been made to devise trial frames that could be adjusted to any face, and being so adjusted would indicate on scales attached to them the height of bridge and distance "out" or "in" required; but the method given herewith is, on the whole, much more accurate, simple and satisfactory.

The different forms of the bridge are figured and described in the catalogues. The most generally serviceable is the "saddle-bridge," which is capable of ready adjustment, so as to vary its height or distance "out" or "in" or the distance between the pupils.

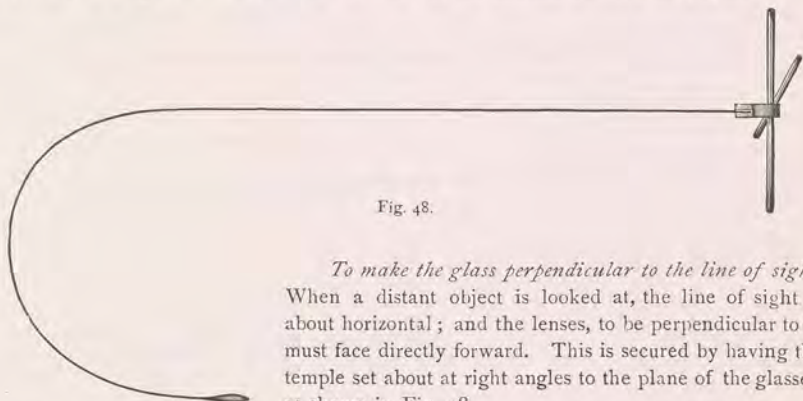


Fig. 48.

To make the glass perpendicular to the line of sight. When a distant object is looked at, the line of sight is about horizontal; and the lenses, to be perpendicular to it, must face directly forward. This is secured by having the temple set about at right angles to the plane of the glasses, as shown in Fig. 48.

For near-seeing, however, the object looked at is commonly below the level of the eyes, and the line of sight is turned down toward it, so that the glass should face forward and downward, and the temple must be attached at such an angle as is shown at Fig. 49.

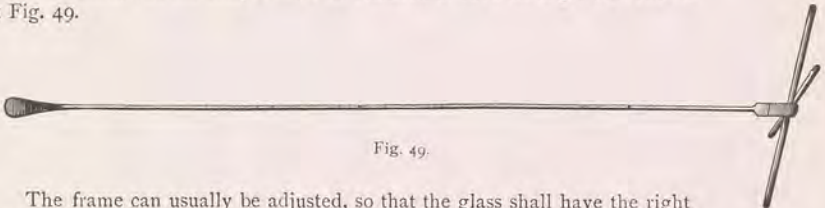


Fig. 49.

The frame can usually be adjusted, so that the glass shall have the right inclination, by twisting the projection from the eye to which the temple is attached. To do this, seize this projection as close to the "eye" as possible with one pair of pliers; then seize the joint with the temple with a pair of flat-nosed pliers, and twist it as much as may be required. Or somewhat the same effect may be obtained by bending the temple near the joint.

When the same lenses are to be used for both near and distant vision, their position must be between the best position for distant and the best for near vision. The same is true of bi-focals. But with bi-focals one lens is usually stronger than the other; and the stronger a lens the greater the annoyance caused by looking through it obliquely, so that the frame should be so arranged that the stronger lens will be the more nearly perpendicular to the



Fig. 50.

line of sight. Thus, with convex bi-focals, the near-seeing lens being the stronger, they should be mounted more like near-seeing glasses; while concave bi-focals, the far-seeing lenses being the stronger, should be mounted more like far-seeing glasses.

For distant vision, too, the lenses are to look directly forward—that is, lie in the same plane; but for near vision they may look somewhat inward, as well as downward and forward, as shown in Fig. 50. But they need never be inclined the other way, so as to look forward and outward.

Fitting eye-glasses. Most of what has been said about the position of the glasses applies equally for spectacles and eye-glasses. In the latter, however, the adjustment is differently accomplished. Here the width between the centers of the glasses, as well as their height before the eye, and distance in front of it, depends on the position and shape of the nose-piece. So that the first thing in the fitting of a pair of eye-glasses is to determine at what points the nose-pieces will rest securely, and in what shape they will bear on the bridge of the nose so as best to secure a firm hold without pressing too strongly on any one point. To secure a good fit it is necessary to try on various frames, and note what modifications are needed by the one that fits best. Width of front is to be gained by making the nose-pieces stand out further from the "eyes" by making the long axis of the oval "eye" stand squarely across the face and by using larger "eyes." The adjustment to width and shape of nose is to be accomplished by changing the shape of the spring. By straightening the spring the nose-pieces are carried further apart so as to accommodate a broader nose.

**New England Association of Opticians.**

The regular monthly meeting of the New England Association of Opticians was held at Young's Hotel, Boston, on September 15th. The committee on the revision of the by laws presented their report, which was acted upon. This Association, which was a pioneer among optical organizations, has now a large membership, among which are many eminent opticians whose names are familiar in the world of optics. As an agency in elevating the profession, it has already an enviable reputation, and the fact that a number of similar associations have followed in the same lines is an eloquent compliment at once to its achievements and possibilities.

## OPTICIANS WANTED

who desire the most thorough knowledge in applied Optics, Ophthalmoscopy, and the technique of the Ocular Muscular System, to know they can *implicitly* rely upon obtaining the same in the least possible time (claims by less experienced notwithstanding) at

### *The Chicago Ophthalmic College and Hospital*

607 Van Buren Street, Chicago, Ill.

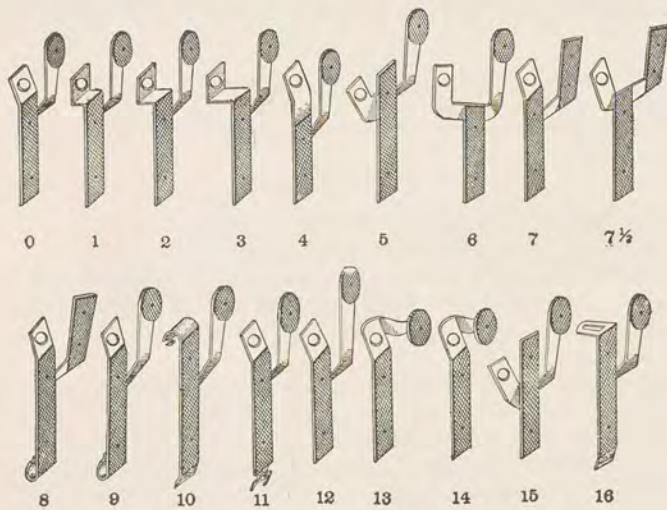
This guarantee can reasonably be made to earnest men (not diploma hunters), as we have had the most experience in earnest teaching and our justly earned reputation for thoroughness will always be guarded.

Not "How Short the Course," but "How THOROUGH" is our motto.

H. M. MARTIN, M. D.

## THE FAMOUS KING ANCHOR GUARDS

FOR EYE-GLASSES.



If eye-glasses are furnished with these **Anchor Guards**,  
You Can't Shake 'em Off.

Made in gold, German silver and filled gold.

## JULIUS KING OPTICAL COMPANY

New York.

Cleveland.

Paris.



Headquarters for

**Artificial Eyes.**

We represent French and German manufacturers.

### FOREMOST

in everything pertaining to **OPTICAL GOODS**. Our workshop is one of the most complete in the country, and your Prescriptions will receive prompt and careful attention. Those wishing to acquire the knowledge requisite to the prosecution of the business will find a short course at our

### OPTICAL SCHOOL

the thing. Those who have taken it are delighted and successful. Test Cases a specialty. We are an Exclusively Optical House, and can serve you well—and save you money.

### THE S. GALESKI OPTICAL CO.

Factory, 8 South Tenth St.

915 E. Main Street, Richmond, Va.

### Be Up To Date.

Learn to correct the latent defects of vision and your success is assured. New book, "New Methods in the Science of Fitting Glasses," will give you the knowledge you desire. Price, \$1.25. Prospectus free. Send for particulars of

Fay's Improved Optometer, \$7.50.

Address **W. G. FAY, SPRINGFIELD, OHIO.**



## The Human Eye

How to Correct its Defects by  
Properly Fitting Glasses

A MANUAL FOR THE USE OF OPTICIANS.

One hundred pages, containing thirty-five illustrative cases and over fifty wood-cuts.

Price, 75 cents, postage paid.

## QUEEN & CO.,

The Opticians  
PHILADELPHIA

## A Cabinet for Frames and Lenses IMPROVED



Send for descriptive circular.

Price, **\$6.90**, less 6 per cent.

For Reliable Optical Repair and R Work, try us.

Price-List, R Blank and Test Cards furnished gratis.

## Jos. Friedlander & Bro. Wholesale Opticians and Optical Lens Grinders,

9 Maiden Lane, NEW YORK.

Send 30 Cts. for Sample of our No. 113 R. B. Frame.

*When writing to advertisers, kindly mention The Keystone.*



**The Optician's Manual.**

**A Hand-Book of Spectacle Adjusting for the Use of Jewelers and Opticians.**

[Commenced April, 1890. Subscribers are advised to file all the back numbers, thus affording them (when completed) the most thorough treatise on the subject extant.]

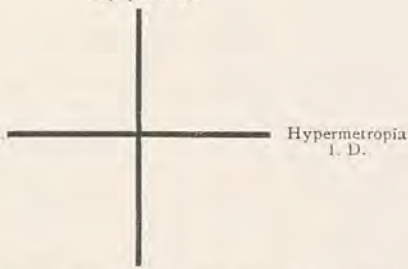
CHAPTER I.—INTRODUCTORY REMARKS.  
 CHAPTER II.—THE EYE ANATOMICALLY.  
 CHAPTER III.—THE EYE OPTICALLY; OR, THE PHYSIOLOGY OF VISION.  
 CHAPTER IV.—OPTICS.  
 CHAPTER V.—LENSES.  
 CHAPTER VI.—NUMBERING OF LENSES.  
 CHAPTER VII.—THE USE AND VALUE OF GLASSES.  
 CHAPTER VIII.—OUTFIT REQUIRED.  
 CHAPTER IX.—METHOD OF EXAMINATION.

**CHAPTER X. (Continued.)**

**PRESBYOPIA.**

**MIXED ASTIGMATISM.**

Myopia 1. D.



Suppose we have a patient with mixed astigmatism, who has been wearing the following cross cylinder:

$$+ 1. D. \text{ Cyl. axis } 90^\circ \quad \perp \quad - 1. D. \text{ Cyl. axis } 180^\circ.$$

When this patient reaches forty-five years of age, he will complain that the reading is blurred and indistinct, or perhaps he will scarcely be able to read at all. If we place a + 1. D. lens over his spectacles, he says the print is made much more distinct and he can read now with comfort. This gives us the following sum:

$$+ 1. D. \text{ Cyl. axis } 90^\circ, \quad \ominus \quad - 1. D. \text{ Cyl. axis } 180^\circ \\ + 1. D. \text{ S.}$$

But we cannot add a spherical to, nor subtract it from, a cylinder, and hence the result of this sum is not so easy to ascertain.

When the case is analyzed, however, and the refraction of each meridian considered separately, the problem is much simplified, and may be stated as follows:

$$\begin{array}{r} \text{Horizontal Meridian } + 1. \quad \text{Vertical Meridian } - 1. \\ \quad \quad \quad + 1. \quad \quad \quad + 1. \\ \hline \text{Horizontal Meridian } + 2. \quad \text{Vertical Meridian } 0. \end{array}$$

The result of this sum is expressed by the following prescription:

$$+ 2. D. \text{ Cyl. axis } 90^\circ.$$

The cross cylinder in this case may be transposed into a sphero-cylinder and written in two different ways:

$$+ 1. D. \text{ S. } \ominus \quad - 2. D. \text{ Cyl. axis } 180^\circ \\ \text{or} \quad - 1. D. \text{ S. } \ominus \quad + 2. D. \text{ Cyl. axis } 90^\circ$$

Now if we add + 1. D. S. to the first combination, the result is + 2. D. S.  $\ominus$  - 2. D. Cyl. axis 180°, which can be reduced to + 2. D. Cyl. axis 90°, because the minus cylinder neutralizes the plus spherical in the vertical meridian.

If we add + 1. D. S. to the second combination, the + 1. will neutralize the - 1. and leave + 2. D. Cyl. axis 90° as the result, which is the same in every case, even when the problem is differently worked out.

**METHOD OF EXAMINATION.**

The clinical investigation of any case of supposed presbyopia should commence first of all with a test of the static refraction of the eye and a determination of the acuteness of vision. This will reveal the existence of any hypermetropia, myopia or astigmatism, and render possible the classification of the presbyopia, as to whether it is simple or complicated.

The methods in common use for the detection of these defects have already been described at considerable length in the previous chapter, and need not be repeated here. Suffice it to say

that in hypermetropia the measure of the defect must be added to the value of the glasses ordinarily required by a presbyopic emmetrope of the same age, while in myopia the degree of defect must be subtracted, in order to arrive at an approximate estimate of the glasses required for reading. In astigmatism the correcting cylinder must be combined with the requisite convex spherical lens.

Only in patients where the refraction is emmetropic and the acuteness of vision measures up to the normal standard, is the case to be considered one of simple and uncomplicated presbyopia, and to be measured and corrected according to the rules laid down for this condition.

**TESTING NEAR VISION.**

After the determination of the condition of the refraction (the tests for which are made at a distance of twenty feet), and not before, a trial should be made of the near vision, to ascertain the reading capacity and to measure the amplitude of accommodation. This will give the position of the receded near point, on the distance of which depends the degree of the presbyopia; while the principle involved in the correction of the disability is to supply a glass that will restore the receded near point to a convenient distance, and supplement the failing accommodation.

This confines the treatment of presbyopia to a palliation of the impaired condition of the sight. However, when suitable glasses are prescribed, the individual is enabled again to use his eyes freely for near work without fatigue. If the glasses are too weak, they fall short of affording the full measure of relief; while if they are too strong they necessitate the holding of the book too close to the eyes, and thus impose extra work upon the convergence and may give rise to symptoms of asthenopia.

**GLASSES MUST BE CHANGED.**

The need for a change of glasses from time to time will be felt in all cases of presbyopia, due to a steady and continued loss of accommodation. This need will be accompanied by the same symptoms that indicate the commencement of presbyopia, and it arises at intervals until the accommodation is entirely gone, when the patient may not require any further change of glasses for many years.

The frequency of these changes varies much in different individuals, depending on the innervation of the eye and the sensitiveness of the patient to slight inconveniences, as well as the nature of one's occupation and the degree and accuracy of sight required. In general they should be made as often as once in every two or three years; not oftener than every two years without exciting suspicion of the existence of some complication that endangers vision; nor longer than three years, else the eyes be strained by reason of the glasses being of insufficient power.

The amount of change, or the difference between the old and the new lenses, will vary with the interval that has elapsed and the rapidity of the failure of the accommodation. Each time such a change is to be made the new lenses must be chosen according to the same rules that determined the choice of the old ones, or according to the rules laid down for commencing presbyopia.

**5. D. OF ACCOMMODATION NECESSARY FOR NEAR VISION.**

The amount of available accommodation should not fall below 5. D., to the end that near vision may be pleasant and comfortable. As presbyopia steals on and it begins to fall below this point, we supply the deficiency by placing a convex lens on the outside of the eye. Thus the accommodation steadily decreases and the convex lens as steadily increases, until finally there is an entire loss of accommodation and we find a 5. D. lens supplying the necessary reading power.

This lens would always suffice thereafter if the dioptric system of the eye remained stationary. But the senile changes do not stop with an entire loss of accommodative power, but continue until they cause the eye to pass over into a condition of acquired hypermetropia, when the 5. D. lens will no longer suffice. Now a glass is called for not

only to take the place of the lost accommodation, but also to correct the supervening error of refraction.

**AMBLYOPIA.**

*Amblyopia* (which is an impairment of vision not due to refractive errors which can be corrected by glasses, but dependent upon organic disease which places it beyond the optician's help) sometimes exists in connection with presbyopia, and may even be mistaken for it, because the amblyopic patient, in like manner, cannot see very small objects distinctly, and sometimes also convex glasses improve his vision. But in simple presbyopia (uncomplicated with amblyopia) the patient enjoys the normal acuteness of vision and an unrestricted range of accommodation, which would be impossible in the presence of amblyopia. Besides, with the proper convex glasses the patient is able to read the No. 1 type as close as eight inches; but if he can read only the No. 3 or No. 4, and that with a conscious effort, or is obliged to hold the book at some unusual distance, we may reasonably infer that he is amblyopic.

**GLASSES SHOULD NOT MAGNIFY TOO MUCH.**

It should always be borne in mind that the object of the glasses prescribed for the relief of presbyopia is not to magnify the print, this being merely an incidental effect, but rather to add to the refractive power of the eye and assist the crystalline lens in focusing divergent rays of light upon the retina. Only so much assistance should be given as is really required, and it follows that anything more than this would be not only superfluous, but injurious.

The magnifying of the print produced by the convex glasses worn by the presbyope depends on two factors: first, the enlarging effect of the convex lens itself (this power being inherent in all convex lenses); and secondly, the contrast with the appearance of the letters before the glasses were used, the print for some time previously having been diminishing in size, on account of the lessened refractive power being scarcely sufficient to bring it to a focus on the retina. Hence when glasses are worn and the refraction increased, a clear and distinct image is formed, which contrasts strongly with the previous indistinct one.

**PRESCRIBING GLASSES FOR PRESBYOPIA SHOULD NOT BE CARELESSLY DONE.**

Although it seems to be a very simple and easy matter to adjust glasses for presbyopia, the truth is, mistakes are not uncommon, more so, perhaps, than in the correction of some of the other errors of refraction. If such is the case, the cause is to be found in the fact that presbyopia is not a well-defined departure from the normal form or structure (as are the various optical defects), but is rather an impairment of function of the crystalline lens and the ciliary muscle, the latter of which does not always enjoy the same degree of innervation, varying greatly at different times and under differing circumstances.

In youth the muscle possesses a normal tone, which is constant as a rule, but there is a wide departure from this condition in presbyopia.

A patient who is apparently satisfied and pleased with his glasses one day, may return the next day with the complaint that they are entirely unsuitable. This is perhaps more often the case with women, because they do not seem to be able to interpret their sensations and express their feelings as accurately as men. (We make this remark a little cautiously, anticipating a vigorous denial from the female readers of THE KEYSTONE; but as the male readers constitute a large majority, we are thereby afforded a sense of safety in giving utterance to this statement.)

**GIVE THE PATIENT A CHANCE TO EXPRESS HIS CHOICE.**

The optician should not follow too closely any iron-bound rule in prescribing glasses for presbyopia. Sometimes a stronger glass and sometimes a weaker one will give more satisfaction than the one that seems to be indicated.

"The Optician's Manual," as published in THE KEYSTONE from April, 1890, to November, 1896, (Chapters I to X inclusive) can now be had in book form. Price, \$2.00.

# F. A. HARDY & Co.

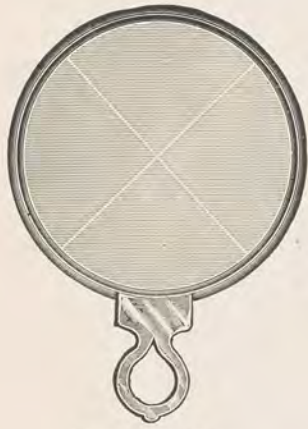
Wholesale and Manufacturing  
**OPTICIANS**

46 & 48 Madison St., CHICAGO

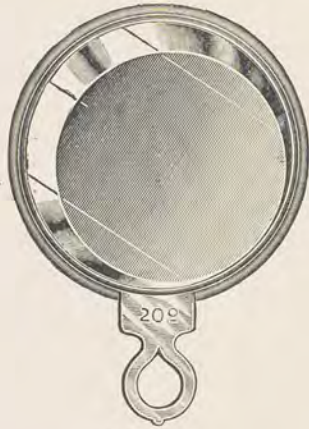
We call attention to the

## Most Complete Line of **OCULISTS' TRIAL CASES** in the Market

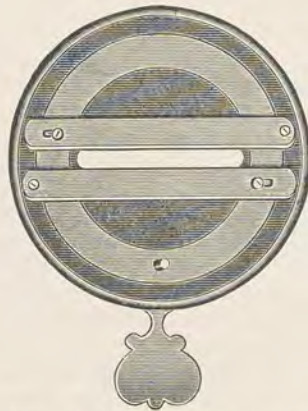
Prices ranging from \$30.00 to \$75.00.



Cross Line Disk.



20° Prism.



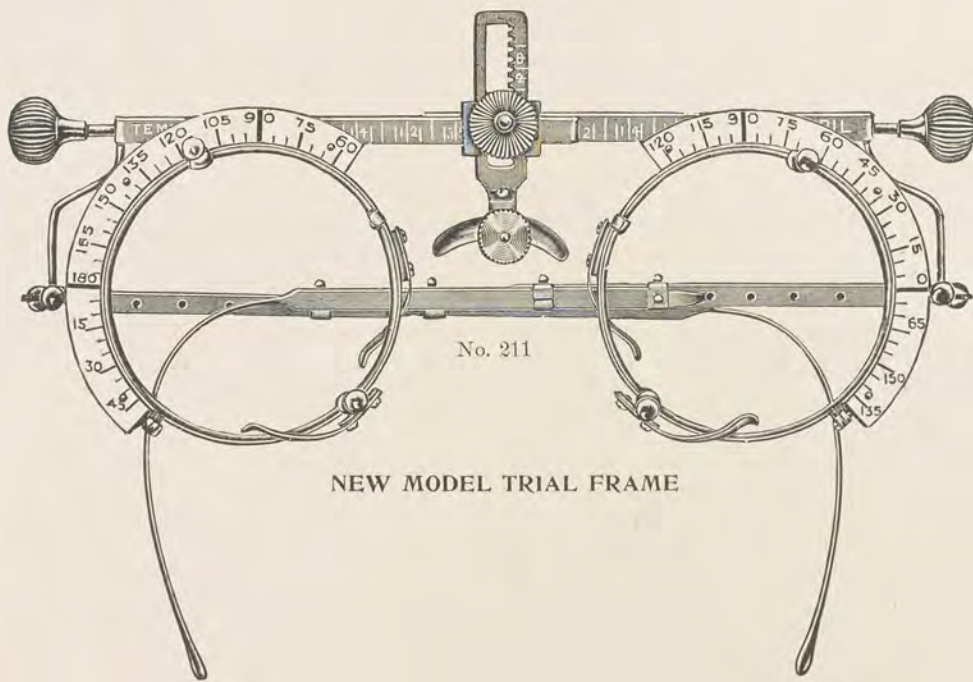
Gill's Adjustable Stenopaic Slit.



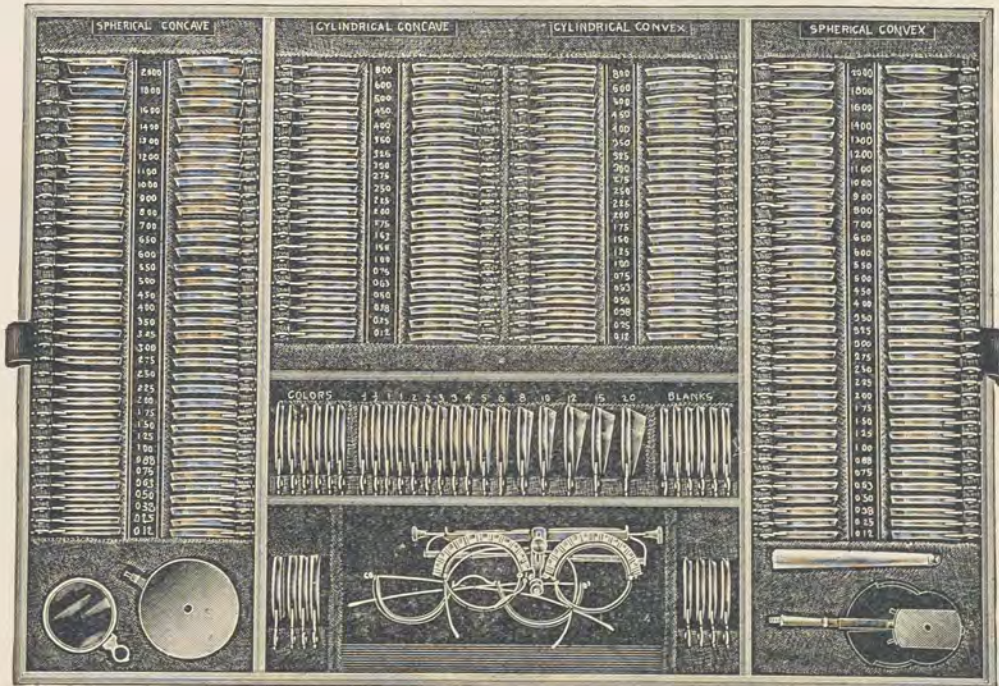
Punched Rim.



Turned Rim.



NEW MODEL TRIAL FRAME



No. 2

CATALOGUES SENT ON APPLICATION, TO DEALERS ONLY

## Optical Questions and Answers.

*This page will bear careful study, and the practical optician can learn from these Questions and Answers much that will be of value in his everyday work and that can not be found in books.*

*[In order to insure an answer in the next issue, questions should reach us by the 10th of the preceding month.]*

[We will take pains to carefully answer all questions of optical subjects, and give advice in the management of difficult cases, and our subscribers are cordially invited to invoke our assistance whenever they find themselves in need of counsel and advice. In addition to giving a careful history of the case, please always give 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. C. L."—*Will you please let me know if there is an artificial eye model to use in practice work with the ophthalmoscope? I have heard there is such a model; if there is, will you please tell me where I can get one?*

Yes, there is a model constructed in imitation of the human eye, designed for the study and practice of ophthalmoscopy and the objective determination of ametropia. It is of very great assistance to the student, and the results to be obtained from it are quite accurate.

It consists essentially of two tubes, one sliding into the other. In the front part of one tube there is a convex lens of 20 D., and at the back part of the other tube there is a drawing representing the retina and the normal eye ground. This picture can be brought nearer to or removed farther from the lens, thus simulating the various degrees of hypermetropia and myopia, the amount of which is expressed by an accurate scale on the smaller tube.

This instrument can be procured from any prominent wholesale optical house.

"Fresno."—*I sometimes feel as though I would have to wear glasses at work, and yet I am reluctant to begin. I experience a blur in eyesight as soon as I take watchmaker's loop from my eye, as I lay a movement down after working upon same for four or five minutes or so; and then if I want to see "sharp," I will have to put eye-glass on my eye again, so as to continue work immediately again. Would you advise temporary nose glasses while at such work wherein eye-loop glass is not customarily used? This is not of long standing with my eyes.*

On first thought we would say our friend was beginning to be presbyopic, but we don't want to insult him if perchance he may yet be a young man. It is unfortunate that he has failed to state his age, as the diagnosis of the case depends entirely on this point. The trouble may be due either to presbyopia, hypermetropia or astigmatism, but he has not given us any data on which to base an opinion.

We would refer our correspondent to the chapter on presbyopia, of "The Optician's Manual," which is just drawing to a close, which will enlighten him as to the proper mode of procedure to determine the nature of the defect, and at the same time indicate the proper remedy.

"W. O. H."—*Lady, single, thirty-two years of age. In August, 1894, a physician called on me to test this lady's eyes; he had been treating her for some time, and could not relieve her; she had headache constantly and had to wear a black veil over her eyes when the sun was shining. I found at that date acuteness of vision and prescribed as follows: R. V.  $\frac{11}{16}$ ; — 1. D. Sph.  $\odot$  + .75 D. Cyl. axis 95° =  $\frac{11}{16}$ . L. V.  $\frac{11}{16}$ ; — 1. D. Sph.  $\odot$  + .50 D. Cyl. axis 95° =  $\frac{11}{16}$ . This combination relieved headache and photophobia entirely, also her general health got better. Now then, about one week ago, she sent for me to call and examine her eyes again. I found her in a darkened room, with a veil over her eyes and with a severe headache. I tested eyes carefully, and got as follows: R. V.  $\frac{11}{16}$ ; — 1.50 D. Sph.  $\odot$  — .75 D. Cyl. axis 30°  $\odot$  2° prism base out =  $\frac{11}{16}$  full. L. V.  $\frac{11}{16}$ ; — 1.25 D. Sph.  $\odot$  + 1. D. Cyl. axis 90°  $\odot$  2° prism base out =  $\frac{11}{16}$  full. She complained of seeing double; when looking at a chair, she would see two chairs side by side, one chair appearing to be farther away than the other. I tested with Maddox rod and double prism carefully, and found, as you see, insufficiency of external recti muscles. With this combination she went out in the yard, and sunlight did not hurt or cause discomfort. Now what is your advice in this case? Would you grind prisms on with the spherocyls., or would you put prisms in hangers? With this combination, she says she sees good as ever, at far point and near point, and sees no signs of diplopia. Would like to hear from you in September Keystone, as I consider this a complicated case. What do you think of it?*

This is certainly an interesting case, and in considering the first question that arises is why the acuteness of vision should have fallen in two years from  $\frac{11}{16}$  to  $\frac{11}{16}$ , and why the correcting glasses now fail to raise it to the normal standard as they did two years ago. The cause for this must be ascertained if possible, and an ophthalmoscopic examination will doubtless throw some light on the case.

In this patient we have again to deal with a sensitive nervous system, and her general condition needs as much

attention as her eyes, although, of course, the latter may injuriously affect the former. In this case, on account of the double vision, the muscular system of the eye will require as much attention as the refraction, and prisms are as necessary as the spherocylinders. The glasses may all be ground in one lens, as spherocylindro-prismatic lenses are not uncommon.

If the patient sees two chairs (or, better still, a flame should be used for the test, and this will also appear double), the proper prism to prescribe is the weakest one that fuses the double images and restores single vision. This test should be made with the proper correcting cylinders or spherocylinders, the determination of which will be the first step, and apparently the most difficult. Great care should be exercised in the selection of the glasses, as improper ones will only intensify the patient's misery.

"Atropine."—*I am in the optical business and am thoroughly acquainted with the use of atropine sulphate; that is, the four grain solution, which I use three times daily for four days; also I have a method of bringing out the lateral trouble without mydriatic, but want some short method for using atropine. Will you please tell me the best and surest method for quick work? How is the best method of using homatropine, and what do you think of it?*

The custom of the writer is to order three instillations of the atropine solution: at bed time on the night previous to the examination, on arising in the morning, and again one hour before the appointed time. This suffices in all except a few unusual or complicated cases.

The effect of homatropine is much more evanescent than atropine, the duration of its action, however, depending on the strength of the solution used and the frequency of the instillations. A solution of eight to ten grains to the ounce is that most commonly employed, and it is to be dropped into the eyes eight or ten times at short intervals, when the accommodation will be found to be eliminated, and the eye prepared for the examination.

In ordinary cases homatropine is fairly satisfactory, and we are often forced to it (if we use any mydriatic at all) because business men cannot be deprived of the use of their eyes for any extended length of time. The results to be obtained from it are sufficiently accurate to be depended upon, except perhaps when the symptoms are grave and the headaches and eye-pains extraordinarily severe, when atropine is preferable.

The effect of homatropine wears off in about twenty-four hours, while the eyes do not recover from the effects of atropine for a week or ten days. If it is desired to dilate the pupil for ophthalmoscopic purposes homatropine is probably the best agent.

"Knowledge."—*I have an ophthalmoscope, but have never been able to see anything in the eye to amount to anything. If in any way you can enlighten me on the use of the ophthalmoscope, I wish you would do so. Lady, age twenty; brunette, a little under size; has never worn glasses; she is a school teacher, and came to me to be fitted. Upon questioning her, I find her eyes blur; has a great trouble with head aching. She had the measles some few years ago. I tried to examine her eyes with ophthalmoscope, but could not use it to any advantage. I then proceeded to test with case for distant vision, which I did at twenty feet away from test card, with following results: R. E. without test equals  $\frac{11}{16}$ , and with — .25 Cyl. axis 180 equals  $\frac{11}{16}$ . L. E. clearly astonished me, for it looks healthy and good; but with the smallest pin-hole test the patient could see only the largest letter on the test card just for an instant, and then everything was gone, which =  $\frac{11}{16}$ ; and I could not do anything more with it. Upon asking the patient if that eye pained or inconvenienced her any more than the other one, she replied by saying that she knew that she could not use that eye when the other one was closed, and thought that she could see just as well with the one good eye. From this description will you be able to give me any information on the subject? I prescribed — .25 Cyl. axis 180 for her and put them on her. They seemed to give the good eye relief. Did I do right or wrong, and what do you think is the trouble with the bad eye? Do you think that lenses will do it any good? Of course, they certainly will not, for I could get her to see only the 200 foot line at twenty feet away with any glass. What I want to know is if that eye will need any medial treatment. In the formation of a cataract, does a person have any pain to speak of?*

In the limited space allowed for the answers to our correspondents' queries, it would be impossible to give any very extended instructions on the use of the ophthalmoscope. Our friend should purchase a book covering this subject and familiarize himself with the theoretical aspect of ophthalmoscopy, and then go to work with his instrument and put into practice the theory he has learned. If he will intelligently and patiently pursue this course he cannot fail to acquire the necessary skill to examine the fundus of the eye and to correctly interpret what is seen.

In the absence of more detailed information concerning this lady's left eye, we are unable to make a diagnosis of the cause of the impaired vision. It seems, however, to be a case lying outside of the optician's province and should be referred to a physician for examination, diagnosis and prognosis. Perhaps nothing can be done to improve the sight of this eye, but in any case it is important to locate and determine the cause of the trouble.

It was entirely proper to prescribe the concave cylinder for the right eye, and to depend on this eye for all vision, as there is scarcely any hope for the restoration of binocular vision. The growth of a cataract is painless, but this is a condition easily recognized by the ophthalmoscope. The line of treatment seems to be to preserve and conserve the sight of the right eye, practically disregarding the left.

"Back Woods."—*(1) Age, forty-seven. Had ulcers on eyes years ago. V., L. E.  $\frac{11}{16}$ , R. E.  $\frac{11}{16}$ . Pin-hole gets each eye down about two lines lower on test card. No better with either + or —. Maddox rod shows the muscles O. K. Vertical lines look plainest, but correction of this don't seem to help much. He holds reading about eight inches. Can I hope for any greater improvement than what the pin-hole gives? (2) How slight an amount of muscular insufficiency would you think worth correcting; that is, how many inches from the flame must the bar of light (Maddox rod) be, to require attention? (3) Failing to improve with + or — lens, and finding evidence of astigmatism, how can you tell if a concave or convex Cyl. is needed, or do you have to try each one to tell?*

The healing process of ulceration is always followed by cicatrization, the same in the eye as in any other portion of the body; in the latter case the result is a scar which is very noticeable in the skin, while in the eye we have milk-like opacities of the cornea. If these spots on the cornea are directly over the pupil, the sight will be impaired, and the degree of impairment will be in proportion to the density of the opacity and its location in the direct line of vision. If, however, the spots are to one side or the other, and the patient is able to see past them through a portion of the cornea that is clear, vision may remain fairly satisfactory.

In this case the expectation of improvement will depend on the location of the opacities. Glasses cannot overcome or neutralize the effect of spots in the direct line of vision, but at any rate we would expect glasses to afford as much improvement in vision as the pin-hole yields.

(2) The degree of muscular insufficiency is not measured by the number of inches of separation of the flame from the streak of light when the Maddox rod is used, but rather by the prism that is required to bring the two together, one over the other. In some cases a slight degree of insufficiency may cause marked symptoms of asthenopia, while in other persons a larger degree may exist without the corresponding asthenopic symptoms. Our advice is to correct any amount of insufficiency, however slight, that causes discomfort.

(3) The determination of the nature of astigmatism, as to whether it is hypermetropic or myopic, will depend on the acceptance of a convex or concave cylinder. The rule is to commence with a convex cylinder, and if that is accepted the inference is the case is one of hypermetropic astigmatism, and that a concave lens is contra-indicated.

"H. M."—*Lady, about forty-eight years; extremely nervous—could hardly sit still; stuttered badly and was in constant pain in and around the eyes; could hardly give her a test, but at last found R. V.  $\frac{11}{16}$  with — 1  $\frac{3}{4}$  D. S., and left eye no good at all. Tried her with candle and she could not make it out, at any distance, with that eye. I fitted her with — 1  $\frac{3}{4}$  D. S., which she wore for a month. Her test then showed a great improvement, R. — 2 D. S.  $\odot$  — 1 D. C., axis 135° =  $\frac{11}{16}$ . Left eye had become sensitive, and — 2 D. S. =  $\frac{11}{16}$ . In inside test find 4° hyperphoria. I prescribed R. — 2 D. S.  $\odot$  — 1 D. C., axis 135°; L. — 2 D. S.  $\odot$  3° base up. She wrote me that the first glasses, — 2 D. S., I sent her were much better and easier than those I prescribed last. Should I insist on her wearing these until she gets used to them, or let her wear the first ones? Ought I to have given her a 1° or 2° prism first, and then changed to 3° later? She complains of glasses making her dizzy. For reading, R. +  $\frac{1}{2}$   $\odot$  — 1 D. axis 135; L.  $\frac{1}{2}$   $\odot$  3° base up, was very satisfactory at time of test. She could read fine print at six inches, but only with R. She made no complaint about reading glasses.*

One of the unfortunate features in this case is the extremely sensitive condition of the nervous system, and this adds greatly to the difficulties of the optician in making a satisfactory test. If this lady is myopic and requires concave lenses, either spherical or cylindrical, caution must be taken not to make them too strong. If this patient had never previously worn glasses, there will be some difficulty at her age in getting accustomed to them, especially as they are concave, on account of the tax such a glass imposes on the accommodation, which is now being weakened by senile changes and calling for assistance.

If she feels that the first glasses are more comfortable than the newer ones, it would not be advisable to insist on her wearing the latter. The eyes must be coaxed, not driven. At this age the reading glasses are of first importance, and the greatest care must be exercised in prescribing glasses for this purpose, perhaps even more so than for distance.

A prism of 3° base up is quite strong, and it is possible the eyes might be much more comfortable if it was omitted; or if not, then that it should be weakened, perhaps 1° or 1  $\frac{1}{2}$ °. The importance of prisms and the correction of muscular troubles is often over-estimated, and the tendency of the times seems to be to run to extremes in these matters. In many cases it is better to give more attention to the refraction and less to any supposed disturbance of the muscular equilibrium.

(Continued on page 787.)

# AIKIN, LAMBERT & CO.,

Manufacturers of Fine Gold Pens; Holders in Pearl, Silver, Gold, Shell, Agate, Ivory, Ebony and Gold Plate; Pencil Cases, Tooth and Ear Picks, Glove Buttoners, Match Boxes and Silver Novelties.

Assortments in SHOW CASES and FANCY TRAYS; PLUSH COMBINATION SETS. New and Stylish Patterns. Best quality warranted, and are the most durable; cheaper grades unsurpassed by any in the market.

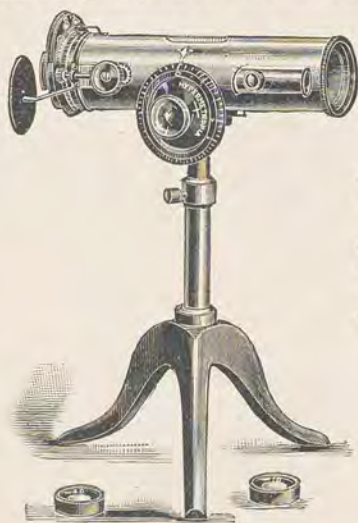
MERCANTILE FOUNTAIN PENS, warranted satisfactory.

General Agents for the Paul E. Wirt Fountain Pen.

SALESROOM—19 MAIDEN LANE, NEW YORK.

## De Zeng's REFRACTOMETER

Used and endorsed by the leading Eye Specialists, Refractionists, Ophthalmic Hospitals, and by the United States Army.



No Atropine  
No Mistakes  
No Lost Time

The Manifest Error  
The Latent Error  
The Total Error

### THE CORRECT METHOD.

The best method employed in testing, without atropine, is what is known as the "Fogging System," which consists in over-correcting a hypermetropic eye with a convex sphere or under-correcting a myopic eye by the application of a concave sphere of such power as to render the test type deeply blurred, that the accommodation may be induced to relax as far as possible, and the hidden or latent error be developed and measured with the manifest.

Through the application of this system in the use of the Refractometer, its high condensing properties admit sixteen times the volume of light to the retina under myopic conditions, that is admitted under similar conditions when a similar test is made with the trial case; and owing to the increased retinal stimulation to the ciliary muscle towards relaxation, due to the accumulated volume of light at a focus before the retina, the Refractometer develops and measures more latent error than any other instrument not supplemented by atropine.

### SPENCER LENS CO.

Send for Descriptive Pamphlet of De Zeng's Refractometer.

546 Main Street, Buffalo, N. Y.



DR. H. P. N. DAHL,  
Maynard, Mass.,

studied physiology in Europe because it was always his desire to become an optician, competent to prescribe glasses for the human eye. He came to this country in 1891, and at once saw there was a great demand for skilful optical work; this led him to seek a Course at the best optical college to be found. In looking for such a one, he declares our course and methods the best he had met.

Dr. Dahl entered our Correspondence Department in February, 1895. He showed great diligence and aptitude, and came to Philadelphia to graduate and receive his Diploma in April, 1895. In April, 1896, he again came to this city to attend the College for a bestowed examination, presenting an essay on nine complicated and difficult cases, which fully exemplified his knowledge of the laws of refraction. As a mark of appreciation, he received the highest honors of the College, viz.: our degree of Doctor of Refraction.

Although laboring under the difficulty of being a foreigner, Dr. Dahl has established a reputation as a skilful optician, that has attracted patients from far and near, and he is withal a Christian gentleman. He was much pleased with our Correspondence Course of Instruction, and with the attention he received while at the College; and he has written us several warm letters of thanks and commendation, recommending our College to those who wish to become competent opticians.

Address all letters to Dr. C. H. Brown, 1824 Diamond St., Philadelphia, Pa.



Dr. C. H. Brown,

### Correspondence Again.

Correspondence has been our cry for the past seven years, and always will be. It is our great specialty, to which we have given the deepest thought and the most painstaking attention, and is embellished with our ripest experience.

Our Correspondence system was not designed simply as a pretext on which to furnish a Diploma; but it was originated to supply a crying need, and to furnish a legitimate Course of Optical Instruction.

We were the originators of this method of teaching Optics, and after we had demonstrated the certainties and the possibilities of it, others were attracted by our success and attempted to imitate our methods, only to meet with failure and remain in obscurity.

Therefore, if you are thinking of taking a Correspondence Course, don't imagine you can get it anywhere; there is but one, and that is ours. In addition to the thoroughness of the teaching of this Course, a Diploma from this city and this College gives the graduate a prestige that could not be obtained in any other way.

### PERSONAL INSTRUCTION ALSO.

Although we have said but little about it, we give individual attention to those who attend the College in person. Thus the instruction is gauged to suit the student's capacity, and we allow no man to leave us until he and we are both satisfied with his attainments.

Enclose four cents with your card or letter head, and address as follows:

RETURN IN 5 DAYS TO



Dr. C. H. Brown,  
1824 Diamond St.  
Philadelphia, Pa.

It's  
Practical  
Economy

to trade with us. Qualities are not sacrificed to price, and yet prices are never high. We get the best optical merchandise, and sell them as close to cost as we can.

To Patronize  
Our Optical  
Prescription  
Department

is to insure a tranquil mind and an easy digestion. We guarantee also to save you



A trial will convince you.

## A Pointer on Eye-Glasses



10 K. Rimless, complete, \$15.00 per doz. net, \$1.65 per pair net.  
14 K. " " " 20.00 " " " 2.25 " " "  
N. P. " " " 3.00 " " " .50 " " "

Furnished in either Peris, Convex or Concave, any size eye.

YOUR DOLLARS STRETCH LIKE RUBBER WITH US.

THE LATEST AND BEST, works like the De Long Hook and Eye.

1-10 Plate Hooks only, . . . . \$1.50 per doz.  
1-10 " Chain and Hooks, . . . . 7.50 " "  
10 K. Gold " " " . . . . 21.00 " "



GEO. MAYER & CO., 108 South Eighth St., Philadelphia, Pa.

WHOLESALE MANUFACTURING OPTICIANS.

## Lens-Grinding for Prescription Work.

IX.

### Preliminary Grinding for Lenses.



BECAUSE the perfection of lenses produced depends entirely on the perfection of the forming tools we employ, we have taken so much pains to impress on our readers the importance of observing the greatest care in getting up such forming tools. As we left the concave tool in our article on page 701, in September, 1896, KEYSTONE, the concave was turned to coincide with the convex tool shown at Fig. 3 of that issue. To aid in explanation, we reproduce the essential features of Figs. 3 and 4 of the issue referred to, at Figs. 1 and 2 of the present number.

After the convex tool *C*, Fig. 1, is turned to the perfection we have described, the concave tool *F*, Fig. 2, is first turned as directed at the close of our article on page 701, September, 1896, KEYSTONE, and then the final perfected form is given by grinding with the convex tool shown at Fig. 1. About the best material for grinding the brass forms *C* *F* together is fine glass dust and oil, such as is used for grinding brass stop-cocks by the plumbers. In the final grinding only the slightest coating, or rather smear, of glass dust and oil should be employed. Glass dust does not embed itself in the metal as does emery.

#### Testing for Accuracy

The most crucial test for accuracy of form of the convex and concave tools shown at Figs. 1 and 2 is to rub the surfaces together, after washing away the oil and glass dust with soap and

water. If the two surfaces, convex and concave, show a tendency to flash into a polish evenly and equally all over on rubbing together, we can rest assured the forms of the two surfaces are about what they should be. If, on the other hand, they show rings and spots, we can take it for granted that we have slighted our task at some point, and our judgment, aided by our mechanical experience, should direct us as to wherein we have been negligent.

About the best material for the tools shown at Figs. 1 and 2 is a bronze approaching a bell-metal—in fact, a soft bell-metal, the alloy consisting of about three or three and a half parts of tin to one of copper.

We have already spoken somewhat at length about the rough-grinding of lenses, but we feel as though we could to advantage say much more, because the first grinding is always a matter of vexation, especially to the beginner.

We have previously mentioned lead tools and tools coated with lead, but such tools have so great a range of usefulness as to prompt the idea of saying more about them. The convex tool shown at Fig. 1 may, in most instances, be considered as the parent tool, its mate at Fig. 2 being fitted to it; and if we get up any rough-grinding tools they must also be made to conform to the curvature of *C'*, Fig. 1. It is to be constantly borne in mind that this tool is to do no work except to correct the curvature of the concave tool, which latter is used for grinding the lens.

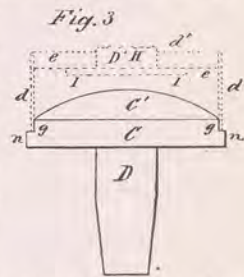
#### Tools for Rough-Grinding

Let us imagine we are to make a concave rough-grinding tool for carrying out our plan of grinding a plano-convex lens of 12" focus. The convex tool shown at Fig. 1 could, for such lenses, well be 6" or 6½" in diameter. For a curvature of 6" radius, with a tool 6½" in diameter the "rise" of the convex face would be less than 1". For ordinary prescription work a convex or concave tool would not need to be more than 6½" in diameter, as this size would enable the workman to grind at one time seven lenses 1½" in diameter.

For lenses of less than 12" focus we can employ convex tools like Fig. 1, of 4" in diameter. Consequently we should only require two diameters of tools like Figs. 1 and 2, viz., tools of 4" and 6" in diameter. The curvature of the face *C'* would, of course, have to be different. We can readily arrange to cast lead on the face of our convex tools, such lead copies serving as concave tools for rough-grinding. Lead tools are quickly made, and soon fitted to run true in the lathe by means of a cone plug similar to *D* *h*, Fig. 1.

Concave tools can also be made of a composition of emery and shellac, melted together and placed on the tool *C* to take shape and harden.

We have not the space in the present article to give the entire details for making such rough-grinding tools. The general idea, however, is conveyed in the cut at Fig. 3. Here the convex tool *C* is shown with the cone taper *D* set vertical; and now the tool *C* has a notch or step turned at *g*, as indicated in Fig. 1 by the dotted lines *g g*. A band is placed around *C* as shown at the dotted lines *d*. This band is filled up to the dotted line *e* with melted lead, and while the lead is still melted a piece *D H'* is set in the lead until it (the lead) cools. This piece *H* serves as a taper like *D*, Fig. 1, for the lathe spindle.



#### A Frameless Screw Lock.

The first application of a locking device to a frameless spectacle or eye-glass has been placed on the market by E. Kirstein's Sons Co., Rochester, N. Y. It is claimed for this invention that it will at once appeal to the retailer, as well as the consumer, inasmuch as the threads in the strap of a frameless stud, bridge or end piece often strip, thus making that part either worthless, or causing much delay in repairing, where one of these locking nuts would make the glass perfectly secure, as well as absolutely preventing the possibility of the screw working loose. The nut is not at all conspicuous and does not detract from the neat appearance of mounting, in the least.

#### Brayton's Compound Prism Chart.

We are permitted to illustrate the above Compound Prism Chart designed and copyrighted by J. T. Brayton, of the Geneva Optical Company, Chicago, Ill., the inventor and patentee of the well-known lens measure and other optical appliances introduced by that house. This chart is the result of many complicated calculations relating to prisms. It is accurate in its results, and is indorsed by many prominent specialists who have used it in their practice. The directions given below are believed to be sufficient to clearly show its value and application.

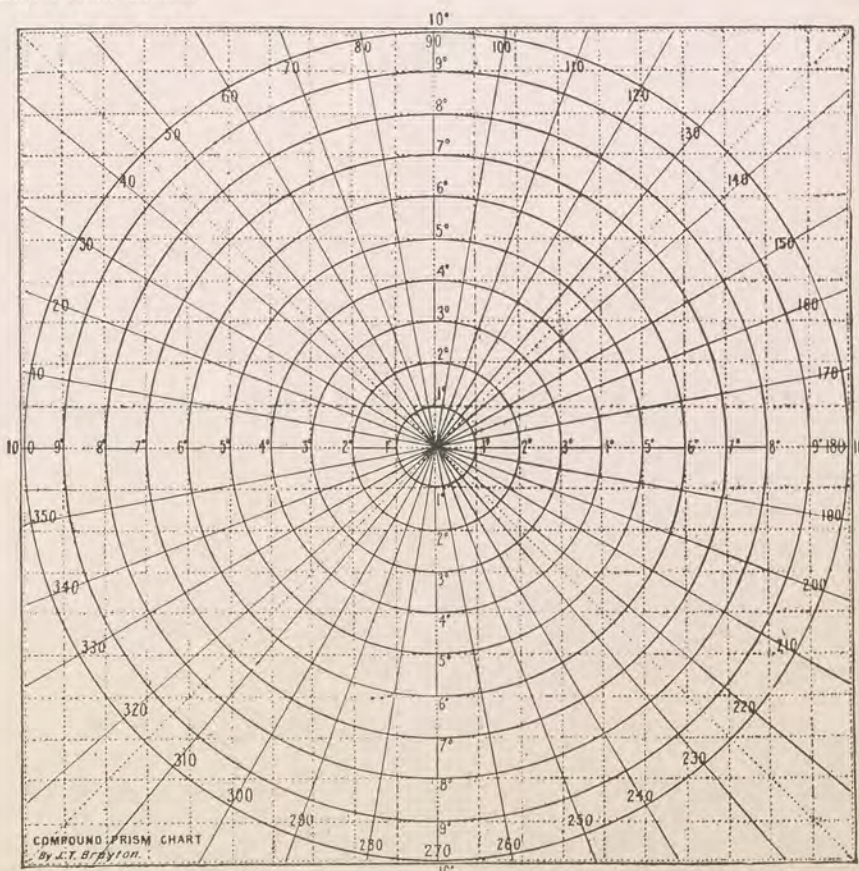
The above chart is used to determine the resultant powers of two prisms, the base of one at 0 or 180, the other at 90 or 270. It is also used to measure the prism power in the horizontal and vertical meridians of a prism with base turned upon some other degree than 0, 90, 180 or 270.

Each circle from the center outward represents from 1° to 10° of prism, and can be used to any degree of prisms. The dotted lines represent the power in the horizontal and vertical meridians of the prism employed, its base being placed at any degree upon the circle from 0 to 360. The solid lines radiating from the center represent each 10° of the circle, or protractor.

Example 1st.—A prism of 70° base at 0, with 4° base at 90° has been used to measure the muscular insufficiency. What single prism and position of its base will be required to give the same power in all meridians? Follow the dotted lines from the 7th circle to the left (0°) side of the center, upward, until they intersect the dotted lines from the 4th circle above (90°) the center. Their point of intersection will be found at 30° of the protractor, upon the 8th circle, showing that an 8° prism with base at 30° is required. If it is desired to divide this prism into two lenses for each eye, one would be 4° base at 30°, the other 4° base at 210°.

Example 2d.—A 5° prism, its base at 143°, has been used. What is its prism power in the horizontal and vertical meridian? Upon the 5th circle and 143° of the protractor, horizontal and vertical lines intersect. The horizontal line (followed to the left) unites with the 3d circle and the vertical line (followed downward) unites with the 4° circle, showing a prism power of 3° its base vertical (90°) and 4° its base horizontal (180) as the result. If it is desired to divide this into two lenses one would be 2½° base at 143°, one of 2½° base at 323°.

The chart is also used as a protractor to lay out or measure the axis of cylindrical lenses. Printed on heavy calendered paper, 10 x 10 inches.



Entered according to the Act of Congress, by J. T. BRAYTON, in the year 1896, in the office of the Librarian of Congress at Washington.

# OTTO YOUNG & CO.

149, 151, 153 STATE STREET  
CHICAGO, ILL.

*Watches, Diamonds, Jewelry,  
Tools, Materials, Optical Goods, etc.*

A Few Selections from Our Optical Department:

## GOLD RIDING SPECTACLE FRAMES, SADDLE BRIDGES.

QUALITY AND WEIGHT GUARANTEED. IN 00, 0, 1 OR 2 EYE SIZE.

| Medium Weight. |                             | Heavy Weight Fronts,<br>Medium Weight Temples. |                             | Heavy Weight. |                             | With Cable Twist Temples,<br>Heavy Weight. |                             |
|----------------|-----------------------------|------------------------------------------------|-----------------------------|---------------|-----------------------------|--------------------------------------------|-----------------------------|
| No. 80.        | 8 Karat, . . . Each, \$1.60 | No. 55.                                        | 8 Karat, . . . Each, \$1.90 | No. 83.       | 8 Karat, . . . Each, \$2.15 | No. 60.                                    | 8 Karat, . . . Each, \$2.50 |
| " 81.          | 10 " . . . " 1.90           | " 56.                                          | 10 " . . . " 2.25           | " 84.         | 10 " . . . " 2.50           | " 67.                                      | 10 " . . . " 3.05           |
| " 82.          | 14 " . . . " 2.65           | " 57.                                          | 14 " . . . " 3.15           | " 85.         | 14 " . . . " 3.60           | " 74.                                      | 14 " . . . " 4.40           |

## STRAIGHT TEMPLE GOLD SPECTACLE FRAMES.

| Light Weight, Round Eye-Wire,<br>Long Round Temples. |                                 | Medium Weight, Flat Eye-Wire,<br>Long Flat Temples. |                                 | Heavy Weight, Round Eye-Wire,<br>Long Flat Temples. |                                 |
|------------------------------------------------------|---------------------------------|-----------------------------------------------------|---------------------------------|-----------------------------------------------------|---------------------------------|
| No. 38.                                              | 8 Karat, . . . . . Each, \$2.10 | No. 41.                                             | 8 Karat, . . . . . Each, \$2.20 | No. 47.                                             | 8 Karat, . . . . . Each, \$2.50 |
| " 39.                                                | 10 " . . . . . " 2.40           | " 42.                                               | 10 " . . . . . " 2.60           | " 48.                                               | 10 " . . . . . " 3.15           |
| " 40.                                                | 14 " . . . . . " 3.40           | " 43.                                               | 14 " . . . . . " 3.70           | " 49.                                               | 14 " . . . . . " 4.55           |

## GOLD FILLED RIDING SPECTACLE FRAMES.

10 KARAT SEAMLESS WIRE. WARRANTED 10 YEARS.

|          |                                                                       |          |                                                                  |
|----------|-----------------------------------------------------------------------|----------|------------------------------------------------------------------|
| No. 077. | Extra Fine B. S. O., with Cable Twist Temples, . . . Per pair, \$1.41 | No. 084. | Extra Fine B. S. O., with Riding Temples, . . . Per pair, \$0.80 |
| " 079.   | Fine A. O. Co., " " " " . . . " " .80                                 | " 77.    | Fine A. O. Co., " " " " . . . " " .63                            |
| " 082.   | Medium A. O. Co., " " " " . . . " " .63                               | " 086.   | Medium A. O. Co., " " " " . . . " " .50                          |

## SILVER, ALUMINICO, GERMAN SILVER AND STEEL RIDING FRAMES.

|          |                                                           |          |                                                                      |
|----------|-----------------------------------------------------------|----------|----------------------------------------------------------------------|
| No. 108. | Coin Silver, Riding Temples, . . . . . Per pair, \$0.56   | No. 112. | German Silver, Riding Temples, . . . . . Per pair, \$0.21            |
| " 1091.  | Aluminico, " " " " . . . . . " .25                        | " 0127.  | Nickel-Plated, Gold Filled Bridge, with Cable Twist Temples, " " .38 |
| " 0129.  | Nickel-Plated, with Gold Filled Bridge, . . . . . " " .38 | " 126.   | Extra Fine Nickel-Plated Riding, . . . . . " " .38                   |
| " 120.   | Nickel-Plated, Riding Temples, . . . . . " " .23          |          |                                                                      |

## GOLD FILLED EYE-GLASS FRAMES.

10 KARAT SEAMLESS WIRE. WARRANTED 10 YEARS.

|           |                                                                 |           |                                                             |
|-----------|-----------------------------------------------------------------|-----------|-------------------------------------------------------------|
| No. 0201. | B. S. O. Extra Fine, Bausch Cork Guards, . . . Per pair, \$0.88 | No. 1203. | A. O. Co. Extra Fine, Bausch Guards, . . . Per pair, \$0.50 |
| " 0204.   | " " " Wells Offset " . . . . . " .88                            | " 201.    | " " " Wells Offset Guards, . . . . . " .50                  |

If Frames are ordered with Lenses, add the following prices per pair: Spherical 10 cts.; Cylindrical, 45 cts.; Sphero-Cyls., 65 cts.; Cement or Perfection Bifocal, 50 cts.  
For detailed description of above Frames, see cuts and corresponding numbers in our Catalogue.

## AMERICAN STANDARD INTERCHANGEABLE LENSES.

|           |                                                                                  | Per dozen pairs |
|-----------|----------------------------------------------------------------------------------|-----------------|
| No. 411.  | 1st Quality Pebble Lenses, Periscopic Convex, . . . . .                          | \$8.50          |
| " 413.    | " " " " Double Convex, " " " " . . . . .                                         | 7.50            |
| " 414.    | " " " " Glass Lenses, Periscopic Convex, " " " " . . . . .                       | 1.20            |
| " 4140.   | 2d " " " " " " " " . . . . .                                                     | .85             |
| " 415.    | 1st " " " " " Concave, " " " " . . . . .                                         | 1.30            |
| " 416.    | " " " " " Double Convex, " " " " . . . . .                                       | .90             |
| " 417.    | " " " " " Concave, " " " " . . . . .                                             | 1.00            |
| " 421.    | Plain Smoke Lenses, no Focus, . . . . .                                          | 1.00            |
| " 422.    | " Blue " " " " " " " " . . . . .                                                 | 1.00            |
| " 0422.   | " White " " " " " " " " . . . . .                                                | .90             |
| " 0423.   | Shooting Lenses, Amber Tinted (see cut No. 15) " " " " . . . . .                 | .90             |
| No. 4014. | 1st Quality Periscopic Convex, accurately centered and focused, . . . . .        | \$1.50          |
| " 4015.   | " " " " Concave, " " " " . . . . .                                               | 1.50            |
| " 418.    | " " " " Blue Tinted, Periscopic Convex, . . . . .                                | 1.50            |
| " 4018.   | " " " " " Concave, . . . . .                                                     | 1.50            |
| " 419.    | " " " " Smoke Tinted, " Convex, . . . . .                                        | 2.50            |
| " 420.    | " " " " Pink " " " " . . . . .                                                   | 1.50            |
| " 423.    | Skeleton Lenses, drilled for frameless eye-glasses, Periscopic Convex, . . . . . | 1.80            |
| " 424.    | " " " " " Concave, " " " " . . . . .                                             | 1.80            |
| " 425.    | " " " " " spectacles, " Convex, " " " " . . . . .                                | 1.80            |
| " 426.    | " " " " " " Concave, " " " " . . . . .                                           | 1.80            |

Our prices are right, and goods as represented. We do not quote low prices and substitute second quality for first.

PRESCRIPTIONS FILLED with care and returned the same day as received.

For Full Line of Optical Goods, see our Catalogue, pages 3 to 43.

ABOVE PRICES SUBJECT TO 6 PER CENT. CASH DISCOUNT ONLY.

**Among the Opticians.**

— Albert Pick has opened an optical office in Barnstable, Mass.  
 — Morck & Kirberger have succeeded Morck Bros., of Warren, Pa.  
 — Blashill, the Inlay City, Mich., jeweler, has opened a complete optical department.  
 — S. C. Hewitt, manufacturing optician, has built an addition to his factory in Salem, Mass.  
 — The R. P. Sternberg Company, optician, has moved from 1006 Chapel Street to 123 Church Street, New Haven, Conn.  
 — Dr. M. M. Brown and L. A. Wood have started a new optical business in the Ellicott Square Building, Buffalo, N. Y.  
 — George H. Brown, optician for J. C. Derby, Concord, N. H., has leased the optical department and will increase the stock.

— The New York State Association of Opticians held a meeting last month in the optical parlors of Crossman & Swart, Auburn, N. Y.

— A. R. Brooks, St. Louis, Mo., got out a special optical catalogue which he recently mailed to his customers and to the trade in general.

— The Hanf Optical Company, Wilmington, Del., has sold by auction its jewelry stock. The company will continue business as manufacturing opticians.

— The Blanchard Optical Company, Southbridge, Mass., has enlarged its factory to enable it to manufacture spectacles and other optical goods besides eye-glasses.

— A new optical company, known as the Regent Optical Company, has established itself in Buffalo. G. W. Aimes, an eminent optician, is the president of the company.

— A swindler recently took quarters in Salt Lake City, Utah, and advertised himself as an optician. He examined eyes free of charge, and sold a quantity of bogus spectacles at five dollars a pair. He left in time to escape the authorities.

— Henry Castelberg, proprietor of the Pioneer Jewelry Company, Baltimore, recently completed a course in the Spencer Optical Manufacturing Company's school in New York, and has added an optical department to his establishment.

— C. L. Merry, Kansas City, has again enlarged his plant, which now occupies the entire second floor of the Missouri Gas Building. Considerable new machinery has been installed in position, and a complete optical manufacturing plant is now at the service of the Western trade.

— The Klein Optical School, 2 Rutland Street, Boston, Mass., has issued its catalogue or prospectus for 1896-1897, and it contains much that will interest all intending opticians. This is a first-class optical school, and was recently honored by being favorably reported on by a special committee of the New England Optical Society. The term opens October 1st.

— A Los Angeles, Cal., correspondent writes: "I have seen it stated in an Eastern journal that Los Angeles has twenty-two opticians and only two manufacturing opticians. This might lead to a misconception. While twenty-two opticians ought to be plenty for a city of 60,000 inhabitants, the two manufacturers referred to meant undoubtedly the two wholesale houses, for among the twenty-two opticians are other manufacturing opticians."

**Optical Questions and Answers.**

(Continued from page 783.)

"C. P. S."—Please inform me through your valuable journal how to use a \$100 case of test lenses, also how to use ophthalmeter (four electric lamp machine). I am to use both of these, and want to get posted. I have a fair smattering knowledge of the test lenses, but not how to plus, minus, etc., or compounding for special prescriptions and astigmatism, and adjusting test frame on face for same (and in myopia).

The answer to this question would be quite a long story and would occupy much more space than could be given to it on this page. But that is not necessary, as the use of the trial case and the combination of lenses has been thoroughly described in "The Optician's Manual." If our correspondent possesses the back numbers of THE KEYSTONE he can refer to them; if not, he can procure the "Manual," republished in book form, by mailing two dollars to this office.

The ophthalmometer is used to measure the radius of curvature of the cornea and thus to detect corneal astigmatism. It is almost an impossibility to describe its use without a number of cuts of the instrument and its various parts, and besides it is scarcely of sufficient interest to the average reader to justify us in giving it the necessary space. A circular of the instrument, which can be procured from any wholesale optical house, will give the desired instructions.

**The Optical Society of the State of Pennsylvania.**

The second meeting of the members of the Pennsylvania Optical Society was held in the Lafayette Hotel, Philadelphia, on the evening of September 7th. The object of this meeting was the consideration and adoption of the constitution and by-laws drawn up by the temporary officers and executive committee. Before proceeding to the business proper of the meeting it was decided that permanent officers be elected, and it was moved and carried that this honor be conferred on the officers *pro tempore*, a not undeserved compliment to the industry and ability displayed by these gentlemen in drafting the constitution and by-laws. The permanent officers are, consequently, as follows: A. Martin, Philadelphia, president; H. E. Hermann, Williamsport, first vice-president; C. A. Longstreth, Philadelphia, second vice-president; T. E. Leech, Philadelphia, treasurer; T. Haines Moore, Philadelphia, secretary. Executive committee: Chas. S. Gill, of Lancaster, and J. Brinkerhoff and C. H. Flagg, of Philadelphia.

According to the by-laws the members of the executive committee will be elected annually, but the president, vice-presidents, secretary and treasurer above mentioned will hold their offices until the sixth annual meeting, after which their successors shall be elected each year. It was the opinion that a frequent change of officers at the beginning would be detrimental to the building up and initial success of the Association. Membership is not limited to the State of Pennsylvania. Members have been already enrolled from New Jersey, Delaware, and at least one application from an optician in England was favorably considered. Women are also eligible to membership.

The portion of the constitution, as adopted, which will most interest our readers is as follows:

"There shall be three grades of membership—those of optician, dioptrician and ophthalmotrician, and no person may be admitted to any one of the grades unless he has obtained from the Association a certificate that he has passed an examination for admission to that grade.

"The subjects of the examinations shall be as follows, that is to say: For optician membership there shall be no examination. For dioptrician membership the subjects shall be optical materials and the subjective methods of eye testing; and for ophthalmotrician membership, the subjects shall be optical materials, the subjective and objective methods of sight testing, and the diagnosis of the cause of failure of good vision, and it shall be necessary for all candidates for the ophthalmotrician grade to have been in attendance at some eye clinic at least four hours per week for six months. The executive committee shall from time to time issue a list of text books, the contents of which shall form a general basis of the examinations, it being, however, understood that the examiners should not be absolutely restricted to such text books."

The board of examiners will consist of three persons, who are to be appointed by the executive committee, and members who pass the examinations for the grades of dioptrician and ophthalmotrician may obtain certificates on payment of five dollars and ten dollars respectively.

It is decreed that no member shall peddle spectacles or solicit business from house to house; and no member shall, without previous written permission of the executive committee, which shall in all cases be limited to a special place, period or occasion, have or keep in any street, market, public place or place of amusement a stall with glasses exposed thereon for sale.

The initiation fee for membership is five dollars, and the annual subscription a similar amount. The next meeting of the Society will be held on October 5th.

**The Julius King Prizes Awarded.**

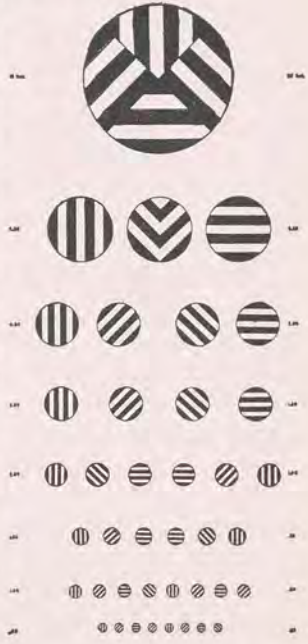
Our readers will remember an advertisement of the Julius King Optical Co. in the July issue of THE KEYSTONE, offering two prizes of twenty-five dollars each for the best illustration or design for advertising King's Patent Anchor Guard Eye-Glasses and for the best written and most concise description or notice for advertising such eye-glasses. The competition for the prizes was closed on September 1st, and the awards made by a committee of three, consisting of A. Martin, president of the Pennsylvania Optical Society, D. E. Weston, of Ferguson & Weston, opticians, Philadelphia, and B. Thorpe, of THE KEYSTONE. This committee unanimously decided that the prize for "the best illustration or design" be awarded to Robert A. Brunner, Rutherford, N. J., and the prize "for the most concise description or notice" be awarded to E. P. Wheeler, Paterson, N. J. We congratulate the successful contestants, both of whom have been long known to THE KEYSTONE as men of bright business ideas and much originality.

**Michigan Optical Society.**

At a meeting of opticians held September 10th at Grand Rapids, Mich., the Michigan Optical Society was organized with the following officers: Frank D. Fuller, Grand Rapids, president; C. Wolfe, Howard City, vice-president; Ernest Eimer, Muskegon, secretary and treasurer. The object of the Society is the same as of similar State societies already formed. Only competent opticians will be admitted to membership, and such opticians are requested to communicate with the secretary. In the general movement to elevate and professionalize the calling of the optician the brethren in Michigan are expected to take a creditable part. THE KEYSTONE wishes all success to the new Society.

**A New Chart.**

This chart is based upon the well-known principle of the visual acuity dependent upon the angle of the emitted ray. For example, if the 180° lines are the clearest, by implication the lines at right angles are the dullest. The procedure then is to simply progress down the chart, asking your client to designate the largest sphere at 90° wherein the black and white bars are so fused that it is impossible to individualize between the black and white. Then if the intervening space between the ametrope and the chart be ten feet, the correct strength of the cylinder will be found in the number opposite to the left of the chart. If twenty feet be the distance, the corrective strength will be noted to the right of the line.



Certainly where the astigmatism is complicated by the co-existence of hyperopia or myopia, the latter should be corrected by any of the hitherto existing means, preferably by procuring the best vision obtainable by imposing sphericals over the eye while your client is viewing the distant reading chart. When this is occluded, then the remaining aberration consists merely of astigmatism, which by observing the foregoing directions can be readily determined.

Any device which will diagnose and determine the exact amount of astigmatic aberration, including axis, will be found to irresistibly appeal to those whose knowledge of optics does not embrace the ophthalmoscope, etc. Astigmatism being practically the only form of static aberration, *i. e.*, not influenced by the dynamic virtue of the ocular cilia, it can readily be seen that the angle of visual acuteness remains the same.

L. L. FERGUSON.

[This chart is made by the Julius King Optical Company, New York and Cleveland.]

**New Optical Catalogues.**

E. Kirstein's Sons Co., Rochester, N. Y., have issued a descriptive price-list, copiously illustrated, of spectacles, eye-glasses, lenses and optical specialties, trial cases, optical machinery, tools, etc., manufactured by them. The book is handsomely compiled, and has an abundance of optical information that the trade can't well afford to be without.

The Spencer Optical Manufacturing Company, of New York City, have given evidence of their enterprise and confidence by presenting to the trade a new optical catalogue. It contains two hundred illustrated pages, with handsome cover representing alligator skin, making the book quite ornamental, and it combines simplicity with the minutest detail in presenting the goods of their own manufacture. Every article known in their line is included, together with numerous productions never seen before, while the assortments in their import department of opera, field and marine glasses is unsurpassed in the quality and variety presented, being their own exclusive designs from the artists at their Paris factories. Every jeweler will be benefited by sending for one of these books. The Climax Eye-Glass (Baker's patent) with adjusting pupillary distance, the offset guard (adjustable) frame, and the metal eye-glass case for offset guards, are among the things described that must interest the optician.

The Geneva Optical Co., Chicago, will issue a new optical catalogue about October 1st. They say in their announcement to the trade: "In our new catalogue we shall try to retain all of the old that is staple, and add all desirable improvements which we can recommend. In former years our catalogue has been regarded as standard, and we propose that the new issue shall be in no wise inferior to our former catalogue which we issued to the optical trade."

### American Lathes and Their Attachments.

LXXII.

#### Theoretical Work Practically Tested.



HERE should be no errors incorporated to exceed  $\frac{1}{10000}$ " if any commendable degree of care has been observed in the construction of the device for graphically delineating the cycloidal curves for wheel teeth. Or, in other words, the cycloidal curves *b*, Fig. 1,

as delineated by the machine, are at no point  $\frac{1}{10000}$ " removed from the theoretically perfect. As shown at Fig. 1, the curved lines *b v* and *b' v'* represent the faces and flanks of an epicycloidal tooth for stem-wind gear of 84 diametrical pitch.

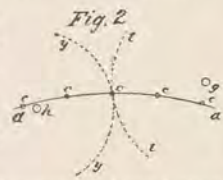


It is to be understood that the spaces *c* on the pitch circle *a*, Fig. 1, represent tooth spaces, and such tooth space must, of course, embrace the thickness of the tooth *A* and also that of the engaging tooth of the mating wheel. Exactly how much allowance to make for clearance, to avoid pinching, will depend on the accuracy with which the teeth are cut. With anything like careful workmanship  $\frac{1}{10000}$ " is quite enough for clearance. We mean by this, the thickness of a tooth on the pitch circle should be  $\frac{1}{10000}$ " less than one-half of the tooth space. If this rule is observed on each of the two mating wheels, we will have a clearance of  $\frac{2}{10000}$ ".

#### Mechanically Realizing Theoretical Accuracy

If we could reduce the accuracy of our graphic curves as produced by our device for delineating cycloidal curves, in proportion to relative sizes, we could realize an accuracy of 100 to 1; or, in other words, the small wheels should have no errors to exceed  $\frac{1}{10000}$ ". This is, of course, not to be entirely expected, but with good care we should realize an accuracy within an error of  $\frac{1}{25000}$ ".

In carrying out our graphic plan for the production of cutters, we could, by constructing a machine on the pentagraph plan, produce wheel-cutters from the curve delineated by the device we have described and illustrated, which would not contain any errors to exceed  $\frac{1}{50000}$ " previous to hardening, which process would undoubtedly throw them out to some extent. Cutters for wheel teeth of satisfactory accuracy can be gotten up by substituting simple curves for the cycloidal curve *b v*, Figs. 1 and 2. Of course, it is understood that the curve *c b*, Fig. 1, represents the epicycloidal curve outside of the pitch circle *a*, and the arc *c v* represents the hypocycloidal arc inside the pitch circle *a*.



It will be remembered that in September KEYSTONE, page 715, we outlined at *H*, Fig. 4, a piece of sheet zinc, on which the pitch circle was drawn and the cycloidal curves were delineated. Now, if we take a pair of spring dividers we can soon find two centers from which we can sweep simple curves which will coincide very nearly with the cycloidal curves *c b* and *c v*. Of course, it is understood that only such portions of the cycloidal curves as come between the circles *e* and *f* are considered. The arc *f* represents the clearance, that is, the depth to which the

teeth are cut to clear the addendum of the mating wheel-teeth.

The circles at *t y*, Fig. 2, represent curves which are to be employed for shaping the teeth. As soon as we ascertain from actual measurement the proper radius for these circles *t y*, we can, by dividing such measurement by 100, arrive at the correct size for making the actual cutter. We show at Fig. 3 the actual relation these circles bear to a tooth.

Of course, in shaping the cutters for cutting the teeth of such wheels, the order in which the circles *t y* are arranged in Fig. 3 will have to be reversed. To explain, let us suppose we have to make a cutter for producing teeth like *A*, Fig. 3. We make a round-nosed cutter for the slide-rest, the cutting point to conform to the circle *t*. We show at *B*, Fig. 4, the edge of such a cutter, such round-nosed cutter shaping the parts of the cutter *B* which form the addendum of the teeth.

In watch wheel teeth it is usual to point the ogives or addendum, but in stem-wind gear truncated teeth, or teeth shaped as shown at *u*, Fig. 3, could as well be employed. The same can be said of rounding the bottom of the tooth spaces by the cutter *B* at *s*.

In our next article in this series we shall reproduce the exact curvature of the cycloid *b c v* as delineated by a machine of this kind, and also give exact sizes of the circles *t* and *y* for a wheel .5" in diameter, with forty-two teeth and with eighty-four diametrical pitch.

*"We would not be without The Keystone if costing double the price, as we consider it far superior to any other jewelers' journal we have yet seen."—Green Bros., jewelers, Newcastle, New South Wales (Australia).*

### Philadelphia Horological Society.

The regular monthly meeting of the Philadelphia Horological Society was held at its rooms in Bank Hall, southeast corner Broad Street and Columbia Avenue, on Thursday evening, September 3d, President Lewis presiding. The following persons were elected to membership: Geo. H. Hazlitt, editor of the *American Jeweler*, Chicago, Ill.; Edward Potz, Middleburg, Va.; and Francis Leeper, Philadelphia.

The following donations to the Society's museum were received from Chas. L. Conrad: A Chinese duplex watch movement; one jeweled cylinder; an assortment of antique unfinished and finished watch material; and an illustrated catalogue of watches exhibited at the Centennial Exhibition by Messrs. J. M. Badollet & Co., of Geneva, Switzerland. From Albert Moeller were received an old Swiss lathe showing an ingenious arrangement of the T-rest, a tool for facing the ends of cylinders, and a collection of curious and finely engraved verge balance cocks. A vote of thanks was tendered to the donors for their useful and generous contributions. The Society's museum is now growing apace, and these donations materially assist and increase the interest of the members in horological pursuits, often giving rise to instructive discussions when they are presented.

The Franklin Institute, of Philadelphia, has requested of the Society that they prepare a list of representative modern works on horology for the use of the Institute, as their library is not as well provided with such publications as could be

desired. The request was referred to the committee on publications. This committee is now engaged in the compilation of ancient and modern works on horology, and it is earnestly desired, for its assistance and to lighten its labors, that watchmakers or others having rare books on this subject in their possession, or having knowledge of them, will please send a copy of the title-page, including publisher's name, address and date, to the secretary of the Society. It is contemplated to make this compilation as complete as possible in all languages, and in the case of books in any language other than English it is requested that the title be sent with an English translation.

At the monthly meeting of the Franklin Institute, on the evening of September 16th, President Lewis, of the Horological Society, read a paper concerning some curious phenomena he has observed in connection with magnetized watches.

An interesting series of lectures will be given before the Horological Society during the season of 1896-97, and the committee having the matter in charge has been very fortunate in securing the services of gentlemen eminently qualified to present the latest advances—practical as well as theoretical—in horology and allied sciences. The lectures and subjects are as follows:

- October 1st.—H. E. Duncan, of the American Waltham Watch Co., "The Escapement of the Waltham Watch," illustrated with numerous mechanical lantern slides.
- November 5th.—T. Perkins, of the Elgin National Watch Co., "The Ethics of Watch Repairing."
- December 3d.—Wesley Fenimore, "Practical Watch Case Repairing."
- January 7th.—Isaac Herzberg, president of the Pennsylvania Retail Jewelers' Association, "Sympathetic Strikes; or, Antics and Ailings of the Watch Movement and the Watchmaker."
- February 4th.—S. Goforth, member of the Franklin Institute, "The Philosophy of Steel," illustrated with lantern slides.
- The annual meeting of the Society will be held on March 4th.
- April 1st.—F. T. Haselka, member of the British Horological Institute, "Electrical Clocks."
- May 6th.—H. Rauschnig, "Chiming Clocks, and How to Make Them."
- June 3d.—J. W. Hietel, "Hietel's Spring Lever Escapement."

As one of the objects of this Society is the diffusion of useful knowledge in its own particular sphere of action, watchmakers and others interested are cordially invited to attend these lectures.

#### Advertising Trick Recalled.

Some recent attempts to secure free advertising in the Gotham newspapers recall the trick played by a Chicago house several years ago. One of the partners went into court and asked for an injunction to restrain the other partner from sacrificing the goods in their store at figures far below first cost. The plaintiff said his partner had, with some insane desire, marked all the goods in the store below cost. Then he went into details and showed how different articles were being sacrificed, notwithstanding his protest, and asked the court to issue an injunction and restrain the fractious partner. It was a strange fight and the newspapers took it up and devoted columns to the novel case. The result was that people on the lookout for bargains flocked to the store and purchased goods. Day after day the hearing was delayed, and, finally, when the free advertisement had been worked to its end, the suit was dismissed without prosecution, the whole cost to the firm for thousands of dollars' worth of advertising being about \$150 in attorney's fees. —Fame.

#### As To Personal Appearance.

There's only one man who is privileged to be shabby—that's the man of genius. Shabbiness is popularly supposed to be one of the "eccentricities of genius," although as a matter of fact it's generally due to a lack of money.

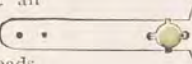
Shabbiness in a tradesman or his employees is unpardonable. It is put down as poverty or sheer laziness, and people don't like it. Everybody about a store ought to be dressed with the utmost neatness, and soiled linen, unblackened shoes or a day-before-yesterday's growth of beard should be strictly barred.



**Buy The Best.** Imitators claim something "just as good. Don't be deceived by this idle talk. The Optical Goods manufactured by us are admitted by the *Leading Jobbing Houses in this line* to be the **BEST QUALITY** and **FINEST FINISHED** goods manufactured.

**KEEP THIS BEFORE YOU.** Read Carefully and Remember.

Whereas it has come to our knowledge that some of the Trade **ARE EXPRESSING A DOUBT** about the **RELIABILITY** of the **GUARANTEE** printed on the tags **ATTACHED TO OUR GOODS,**

We hereby **NOTIFY THE TRADE** that all goods manufactured by us having this  attached and are stamped **B.S.O.** on the goods themselves are **WARRANTED** as this tag reads, and we stand ready to make that **Warrantee** good.

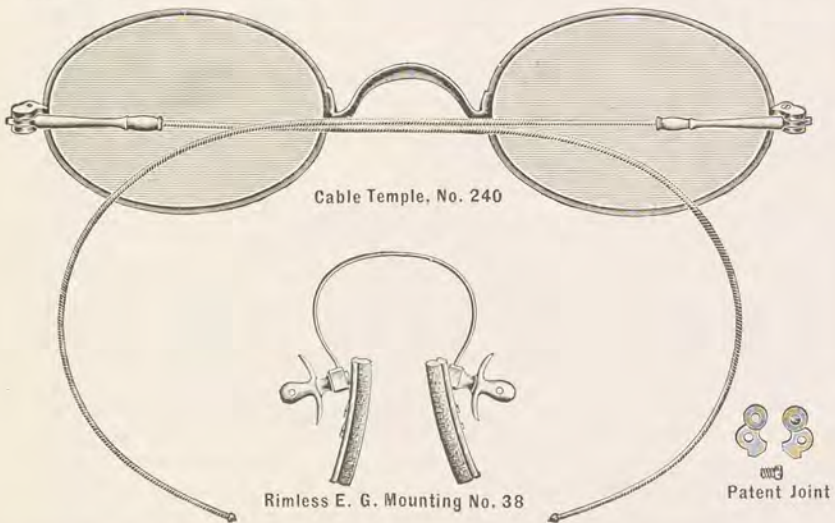
If there is still a doubt in your minds, **write to us** and we will try to convince you that this **Guarantee is good.**

See our sample line and be convinced of what we say. A full line of **Riding, Straight and Cable Temple Spectacles, Rimless Eye-Glasses and Spectacle Frames, Guards, Temples, Screws, Springs, etc.**

**BAY STATE OPTICAL CO.**

**ATTLEBORO, MASS.**

These goods can be had from the **Leading Jobbers** of this country and Europe



Gold Filled.  
Warranted 10 years  
Trade Mark.  
**B.S.O.**

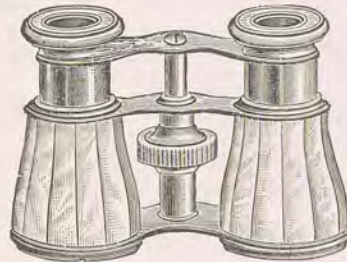
We have just received our

Fall Importation of

**OPERA-GLASSES**

for the Holiday Trade,

Including many **NEW STYLES AND PATTERNS,** as well as the **REGULAR STANDARD VARIETIES.**



Black and  
Fancy Leathers.  
Aluminum.

Oriental,  
Smoke and  
White Pearls.

Opera-Glass Cases, Bags,  
Fancy Leather Cases, Handles.

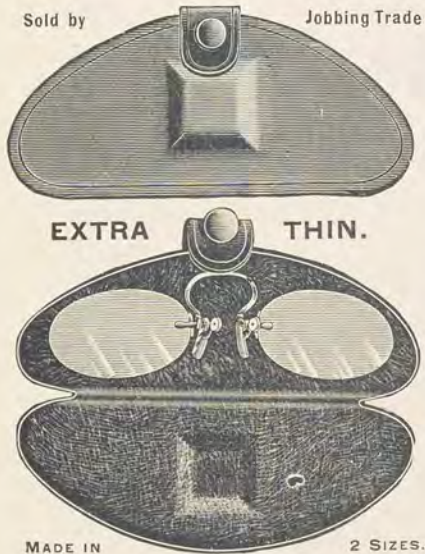
Send for Quotations and Cash Prices.

**GLOBE OPTICAL CO.**

414 Washington Street,

**Boston, Mass.**

Sold by Jobbing Trade



**Koenen's New Shell Case**  
FOR OFFSET EYE-GLASSES.

THE LATEST AND BEST. THIN AND STRONG.  
Manufactured and Patented by  
**A. KOENEN & BRO.,** 81 Nassau Street,  
NEW YORK.  
Manufacturers of Spectacle and Eye-Glass Cases.

**GORDON & MORRISON CO.**  
Dealers in Everything Pertaining to the  
Jewelry and Optical Trades.



This is a small space for the house who always quote the lowest prices.  
Watches, Diamonds, Jewelry, Silverware, Clocks, Watch Materials and Tools, Novelties, Optical Sundries, Spectacles, Eye-Glasses, Lenses, Trial Sets, Opera-Glasses, Field Glasses, etc.

Write for our Illustrated Catalogue, which we will forward free on application.

178 & 180 E. Madison St., CHICAGO, ILL.

When writing to advertisers, kindly mention *The Keystone.*

**SIMPLE,  
YET  
SIMPLY PERFECT**

*The Lloyd  
Metal  
Case*

is the Case. Try a dozen at \$1.55.



**H. E. KIRSTEIN & CO.,**  
ROCHESTER, N. Y.



**To Any Optician It May Concern**

We wish to inform him that, having proven by law our claim that the 4-bar is an infringement on the 3-bar spring, we **now** control its output.



We can supply either 3 or 4-bar springs.

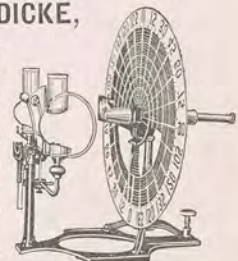
**E. KIRSTEIN'S SONS CO.**  
ROCHESTER, N. Y.

**FOX & STENDICKE,**

Manufacturing  
Opticians,  
61 Fulton St.,  
New York.

Javal, Schiötz  
Ophthalmometers,  
Phorometers, Skia-  
scopic Apparatus,  
etc., etc.

Send for Price-List.



**KLEIN SCHOOL OF OPTICS,**  
2 Rutland St., Boston, Mass.

The only scientific optical school in America. Instructions in all branches of optical work, from the bending of a bridge to the grinding of the most complicated lenses. Ophthalmoscopic diagnosis of errors of refraction and diseases of the eye. School opens October 1st. Catalogue ready about middle of August. Full course, \$75.00; single term, \$30.00. Address,

**THEODORE F. KLEIN,**  
School of Optics,  
2 Rutland Street, Boston, Mass.



This School offers the best advantages, being connected with a jewelry store, where fine engraving, including die-cutting and high class work, is executed in presence of students. We accept a limited number of students, who receive personal instructions in all branches of the art.

**WRITE FOR PROSPECTUS.**

**Annual Meeting of the Optical Society of the State of New York.**

In accordance with the decision of the executive committee the annual meeting of the New York Optical Society will be held in Parlor "F" of the Fifth Avenue Hotel, New York City, on Tuesday, October 6, 1896, at eight o'clock P. M., "For the election of officers and for such other business as may come before it." As this will be the Society's first annual meeting since its organization, it has been deemed necessary by the executive committee to devote the session almost exclusively to executive business. Members are therefore urgently requested to make strenuous efforts to attend, as it is expected that the future legislative policy of the Society will be decided upon.

**New England Association of Opticians.**

At the meeting of the New England Association of Opticians, held in Boston on September 15th, the president, F. E. Welch, occupied the chair. After the usual routine business the report of the committee appointed last June to revise the constitution and by-laws was presented and read by E. P. Wells. The committee's report was of considerable length, and quite a number of important changes were recommended. After a long discussion it was voted to lay the report on the table for one month. It was also voted to authorize the committee to prepare a circular letter for distribution among the opticians of New England, calling their attention to the necessity of organization.

**Canadian Opticians' Association.**

A meeting of opticians was held in Toronto recently at the office of the Montreal Optical Co., 60 Yonge Street, for the purpose of forming an organization in the interests of the trade and to protect the public from being victimized by unqualified optical practitioners. The new organization will be known as the Canadian Opticians' Association. The following officers were elected: President, J. H. V. Jury, Bowmanville; first vice-president, E. J. McIntyre, Chatham; second vice-president, R. Hemsley, Montreal; secretary and treasurer, Frank Ellis, Toronto.

**The Optician's Manual in Book Form.**

We hasten to inform those of our readers who have forwarded us cash in payment for the Optician's Manual in book form, that copies will be mailed them as soon as the book leaves the printer's hands, which we hope will be about October 20th. It is unnecessary for us to repeat that the Manual has been published in book form at the urgent solicitation of our optical readers, who know and appreciate its value. It makes a bulky volume of about 400 pages, is handsomely bound in cloth, and the fact that it is a reprint enables us to furnish it to the trade at the moderate price of two dollars per copy. Those eager to secure a copy before the first edition is exhausted will do well to order early. Remittances should be sent to THE KEYSTONE, 19th and Brown Streets, Philadelphia.

W. R. Donovan, secretary of the New England Association of Opticians, has opened a workshop for repairing and general prescription work for the optical trade at 4 Province Court, Boston.

Louis V. Guertin, Pawtucket, R. I., is having his store, at 33 Broad Street, thoroughly renovated. When the painters, paper-hangers and decorators are through, he will have the prettiest little store in the city.

W. P. Bullard, formerly connected with J. W. Sanborn & Co., has started in the optical business at 6 Winter Street, Boston, Mass. Mr. Bullard has a thorough knowledge of the business, and starts with every prospect of success.

C. E. Davis, manufacturer and prescription optician, 2 Park Square, Boston, Mass., has recently made a number of improvements in his establishment that give additional room and improved facilities. These will enable him to attend promptly to his growing mail order business. Mr. Davis has recently issued two catalogues, one to the jobbing trade, and the other to retailers, and every one interested can have a copy of either of these books on application. Mr. Davis is giving special attention to the manufacture of artificial eyes, of which he carries 10,000 in stock, enabling him to fill orders for any description of eye that may be ordered.

M. E. Nabstedt, of Davenport, Iowa, has lately added a regular optical department to his jewelry store.

J. A. Foster & Co., the big Providence jewelers, have added an optical room to their large plant. The firm have had an optician for years past, but heretofore have not had any special facilities for doing optical work. A room has now been set aside on the second floor, adjoining Mr. Foster's office, and especially fitted up for the examination of eyes and the fitting of glasses. This department will be in charge of F. M. Glover, an experienced optician, who was recently connected with F. A. Hubbard, of Springfield, Mass.

Wm. U. Updegrave, Johnstown, Pa., has a reputation for contriving optical illusions. On one of his advertising cards he has an illusion entitled "Kiss and make up," which consists of two figures, one of a lady and one of a gentleman, nearly two inches apart. Between the figures is a black spot, and underneath are these directions: "To make them kiss, cut the black spot out, hold the card fifteen inches away. Look intently through the hole with both eyes and slowly bring the card close to your eyes, and they will kiss."

"Enclosed find renewal of subscription. Am very much pleased with The Keystone. Hints on ads. are worth more than price of the journal. Optical department is also very helpful."—J. M. Chalmers, optician and jeweler, Lake City, Minnesota.

**Her Watch.**

I peeped into her watch when she said "The old thing wouldn't go." After a hasty glance I didn't wonder. And my diagnosis was "indigestion."

Pasted against the inner side of the case were: 1. A portrait of her first love and a lock of his hair. 2. Some dead for-get-me-nots. 3. A newspaper clipping announcing her recent engagement. 4. A four-leaf clover. Between the inner cover and the works were two pictures and a receipt for cold cream!

And still the obstinate thing refused to go!



**PREPARE FOR FALL TRADE.**

Put a good Chronometer in your show-window. We have a number that we are selling cheap, for cash. All in good order and warranted.

**RIGGS & BROTHER,**  
Chronometer Manufacturers, 221 Walnut St., Philadelphia, Pa.  
ESTABLISHED 1818.

MY SPECIAL OFFER of 15 per cent. Discount, which appears on page 687, September KEYSTONE, does not apply to Watch Material manufactured by the Waltham, Elgin and other watch companies.

F. W. H. SCHMIDT,  
100 State Street, Chicago.

**Skillful Adjustment of Eye-Glasses**

by means of **MADE EASY**

**THE PIVOT GUARD.**

We will give you points in eye-glass fitting in connection with our Pivot Guard, which it will be to your advantage to know. One dozen pairs Pivot Guards, with adjusting key, sent upon receipt of 75 cents. Illustrated Primer, Free.

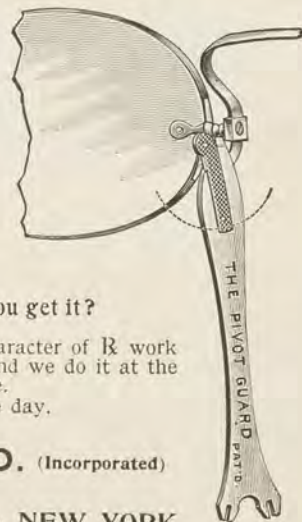
**HIGH-GRADE PRESCRIPTION WORK. Do you get it?**

We offer to our customers the same quality and character of R work that has made the Meyrowitz manufactures famous, and we do it at the same prices that are charged for work of an inferior grade. Send us a trial R order. Filled and returned same day.

**THE MEYROWITZ MFG. CO. (Incorporated)**  
WHOLESALE OPTICIANS

104 E. Twenty-third St. (Meyrowitz Building), NEW YORK

WHOLESALE PRICE-LIST, PRESCRIPTION BLANK BOOKS, ETC., FURNISHED ON APPLICATION



**L. MANASSE, Manufacturing Optician and Importer, 88 Madison Street, CHICAGO, ILL., U. S. A.**

Paris Office, 24 & 26 Rue des Petits Hotels. London Office, 40 Hatton Garden. German Office, Furth, Bavaria.



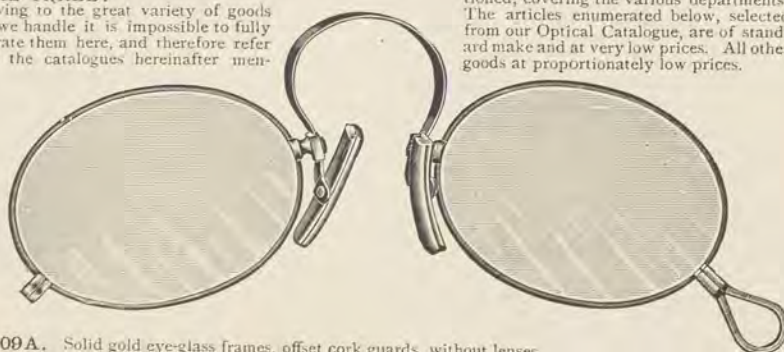
Gold, Gold Filled, Alumnico and German Silver Riding Frames, without Lenses.

- No. 1. Light weight frame, broad saddle bridge, 1 eye, per doz., 8 K. \$18.00 10 K. \$21.00 14 K. \$28.50
- No. 3. Medium weight frame, with heavy saddle bridge, 1 and 0 eye, per doz., " 23.00 " 33.00
- No. 34. 10 K. gold filled frame, saddle bridge, 1 and 0 eye, per dozen . . . . . 6.50
- No. 34A. Same as No. 34, but with cable temple, 1 and 0 eye, per dozen . . . . . 8.00
- No. 34B. Extra quality gold filled frame, saddle bridge, 10 K. seamless wire, 1 eye, per dozen . . . . . 9.00
- No. 23. German silver frames, saddle bridge, 1 and 0 eye, per dozen . . . . . 2.00
- No. 27. Alumnico frames, saddle bridge, 1 and 0 eye, per dozen . . . . . 2.75

- Gold, Gold Filled, Alumnico and German Silver Frames, Straight Temples, without Lenses.**
- No. 15. Medium weight frame, flat eye wire and temples, 1 and 0 eye, per dozen, 8 K., \$25.20 10 K., \$30.00 14 K., \$42.50
  - No. 32. 10 K. gold filled frame, 1 and 0 eye, per dozen . . . . . 6.50
  - No. 32A. Extra quality gold filled frame, 10 K. seamless wire, 1 eye, per dozen . . . . . 11.00
  - No. 21A. German silver frames, 1 and 0 eye, per dozen . . . . . 1.80
  - No. 25. Alumnico frames, 1 and 0 eye, per dozen . . . . . 2.40

We issue the following Catalogues: Catalogue No. 5, Opticians' and Jewelers' Trade List.  
Prescriptions Filled without delay. Catalogue No. 3, Meteorological Instruments, with wholesale price-list.  
Catalogue No. 2, Mathematical Instruments, " " "  
Catalogue No. 4, Magic Lanterns, " " "

**TO THE TRADE:**  
Owing to the great variety of goods which we handle it is impossible to fully enumerate them here, and therefore refer you to the catalogues hereinafter mentioned, covering the various departments. The articles enumerated below, selected from our Optical Catalogue, are of standard make and at very low prices. All other goods at proportionately low prices.



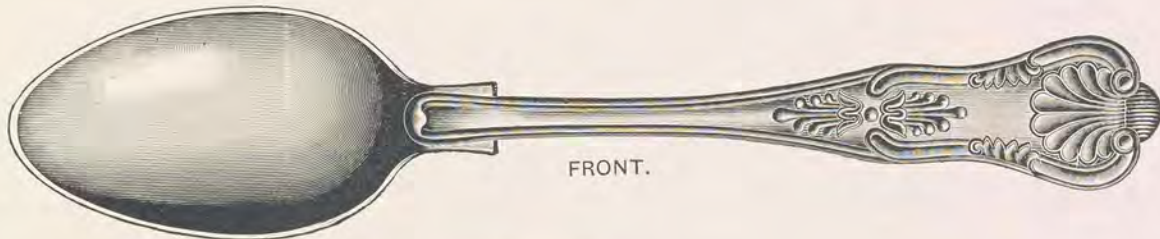
- No. 109A. Solid gold eye-glass frames, offset cork guards, without lenses, 1 and 0 eye, per dozen . . . . . 8 K., \$19.50 10 K., \$24.00
- No. 119. Rimless eye-glasses, 10 K. mtgs., offset cork guards, No. H or C pcc. or pcc. lenses, per doz. 16.00
- No. 120. Rimless eye-glasses, 10 K. mtgs., offset cork guards, with ring for cord, pcc. or pcc. lenses, per dozen . . . . . 20.00
- No. 129. 10 K. gold filled frame, offset cork guards, like cut, without lenses, per dozen . . . . . 6.00

**INTERCHANGEABLE LENSES.** Per doz. pairs.  
First quality pcc. or pcc. lenses, 1 and 0 eye, polished edges . . . . . \$1.00  
First quality cement bifocal convex lenses, 1 and 0 eye . . . . . 4.50  
First quality perfection bifocal convex lenses, 1 and 0 eye . . . . . 5.00

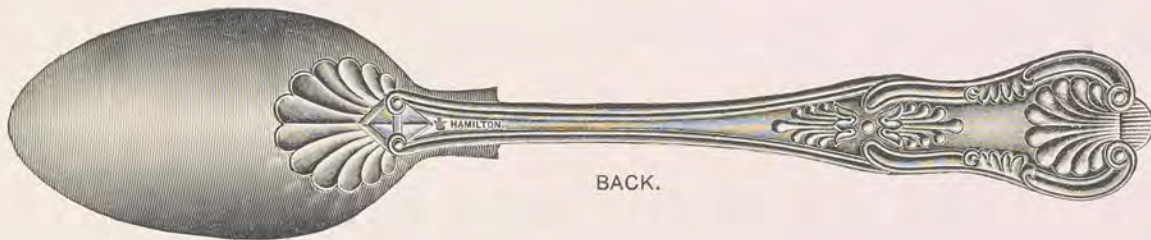
Here are so many goods in the market bearing the word "Rogers" in some form or another, some of which are inferior goods, that the word "Rogers" is no longer a guarantee of quality. To be absolutely sure of the best in the market, see that your goods bear the name "HAMILTON," either CROWN "HAMILTON" or ROGERS & HAMILTON. They are the best in all respects, style, finish and lasting qualities.

THE ROGERS & HAMILTON CO.,  
WATERBURY, CONN.

### KING TEASPOON.



FRONT.



BACK.

MADE IN "HAMILTON" PLATE ONLY.

ALL ROGERS & HAMILTON  
SPOONS AND FORKS HAVE



TWO ADDITIONAL PLATES  
ON PARTS MOST EXPOSED TO WEAR.

The Rogers & Hamilton Co.  
WATERBURY, CONN.

(FAC-SIMILE OF TOP LABEL ON SPOON AND FORK BOXES.)

Our Goods Wear Longer and Cost No More Than Ordinary Silver-Plated Ware.

WRITE FOR PRICE-LIST AND ILLUSTRATIONS.

THE ROGERS & HAMILTON CO.,  
WATERBURY, CONN.



WESTERN BUREAU OF THE KEYSTONE,  
ROOM 511,  
COLUMBUS MEMORIAL BUILDING,  
CHICAGO, Sept. 26, 1896.

Business skies are brightening. Last month we noted a slight improvement at this point. It is pleasant to state that there has been further progress in the same direction. September shows a marked improvement over August, although the volume of business is not at all up to the average. As a consequence of this improvement a more cheerful feeling pervades the trade and the outlook is brighter. All that the country has really suffered from has been lack of confidence, and this is being rapidly restored.

One of the most cheering signs of the times here in the West is the gain of six cents in the value of wheat the past week. An advance of six cents a bushel in the price of wheat in one week would be remarkable enough at any time, but at such a time as this it is doubly significant.

Collections still continue slow, but there is an improvement here also, and they will be still better through October.

After making a complete round of our jobbers and manufacturers yesterday and to-day, we do not know how we can better illustrate the state of trade here in Chicago than by quoting the expressions of a few leading men in the jewelry trade, who describe the situation as follows: Said the manager of one of our big State Street retail stores, "It is very gratifying for us to say that our September business is an improvement over that of last year." One of the members of another of our leading State Street firms remarked that they "are not finding fault, for the year's trade so far showed that they were more than holding their own over last year." "Picking up a little the last three weeks," said a jobber. "I am much encouraged," said another. The third jobber remarked, "Yes, our orders are better, ditto house sales. I think it safe to say that there is more confidence than there has been. Collections are still slow." Then another said that "Trade upon the whole may be reckoned a little better." While still another said, "Getting better; coming our way for the past two weeks; not doing as much as we would like, but having a fair business every day." "There is a little more life in things," remarked a well-known manufacturer's agent. "Not booming, but yet improving," said a manufacturer.

Our catalogue houses are still busy with the getting out of their fall catalogues. Most of them will be about a month later than usual in sending them out to the trade, on account of election year, which means that none of them will be out before early in October. Some of our catalogue firms express themselves that they don't care to have their books ready to send out before the very last days of October, and that they do not expect to have them in the hands of the retail jewelers until after the election. There has been fully as much care and labor bestowed upon these different trade compendiums as ever; in fact, all these houses claim that their new fall catalogues will be more complete, comprehensive and handsome than any of their previous issues. The trade will look for the Chicago catalogues with interest.

Some of our manufacturing jewelers are enjoying a really good business of late. Said Chas. T. Wittstein, of Theo. Schrader & Co.: "Our trade in our manufacturing department has not offered much material for complaint during September. Orders for jewelry of special design have been so plentiful that we have recently been compelled to put on extra men to keep up with them. Just how long this condition will last we cannot say, but at present we certainly have no reason to complain of dull business in our factory. The outlook for fall trade is encouraging."

R. A. Kettle, Chicago manager for the Waltham Watch Co., said to THE KEYSTONE representative that "the best news is that business is getting better. It is actually improving. Our distribution of 'Royal' twelve-size watches was made September 24th to the entire jobbing trade of the United States. This is the cheapest twelve-size grade we make, and we are unable to supply half the demand. For this reason we can report a good business this week."

B. F. Simpson, the bright young man who covers Minnesota, the Dakotas and parts of Wisconsin and Iowa for Otto Young & Co., came in from the road last week. When greeted by THE KEYSTONE man and asked as to trade conditions in his territory, he replied that conditions in the Northwest could be stated in six words: "Everybody is

waiting for the election." He further stated that of late he had found trade picking up somewhat, and that he considered the outlook encouraging.

The bicycle trade is very much on the quiet now, in fact, the cycle-selling season is practically over for this year, save possibly in the South. The trade demoralizing prices now in effect are but an aggravated form of the same illegitimate and unfair competition that has had to be met through most of the present season. Unfortunately for those into whose charge the sale of bicycles rightfully belongs, and to whom it should be wholly confined, this peculiar and wonderful product of American skill and ingenuity is in a way adapted to almost every line of trade, and is to be found displayed in the show windows of nearly every kind of tradesmen. Manifestly, it will be difficult to find any one to buy wheels so long as everybody has them for sale. And right here is where the so-called "collapse" of the wheel business comes in. In conversation with one of our well-known bicycle makers recently this point was discussed. He expressed himself to the writer that he thought the present season had clearly demonstrated to those who are out of place in trying to handle bicycles that they cannot hope to get their money back on investments in wheels, and that they will next season speedily turn the work over to regular cycle dealers—jewelers, hardware dealers and vehicle dealers—to whom it really belongs. In this way he claimed that the bicycle business would straighten itself out and settle down to a profitable basis.

#### Personal Mention.

Henry Paulson, of J. H. Purdy & Co., is at his desk again after a two-weeks' vacation spent in Northwestern Minnesota.

Jeweler W. H. Vosburgh, of West Madison Street, returned the early part of the month from an extended visit to his old home in Wisconsin, where he went to seek rest and good health. He tells us that his health was much improved by the trip.

Hayden W. Wheeler, head of the widely known New York wholesale house of Hayden W. Wheeler & Co., was in town early in the month for a short stay. He was en route home from a trip to the Pacific Northwest, where he visited his son, who is in business at Tacoma, Wash. Mr. Wheeler was cordially greeted by the Chicago trade on whom he called.

C. A. Kiger, of C. A. Kiger & Co., jobbers, Kansas City, Mo., was in town last week, looking over the lines of Eastern manufacturers' agents and selecting the latest fall novelties. Mr. Kiger remarked during a pleasant call at KEYSTONE headquarters that they had every prospect for a good fall and holiday trade in the Missouri and Kansas territory; that it would begin the very hour and day the result of the election was announced.

Miss Grace Castle, for two years past the stenographer and assistant to the manager at THE KEYSTONE'S Western headquarters, will wed Mr. Wm. J. Nye, of the Chicago Board of Trade, on the evening of October 22d, at the home of the bride's mother, 301 Wesley Avenue, Oak Park. Mr. Nye, you are to be congratulated.

Bruce Bonney, of Shreve & Co., San Francisco, was in town a day this week, en route home from a short visit in the East.

Miss Agnes Happel, third daughter of Mr. and Mrs. F. C. Happel, 175 Bissel Street, this city, will marry Dr. A. C. Broell, a well-known and successful North Side physician, on the evening of October 1st. This wedding will be of more than ordinary interest to KEYSTONE readers, for the reason that the father of the bride is the head of the F. C. Happel Company, the pioneer jobbing house of Chicago. It will be a quiet affair, the ceremony occurring at the home of the bride's parents. The young people will make their home in Chicago.

Geo. M. Wallace, for several years past manager of the Chicago store of the R. Wallace & Sons Manufacturing Company, has been transferred to New York and has charge of their New York house. Robert Morris, for some time past city salesman at the Chicago store, succeeds Mr. Wallace here.

Grant Marquardt and family returned the early part of the month from a pleasant outing spent at Delavan Lake, Wisconsin.

Stephen C. Holland, credit man for B. F. Norris, Alister & Co., after fifteen years' service with this firm, has resigned. Mr. Holland is undecided at present as to the future.

A. C. Becken has been confined to his home the past three weeks with a severe attack of pleuro-pneumonia. A greater part of this time he has been a very sick man, dangerously so, but we are glad to report that the best of medical attention and good nursing have brought him past

the danger line. Word from his home to-day was that he was feeling much better and that he was able to sit up some. In fact, he has been able to sit up some for several days past, and is gaining in strength.

A. L. Kingsbury, missionary for the Elgin Watch Company, returned Wednesday from a ten-weeks' trip in Canada, where he was championing the Elgin watch among the Canadian trade.

I. Speyer, a well and favorably known member of the traveling force of Goldsmith Bros., the refiners, was married September 2d to Miss Ettie Mayer, daughter of H. Mayer, of this city, who also holds a position with the above firm. The wedding ceremony occurred at the Oakland Music Hall, Drexel Boulevard, and was a brilliant affair—a large number of the friends of both contracting parties being present. The young couple are now enjoying their honeymoon on a month's trip through the West. Upon their return they will make Chicago their home.

M. A. Mead has been making his regular fall trip through Colorado and the Rocky Mountain country the past three weeks. He has been sending in some mighty good business, considering the red-hot political campaign we are having.

F. G. Thearle, of C. H. Knights & Co., has been spending the past week at Alma, Mich., visiting his wife, who is there for her health.

W. M. Alister arrived home Thursday morning from a six weeks' trip of rest and recreation spent among the resorts of New England. Mr. Alister is looking splendid, and tells us he had a splendid outing, and that his only regret is that he could not stay a month longer. His family accompanied him.

Chas. J. Jacobs, Chicago manager for the Homan Silver Plate Company, is home from his Eastern trip.

Julius Ghislin, well known to the trade as former Texas and Southwestern traveler for Benj. Allen & Co., but at present holding a house position with the above firm, is being congratulated by his friends upon the arrival of a little new woman at his home.

S. Lindenberg, of Bene, Lindenberg & Co., jobbers, Cincinnati, was in town a day recently, calling on his friends in the trade.

A. L. Sercomb, manager of the Meriden Britannia Company's Chicago store, has just returned from a hurried trip to their factory.

S. Goldsmith, of Goldsmith Bros., the refiners and assayers, left September 10th on an extended business trip through the far West, going through to the Pacific coast. He will be absent about six weeks.

Max Green, of M. R. Green & Co., Masonic Temple, has recently visited a number of towns in the northern part of the State, and reports a better feeling among the trade as to business, but that they are still waiting until after the election before buying goods of any magnitude.

E. E. Marek, well known to the Western trade as a former traveler for the Illinois Watch Company, is now occupying a desk in the office of the Geneva Optical Company. His position is that of house salesman.

J. A. Limbach, who champions the noted Foster & Bailey line in the territory west of Chicago, left last week for an extended trip through the West, going as far as the Pacific coast. He will be absent six weeks.

Dr. Edwin M. Harrison, optician, has opened an office for the practice of his profession in room 1312, Columbus Memorial Building.

The McCormick Optical College, at 84 Adams Street, will open a night class early in October. Write at once for dates. President McCormick tells us that day students of this college are always welcome to attend its night classes.

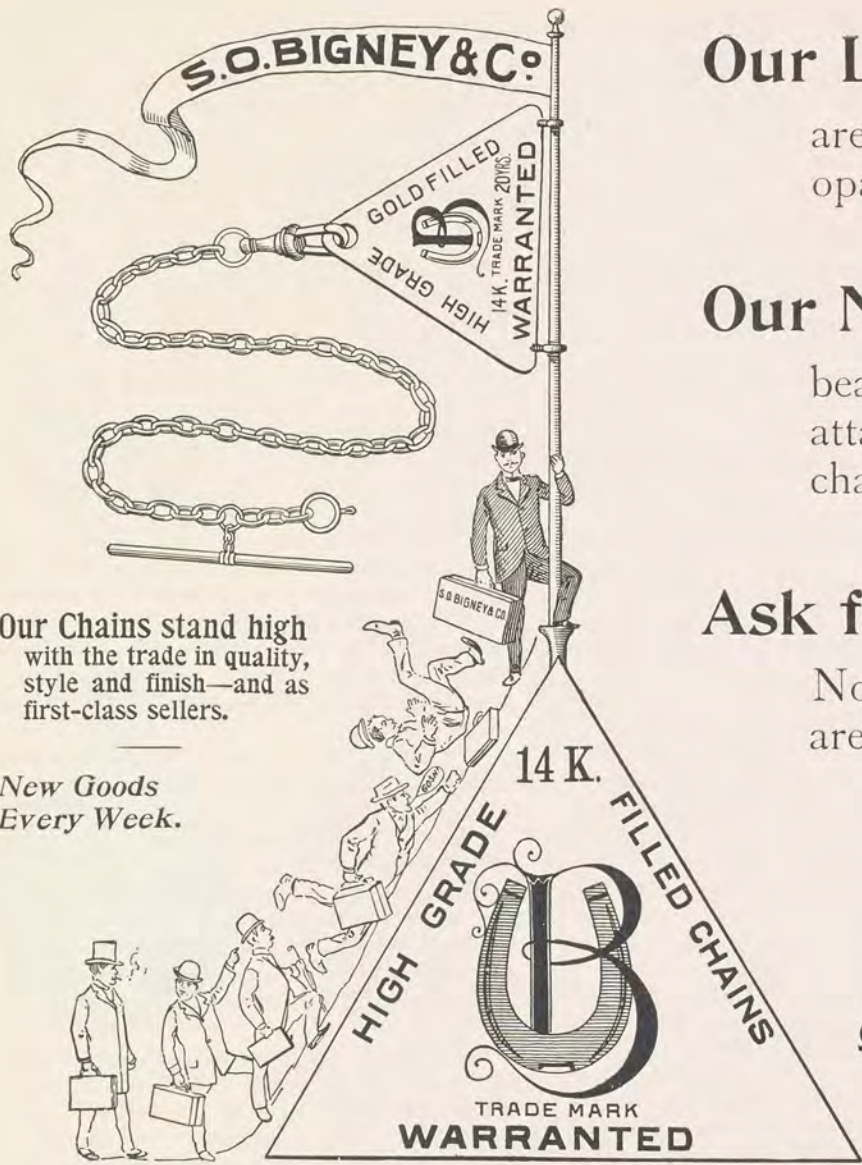
M. N. Smith, formerly a retail jeweler at 1312 Masonic Temple, is now located at Cripple Creek, Colo., in the same business.

Word from President Martin, of the Chicago Ophthalmic College, who is now in San Francisco, Cal., is that his Pacific Coast class, which began September 14th, is more of a success than he had anticipated, thirty students being present at the opening. The session will last about six weeks. Dr. Martin personally conducts the class, assisted by his sister, Miss Schofield, and W. D. Fennimore, of the California Optical Company. He expects to return to Chicago about the middle of October, and will open his November class at the Chicago Ophthalmic College at the usual time.

Ed. Wear has re-entered the employ of B. F. Norris, Alister & Co.

Jeweler E. M. Weber, of West Twenty-second Street, has recently made improvements in his store that have added much to its attractiveness.

(Continued on page 788 f.)



Our Chains stand high with the trade in quality, style and finish—and as first-class sellers.

New Goods Every Week.

## Our Lorgnette Chains

are trimmed with gold slides, set with beautiful opals, diamonds, pearls, turquoise and rubies.

## Our New Tag

bearing our trade-mark, a fac-simile of which is attached to flagstaff, will be found on all gents' chains shipped from our factory after Oct. 1st.

## Ask for These Chains.

No stock is complete without them. The styles are unique and attractive.

## S. O. BIGNEY & Co.

Manufacturers of High-Grade Goods,  
ATTLEBORO, MASS.

*THE WONDER OF THE AGE!*

# “Atlas” Watch Movements

AMERICAN MANUFACTURE.



**6 Size Atlas.**

7 jewel, stem-wind, quick train, nickel, damaskeened, pendant set.

Price, \$4.00,  
according to Keystone Key.

Greatest Value for the Money  
Ever Offered.

Ready for Delivery October 15, 1896.



**18 Size Atlas.**

7 jewel, stem-wind, hunting, lever set, quick train, nickel, damaskeened.

18 Size O. F., Pendant Set,  
Price, \$3.50,

according to Keystone Key.

**WRITE YOUR JOBBER FOR SAMPLES.**

**LOUIS MANHEIMER,** Sole Agent,

103 State Street, CHICAGO, ILL.

## Chicago News.

(Continued from page 788 d.)

J. A. Hesselbom, retailer at 103 Garfield Boulevard, has been at his present location for about one year, and in that short time has developed a fine repair business. Mr. Hesselbom is well known to the Chicago trade as a fine watchmaker, having worked for Spaulding & Co. and Giles, Bro. & Co. for eight years previous to his embarking in business for himself. He is a native of Sweden, and in 1885 he received a medal from that government for skilled work.

John C. Leppert, for the past eighteen years located at 155 South Halstead Street, will remove October 10th to 244 West Madison Street, where he will have a larger and more attractive establishment. This store is the one which has been occupied by E. Kirchberg for a number of years, Mr. Leppert having bought a part of his furniture and the goodwill of the location.

Miss Margaret Avery, grand-daughter of President T. M. Avery, of the Elgin Watch Company, and her mother, Mrs. Tuttle, returned home last week from a year's sojourn in Europe.

Lapp & Flershem will issue their extensive new fall catalogue about October 15th. It will be copiously illustrated, and indispensable to every up-to-date jeweler. All the latest fall novelties, as well as everything needed by the retail jeweler, are here catalogued in the most attractive style. It will be furnished free to any legitimate jeweler in territory tributary to this market. If you are not in the habit of receiving this book, write a request to the above firm, asking them to send it to you, and they will forward it by express. Be sure and say you "saw it in THE KEYSTONE."

Young's new fall catalogue will be out October 1st. As usual this house will head the list of the Chicago catalogue firms in getting their book before the trade. Mr. Schnering tells us that they expect to begin sending it out to the jewelers on the above date. It will be a handsome book, finely and extensively illustrated, and larger than last year. It will be found very complete, showing the full line carried by the up-to-date and sterling firm of Otto Young & Co. It is too large to mail, but will be sent by express prepaid to bona fide jewelers throughout the Chicago territory. Should you not receive this catalogue before the middle of October and you desire it, write the firm a request for it.

## Out-of-Town Visitors.

J. A. Goldstein, of Springville, Iowa, was buying goods in this market the early part of the month.

Charles Altenberg, of Portage, Wis., was in town the early part of the month, making a selection of fall novelties.

B. L. Gates, of Sioux Falls, S. Dak., was a recent buyer in this market.

F. H. House, of Galva, Ill., bought goods in this market recently.

F. M. Chamberlain, with J. R. Mercer, Kansas City, Mo., was in town last week, en route East on a vacation.

Will Hays, of F. C. Cook & Co., Janesville, Wis., was among the jewelers who have recently bought goods in this market.

J. R. Bashaw, of Leon, Iowa, was met in the office of one of our jobbers recently by THE KEYSTONE representative. Mr. Bashaw spoke encouragingly of after-election trade prospects in his section. He thought the magnificent crops of Southern Iowa warranted a fine late fall and holiday business, and he was buying accordingly.

G. F. Schmermund, of Greenville, Ohio, bought a line of the latest fall novelties in this market last week.

Jeweler Trask, of Trask & Plain, Aurora, Ill., was buying goods in this market recently.

J. M. Van Slyke, of Madison, Wis., was a trade visitor here last week.

Dan Sargent, of Falls City, Neb., spent several days in town the early part of the month. Mr. Sargent was renewing old acquaintances in the trade and making a selection of fall novelties.

Fred Bahne, of C. L. Crawford & Co., Peoria, Ill., was in Chicago, calling on the trade, early in the month.

Mr. Cook, of the firm of Cook & Bell, Phoenix, Arizona, who also conduct a store at Prescott, in the same Territory, was a buyer in this market recently. Mrs. Cook accompanied him.

N. W. Reynolds, formerly with T. F. Wilson, of Grundy Center, Iowa, was in town for a few days the early part of the month, selecting an opening stock for his new store, which he is opening up at Peterson, Iowa.

E. H. Carpenter, one of the Hawkeye State's leading jewelers, for a number of years located at Burlington, was buying goods in this market recently.

D. W. Stewart, druggist-jeweler of Redlands, Cal., was a trade caller in Chicago recently.

J. J. Johnston, of Pittsfield, Ill., was a trade caller in Chicago recently. Mrs. Johnston accompanied him.

Mrs. Gere, wife of Jeweler C. C. Gere, Urbana, Ill., was in town the early part of the month, a guest at the home of R. W. Barlow, of C. H. Knights & Co.

Mr. Coombs, of the Omaha Watch and Jewelry Company, was a trade visitor in town recently.

Mr. Willson, of the S. H. Willson Company, Mantorville, Minn., bought goods in this market recently.

Jeweler J. Mednikow, of Milwaukee, was an interesting caller at KEYSTONE headquarters lately. Mr. Mednikow remarked that although trade was suffering in the Cream City from political agitation, as elsewhere, they were well satisfied that there would be a genuine revival of business after election.

W. C. Fulton, of Aledo, Ill., was a pleasant caller at KEYSTONE headquarters early in the month. He has recently bought out the business of Jeweler W. D. Emerson, who has been engaged in the retail jewelry business in Aledo for the past ten years, and has merged this stock into his own.

Wm. T. Hixson, of Geo. W. Hickox & Hixson, El Paso, Texas, was a congenial caller at KEYSTONE headquarters recently. Mr. Hixson reported trade quiet in his country, as elsewhere; but that they had every reason to believe that it would improve immediately upon the settlement of the political questions at issue, for he believed they would be happily settled for business interests.

Jeweler John Russell Hawkins, of Mason City, Iowa, spent several days in town recently. His visit to Chicago was a combination of business and pleasure; Mrs. Hawkins had been enjoying the summer in the East and they planned to meet here. Mr. Hawkins also improved his opportunity to make a selection of fall novelties from our jobbers' stocks. During a call at KEYSTONE headquarters he expressed himself as well satisfied that trade would improve with a bound right after election, and that on the strength of his belief he had made extensive improvements in his store recently.

B. G. Hough, of Clarion, Iowa, was a buyer in this market recently. Before leaving town he dropped in at KEYSTONE headquarters, where he was a welcome caller.

N. H. Knowles, of Humboldt, Iowa, was a recent buyer in this market. Mr. Knowles was of the opinion that there would be a decided improvement in trade in his State as soon as the political battle now raging was settled.

Dan. D. Williams, of the D. D. Williams Company, Emporia, Kans., was a recent trade visitor in Chicago.

J. C. Klaholt, one of the best known Illinois jewelers—for years located at Springfield—was in town, buying goods, last week.

J. B. Hudson, of Minneapolis, Minn., was buying goods in this market last week.

Albert Pfeifer, of Little Rock, Ark., was among the out-of-town jewelers who bought goods here recently.

T. B. Myers, of St. Paul, Minn., was in Chicago last week, making a selection of the latest fall novelties.

C. A. Vanderberg, of West Superior, Wis., was a recent trade visitor in Chicago.

L. B. Weber, formerly in the jewelry business at Duluth, Minn., spent several days in town recently, selecting goods for his new store, which he is opening up at Burlington, Iowa. The new firm reads Weber & Phelan.

Among the recent visiting dealers in Chicago was A. H. Richards, of El Paso, Texas.

Jeweler J. C. Lewis, of Dwight, Ill., accompanied by Mrs. Lewis, was in town last week, en route home from their summer outing spent at Lake Minnetonka.

L. H. Hopkins, of Dubuque, Iowa, was buying goods in this market last week.

M. B. Rockwell, of Crown Point, Ind., was a trade visitor in Chicago recently.

H. L. Haman, of St. Paul, Minn., was in town last week, selecting an assortment of the latest fall novelties.

Among the well-known Western jewelers who were buying goods in this market last week was Dan. S. Jones, of Independence, Iowa.

S. D. Littlefield, of Delavan, Wis., bought goods here this week.

Mr. Giddings, of Clark, Giddings & Co., Sterling, Ill., was in town Thursday, making a selection of fall novelties.

Dr. F. O. Hart, optician, of West Unity, Ohio, was buying goods in this market recently.

Dr. A. Edwards, optician, of Reedsburg, Wis., was a recent buyer in this market.

Dr. F. W. Terhune, optician, Viroqua, Wis., was buying goods in this market last week. He is a recent graduate of the South Bend College of Optics.

D. F. Sullivan, of Rockford, Ill., was a recent trade visitor here.

Among the many well-known Western jewelers seen in Chicago recently was Alex. Marks, of Lawrence, Kan. He was en route home from an extended Eastern trip.

Dr. H. Printz, of Denver, Colo., a well-known Western optician, bought goods in Chicago this week. He was en route to visit his old Ohio home.

C. F. Artes, of Evansville, Ind., was in town the first of the week. He was on his way home from a two months' outing spent among the Michigan resorts, where he was escaping his usual siege of hay fever.

Chas. Larned, of Fort Atkinson, Wis., accompanied by his wife, has been in town this week, selecting an assortment of the latest fall novelties.

C. C. Wolf, of Rochester, Ind., has been a trade visitor here this week.

M. E. Nabstedt, of Davenport, Iowa, has been in town the past week, purchasing new fixtures for his store. Mr. Nabstedt is making extensive improvements in his establishment, which, when completed, will give him one of the most modern and up-to-date jewelry stores in the Hawkeye State.

C. A. Stevens, of Holland, Mich., was buying goods here this week.

J. C. Woelfle, of Peoria, one of the most widely and favorably known jewelers of the Sucker State, is in town.

## Gossip Among the Trade.

The Union Show Case Company, the well-known makers of jewelry store fixtures, for a number of years located at 167 and 169 Randolph Street, second floor, have removed their salesroom to the ground floor at 171 Randolph Street, where they now have one of the most handsome and commodious quarters devoted to the sale of store fixtures in Chicago.

One of the late things seen in the windows of the big State Street stores are umbrella handles which are fairly encrusted with jewels, made in grotesque or in tasteful designs, some being of antique silver or gold inset with jewels, or, again, of natural wood handles set with the precious stones. The fad is costly, for expensive stones are alone worth the setting, all others being without effect.

The exhibition of the Chicago Cycle Show will open in the Coliseum, Jackson Park, on Saturday, January 23, 1897, and continue during the next week, under the direct management of the National Cycle Board of Trade, who assure the public that it will be a great improvement over last year's effort. The diagram shows the general floor plan of the spaces. They differ from those of last year in that they are not so microscopic in dimensions, being fifty per cent. larger—that is, ten by twelve feet. The rental for spaces will be reduced forty per cent., and the profits of the show will be pro-rated among the exhibitors instead of going to a grasping exhibition company. There are in all 416 spaces, and all are of uniform size, for which more than 325 applications are already in hand. The New York Show follows right on the heels of the Chicago function, opening on February 6th and continuing until the 13th, at the Grand Central Palace of Industry, Lexington Avenue. Both exhibitions will be on a larger and more extensive scale than any previous efforts in cycle shows.

The walls of the new Silversmiths' Building are rapidly approaching completion. Enough can be seen already to show that the front will be the most modern and handsome on Wabash Avenue. Benj. Allen tells us that with moderately favorable weather the building will be finished according to contract, and that the progress towards its enclosure is fully up to expectations.

The following is a list of recent graduates of McCormick Optical College, 84 Adams Street, Chicago: Walter H. Grünert, Oconto, Wis.; George C. Armstrong, Aaron D. Rothstein, Henry Levinson, John A. Patterson, Tracey F. Hawley, Edna M. Tolley, Laura C. McCormick, Chicago; Edwin R. Lee, Webster City, Iowa; Fanny M. Huston, Greenfield, Ind.; George T. Irvin, Aledo, Ill.; Henry H. Frudenberg, Minneapolis, Minn.; Stephen A. Sherman, Binghamton, N. Y.; Staten E. Griffin, Maysville, Mo.

The standard of elegance in trade literature seems ever to advance, and the most notable expression in this line will be found in the new illustrated fall catalogue of Benj. Allen & Co., which is now nearly ready for distribution. It will be issued to the trade by October 15th, and will be a representative book from a representative house. It will be a large, complete and handsome publication, worthy of a place on the desk of every jeweler in the land. If you have not received it by October 25th, write for it to Benj. Allen & Co., Chicago.

(Continued on page 788 h.)



# WE WANT YOUR MONEY

AND WE'LL GET IT IF

## QUALITY AND PRICE INTEREST YOU

If you pay for your goods in 30 Days,

## WE WANT YOUR TRADE.

Price includes choice of Elgin or Waltham Movement.

REGULAR PRICE } Case alone, \$14.00 } DO A LITTLE  
                          } Movement alone, 10.00 } FIGURING.



Guaranteed to Wear 20 Years.

No. 1001. O SIZE. No. 1002.

Every Watch on this Page  
**\$19.30**  
NO MORE, NO LESS.



Guaranteed to Wear 20 Years.

No. 1003. O SIZE. No. 1004.

The Manufacturers of these Cases will **Not Permit us to Advertise Their Name.**

Every Case bears their Guarantee to wear for 20 and 25 Years. They are 14 K. Filled. These Cases are sold by EVERY retail jeweler in the land.



Guaranteed to Wear 20 Years.

— 6 SIZE. —

All Prices Quoted are according to Keystone Key.



Guaranteed to Wear 20 Years.

— 6 SIZE. —



This entire row of Cases is guaranteed to wear for 25 Years.



No. 6570. Doric, Rococo Center, Carved Shell.

No. 6610. Doric, Extra Fine Vermicelli.

No. 1309. Rococo Center, Star Vermicelli.

No. 1451. Rococo Edge, Fancy Engraved.

No. 6559. Fancy Vermicelli.

No. 6413. Doric, Rococo Center, Richly Carved.

SELECTION PARCELS OF DIAMONDS SENT ON APPROVAL.

### Wm. I. Rosenfeld, 8 Maiden Lane, New York.

## Chicago News.

(Continued from page 788 f.)

A meeting of the credit men of the jobbing jewelry and cognate lines was held at the rooms of the Chicago Jewelers' Association, September 18th, for the discussion of credits and to see if the present system of reporting might not be improved or made more efficient. F. A. Hardy presided and Mr. Towers, of Lapp & Flershem, was secretary.

F. W. H. Schmidt, material jobber at 100 State Street, Chicago, desires us to state that his announcement of fifteen per cent. discount in September KEYSTONE did not apply to material manufactured by the Elgin and Waltham Watch Companies.

Over two hundred Chicago manufacturers and jobbers, as also several thousand retailers outside of Chicago, have formed an extensive mercantile alliance, which has been designated the "National Association of Merchants and Travelers." The objects of the Association, as set forth in the by-laws, are to advance the mutual interests of manufacturers, jobbers and retail merchants, and the membership of the Association is pledged to work actively to secure all reasonable benefits through the co-operation of the great commercial interests represented, and to take such action upon vital trade issues as shall be of mutual advantage. An ingenious arrangement divides the main Association into four divisions, as follows: Division A—Dry goods, cloaks, millinery and jewelry; Division B—Clothing, woolens, boots and shoes, men's furnishings, hats and caps; Division C—Groceries, crockery, drugs, hardware, bicycles and sporting goods; Division D—Traveling salesmen for all Chicago jobbing and manufacturing interests. The movement for the formation of this alliance has been going on secretly for two months past, but it was not until September 1st that a meeting was held and a constitution drafted. The inaugural meetings were held September 21st and 26th, and the large attendance and enthusiasm manifested augured well for this new organization. The general officers of the Association for the first year are as follows: general chairman, A. C. Bartlett, of Hibbard, Spencer, Bartlett & Co.; vice-general chairman, J. V. Farwell, Jr., of the J. V. Farwell Company; general treasurer, A. Nathan, of Kuh, Nathan & Fischer; general secretary, C. S. Tomlinson, of the *Dry Goods Reporter*.

"I have read single articles in *The Keystone*, worth the price of a year's subscription."—*W. J. Sprawl, jeweler, Sparta, Illinois.*

## Philadelphia Notes.

Local business is in better condition, not so much by reason of a very material improvement as by a strengthening of confidence in the early future and a consequent preparatory activity. The local public are very sanguine as to the result of the election, and some industrial establishments are starting up in anticipation. Though full confidence will not be restored till after election, the present month is expected to bring a fair volume of business, and stocks are in readiness.

The Jewelers' Club is already making arrangements for their fall entertainments. The first club night of the season will be held October 1st.

Riggs & Brother will move from 1005 Walnut Street to 310 Market Street about October 1st.

C. F. Rump & Sons, Fifth and Cherry Streets, have issued an illustrated list of handsome leather goods, consisting of pocket-books, card cases, photo. frames and other fancy leather goods with sterling silver and gold mountings. One of these illustrated lists will be mailed to jewelers on application.

Charles Diesinger, 720 Sansom Street, was recently thrown from his wheel, and several marks on his countenance evidenced the force of his collision with mother earth.

A Girard Avenue jeweler was recently the victim of a designing thief. The jeweler went to spend the evening at the house of his sister, and left his wife in charge of the store. The thief, evidently aware of both facts, went to the store and imparted to the wife the alarming information that her husband had been run over on a local railroad. Completely beside herself, the wife hurried from the store to ascertain the truth of the terrible information, and in her absence her informant helped himself to a score of watches. The jeweler was found to be unharmed, and is now mourning the loss of his property. The theft should put local jewelers on guard against the numerous schemes of clever robbers.

## Trade Notes.

F. J. Owen for many years watchmaker for J. B. Trickey & Co., Lincoln, Neb., has recently opened up a repair establishment for himself in that city.

Mrs. J. M. Irmen, wife of Jeweler Irmen, of Atlantic, Iowa, has just returned from a trip East, where she spent the summer visiting relatives.

A. L. Cleaver, of Boone, Iowa, has put in handsome new fixtures, which have greatly improved the appearance of his store.

Theodore L. Rogg, of Des Moines, Iowa, has recently returned from a month's outing pleasantly spent among the Colorado resorts. There were a half dozen young ladies in his party, and as Mr. Rogg is still whole-hearted and fancy free their presence added much to his enjoyment of the trip.

Strow Bros. have succeeded John L. Strow, at Fort Dodge, Iowa. The junior member of the new firm is a skillful optician, and will give special attention to this department of the business.

W. J. Kelley, of Oshkosh, Wis., is holding an auction sale with the intention of closing out his business. Herman G. Briggs, the Michigan auctioneer, is conducting the sale.

C. W. Bollinger, of Oskaloosa, Iowa, attended the G. A. R. encampment at St. Paul, and the annual meeting of the Grand Lodge of the Knights of Pythias at Minneapolis last month. He was accompanied by Mrs. Bollinger.

F. J. Page, of Oskaloosa, Iowa, was in attendance at the G. A. R. encampment at St. Paul last month.

A. C. Billon, Jr., of Davenport, Iowa, has recently moved into a new store and now has one of the pretty establishments of that town, in a more desirable location than heretofore.

Jeweler P. F. O'Connell, of Atlantic, Iowa, is president of the Board of Education of that live young city.

F. B. Harris, of Lincoln, Neb., is now located in a larger and better store than formerly. The new establishment is up to date, and is one of the real pretty stores of that section.

J. B. Trickey & Co., the pioneer jewelers of Lincoln, Neb., have refitted and refurnished their store in anticipation of a good trade after the election is over.

C. W. Dudgeon, of Ames, Iowa, has recently moved into a new store, which he has fitted up in good taste. He has added a stock of stationery to his line.

Chas. R. Hanger, junior member of the firm of Hanger Bros., Des Moines, Iowa, died after a short but severe illness, August 4th, aged twenty-eight years. He was a promising young man, with a bright future, and his loss was a terrible blow to his family and a large circle of friends.

E. W. Blossom, of Sterling, Ill., has made extensive improvements in his store, which now presents a very attractive appearance.

Jeweler Dan. S. Jones, of Independence, Iowa, is in demand as timekeeper and judge at racing meetings.

The stock of the late G. W. Barrett, of Boone, Iowa, has been closed out to his stepson, E. S. Mellish, of Oxford Junction, Iowa.

Rothstein & Lippman Bros., Altoona, Pa., opened their new store recently and crowds viewed the pretty fixtures, stock and decorations on opening day. The large windows were prettily decorated for the occasion, and ferns and palms in profusion beautified the interior. To every purchaser during the opening days was given a souvenir in the form of a painting on glass, pretty enough to claim a place in the best parlor.

## A New Typewriter.

The latest typewriter on the market is known as the Williams typewriter. It has no ribbon or other accessory that is liable to get out of order, and works on the simple principle of a press. Every letter can be seen while it is being printed, and it makes possible the highest speed yet attained. It can be operated on sight, and the learner can acquire speed in a fraction of the time required for other machines. Its unusual strength gives it great durability. It is consequently more labor-saving and money-saving, easier of manipulation, and it is claimed by the makers to be more satisfactory in every respect than any other typewriter on the market. Further particulars as to the machine can be had from the G. S. Lovell Clock Co., 1019 and 1021 Market Street, Philadelphia.

## Talk About Ridiculous Questions!

### Here's One:


J. M. C. asks: "Is not every filled case a Jas. Boss case?" Wonder he didn't ask "Is not every filled case the best made?" He reasoned thus, probably:


**The Jas. Boss case is a filled case.  
The ——— case is a filled case.  
Therefore the ——— is a Boss case.**

It's fool reasoning like this that ruins business. The jeweler who does not know that there are numberless kinds of so-called filled cases is a good mark for the sheriff.

But there's only one standard—that's the Boss. Always has the same amount of gold—now or a decade hence, good times or bad times. This is important to remember—and here's a little mnemonic:

**Only filled cases made by Keystone  
Watch Case Co. are Jas. Boss  
cases.**

**Only filled cases made by Keystone  
Watch Case Co. have this  
trade-mark **

**Therefore only filled cases with this  
trade-mark  are Jas. Boss  
cases.**

There are other filled cases than the Boss—lots of them. There's the ———, for instance, that has more or less gold, just as the maker wants to make more or less profit. To make a sale for it he lowers the price fifty cents and takes out a dollar's worth of gold—and then some jewelers will ask why the Boss can't be sold as cheap!

Jas. Boss cases are made by processes and under patents which are our sole property. They are always of a fixed standard quality, never suffer deterioration, and are the only filled cases on which the trade can implicitly rely. See pages 806 to 811 for our new fall patterns.

Keystone Watch Case Company.



ESTABLISHED 1880.

ESTABLISHED JEWELERS ONLY.



# P. J. Burroughs

## THE JEWELERS' AUCTIONEER

103 STATE STREET  
CHICAGO, ILL.

Reference of a few sales I have conducted in different parts of the country. I can also refer you to almost any manufacturer or jobber of jewelry or silverware in America. Any of the undersigned would be pleased to inform you as to my ability:

Clemens Hellebush, Cincinnati, Ohio.  
Cady & Olmstead, Kansas City, Mo.  
Anderton & Eberhardt Co., Dayton, Ohio.  
M. Wunsch & Co., San Francisco, Cal.  
M. German, Los Angeles, Cal.  
H. Morton, San Jose, Cal.  
A. I. Hall & Son, San Francisco, Cal.  
C. S. Raymond, Omaha, Neb.  
Steinmetz Jewelry Co., Helena, Mont.  
J. W. Kelly, Carrollton, Mo.  
T. G. Calvert, Lexington, Ky.  
A. H. Simon, St. Paul, Minn., 2 sales.

W. B. Clapp, Chicago, Ill.  
P. Kern, El Paso, Texas.  
W. T. Irvine, La Crosse, Wis.  
David H. Harris, Fulton, Mo.  
Wm. Ennis, Birmingham, Ala.  
Joseph & Fish, Chicago, Ill.  
E. Hallett, Lincoln, Neb., 3 sales.  
J. G. Willeke, Springfield, Mo., 2 sales.  
Baldwin & Co., St. Joseph, Mo.  
A. Pinover, New York.  
A. T. Threadgale, Taylor, Texas.  
H. Hahn, Lansing, Mich.

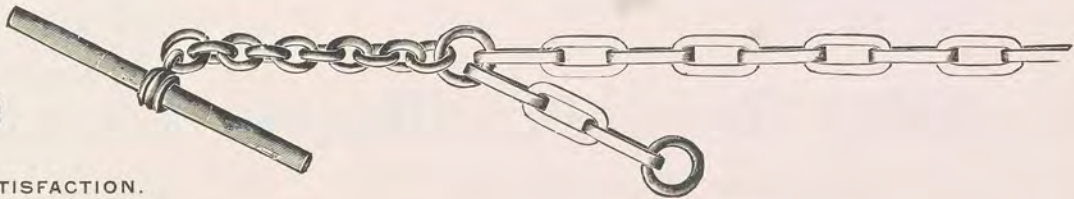
Worden & Morris, Fort Wayne, Ind.  
C. S. Durfee, Davenport, Iowa, 2 sales.  
A. Steinau, Cincinnati, Ohio.  
C. B. Scott's Sons, Mayfield, Ky.  
D. Donnan & Bro., Waco, Texas.  
McKee & Schunck, Celina, Ohio, 2 sales.  
M. B. Wright & Co., Kansas City, Mo.  
M. J. Benjamin, Denver, Colo., 2 sales.  
J. H. Bihl, Fremont, Ohio, 4 sales.  
John Leith, Bay City, Mich.  
Austin & Hunter, Belton, Texas.  
Roth Importing Co., Denver, Colo., 2 sales.

The Jaccard Watch and Jewelry Co.,  
Kansas City, Mo.  
W. A. Pfister, Sheboygan, Wis.  
Geo. Beemer, Lead, South Dakota.  
O. F. Zimmerman, Jeffersonville, Ind.  
W. B. Talifafero, Jackson, Tenn.  
G. W. Brown, Cheyenne, Wyo.  
M. German, San Diego, Cal., 2 sales.  
J. H. Alden, Beatrice, Neb.  
H. H. Bisbee, Ludington, Mich.  
C. W. Miller, Bloomington, Ill.  
Hight & Fairfield, Butte, Mont.

# HONEST GOODS AT RIGHT PRICES

IS THE BASIS ON WHICH WE ARE BUILDING OUR BUSINESS.

## 1000 Patterns at One Price



WE GUARANTEE EVERY CHAIN TO GIVE PERFECT SATISFACTION.



## PLAIN BAND RINGS GOLD FILLED.

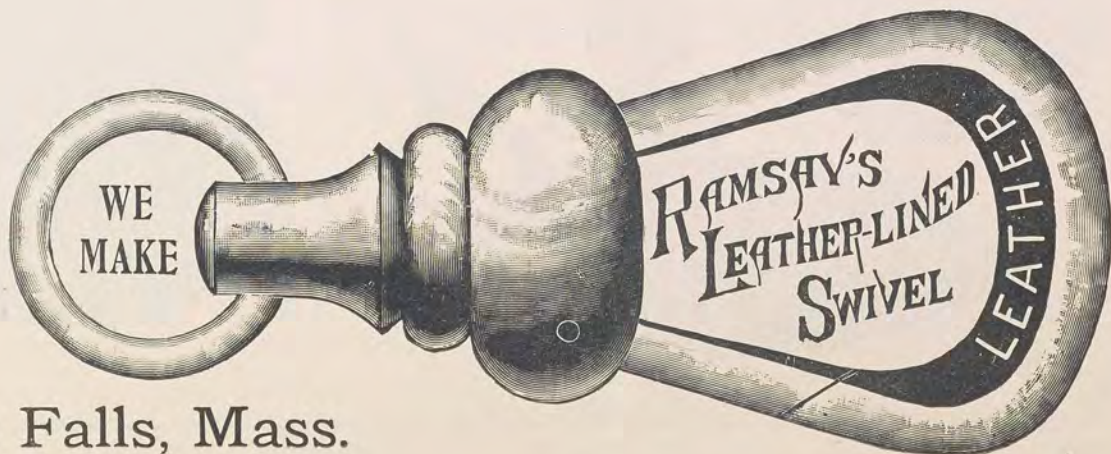
SUPERIOR IN QUALITY AND FINISH TO ANYTHING ON THE MARKET.



## FONTNEAU, CUMMINGS & FAGAIN,

Manufacturing Jewelers,

Attleboro Falls, Mass.





Are always of **STANDARD QUALITY  
NEWEST STYLES  
BEST FINISH**

They will always sell when anything will, and cost no more than those of doubtful reputation.

Don't wait for our travelers, but send direct to

**M. B. BRYANT & CO.**

10 Maiden Lane, New York

OLDEST  
RING MAKERS IN  
AMERICA

## WHISK BROOMS



Cut half size.  
No. 4110. WHISK BROOM.

and Other Novelties  
for Fall Trade,  
**all QUICK SELLERS,**

are now ready and in the hands of our *salesmen*. Do not let our representative leave your store without looking through his line.

If you are looking for Money-Makers and Trade-Bringers, we have them.

Write to us if there is anything you want in **Sterling Silver.**

**Codding Bros. & Heilborn**  
North Attleboro, Mass.

NEW YORK OFFICE—C. A. VANDERBILT, 178 BROADWAY.  
CHICAGO OFFICE—F. A. BUCK, 805 MASONIC TEMPLE.  
PHILADELPHIA OFFICE—J. C. BUCK, 15 NORTH SIXTH STREET.  
SAN FRANCISCO OFFICE—STANLEY GIDDEN, 120 SUTTER STREET.

**No Mystery  
In Our  
Methods**



of teaching Watchmaking and Optics. We are simply ourselves thorough experts, and make our pupils likewise. No incompetent watchmaker or optician can be credited to the

## Waltham Horological School

which is the oldest and has the best equipment and instructors.

Thorough instruction given in **Horology, Engraving and Ophthalmology.**

Graduates are often sent to responsible and good-paying situations.

Every pupil has the privilege of making a watch while here, and owning it when finished, without extra cost.

Write for our New Prospectus.

**Palmer &  
Swain,**  
Proprietors,  
**Waltham,  
Mass.**



PIN RECEIVER No. 065.



CANDLESTICK No. 181sz.



JEWEL BOX No. 151o.



ATOMIZER No. 175.

As beautiful a line of **Christmas Goods** as one would wish to see—new, novel, and ready sellers. Can, by ordering at once, be had from

**THE C. F. MONROE CO.** *Manufacturers of Wedding and Holiday Novelties.*  
Office and Factory, MERIDEN, CONN.

New York Salesroom,  
42 Murray Street.

Arts Allied to the Jewelry Trade.

LXXVII.

Lapping, in Electro-Plating.



ANOTHER and better method of securing laps to a lathe arbor can be made use of than the one described and illustrated in our last preceding article, but it requires a little more labor in fitting up such a chuck or holder. However, it will amply pay for the extra trouble and expense. The kind of lathe to employ for serviceable work is one with male screw on the end of the spindle, on which is fitted an extra face-plate. We show at Fig. 1 the complete device, and at B, Fig. 2, is shown the new face-plate by itself.



Fig. 1  
New Device for Holding Polishing Laps

This face-plate is best made of cast iron, and should have a female screw which fits accurately on the lathe arbor. Extending forward from the face-plate B is a cylindrical ring or bearing, shown at B'. This ring only serves for a seat to the lap C, and can be made either cylindrical or slightly taper. For securing the lap in position four screws are used, two of which are shown at x x, Figs. 1 and 2. The screws x do not extend quite through the lap C, and are placed at equal intervals. If the fitting up of the chuck B and lap C is correctly done, any of the four screw-holes x in B or C will match. Such a chuck as B also serves admirably for holding wooden polishing heads or pulleys.

All polishing wheels should be made as true as possible at the outset, and the arbor or spindle on which they are placed should be so constructed that such laps or polishing pulleys can be taken off and replaced any number of times and run true in every instance. Lathe spindles with a taper screw for soft buffs should not be used for hard ones, as hard buffs will not run true. All hard buffs and laps should be set against a shoulder on the same principle as shown in Fig. 1. Such laps and buffs should have a sound central bearing, and be clamped to a shoulder like B, Fig. 1. There is no great difference in the result whether the clamping against the shoulder is done with four screws, as shown at x, Fig. 3, or by one nut placed on the arbor and outside of the lap or hard buff.

We have chiefly introduced a description of a metal lap to illustrate and explain the perfect type of hard buff. Still, a lap composed of an alloy of lead and tin can be employed by the electro-plater to good advantage, especially for worn goods, like watch cases. A watch case with a panel on the back can, after stripping off the old gilding, be lapped to good effect, especially if the workman is something of an engraver. A lapped panel removes the look of wear, leaving the angles sharp and crisp as in new work. Hard buffs, having but little elasticity, leave a surface much like one produced by a metal lap. On the other hand, soft, spongy buffs, although producing a polished surface, leave such surface wavy and conveying the idea of cheap work.



Fig. 2

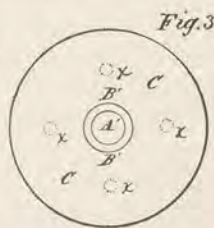


Fig. 3

Wooden Buffs for Polishing

Wooden buffs can be used to excellent advantage on the arbor shown at Fig. 1. White gum-tree wood makes a splendid hard buff. To make one, take a piece of gum-tree wood from near the butt and about 8" or 9" in diameter, and cut it into sections across the grain so as to form blocks about 8" or 9" in diameter and 2" thick. If the bearing B' is 3/4" in diameter, bore about a 5/8" hole in the center of the wooden blocks. The idea will be seen by inspecting Fig. 4, where we show such a block seen flatwise, with the 5/8" hole in the center. Such blocks should be boiled in water for three or four hours, to remove the sap.



Fig. 4

Usually boring a 5/8" hole at the center will prevent such blocks from checking during the process of seasoning. Pasting paper on the flat sides will also tend to prevent season checks. A further precaution can be used, and this lies in making a radial slit with a thin saw as shown at b, Fig. 4. Such radial saw-kerf, for a hard buff 6" in diameter, should be about 2" in radial extent. If such blocks show a strong tendency to check in drying, a second saw-kerf can be made at the dotted line b'. Such blocks should be carefully planed flat on one side, the hole in the center nicely fitted to the bearing at B', and then four holes bored to receive screws to bolt the wood pulley D to the chuck B. When wooden blocks like D are employed, the better plan would be to let the female screw-thread for the bolts be in the iron chuck B, using screws with bevel heads countersunk in the wood. A wooden pulley of this kind, seen at right angles to the axis of the lathe, will appear as shown at Fig. 4.

The cylindrical face (see v v, Fig. 5) of the pulley can be employed with emery cake, or a leather strap can be glued to the surface. For nickel work, such pulleys work admirably with Vienna lime made into a paste with cosmoline. By holding a fine-toothed cylinder to the surface of such a wooden wheel the surface can be roughened so as to hold more abrasive material than the simple grain of the wood. The toothed cylinder just mentioned is made of steel, and acts like a milling tool. A very thin chip turned from the face v perfectly restores the accuracy of such pulleys as D.

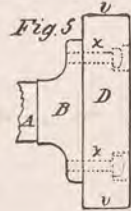


Fig. 5

"The Keystone is better than all the other jewelry trade journals combined. We can't do business without it."—Gunning & Hamilton, jewelers, Hancock, Wis.

An Artful Donor.

"You can see lots of human nature in a jewelry store," remarked the man who was arranging a tray of gems in the window so as to give them their greatest possible allurements. "One of the things I have noticed is that most people dislike to depend on their own judgement. They don't appreciate anything until they know its value in dollars and cents."

Just then a young man came in and asked to see some rings. He was not long in making a selection, and, pulling out a roll of bills, he asked the price.

"Twenty dollars," replied the jeweler.

The young man put the money back into his pocket.

"Is that all?" he inquired regretfully.

"Yes. I wouldn't be justified in charging any more. But it's a very handsome ring, and everything about it is just as it's represented."

"Twenty dollars doesn't seem enough to pay for a ring for this young lady," he remarked pensively. "That's a pretty ring and I think she'd like it very much if she

didn't find out what the price was. I'll tell you what I'll do. I'll buy the ring if you'll put a fifty-dollar price tag on it and let it stay in the window until day after to-morrow."

"I don't quite see what good that will do you."

"I've set my heart on seeing her wear this particular ring. I know she will like its style when she first sees it. But you know how women are; they're never content until they know how much everything costs. To-morrow I'll take her out walking and we'll pass your window. We'll stop and look in, and she'll recognize the ring the instant she puts her eyes on it. I won't say a word, but she'll notice that it's marked fifty dollars and will feel that it is not only a fine-looking ring that she's wearing, but that it is all right as to price; and then we can all be happy."

—Free Press.

Goods Well Bought Are Half Sold.

If that adage were better and more often thought of, and lived up to, there would be cleaner stocks at the end of the year, a better margin of profits, and fewer cases of bankruptcy. Competition in business, want of confidence, financial stringency, and the host of ills that politics are supposed to bring upon us, are not half so detrimental to a man's business as poor buying. The whole catalogue combined could not show such a long black list of failures, as a result, as the one great evil of not buying wisely and well.

The buyer who has no system or rule to work by and who considers that purchasing novelties is a sort of lottery, and that it can be done by guesswork as well as any other way, is away off, and is likely to discover that fact unless he is fortunate enough to have customers built on the same general plan.

The first thing to do is to determine what goods are really novelties possessing merit; to separate the genuine novelties from the absurdities.

In the anxiety to produce something different from anything else, some manufacturers, with a disordered imagination in the place of taste, put lines on the market under the name of novelties that are really commercial nightmares. Others try to imitate lines that are likely to become popular. The imitation is always inferior, and frequently turns out to be a flat failure. The buyer who gets bitten with these shams often rails against novelties in general and concludes that his trade does not demand them. The demand for particular novelties must be made, although customers are looking for such things in a general way.

If you strike a winner, something that becomes the popular fad, there is profit and popularity for you if you know how to handle it. Push it for all it is worth; never let a customer hear that you are just sold out if you can help it; but be prepared to drop it and sell out quickly as soon as the demand begins to let up, which is usual when some other toy takes the people's fancy. While watching for the decadence of the one, look out for the advent of the other.

—Dry Goods Economist.

Three Good Business Hints.

Lloyd's Commercial Guide gives the following advice to its readers: Never sign a paper without reading it; and if, after reading, you do not understand it, have it thoroughly explained before you put a signature to it. It is best to get some third person, who is not interested in the matter at all, to explain the meaning of what is not clear, or to point out words that may have two meanings in the document. Always make a memorandum in your little book of any contract you undertake for money or any agreement to work. It saves much trouble to keep a memorandum book and put down the dates when you either pay or receive money. Whenever money passes on account, set it down. If any money or thing of value goes through your hands, give a receipt for it and make a memorandum. Your receipt settles the amount that passes, and that cannot be disputed. When you pass it to a third party, get a receipt and keep it. This form is as important in the transfer of income, trust money or valuables among your own family as with other persons.

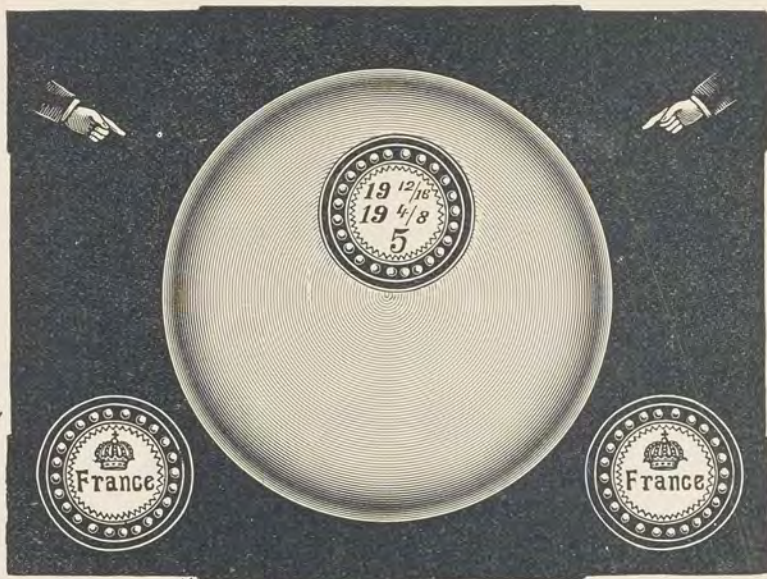
A Hint for Jewelers who Advertise.

When you advertise in newspapers, try to have your ads. contrast in some degree with the other ads. on the same page. If other merchants' announcements are inclosed by bold borders and set up in large display type, use no border and have your ad. set in small type with plenty of white space, and it will, by reason of the contrast, be the most striking ad. on the page. Many newspapers run wild in the matter of borders, which is as bad as no borders at all.

—Brains.

FRANCE

ASK YOUR JOBBER FOR THEM.



ASK YOUR JOBBER FOR THEM.

FRANCE

*"The True Blue"*

BEADED LABEL **FRENCH** WATCH GLASSES

THE GENUINE FRENCH GLASSES ARE LABELED  
**FRANCE**  
ON EVERY PACKAGE.

These Glasses are preferred wherever Quality, Finish and Accurate Gauging are required.

**SUSSFELD, LORSCH & Co.,**

16 RUE D'ENGHEN, PARIS. 37 & 39 MAIDEN LANE, NEW YORK.



THE *M. Paradis*

FOR WHICH WE HAVE BEEN THE SOLE AGENTS THESE PAST

**30 Years.**

MADE BY A MANUFACTURER WHO STANDS UNRIVALED IN THE ART OF TEMPERING, THESE WELL-KNOWN MAINSPRINGS HAVE ALWAYS MAINTAINED THEIR REPUTATION FOR SUPERIOR EXCELLENCE.

ASK YOUR JOBBER FOR THEM.

THE *Monitor* BRAND LINDSTROM PLIERS ARE MADE OF THE HIGHEST GRADE SWEDISH STEEL, WHICH FROM ITS NATURE AND STRUCTURE HAS BEEN FOUND TO BE THE BEST FOR EDGE TOOLS. THEY ALMOST MERIT THE TERM INDESTRUCTIBLE.

**SUSSFELD, LORSCH & Co.,**  
37 & 39 MAIDEN LANE, NEW YORK.  
16 RUE D'ENGHEN, PARIS.

SOLE AGENTS  
UNITED STATES AND CANADA.



### Hairsprings, Springing and Adjusting.

XXVI.

#### Practical Heat and Cold Adjustment.

**P**RIOR to commencing practical heat and cold adjustment, we should provide ourselves with a tool for conveniently manipulating the screws set in the rim of a compensation balance. We have seen many tools devised for this purpose, but never saw any device equal to an ordinary Birch key which has had the winding jaws manipulated for grasping the balance screw. One of these keys with a wooden handle, to render it as light as possible, is the kind; and a long key is to be chosen in preference to a short one. All the screws of a balance should be tested, to see if they run easy and strike the balance square across the rim.

In a previous article we have made mention of testing a balance to see if a change of temperature would throw it out of poise, and consequently need not refer to it again here. We first place the movement in the middle temperature box, carefully noting its rate each day by a good pendulum regulator, at a certain hour and minute of each day for at least four days. It is to be supposed in this trial that the watch is placed in a horizontal position with the dial up. Each day the watch is rated as gaining or losing a certain number of seconds.

Let us suppose we have three movements which we are testing. On Monday, August 2, 1896, at nine o'clock A. M., the three movements *A B C* were set to seconds with our regulator. On Tuesday (the next day) morning at the same hour and minute, movement *A* had gained three and one-half seconds; movement *B* had also gained, but the gain was seven seconds; movement *B* had lost five and one-half seconds. We can make out a rate card in this form:

| Movement Number. | Rate.   |       |       |        |       |
|------------------|---------|-------|-------|--------|-------|
|                  | Aug. 2d | 3d    | 4th   | 5th    | 6th   |
| A 3,850,641      | 0       | 3½''+ | 7''+  | 10½''+ | 14''+ |
| B 7,280,452      | 0       | 7''+  | 14''+ | 22''+  | 28''+ |
| C 4,728,524      | 0       | 5¾''- | 12''- | 18''-  | 25''- |

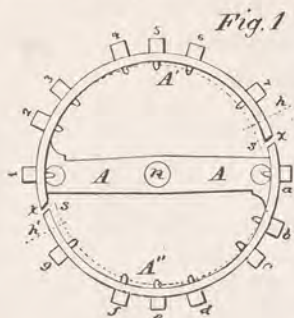
It will be seen that we have not set the movements anew each day, but have given how much they vary from day to day.

#### Averaging the Daily Errors.

To get at the average daily error, we add together the daily rate for a given number of days, and then divide by the number of days. Thus according to above table watch *C* lost 5½ seconds the first day, 6½ seconds the second day, 6 seconds the third day, and seven seconds the fourth day. We add these numbers together and divide by 4, the number of days, and find this watch to average 6¼ seconds losing rate per day. The same method is employed with the others, that is, we add together the actual daily rate and divide by the number of days, to get the daily loss or gain.

We next place the watches in the cold apartment. There is no reason why we should choose this apartment rather than the hot one, although we believe it is usual with adjusters to do so. We now carefully note any change in rate. We will still retain the designating letters *A B C*, simply for the reason that they are more easily and quickly written than seven figures. We again make daily note of rate as before, jotting down the rate for

each day. In further explanation, let us suppose watch *A* to have its daily rate accelerated, and that it averages two or three seconds per day of greater gain. Such gain tells us the balance is not sufficiently compensated. The extra gain being but



slight, the change of a single pair of screws should effect the correction. We show at Fig. 1 a compensation balance of the type usually used for watches, with the compensation screws designated by the first seven digits, and the pairs or opposite screws by the first seven letters of the alphabet. There is no reason why seven screws should be placed in each of these rims, except that practice has proved this to be about the best number to give the most satisfactory results.

#### Shifting Balance Screws to Effect Compensation

In all the higher grades of watches the segments of the compensating curbs have several holes more than are necessary to receive the number of screws usually placed in them. In the instance we have just cited, probably changing the screws *g 7* to the positions indicated by the dotted radial lines *h h'* would nearly effect the necessary change.

On former occasions we have spoken of the principles involved in the composite compensation balance, but it will do no harm to make a sort of *resumé* of what we have already said. The rims or curbs *A' A''* are composed of laminæ of brass and steel, with the brass outside. Now, it is a well-known physical fact that brass expands more with heat than steel. Suppose that at the normal temperature, say 75° F., the segments of the balance run dead true. Said balance, at the temperature of 90° F., would curve the segments inward toward the dotted arcs *s s*, thus giving greater movement to the screws *g 7*.

*"We have used the contents of each copy of The Keystone for the last ten years in our business with perfect success. It has been a friend to me as a jeweler, watchmaker, and writer, engraver, and as an optician. It always fits the case."—W. L. Jones & Co., jewelers, Martinsburg, West Virginia.*

#### Instructive Show-Windows.

EDITOR KEYSTONE.

ELMIRA, N. Y., Sept. 7, 1896.

In my travels I have come across many odd object lessons on the silver question. At Sherman, N. Y., a produce buyer advertises to buy all produce from the farmers at double the market price, if they will take pay in Mexican dollars. He tells them they can hold these until Bryan is elected and the free silver coinage bill is passed, and then have them received at double value. The farmers, however, do not seem eager to exchange on these terms.

At Buffalo, N. Y., a local firm had their windows dressed with fifty-cent goods, and in the foreground kegs of Mexican dollars with bold placards offering any article in the window and a Mexican dollar for any American dollar.

W. P. Sedgwick, jeweler, of Bath, N. Y., had on one side of a platform in his store window ten American silver dollars, good anywhere for their face value. Under them is a block of silver, the melted product of a similar ten dollars, and which in that form is worth \$5.24. Below that again are ten Mexican dollars, worth also only bullion value, about \$5.50. On the opposite side is a ten-dollar American gold piece, and under it a piece of gold obtained by melting an eagle and still having the same value as before melting. ISCA.

BUSINESSLIKE.—"Here lies Jane White, wife of Thomas White, stonemason. This monument was put up out of respect for her memory, and as a specimen of his workmanship. Tombs in the same style, £50."



- President, . . . . . Of J. B. Bowden & Co.  
 J. B. BOWDEN, . . . . . First Vice-President, . . . . . Of Brooklyn Watch Case Co.  
 HENRY HAYES, . . . . . Second Vice-President, . . . . . Of Keller & Untermeyer.  
 DAVID UNTERMAYER, . . . . . Third Vice-President, . . . . . Of N. H. White & Co.  
 N. H. WHITE, . . . . . Treasurer, . . . . . Of Bernard Karsch.  
 BERNARD KARSCH, . . . . . Secretary, . . . . . Of Hodenpyl & Sons.  
 GEO. H. HODENPYL, . . . . .  
 EXECUTIVE COMMITTEE:  
 H. H. BUTTS, Chairman, . . . . . Of Hayden W. Wheeler & Co.  
 F. KROEBER, . . . . . Of F. Kroeber Clock Co.  
 AUGUSTUS K. SLOAN, . . . . . Of Sloan & Co.  
 WM. H. BALL, . . . . . Of Wm. H. Ball & Co.  
 HENRY ABBOTT, . . . . . Of Henry Abbott & Co.  
 CHAS. F. WOOD, . . . . . Of Chas. F. Wood & Co.  
 For further information, application blanks for membership, by-laws, etc., address  
 P. O. Box 1037. 170 Broadway, New York.

The regular monthly meeting of the executive committee was held at the Alliance office on Friday, September 11th. There were present H. H. Butts, chairman; Bernard Karsch, treasurer; Messrs. Abbott, Wood, Ball and G. H. Hodenpyl, secretary.

The following were admitted to membership: E. Reineman, 183 Federal Street, Allegheny, Pa.; C. B. Jacquemin & Co., Helena, Mont.; Hight & Fairfield, Butte, Mont.; Crabbe & Williams, Thomas, W. Va.; Geo. A. Bartlett, Holliston, Mass.; Chas. H. Bard, Sedalia, Mo.

There is not a year in the history of the Jewelers' Security Alliance which has not seen an increase in membership over the year preceeding, and judging from present indications the time is not far off when an Alliance certificate will be in place over the safe or safes of nearly every jeweler throughout the country.

Organized to protect the trade against loss by safe burglary the institution from the very beginning demonstrated its efficiency until it has won that degree of appreciation and recognition which it now enjoys as its just desert.

Membership involves the outlay of but five dollars per annum, and an initiation fee of ten dollars, and considering the protection and sense of security it affords, no jeweler should shirk the slight expense.

#### Wanted to Advertise His Trade.

A rather verdant youth dropped into a jeweler's, and after gazing at some fraternity pins in the show case, said to the proprietor:

"Them's mighty nice breastpins you got thar, mister."  
 "What kind of a pin would you like to look at?"  
 "How much is this one with a pair o' compasses and a square?" pointing to a Masonic pin.  
 "Five dollars."  
 "Five dollars, eh! You haven't got one with any hand saw on it, have you? I'm just outer my time, and as I'm goin' to set up as carpenter and jiner, I thought I'd like to have somethin' to wear so folks would know what I was doin'. Well, I'll take it, though I'd like one with a hand saw, but I guess mebbe that's plain enough. The compasses is to mark out yer work, and the square is to measure it when marked out, and any durn fool knows that G. stands for gimlet."  
 —Ex.

#### Be Pleasant to All.

Treat everybody alike. Meet the man who comes to collect a bill and the man who comes to pay one; the woman who buys a dime's worth once a year and has it sent and the woman who is good for fifty dollars a month; the mayor of the city and the boy who wants to beg picture cards, with just the same cordial smile and pleasant word.

Everybody in your town is a possible good customer, and should be treated as such. The rich often become poor and the poor often get rich, and the troublesome boy may be the mayor some day.



AND IMPORTERS OF DIAMONDS

BUFFALO, N. Y.

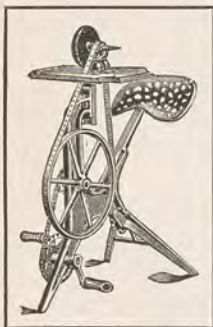
Western Headquarters:  
103 State Street, Chicago, Ill.

WE WILL BE IN THE MARKET THE COMING SEASON WITH NEW AND ORIGINAL DESIGNS IN

RINGS,  
PENDANTS and SCARF PINS.

IN THE FUTURE, AS IN THE PAST, OUR GOODS ARE OFFERED FOR SALE TO THE LEGITIMATE JEWELERS ONLY.

New Polishing and Grinding Machine



This machine is designed especially to meet the demands of the jeweler. It will carry emery and buffing wheels up to 6 inches in diameter, and with perfect ease speeds to 2500 revolutions a minute.

Economy of space reduced to the minimum.

We also make a line of Foot-Power Lathes for heavy jewelry work.

SEND FOR CATALOGUE.

W. F. & John Barnes Co.  
660 Ruby St., ROCKFORD, ILL.

It's Poor Economy

to use poor springs simply because you can get them for a little less money. What you save in price you more than lose by replacing broken ones. There's just one right way to make good springs. That's the way our T. & Co. Mainsprings are made.

They are made of drawn wire.

They have no flaws, as ordinary springs do, which are rolled in sheets and cut to proper width.

They will not set in the barrel.

They are finished in the best possible manner.

We sell them on a guarantee to replace all broken ones.

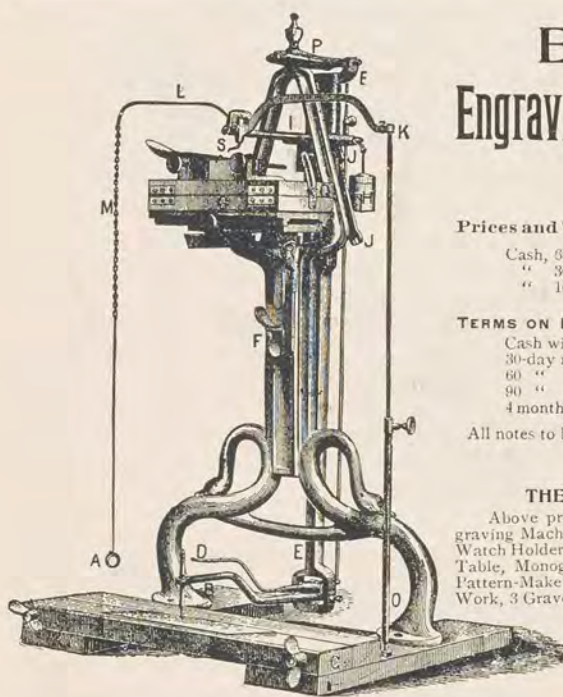
Our Price, \$1.00 per Dozen ; \$11.00 per Gross.

Have you been buying your American Jewels and Balance-Staffs from us? If not, you have been losing money. See our prices. We guarantee them satisfactory; if not found so, return them in good condition within ten days and get your money.

Prices { Elgin Balance-Staffs and Cock and Foot Jewels, . . . \$1.00 per dozen.  
Hampden, Illinois, Waltham, Columbus and New York Standard Staffs and Jewels, . . . \$1.50 per dozen.

Cash must accompany all orders to secure above prices.

TIDD & CO.,  
COLUMBIANA, OHIO.



ENGLE Engraving Machine Co.

Sayre, Pa.

Prices and Terms, F.O.B. cars Sayre, Pa.

|                |          |
|----------------|----------|
| Cash, 90 days, | \$65.00. |
| " 30 "         | 60.00.   |
| " 10 "         | 50.00.   |

TERMS ON INSTALLMENT PLAN:

|                         |          |
|-------------------------|----------|
| Cash with order,        | \$20.00. |
| 30-day note with order, | 10.00.   |
| 60 " " " "              | 10.00.   |
| 90 " " " "              | 10.00.   |
| 4 months' " " "         | 15.00.   |

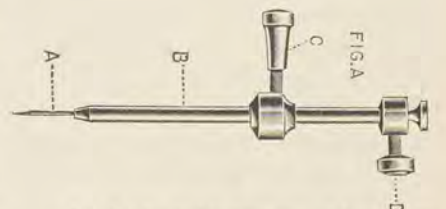
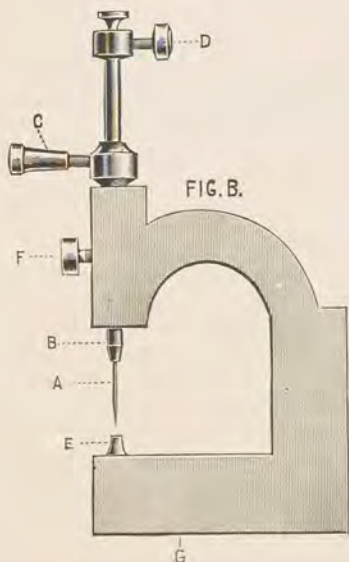
All notes to bear interest at rate of six per cent.

THERE ARE NO EXTRAS.

Above prices of Latest Improved Engle Engraving Machine include the following: Ring and Watch Holder, Coffin-Plate Holder, Movable Type Table, Monogram Book containing 2200 designs, Pattern-Makers' Gouge for Monogram Pattern Work, 3 Gravers, 1 Set Script, 1 Set Gothic, 1 Set Old English Type, Emblems and Borders, and Directions for Operating, so simple that any intelligent boy can master the Machine after a few days' practice.

When writing to advertisers, kindly mention The Keystone.

Striker's Patent Balance-Staff and Pivot Length Gauge for the Artist Watch Repairer.



Will save you time! You will never have to do a job twice over. The correct fitting of balance-staff made extremely simple and absolutely certain. No more guessing or making allowances. No fear when the staff is finished it will be too long or too short. In making a new Staff, it is a simple and exact gauge for finding the extreme length the Staff should be, and retaining that measurement, so that you can make comparisons at any time during the operation of building a new Staff. It will locate with absolute accuracy the Balance or Roller Seats.

For pivoting it is worth its price alone. The length of a broken-off balance-pivot can be obtained in a few seconds. Once you place your staff in chuck to turn pivot, you need never remove it to make length measurements, as by use of the Double Stem (Fig. A) all measurements are taken while your staff is in chuck.

Full instructions sent with every tool. It is finely finished throughout, and every tool is guaranteed to be perfect. Send for one, and if not satisfactory after a fair trial money will be cheerfully refunded. \$2.00 with order, and we will send post prepaid.

GEO. H. STRIKER & SON,

Manufacturers of Fine Watchmakers' Tools,

1883 NIAGARA ST., BUFFALO, N. Y.

FOR SALE BY ALL THE LEADING TOOL AND MATERIAL JOBBERS.

**Watchmakers' Tools, and How to Use Them.**

LXXXVIII.

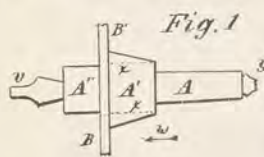


**More Practical Lathe Work.**

Of course, it is to be understood that where muriatic acid is used to remove the blue from steel, some precautions must be taken to neutralize such acid, or rust will follow. Most practical workmen of any experience use some alkali for this purpose, but whether the alkali is well chosen is questionable. Of late years many workmen use ordinary washing soda for many purposes, and among others to annul the effects of the acid of soldering fluid. Such workmen would probably use such soda solution to kill the muriatic acid employed for removing blue from steel.

Soda solution used to neutralize (or "kill," as the workshop phrase goes) hydrochloric or muriatic acid produces common salt, such as is used for the table, and if especial pains are not taken to wash such salt away, rust is sure to follow. Other workmen use ammonia to neutralize any acid; this alkali with muriatic acid produces sal ammoniac, which is quite as much of a rust-producer as common salt. Either soda or ammonia would answer if the balance is thoroughly washed; but the trouble is, the washing is but imperfectly done. The most perfect remedy for removing the effects of muriatic acid is boiling out in chalk, shaved fine with a knife, and alcohol.

A good plan to adopt for cleaning steel articles which have had an application of muriatic acid for removing bluing from heat, is to keep a small bottle containing Vienna lime shaved from a lump of this substance with a knife; the bottle to be about one-third full of lime, and the remainder filled with alcohol. When some of this substance is about to be used, the bottle is well shaken and then allowed to stand for a few seconds; then some of the alcohol, milky with lime, is poured on a piece of pegwood flattened on one side. The arms of the balance are rubbed with the pegwood wet with alcohol and lime, to restore the polish dimmed by the bluing and the acid operation. Common freshly burned limestone, shaved from a lump as directed, will answer nearly as well as Vienna lime, both for killing the acid and for restoring a polish. Such lime and alcohol also does well for using with a boxwood lap in the pivot-polisher, and it is likewise an excellent compound for polishing steel.

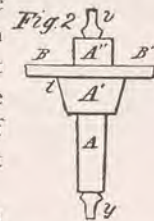


We show at *A*, Fig. 1, a balance-staff which we desire to remove from the balance *B*. We place the seat of the hairspring *A'* in a wire chuck, and turn it away to the dotted lines *x*, when the balance-staff can readily be driven out in the direction of the arrow *w*.

In many of our cuts illustrating how to hold a graver we have shown the gravers as deproportionately large. To a great extent this was unavoidable, in order to explain and show how a graver should be held. The importance of holding a graver so as to make it do a great amount of work with one sharpening cannot be over-estimated. We do not mean by this to use a graver until it is too dull to cut well and do good work, but to get work out of *all* the cutting angles on it.

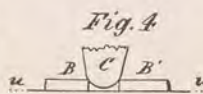
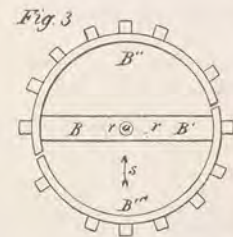
We have now described in detail how to turn a balance-staff, and will next consider the staking on of a balance to a staff. As a rule, a balance which ran true with the old staff will do the same with a new one. In most modern watches the balance is sprung above, and we have a tolerably wide seat for the balance on the staff, which tends to facilitate setting a balance.

It not infrequently happens, however, that the arms to a balance have been twisted in truing. Such twisting would necessarily follow where an untrue staff had been put in and the balance had been trued to adapt itself to the staff. To illustrate, let us imagine a staff turned entirely by employing wire chucks. We instance wire chucks because so many workmen insist that such chucks are "true enough" (in their judgment). Now, we insist that absolutely true is the only degree of *true enough* to be tolerated in fine watchwork. In our illustration we will imagine the staff at Fig. 2 has been turned in wire chucks, and the balance seat at *t* is a little high; that is, if we should put such staff in a pair of accurate truing calipers and test it with extreme accuracy.



If we should now stake a perfectly true balance on this staff the balance would not run true, because the high shoulder at *t* would throw it out. If, on the contrary, the shoulder at *t* is true and of the same height all around, the balance will stake on and run true at first. Before staking a balance on a new staff—said staff supposed to be turned as nearly true as the highest mechanical skill will permit—it is well to take every precaution to insure the balance being true in the flat.

A zinc block 3" by 3 1/2", and about 1/4" thick, planed dead true on one side, is of great use, not only for testing a balance for truth in the flat, but also for flat steel polishing. If we have such a block and lay a balance upon it, we can determine very closely if it is true. Let us, in explanation, imagine we lay the lower side of a balance on such a zinc polishing lap, and, placing a ball-faced punch *C* in the center hole at *a*, Fig. 3, and, pressing down, rub the balance around on the lap. The bar *B* of the balance will be marked with a bright ring around the center hole as shown at the dotted circle *r*. Now, it is evident, if the plane of surface of the metal inside of the circle is flat with the lower edge of the balance, that if we stake it on the staff the balance will run true. Fig. 4 is a side view of the balance bar *B* seen in the direction of the arrow *s*, and shows how the round-faced punch presses the bar down equally on the zinc lap, said lap being represented by the dotted line *u*. More about this in our next issue.



**How To Get Rich.**

A millionaire New York merchant furnishes the following receipt, which, we think, packs about as much good sense into a brief space as can well be done:

"The surest road to success is to be honest, and all men will trust you; honorable, and all men will believe in you; industrious, and all men will have confidence in you; just, and all men will admire you. Be alert; save a part of what you earn so as to be always independent; store your mind with useful knowledge, and the world is yours."



- President,  
HENRY HAYES, . . . . . Of The Brooklyn Watch Case Co.  
First Vice-President,  
JOSEPH B. BOWDEN, . . . . . Of J. B. Bowden & Co.  
Second Vice-President,  
WILLIAM BARDEL, . . . . . Of Heller & Bardel.  
Third Vice-President,  
JOHN R. GREASON, . . . . . Of J. R. Greason & Co.  
Fourth Vice-President,  
D. UNTERMAYER, . . . . . Of Keller & Untermeyer.  
Secretary and Treasurer,  
L. STEVENS, JR., . . . . . P. O. Box 930.  
EXECUTIVE COMMITTEE:  
GEO. M. VAN DEVENTER, Chairman, . . . . . Of Waterbury Clock Co.  
J. W. BEACHAM, . . . . . With Rogers & Brother.  
G. W. STREET, . . . . . Of Geo. O. Street & Sons.  
OLIVER G. FESSENDEN, . . . . . Of Hayden W. Wheeler & Co.  
BERNARD KARSCH, . . . . . Of Bernard Karsch.  
DAVID N. SMITH, . . . . . Of Wm. Smith & Co.  
170 Broadway, New York.

The regular monthly meeting of the executive committee of the Jewelers' League was held on Friday, September 4, 1896. There were present Vice-President Greason, Chairman Van Deventer, Messrs. Karsch, Fessenden, Smith, Street and L. Stevens, Jr., secretary. Minutes of the previous meeting were read and approved. Seven requests for change of beneficiary were received and upon motion granted, and the following applicants were admitted to membership:

- C. L. Viguers, Philadelphia, Pa., recommended by J. H. Scott and C. E. Painter; H. B. Hayes, Pittsburg, Pa., by J. A. Hardy and G. W. Wattles; G. A. Bahn, Austin, Texas, by G. H. Hodenpyl and A. J. G. Hodenpyl; L. Alexander, Brooklyn, N. Y., by J. King and L. Wormser; G. L. Todd, Newark, N. J., by L. H. Todd and C. N. Perley; C. E. Gridley, Chicago, Ill., by J. R. Lilja and A. J. Youngdahl; E. L. Bentley, New York, by I. N. See and T. Greason; C. G. Megrue, New York, by W. H. Candee and W. S. Benjamin.

The next meeting of the executive committee will be held October 9, 1896.

Judging from the numerous letters of praise received by the secretary of the League, that worthy institution is ever increasing in popularity, and indeed not only among members of the jewelry trade, but also among business men in general, whose interest was enlisted by the League's many superior inducements. Purely benevolent and fraternal in character, it is not a money-making enterprise for its officers, in fact, is so far from it that the officers, with the exception of the secretary, receive no compensation whatever for their time and labor, thus reducing the actual running expenses to a minimum. Under such circumstances the reason why insurance in the League, though fully as advantageous, is about one-third cheaper than in any other well-known life insurance association becomes self-evident.

**If You Mean to Succeed.**

Let the business of everybody else alone and attend earnestly to your own; don't buy what you don't need, or feel certain you can create a demand for; use every hour to advantage, and study to make even leisure hours useful; think twice before foolishly spending a dollar; remember you will have another to make for it, and should you spend as fast as you make, you need only hope for a treadmill existence; look after your business largely in the spirit of light-heartedness; buy judiciously, sell fairly, and keep a close eye to the profits; look after accounts closely and regularly; if you find an error trace it out, and keep stirring close accounts; should a stroke of misfortune come upon you, retrench, work harder, but never fly the track; confront difficulties with unflinching perseverance and good humor, and they will disappear like fog before sunshine.

—The Trade Magazine.

"We cannot do without *The Keystone*, for we get ten times the cost in one single issue."—Cotney, Bell & Co., jewelers, Americus, Georgia.



# HENRY ZIMMERN & CO.

Importers of  
**Watch Materials, Tools, Silk Guards and Optical Goods,**  
**47 MAIDEN LANE, NEW YORK.**

Sole Agents for the  
 U. S. American Mainsprings and the Celebrated Gold-Tipped Resilient  
 Mainsprings for all grades of American Watches.

### Caution

As a protection against parties who are putting inferior goods on the market, fraudulently representing them to be the celebrated U. S. Mainsprings, we have adopted the annexed trade-mark. See that the initials U. S. are scratched on each spring. All others are poor imitations.

## THE HIGHEST ATTAINMENT IN PERFECT TIMEPIECES

### THE FIRST PRIZE

at the **International Test of Chronometers**, held at the Observatory of Geneva, Switzerland, on the occasion of the Swiss National Exhibition of 1896, has been awarded to

## Vacheron & Constantin Watches

### ANOTHER FIRST PRIZE

was recently awarded the same makers, as a result of tests at the Geneva Observatory for 1895, for their series of best-adjusted watches. These watches averaged the highest number of points ever attained.

### A GOLD MEDAL

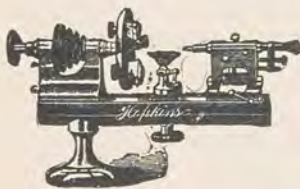
has been awarded to VACHERON & CONSTANTIN by the Swiss National Exposition now being held. They stand first in the list of single manufacturers awarded gold medals.



**EDMOND E. ROBERT,**  
 3 Maiden Lane, NEW YORK.

SOLE AGENT for these Watches in the United States and Canada.

## Hopkins Lathes, with chuck combinations, are all furnished with our Tip-over T Rest without extra charge.



SEND FOR ILLUSTRATED PRICE-LIST OF LATHES, ATTACHMENTS AND SPECIAL TOOLS.

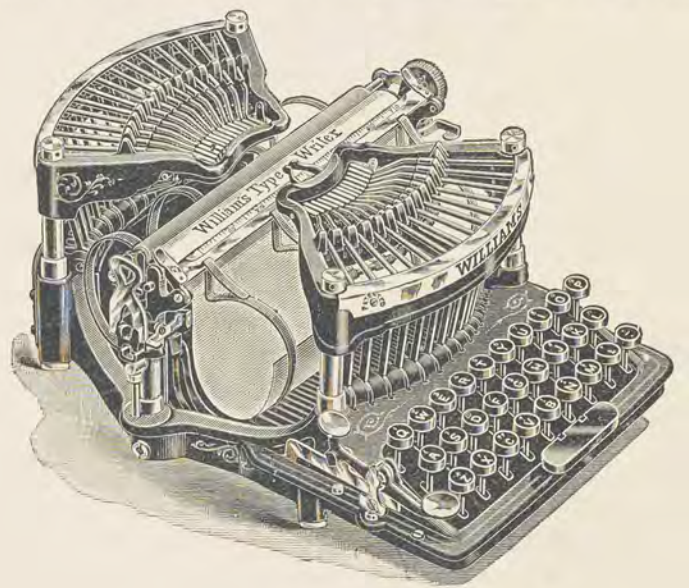


HERE ARE A FEW OF OUR BEST SELLING SMALL TOOLS:

- Waltham Screwdrivers, five in set, \$1.50.
- Set A Counterbores, twelve sizes, for case screws, 2.50.
- Set B Counterbores, seven sizes, for jewel screws, .75.
- Hopkins Watch Case Tool, .75.
- Hopkins Jewel Bezel Opener, .75.

WALTHAM WATCH TOOL CO., Springfield, Mass.

"UNCLE SAM" KNOWS a good thing when he sees it.



## THE WILLIAMS'

proposal to furnish the **United States Agricultural Department** with twenty-five Williams Typewriters has recently been accepted, and **STRICTLY ON MERIT. No cut prices.**

*Visible Writing, Direct Inking, Ease of Manipulation, Economy of Maintenance, and Durability.*

GOOD AGENTS WANTED IN UNOCCUPIED TERRITORY.

ILLUSTRATED CATALOGUE ON APPLICATION.

### THE WILLIAMS TYPEWRITER CO.

253 Broadway, New York.

LONDON—104 Newgate Street.  
 CHICAGO—152 La Salle Street.  
 BOSTON—147 Washington Street.  
 SAN FRANCISCO—508 Clay Street.  
 PHILADELPHIA—1019 Market Street.

MONTREAL—200 Mountain Street.  
 ATLANTA—15 Peachtree Street.  
 CLEVELAND—23 Euclid Avenue.  
 DALLAS—283 Main Street.  
 DENVER—321 Sixteenth Street.

## Elgin Horological School.



ESTABLISHED 1888.

The best School to attend to learn

## Watch and Jewelry Repairing, Engraving and Optics.

SEND FOR CATALOGUE TO

ELGIN HOROLOGICAL SCHOOL, Elgin, Ill.



**The Almighty Dollar.**

BY JOHN TWEEZER.

If an inhabitant of Mars should drop down upon the earth at any time during this eventful month of October, 1896, and land within the borders of the United States, he would be likely to reach a prompt conclusion as to the influences which move us, the thoughts and sentiments which occupy our minds and the occupation which engages our activities. If this Marsian adventurer proceeded on his visit to other planets in the solar system he might find that on one the predominant occupation of its people was in the direction of glory, the struggle for victory in battle and the conquest of arms; in another it might be a universal seeking for scientific truth, for wisdom, for intellectual advancement; in another, the exercise of gallantry and the cultivation of the sentiment of love; in still another, the achievements of art and a right appreciation of beauty in all the forms in which beauty presents itself to the mind. But in the United States, in this month of October, 1896, the Marsian visitor would have to conclude that the one idea which engages the earthly intellect, to the exclusion of all other mental occupations, is the attempt to comprehend the power and the limitations, the proper color and weight, the right size and kind, the actual value and the calculable virtue of The Almighty Dollar.

The editor of THE KEYSTONE lays a restraining hand upon my pen and I may not enter herein into discussion of the moot questions which are making (presumably) a profound economist of each voter in the millions; for THE KEYSTONE has another mission than the education of voters, and politics are tabooed from its pages. We will therefore have to leave the visitor from Mars, who stands in speechless contemplation of the spectacle of a whole people "gone clean daft"—who hears great orators in big towns harking back the shallow logic of the little orators in small villages, and reads newspapers, great and small, that vie with each other in misinformation and partial statement—and we will turn to a consideration of The Dollar itself. There are some facts about it which do not interest the politician, because they are not concerned in his present effort to prove this or disprove that; but the politician must give us chance to breathe betimes. Let us consider the non-political Almighty Dollar.

Uncle Sam was the first to coin the dollar (under that name) in 1789, but, strangely enough, he did not coin the name. Shakespere uses it in several places—in "Macbeth" and elsewhere; yet it is a strange fact that the first and last English dollar was struck off in 1804, over 250 years after Shakespere employed the word. Where, then, did Shakespere find the word *dollar*? It was merely a corruption of the German *thaler* (Low German, *dahler*); and this word "thaler" originated thus: About 1490 the Count of Schlick coined the silver mined at Joachims-thal (Joachim's Valley) into ounce-pieces, which were called Joachim's thalers, from the place they were coined. These coins gained such a reputation that they became a kind of pattern; and when other coiners made coins like them they likewise were called thalers, dropping the "Joachims" for shortness—hence to the Anglicized form *dollar*. The expression "The Almighty Dollar" was first used by Washington Irving, in "Wolfert's Roost," as an Americanism for mammon, the love of gold.

The origin of the dollar-mark is not easy of solution. Various explanations have been offered, but none is quite satisfactory. The usual one, that the mark comes from the letters U. S., which were formerly appended to the federal currency, and which were run together in the hurry of writing, is ingenious but is not supported by any convincing evidence. A more learned explanation traces the dollar-mark all the way back to primeval antiquity. From prehistoric times, *pillars* have been used to signify strength and sovereignty. In ancient Tyre they were revered as sacred symbols. Tyrian coins had two pillars stamped on their face. When the Tyrian explorer, Meleanthus, founded the city known in modern

times as Cadiz, in Spain, he planted there the Tyrian pillars, as symbols of sovereignty, and built over them a temple to Hercules. When Charles V. was crowned Emperor of Germany, having conquered Spain, he incorporated the Imperial and Spanish arms, the "pillars of Hercules" being made supporters in the device. The standard "piastre" coined in the Imperial mint at Seville was called a "pillar piece," because it showed the two pillars of Hercules joined by a scroll, thus:  $\$$ . The piastre was the universally-accepted silver coin of the whole world, in the time of Charles V. The American dollar, which is almost equal in value to the old Spanish piastre, resuscitated the old Spanish symbol.

This is very ingenious, but lacks inherent probability. The theory best supported by evidence accounts for the dollar-mark in this way: Before the union of the States each province had its own paper currency in pounds, shillings and pence. The metallic currency was in Spanish dollars—which were of the value of eight reals, and therefore called "pieces of eight." Accounts were kept in dollars and reals, and as a distinguishing mark in the books a cancelled figure of 8 was used, or sometimes the 8 was put between two standing lines, thus: |8|. When the United States adopted the dollar as the money unit, it was found convenient to continue the old mark; and the present symbol,  $\$$ , is therefore the conventionalized form of the old cancelled figure 8, representing the coin of eight reals.

The Arabic language has fifty-two synonymous names for the sword and but eight for religion. The temper and habits of a nation are in no small degree reflected by its language. The philologist of future times will conclude, from the language of America, that the prevalent passion of its people was the love of money. Slang is the crystallized form of the common thought. The American language, rich in slang of every description, is particularly rich in slang money-terms.

"Greenback" is justified by the color of the back of the Government note. It is slang, of course; but the slang is officially sanctioned, as it is now used in the official reports of the Treasury department. "Rags" dates from the time of the greenback craze. "Shinplaster" is old as the Government—how the prefix "shin" ever came to be used is a mystery, but "plaster" is from the Spanish *piastre*, a silver coin of about the same value as the American dollar. "Sinews of war" appears in the *Congressional Record* of 1861; but the term is as old as Plutarch, who put it in the mouth of Cleomenes. The "dollar of our daddies" is a misnomer. It was the dollar of our grand-daddies—but any attempt to correct a slang term is wasted labor. "Cartwheel" smells of the farm—it came into literature on a pitchfork rather than from a pen. "Ducats" has a Shakesperian flavor; counter ringers" and "pocket weights" are thoroughly American. "Plunk," "plunkers" and "plates," "shekels," "slugs" and "ringers" are good, expressive slang terms, and polite financial circles will use them in ignorance of their origin, a hundred years hence.

"Nickel" is a misnomer, as the five-cent piece contains only twenty-five per cent. of the metal which gives it a name. "Flipper-up" is current in some localities, "chicken feed" in another, and "car-fares" in another, for the same humble coin.

There is an immense variety of slang terms for money in general, without distinction of denomination. Here is a list which comprises the money-slang of toughdom, from the Bowery to the Golden Gate:

- |                  |                 |                   |
|------------------|-----------------|-------------------|
| stuff            | slush           | rhino             |
| balsam           | boodle          | quids             |
| chips            | open sesame     | new lights        |
| tips             | pewter          | lucre             |
| dough            | poney           | filthy lucre      |
| moss             | the ready       | honey             |
| ochre            | dust            | jinglers          |
| the needful      | scads           | jocks             |
| salt             | sand            | loaves and fishes |
| spondulix        | the wherewithal | greed             |
| the world mover  | tin             | gelter            |
| what we-work for | sugar           | dooteramus        |
| swag             | tips            | daces             |
| spelter          | fat             | darby             |
| soap             | doots           | bobs              |
| slats            | cases           | blunts            |

and a hundred others, some quite unfit for "ears polite."

As long as there is money there will be slang terms for it, though the purists may rage and the dictionary-makers imagine vain things. Slang is beyond the control of even so potential an authority as the dictionary-maker.

**Things are Different Now**

I will conclude this article by relating an historical *jeu d'esprit*: When William M. Evarts was Secretary of State he accompanied Lord Coleridge on an excursion to Mount Vernon. Coleridge remarked that he had heard it said that Washington, standing on the lawn, could throw a dollar clear across the Potomac. "Yes," said Mr. Evarts, "a dollar went further in those days than now."

**A Word to Big-Nosed Jewelers.**

If the Roman poet, Martial, was right, then you and I are fortunate in our possession of liberal proboscical blessings; for he said "Not every man is so lucky as to have a nose"—by which, of course, he meant such a nose as Juvenal had in mind when he wrote *nasus, quasi murus, oculis interjectus*, "a nose thrown up like a wall between the eyes." Let us consider our advantages in special, and the subject of noses in general.

The nose is the great facial sign-post which points to character. The pointed, flexible nose indicates a capacity for keen research; the hawk-nose, shrewdness; the broad, flat nose, enthusiasm; the thin, pinched nose, sneakiness; the cocked nose, conceit and contempt.

The nose is the bulletin-board of the passions. Thereon intemperance writes its degrading record, scorn her vulgar sneer, concentration its singleness of purpose, and breeding its graduated refinements.

The same Latin word, *nasutus*, which may be interpreted *having a large nose*, also means *acute or sagacious*. Let us take it for our comfort! Catullus once expressed a wish that he were *all nose*; Ovid was nicknamed *Naso* because of his colossal appendage; Cicero had a great nose with a great wart on it; and Julius Cæsar had a nose that was not to be sneezed at. (Every Roman knows that a Roman nose was part of the glory of his race.)

In more modern times we find that Napoleon always wanted long-nosed generals and counsellors about him. "A long nose and a long head generally go together," he declared. The noble nose of Wordsworth redeemed his otherwise commonplace features and explains why he became Poet Laureate of England; while the feeble button—the insignificant nothing—on the face of Coleridge accounts for the fact that he left behind him (according to Charles Lamb) forty thousand *un-completed* treatises on metaphysics. He had the most unpromising nose that genius ever blew. Bulwer, who had a colossal nose (no language is vituperative enough to describe it) owed none of his fame to genius, but to the persistent effort which such a nose as his led him to justify. There seems to be some ground of probability for Cyrano de Bergerac's positive assertion that the patriotic inhabitants of the moon destroy at birth all small-nosed infants, having no hope for their future. Tristram Shandy's father, in Sterne's immortal story, commenting on the fleshy promontory with which Slawkenbergius split the air when he walked, declared that no family, however high, could stand against a succession of short noses.

Let us stand up, therefore, for our Big Noses, though blows assail them from without *and* within. A great French actor, Dagazon, maintained that the nose is the most complete organ of expression, admitting of forty distinct motions to produce as many varieties of effect; and the more nose, the more expressional result. Those who scoff at our nasal developments are inspired by envy; their imbecile inanities of noses, their bogus frontispieces, their nasal hypocrisies move them to jealousy of our more abundant blessings. Ridicule from these half-furnished folk may be answered by putting our thumbs upon the tips of our facial elongations, with our spread fingers describing the spiral of defiance!

J. T.

# KENT & STANLEY Co., LTD.

Jewelers and Silversmiths

SEAMLESS GOLD FILLED CHAINS, JEWELRY  
SILVER NOVELTIES

NEW YORK OFFICE  
21 & 23 MAIDEN LANE



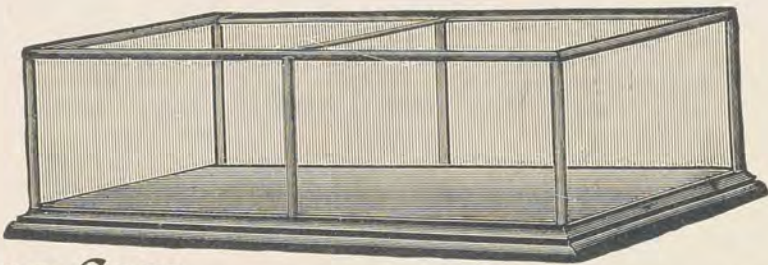
BOSTON OFFICE  
403 WASHINGTON ST.

FACTORY, PROVIDENCE, R. I.

## NEW DESIGNS IN ALL LINES

ALL OUR SILVER GOODS ARE GUARANTEED 925-1000 FINE

Right Things in Store Fixtures  
at Right Prices.



**Show Case**, Figure 33, 10 feet long, 17 inches high, 28 $\frac{1}{4}$  inches wide, outside measure, and to be glazed with double-thick French glass top, front and ends, and to have sliding horizontal doors fitted with American mirrors, for **\$17.00** net, boxed, F. O. B. cars Chicago.

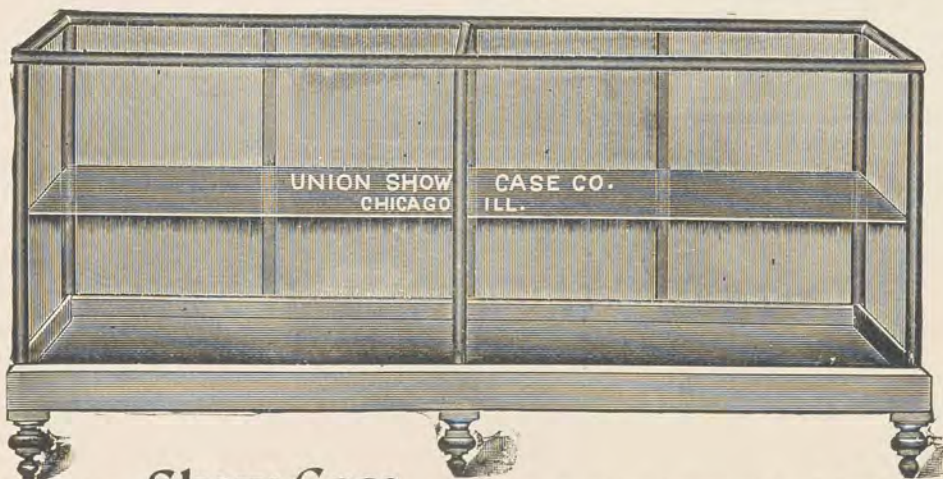
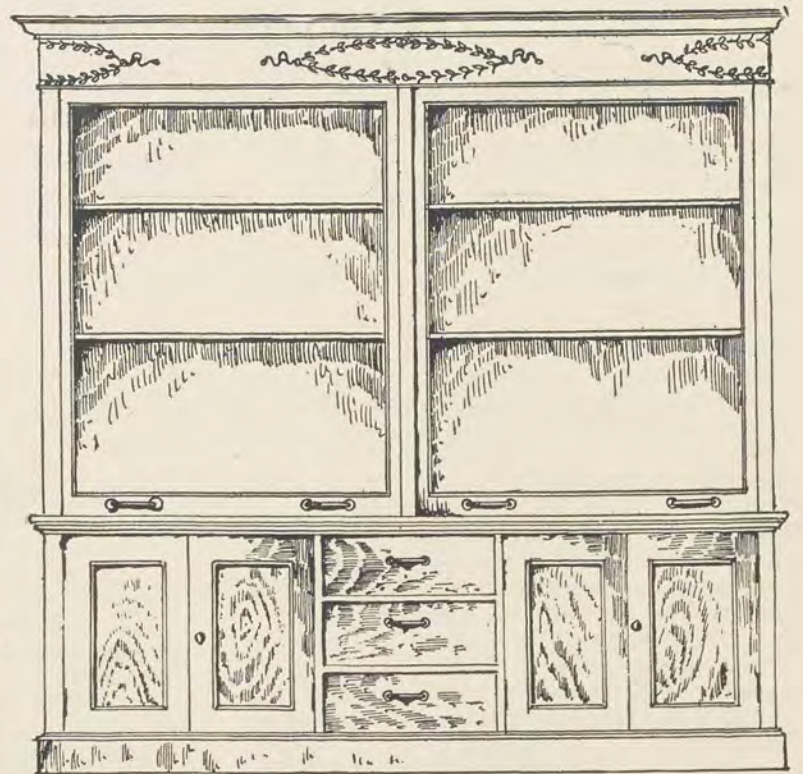


Figure 37 is a **Show Case** which is well adapted to the use of Retail Jewelers for displaying silverware, bric-a-brac, clocks and fancy goods. It is 8 feet long, 27 inches wide, and 42 inches high, outside measure, and is glazed with double-thick French glass front, ends and doors, and the doors slide on steel rail, top and shelf French plate-glass, top laid in from top on green felt, and to have two lights top and front, for **\$36.00** net, boxed, F. O. B. cars Chicago.



**Wall Cases.** Solid Quarter-Sawed White Oak. 8 feet long, 8 feet 5 inches high, 1 foot 4 inches deep inside. Doors slide up, fastened to Morton's steel chains and weights. Inside of case and shelves lined with black felt. Made to ship in the knock-down.

Net price, **\$46.00.** Worth \$64.00.

**Union Show Case Co.**  
167 to 169 E. Randolph St.  
Chicago.

## Clocks.

CVII.

### The Completed Scheme for the Electrical Winding and Synchronizing of Clocks Reviewed.

**T**HE DETAILS of our scheme for winding and setting a series of clocks placed on an electric circuit, we necessarily had to give step by step, taking up the several parts and describing them in detail. We commenced the description of such a system of clocks on page 143, February, 1896, *KEYSTONE*. In that number we showed how the several motors (one for each clock) employed for winding could automatically be cut out of the circuit and the opening be bridged over, and in this way reduce the resistance of the circuit to a minimum.

In our next issue, March, 1896, page 202, we described in detail how a series of clocks could be automatically set to correct time at midday or midnight. On page 284 of the next month (April, 1896) we described and illustrated a method for holding a seconds clock, to bring it to correct time.

We will here add to what we said in our March and April numbers, that, where there are a large number of clocks on a line, it would be an easy matter to arrange the mechanism of a portion of the dials to be synchronized or brought to exact time at some hour other than precisely 12 M. This would very much relieve the work to be done by the electrical current.

To explain, we arranged the winding devices so that the several clocks were wound automatically and in a consecutive manner, and consequently only one motor was at work at any given time. Not so as regards the hand-setting device; these were all supposed to act at one time. True, the wire wound on such magnets was of but slight resistance, but still the accumulated resistance of such magnets, where there are twenty or twenty-five clocks in the circuit, would be more than that of a single motor. There is no reason why the hand-setting device should act at 12 M. any more than at any other hour. We might, for illustration, conceive all the clocks on the circuit to be wound in the night, and the setting to time of the hands to occur at, say, 8, 9, 10 and 11 A. M. This would enable us to use an electrical circuit of less energy than if twenty or twenty-five magnets for setting such numbers of clocks were all put in the circuit at once. It has been suggested that both operations of winding and setting should be performed at night, say between the hour of midnight and 4 A. M., which could easily be done and require no great change in the mechanism we have described. This arrangement would admit of cutting down one-half the number of galvanic cells in the circuit during unemployed hours.

In explanation, let us suppose we are working eight Fuller cells on our line, and from 4 o'clock A. M. to 12 midnight four cells are cut out. The four remaining cells are used in closed circuit, and allow the transmission of signals. What we mean by signals is, an electrical call from any clock in the circuit. In explanation, suppose we

have twenty-five clocks on the line, and these clocks are numbered consecutively from 1 to 25. Now, if, say, No. 14 goes wrong or stops, the person in the room where that clock is located turns a crank, and at the point where the controlling clock is located a signal notice is given like the call of a telegraph instrument, the call indicating the number of the clock.

These signals, up to 26, could be represented by the letters of the alphabet; and for numbers above this, two letters of the alphabet could be employed. The signal would only mean that clock No. 14 (or any other number) needs attention, and the person whose business it is to keep the line in order would know exactly where to go. It would not be policy to have too many clocks in one circuit; and if a great number of dials or clocks were required, it would be policy to arrange them in separate circuits, but all could

#### Transmission of Signals



JEWELRY STORE OF FRED. GOOSMANN, SOMERVILLE, TENN.

be controlled and synchronized by one central clock. This central clock should be a precision clock of high excellence, and be compared daily with careful astronomical observations of the sun or stars.

In keeping the batteries in order, the better way is not to renew the entire plant at one time, but to change or renew one or two cells of the series at shorter periods than the average life of such batteries. To explain, suppose the average life of an improved Fuller cell to be six months; we assume them to be perfectly safe and reliable for four months, and in our plant of eight cells we renew two cups every month. In this way we would renew the eight cups every four months.

In getting up such a plant it is always better to err on the side of too much battery power, rather than not enough. It is not to be understood that we mean by renewing the Fuller cells every four months that we would throw away a zinc because it is only two-thirds consumed, because that would be poor economy; but we constantly place such cells in such relation to the others that they are among such as are soon to be removed. If we intend to work, on an average, eight cells in the circuit, four cells in good order should be able to work the line. By adopting this policy we are always sure of having enough power to do the work under the most exacting conditions.

"I can't suggest a thing for *The Keystone*, but think it is perfect. Don't see how any jeweler, who wants to be up-to-date, could do business without it. I have been a reader for many years, and here is my dollar for another; I can't run my jewelry business without *The Keystone*."—*H. A. Tunehorst, jeweler, Jerseyville, Illinois.*

### A Pretty and Prosperous Jewelry Store.

Nowhere is exceptional beauty so good an advertisement for a jewelry store and stock as in small towns, where it daily attracts the attention and appeals to the admiration of a large proportion of the entire inhabitants. One of the many jewelers who realize the truth of this in all its fullness is Fred. Goosmann, Somerville, Tenn., a cut of whose store is shown herewith. Somerville is a thriving town of some 2,500 inhabitants, and Mr. Goosmann is one of its most respected business men. He has plied his trade there for twenty-five years, and rejoices in the confidence and patronage of his fellow townspeople. G. F. Goosmann, son of the proprietor, is a graduate of Parsons' Horological Institute, Peoria, Ill., and thoroughly conversant with the details of the watchmaker's art. To further improve himself he returns to the Institute to take a course in engraving and optics. During his watchmaking

course he designed and completed a detached lever escapement which proved his possession of exceptional mechanical genius and constructive skill. The aid of his son and the early promise of good times make prospects bright for Goosmann *pere*. His store is handsomely fixtured, well stocked, and, what is more important, liberally patronized. We cannot too forcibly or too often impress on jewelers the importance or even necessity of having their stores handsomely fixtured. A pretty store adds materially to the attractiveness of a stock of jewelry, and a shabby, ill-kept store has the opposite effect. A jeweler must not be satisfied with a store just as good as the shoe

seller's on one side of him or the hatter's on the other. Hats and bacon are quite different from gold watches and silverware, and do not call for as rich surroundings.

### The Antidote for Dull Times.

Among the many merchants who have written us, says *Brains*, to testify to the fact that the dull season Jabberwock can be killed if you go about it right, is Charles E. Rose, of El Reno, Okla., the best jewelry advertiser in the world. Read what he says:

"Although the thermometer has ranged from 90 to 110 degrees in the shade, and from 85 to 99 degrees in our store, we have not closed our doors, but have thrown them 'wide open,' and have done a satisfactory business, the result of a new ad. daily. Last year, during the hot weather, we kept open at night until 8.30; this year we have closed at 7.30. Both my workman and myself have stood the extreme heat better, and I find both the sales and repairing exceed that of last year, for the same time. I might add, that this is not a summer resort."

Note what he says about a new ad. daily. If you will stop to think a minute, you will realize what a tremendous force the daily change of ads. can exert. If you rarely change your ads., people will come to believe that you never have anything new to say, and that nothing is to be expected of you; therefore, will never read your ads. But if you *always* have something new to say, if you never allow the same ad. to appear twice, people will soon learn that your ads. are as much a part of the news of the day as any part of the paper, and will read them for the same reason they read the news columns—to see what's going on.

We are offering the following

# Discontinued Waltham Movements

at very low prices

|    |      |          |       |           |       |         |                       |
|----|------|----------|-------|-----------|-------|---------|-----------------------|
| 0  | Size | Waltham, | Grade | 66,       | 11    | Jewels, | Nickel.               |
| 0  | "    | "        | "     | 68,       | 15    | "       | "                     |
| 6  | "    | "        | "     | H,        | 11    | "       | "                     |
| 6  | "    | "        | "     | K,        | 15    | "       | "                     |
| 16 | "    | "        | "     | Royal,    | Gilt, | 15      | Jewels.               |
| 18 | "    | "        | "     | Bartlett, | Gilt, | 15      | Jewels, Hunting Only. |

If you are seeking Bargains, write us for quotations.

## HENRY GINNEL & CO., 31 Maiden Lane, New York



### Used the World Over for 65 Years!

Ezra Kelley's Watch, Clock and Chronometer Oil.

FACTS SPEAK FOR THEMSELVES.

Messrs. Henry Ginnet & Co. New York, March 26, 1896.  
 GENTLEMEN: We have for years been using Kelley's Watch Oil, both here and in the factory in Switzerland, on all the finest grades of movements of our importation, and it has always given the very best satisfaction.  
 Yours truly, MATHEY BROS., MATHEZ & Co.

HUNDREDS OF SUCH LETTERS COULD BE PUBLISHED.

SOLD BY ALL JOBBERS.



HENRY GINNEL & CO., General Selling Agents, United States and Canada, 31 Maiden Lane, New York.

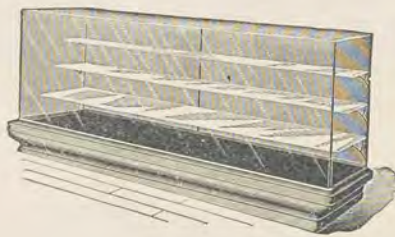
GRIMSHAW & BAXTER, London Agents, 35 Goswell Street, London.

*Silent Salesman*  
TRADE MARK

HIGH-GRADE  
SHOW CASES,  
ETC.

### You Must Show Your Goods.

GOODS WELL DISPLAYED ARE HALF SOLD.



### Phillips' All Glass Case

is the finest case made.

Send for catalogue of our Up-to-Date Show Cases. We also have something new in STORE STOOLS worth seeing. Send for circular.

MODERN { SHOW CASES, WALL CASES, STORE FIXTURES, STORE STOOLS, SCALES, MIRRORS, Etc. } UP-TO-DATE

## John Phillips & Company

Cor. East Fort & Beaubien Sts., DETROIT, MICH.

Established 1864.

## EAGLE WATCH INSULATORS



ALL  
SIZES,  
HUNTING  
AND  
OPEN-FACE.

ALL  
SIZES,  
HUNTING  
AND  
OPEN-FACE

THE BEST PROTECTOR FOR WATCHES  
AGAINST WEAR AND MAGNETIC INFLUENCE.

## THE EAGLE WATCH INSULATOR CO.,

ROOM 37 (SHELDON BUILDING),

68 NASSAU ST.,

NEW YORK.

### Workshop Notes.

Persons 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.

**"Watch Oil."**—(1) *What watch oils are counted best? (2) Is it ever advisable to oil the roller jewel, especially if it be triangular in shape?*

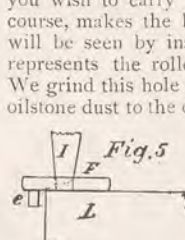
(1) The American oils, either Nye's or Kelley's, are unquestionably superior oils to anything prepared abroad. (2) A jewel pin, either round or triangular, should be oiled. Not a flood of oil, but enough to coat the steel surfaces which come in contact with the jewel pin. We never heard of any reputable maker of high-grade watches who claimed to produce a fork which would act without oil, except the Biddell Brothers in their fork partially made of gold. Any workman of extended experience must have found instances of dry forks being cut, and the sink for the roller coated with red dust, oxide of iron, from the fork.

**"Swiss Pallets."**—(1) *I have a Swiss anchor lever watch in which the depth is too shallow between the escape-wheel and pallets, and all the holes are jeweled: how can I close in the depth? (2) In the same watch the roller is out of round and the watch liable to over-bank; how can I bring the roller true? The staff is now true.*

(1) Here is something which will vastly puzzle the average watchmaker. Exactly how to proceed will depend on how the pallets and other parts are related to each other. In the first place, we should determine if the depth between the pallets and escape-wheel is really too shallow, or only appears so. We have seen instances where the lever would fly back and forth like a recoiling-beat clock, and the depth, in fact, be all right; it was the lounce from the bank which carried the fork over. To test this matter, remove the hairspring from the balance, and, placing all the parts in their proper positions, wind the watch a little, then with a hair brush or a light oiling tool see if you can, when the jewel-pin is out of the fork, move the lever forward enough on either pallet to unlock the pallet. It is to be understood, of course, that the lever has only banking motion enough to be free, and the guard point at no time has more freedom than to clear the roller. We should also at this time determine if the locking face has the proper draw. This is decided by the locking face pulling the lever to the bank in every instance where the guard point is pressed forward to the roller. All these conditions may exist, and still the depth be too shallow. This is to be tested by removing the balance and placing some friction under the fork—a tinsel dial-washer is as good as anything. Then, moving the lever slowly across from bank to bank, see whether, after the engaged tooth drops, the tooth next in order strikes the pallet securely on the locking face or on the impulse face. Here is another nice point to determine, because even if the tooth next engaged, when it reaches the pallet, does fall on the impulse face, but close to the angle, it might not be decided that the escapement has a serious fault which must necessarily be corrected. In explanation, let us imagine that we are continuing the examination of a Swiss escapement with friction under the fork, and that when we commenced our examination a tooth engaged the entrance pallet. As we move the lever across from bank to bank we should carefully note about how much angular motion of the lever is required before the engaged tooth leaves the locking face and commences to act on the impulse plane of the engaged tooth. If more than two degrees of angular motion of the fork is required, there exists too much lock, and in any manipulating of the pallet stones we should bear this in mind, because one or one and one-half degrees of lock should be enough. We continue carefully moving the fork, and note carefully, when the engaged tooth drops from the pallet, whether the tooth which engages the exit pallet strikes full on the locking face. Theoretically, the engaging tooth should strike the locking face of the exit pallet one and one-half degrees of angular motion above the angle to the plane of the impulse face. In the construction of escapements we should work on these lines, but in the repair of watches we should, if our judgment deems it advisable, allow a little departure from the rigid rules laid down by theory. To continue consideration of pallets which do not strictly conform to theory, let us imagine the tooth engaging the exit pallet does not strike fully on its locking face, but engages the impulse face extremely near the angle between the locking and impulse faces. Now, here is a point we wish our readers to carefully note, because in the actual work done (that is, in the real performance of the watch), the tooth will not strike on the impulse face, but on the locking face. This statement seems to contradict the facts as demonstrated by the actual test. Here is a case where what is apparently a truth is a deception, because when the watch was running the tooth would not fall on the impulse face, but on the locking face. The reason for this is, the fork, being fully engaged with the jewel-pin, carries the pallet forward, during the duration of (time employed for) the drop, so far that the tooth really strikes the pallet on the locking face. The balance is moving at about its greatest velocity at the time the drop takes place. If our judgment tells us an escapement is too shallow, we can warm the pallet arms and move the stone forward. Sometimes we can, to advantage, tilt the stone as shown at Fig. 3, where the full lines at *H* indicate the form of the entrance pallet arm, and the dotted outline the form and position of the pallet-stone after being advanced. By so changing a pallet-stone we give more draw to the angle at *a*, and have added to the angular motion of the lever. We have also added to the drop and



insured the locking of the exit pallet. By simply setting the pallet-stone forward we might also have insured the lock on the exit pallet, but we would have added to the lock on the entrance pallet. Every workman should be so conversant with the action of the lever escapement as to see at once all the effects that are going to follow any change he is going to make, before he makes such a change. One of those escapement models we described on page 952, October, 1893, KEYSTONE, enables a workman to practically work out all such problems on a large scale, and establishes more correct ideas than months of study by diagrams. You can move the pallet-stones, either ingress or egress, or both, to remedy a shallow depth in the escapement, but you completely understand in how many ways a single change may affect the entire escapement. (2) You can grind the center hole of the roller to one side with a piece of binding wire placed in your jeweler's saw-frame, keeping the wire coated with oil and oilstone dust, and rubbing back and forth, the wire and oilstone dust grinding the hole toward the side you wish to carry the hole. This plan, of course, makes the hole too large. The idea will be seen by inspecting Fig. 4, where *F* represents the roller and *c* the center hole. We grind this hole with the binding wire and oilstone dust to the dotted line *d*; and to close it, we place the roller



*F* on a bench block as shown at Fig. 5, where *F* represents the roller, *L* the bench block, and *I* a small ball-faced punch, which closes the hole *c* until it fits the balance staff.

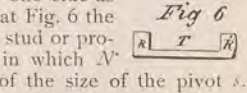
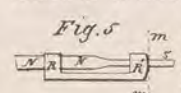
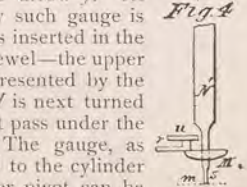
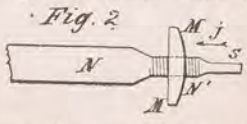
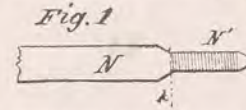
**"Chilled Iron."**—(1) *I have a cylinder 20" diameter by 5' long, made of boiler iron, which I wish to use for compressing air for sand-blast to remove old enamel from bicycle frames, marking glass articles and sand blasting sterling silver articles. What kind of sand to use and where can I get it? (2) Some two or three years ago you gave instructions for constructing a self-winding clock; has the principle of winding by electricity ever been patented? (3) I have one horse power 110-volt Gramme armature electric motor with three binding posts, and a starting box with two binding posts. I have never been able to get any good of the motor, owing to the fact, I think, that I did not have the wires properly placed. (4) If I should use the motor as a dynamo, how should I place the wires and how many sixteen-candle power lamps would it supply? (5) How are cast-iron rollers dressed when they have become worn from use, and how is the surface hardened? Is it by some kind of case-hardening, or by some chilling process? I have frequently heard the expression "chilled steel," but I never heard of "chilled iron" until a few days ago a friend came to me to tell me about the durability of chilled iron; and I immediately consulted Britten, Saunier, Abbot's "American Watchmaker," and the "Iron Age," by S. D. V. Burr, but could find no description of chilled iron. Please describe the process if it is practically used. (6) I have a few bicycles brought to me for repairs, in which, after they have been run from three to six months, the ball track seems to be cracked or scratched in some places. I attempted to anneal and turn them true and then retemper, but they would not temper, so I was compelled to get new cones. What grade and kind of metal were they made of?*

(1) We think you will find it much easier to fill your cylinder with air than to keep it full. A power air blast is what you want. The sand used is what masons call "sharp" sand, and the glassmakers speak of as "silicious" sand. Such sand is abundant in most portions of the United States. We gave, on page 452, May, 1893, KEYSTONE, the details of the sand-blast process with machine for working. (2) A "principle" cannot be patented. There have been patented a number of methods for the electric winding of clocks. We have just closed the description of an excellent plan for the electrical winding of clocks in our article "Clocks," which was devised by our expert and placed at the disposal of our readers. (3) We would have to know more about your motor before we could give any suggestions about how to connect it up. (4) A one-horse power dynamo will fully light about eight sixteen candle lamps. (5) Hard or "chilled" cast-iron rolls are usually ground with a rapidly revolving emery wheel, but in some instances they are turned with special tools and by men accustomed to the work. Full chilled, or cast-iron chill-hardened to the full extent of the process, cannot be turned with a steel tool. The term "chill-hardened" is used to designate cast-iron which has been subjected to a sudden chill in the mould when cast. The face or "tread" of car wheels is chilled by being cast in moulds faced with iron at the part intended to be chilled and hardened. Ordinary gray cast-iron, when cast in sand molds in thicknesses of 1/8", or less, is usually chilled to such hardness that a file will not touch it. We see such results in the cheap cast-iron door locks. The quality of the iron has much to do with chilled castings. The ordinary gray iron becomes intensely hard when cast against a metal surface to suddenly chill it. "White" cast-iron, such as is used for malleable iron castings, is quite hard when first cast, even in sand molds. Such castings are annealed by slow continued heating with the proper chemicals until they are brought to a condition nearly resembling wrought iron. Chilled iron, when the hard surface is removed, cannot be re-hardened. (6) Probably the parts you dealt with were case-hardened. Many articles are made of wrought iron or mild steel, and then case-hardened, which gives a "skin" or surface of intensely hard metal (steel) on the surface while all the metal below it is as soft as ever. When such shell or surface is removed such pieces cannot be hardened again until again subjected to the case-hardening process, said

process being effected as follows: Where the steel coating needs be but very thin, heat the iron red hot and dust upon the surface yellow prussiate of potash. Restore the article to the fire and bring up to a full yellow-red heat, then plunge into cold water. Such treatment produces a coating of hard steel about 1/1000" thick. To produce a coating 1/2" thick, pack the iron pieces to be case-hardened into a sheet-iron box, with pure bone dust, and subject the box and its contents to a full red heat for about thirty or thirty-six hours; after which, and while red hot, plunge into cold water. Norway iron is said to make the best metal for case-hardening. Bessemer steel, while presenting a fine grain and texture, is not usually held in high repute for articles to be case-hardened. Malleable iron articles can be case-hardened quite readily. The yellow prussiate of potash process answering in many instances a good purpose. Recipes requiring animal charcoal and numerous expensive chemicals produce no better results than plain bone dust as directed.

**"Duplex."**—(1) *Can a double action duplex be changed to single action without changing the jewel holes? If it can, will you please give the number of teeth in wheels and pinions; that is, center wheel and pinion, third wheel and pinion, fourth wheel and pinion, escape wheel and pinion, also dial wheels? (2) Is there any one making the micrometer gauge you have been describing in your articles on "Watchmakers' Tools and How to Use Them"? If so, who, and the price? Also the device used in hairspringing? (3) Is there any gauge made to get the height of a cylinder from the end of the lower pivot to the cylinder shell under the escape-wheel? That is where I have the most trouble.*

Yes; the distance apart of the balance hole and the escape-wheel hole jewels, within reasonable limits, has no effect on the matter. Neither has such change any effect on the relations of the other wheels of the train. The double-action duplex, or triplex as it was frequently called, was generally arranged for a sweep second hand, and the balance was sprung to beat quarter seconds. This arrangement caused the sweep hand to show full even seconds on the dial. The escape-wheel of such watches had six impulse teeth and twelve locking teeth. By putting in an escape wheel of the ordinary duplex type with fifteen teeth the watch would beat the usual 18,000 to the hour and need no change in the train. It is of course understood that a new hairspring would be required to make the balance vibrate more rapidly; that is, 18,000 to the hour. The usual proportion for the roller jewel is one-fifteenth of the largest diameter of the escape-wheel; and the distance of the impulse teeth from the center of the escape-wheel is two-thirds the distance to the point of the locking teeth. (2) M. MacKellar, P. O. box 2674, Philadelphia, makes the micrometer calipers. Price, in solid nickel or aluminum, \$6.00; in brass, silver dial and gilt parts, \$5.00. F. W. Schuler, Philadelphia College of Horology, 1213 Filbert Street, Philadelphia, makes the hairspring gauge you inquire about. (3) A gauge which you can readily make yourself is the most desirable tool of any we are cognizant of for getting a cylinder height. To make one, take about a No. 7 needle, and after drawing the temper turn down the point end to the proper size to cut a screw upon it in the No. 15 hole of your Swiss screw-plate. We show at Fig. 1 a portion of a needle so turned and a screw cut at *N'*. After the screw is cut the annealed part of the needle is rehardened and drawn to a spring temper, after which a pivot is turned as shown at *s*, Fig. 2. This pivot is made small enough to enter any pivot hole, and the point *s* to rest on the inner surface of the end stone. A small oval nut is made to run on the screw *N'* as shown at *M*, Figs. 2 and 3, Fig. 3 being a view of Fig. 2 seen in the direction of the arrow *j*. At Fig. 4 we show how such gauge is used. The pivot *s* is inserted in the lower balance hole jewel—the upper surface of said jewel being represented by the dotted line *m*. The oval nut *M* is next turned on the screw *N'* until it will just pass under the arm *r* of the escape wheel. The gauge, as shown in Fig. 2, can be applied to the cylinder while in the lathe, so the lower pivot can be stoned off to the right length. Another somewhat similar form of gauge is shown at Fig. 5. In this gauge the needle is shaped precisely as before, but instead of the nut *M* a piece of brass wire *R*, which is about 1/8" diameter and 1/4" long is employed. This wire has a recess filed on one side as shown at *T*, Fig. 6. In the cut at Fig. 6 the part *R'* is shown separate. The stud or projection *R* has a female screw in which *N'* turns; while the hole in *R'* is of the size of the pivot *s*. In using this tool the pivot *s* is inserted from the lower side of the movement plate, the point of *s* being set to just clear the arms of the escape-wheel. The objectionable feature to this form of gauge is, the end stone is seldom set close to the lower face of the hole jewel, and the space between the two jewels is, of course, chiefly a matter of guesswork. The dotted line *m*, Fig. 5, is supposed to represent the outer surface of the hole jewel. We shall soon give a description of a height gauge in our articles "Watchmakers' Tools, and How to Use Them," which is eminently adapted for such measurements.



# Aikin-Lambert Jewelry Co.

19 Maiden Lane, New York,

ARE FULLY PREPARED TO FILL YOUR ORDERS FOR

## WATCHES DIAMONDS JEWELRY

Selection packages when requested.

We only ask for a trial

Novelties in GOLD, SILVER and PLATE.

*Gold and Silver*

## Refiners and Assayers

*Sweep Smelters*

## L. LELONG & BRO.

S. W. Cor. Halsey and Marshall Sts.

Newark, N. J.

## EUGENE DEIMEL,

WHOLESALE JEWELER.

A full line of these goods always in stock { Watches, Clocks, Chains, Charms, Tools and Material.

Orders for Materials and Jewelers' Findings accurately filled on shortest notice.

Orders for the LATEST NOVELTIES and NEWEST STYLES promptly filled.

No. 157 Jefferson Street,  
DETROIT, MICH.

YOUR PATRONAGE SOLICITED.

## Grand Old Party Elephant

Patent applied for.



OPEN

Touch the Girth,  
and See the  
Winners,

McKinley & Hobart

GOLD-PLATED.  
SADDLE ENAMELED.



CLOSED

The Best Seller on the Market.

Ask Your Jobber for Them.

McRAE & KEELER, Attleboro, Mass.



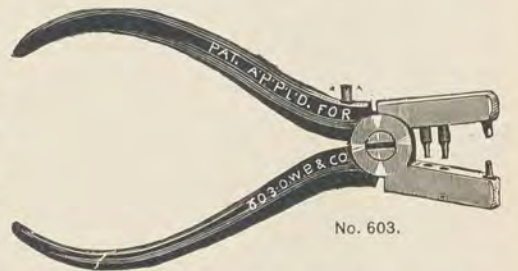
No. 602.

No. 602. New improved LEVER SCREW EXTRACTOR, for watch plates and spectacles. Broken and rusted-in screws are easily and safely removed with this tool.

Price, nickel, 75 cents.

No. 603. New improved COMBINATION LEVER SCREW EXTRACTOR AND PUNCH. Intended for spectacles only, for taking out screws and punching holes in bow springs.

Price, nickel, \$1.00.



No. 603.

No better tools for the purpose in the market. Warranted. Sold by jobbers generally, or we will send them postpaid on receipt of price.

O.W. BULLOCK & CO., Springfield, Mass.

SEND FOR CATALOGUE.

PORTRAITS

LANDSCAPES

BUILDINGS

## CATALOGUES

COMPILED AND ILLUSTRATED FOR ANY BUSINESS.

JEWELERS' AND WATCHMAKERS' WORK A SPECIALTY.

To Jewelers and Silversmiths

WE ELECTROTYPE  
EVERYTHING  
UNDER THE SUN!



Special attention to HALF-TONE ELECTROTYPING, and we make them as good as the original in every case

Duncan & Company, Electrotypers

621 & 623 Commerce Street, Philadelphia

Oldest Stereotype Foundry in America—Established 1815

## Workshop Notes.

Persons 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.

"Cement."—Give me the best recipe for a cement to join rubber and leather together.

Rubber and leather do not seem to unite very kindly. Probably a thick solution of gutta percha in bisulphide of carbon does as well as anything.

"Earth Battery."—In reading about "Hayden's Century Clock," in the *Horological Review*, they state it is run by an earth battery built in the ground and consisting of several old boiler-grate bars and several bushels of coke as electrodes. It is stated this battery will run the clock for 50 or 100 years. Will *The Keystone* please enlighten me a little about earth batteries—the current they produce and how they are made?

Earth batteries are usually constructed by burying plates of zinc and copper, or zinc and coke, at some distance from each other, allowing the moisture of the earth to act as the exciting fluid. Electric currents so produced are very feeble, and their lasting qualities have never been thoroughly tested, but cannot be anything like the time stated.

"Book."—Please send me the name and publisher of a good book treating on and explaining watchmaking, also one on repairing of jewelry and soldering.

We are sorry to say there is no sound, practical, up-to-date book published on watch repairing. The best works on the subject are two handbooks, one by Claudius Saunier, price \$3.50; another by F. J. Britten, price \$2.00; both works can be had at this office. Both of these works are excellent books, and well worth their cost; but we must add they deal chiefly with obsolete methods and the use of tools of forty years ago. It has been the peculiar province of *THE KEYSTONE* to keep its readers posted in the most advanced methods. A work entitled "Manual of Instruction on Hard-Soldering," by Harvey Rowell, is a good work on the subject treated; price, 75 cents; can also be had at this office.

"Diamond."—(1) Let me know if a diamond will break when mounting the stone. Will a corner chip off if not carefully handled? (2) Will a diamond stand heating to hard-solder?

(1) A diamond splits quite easily on its line of cleavage. When preparing large diamonds for cutting into shape for jewelers' use, a skillful workman splits off slabs with an old razor blade. S. M. Burnham, in his work on precious stones, page 177, says: "The fact is, the hardest of gems is one of the most brittle, and has been broken by simply letting it fall on the floor." You might handle roughly, in setting, a thousand diamonds without a single accident, and the next stone might easily be injured by a corner splitting off. (2) A diamond can usually be heated red-hot without injury, and then, again, it might split by heating. The only safe plan is to handle them with great care, making your customer pay for the risk you run with them.

"North Dakota."—(1) How can I oxidize burnished copper? (2) Where can I get extra large clock-hole jewels, something about 3/16"? (3) Where can I get small gears cut?

(1) Copper is not readily oxidized a full or crow black. A fair black can be obtained by using chloride of platinum either in a watery or alcohol solution. A very thin electro deposit of silver enables one to oxidize such silver by any of the many formulas we have published at different times, among which is a freshly made solution of liver of sulphur and water. Dipping the silver-plated surface in a dilute solution of nitrate of mercury intensifies the black. For blacking copper by simple immersion, a solution composed of water one quart, nitrate of iron ten drams, can be used. (2) Probably you can get hold of some fusee jewels, such as go into English lever watches, very nearly this size; and if the size you name is absolutely necessary, they can readily be opened up to that size. (3) Goodnow & Wightman, 63 Sudbury Street, Boston, Mass.

"Pure Gold."—I lately melted some gold received from a dentist, together with some gold coin, and on rolling it cracked so badly it could not be used. I then dissolved it in some nitro-muriatic acid and precipitated with sulphate of iron. After melting it cracked in the rolls worse than before. It has a granulated appearance where it breaks, and looks as if it had iron rust in it. Kindly tell me some other agent to use to precipitate it from solution, that will throw down the gold absolutely pure. On melting it after precipitation I used as a flux saltpetre, sal ammoniac and charcoal.

You failed to tell us what you alloyed your gold with in the first instance; perhaps that is where the trouble was. There is nothing you can use to precipitate gold from its solution equal to pure sulphate of iron. The sulphate of iron should not be air-slacked, but clear green crystals, and to make doubly sure filter the solution of sulphate of iron. The gold you precipitated with the sulphate of iron surely did not crack before you alloyed. We suggest you put your gold into a crucible with some saltpetre, and invert another

crucible over the one containing the gold. Let the upper crucible be smaller than the lower one, and have a small hole broken in the bottom, to allow the gases to escape. Plaster shut the crevices between the two crucibles with moist clay or fine brickdust made into a paste with water. Heat the crucibles to a white heat, and let the button of gold cool in the crucible. In pouring gold into an ingot, do not pour it too hot, and have the ingot as hot as the hand can just bear.

"Lever Clock."—We have a number of small lever clocks which will run all right for two or three days, and then will stop. If we take the lever out and let them run down, and then put them together again, they will run for three or four days, after which the stopping again commences. The clocks are clean. We would like to know the trouble and how we can fix them.

In almost every instance the trouble in lever clocks lies in the escapement, and this culminates in the balance pivots. If these are file-hard and perfectly pointed there is usually but little trouble if the pallet and fork actions are anywhere near as they should be. If the pivots are hard, repoint; and if not hard, harden them and then bring them to a point.

"Gold Standard."—How do the American watch factories put the figures on watch dials?

We believe most of this kind of work is done by a species of transfer from a steel plate, like plate-printing. To explain: The letters and figures are engraved on a steel plate, cutting in the lines and letters as in card-plate or bank note engraving. These lines are filled with black enamel color made up into an oily ink, and the surface of the steel plate wiped clean. A film of collodion is now flowed over the steel plate and allowed to dry, after which the collodion film is stripped away and the printed side laid on the plain hard enamel dial. The transfer is pressed down firmly on the enamel dial. The dial and transfer are next placed in an enamel furnace and heated, to fuse the black enamel color fast to the porcelain dial. At a certain temperature the collodion catches fire and burns, not leaving any residue to mark or stain the dial.

"Precious Stones."—(1) Is there a book on precious stones, telling where they are found and their value? (2) How do you clean a set ring that is black under the stone?

(1) "Precious Stones in Nature, Art and Literature," by S. M. Burnham, price \$3.50; can be had at this office. (2) Such black must be either a stain or organic matter. For the first, use a strong solution of cyanide of potassium. For the second, use strong sulphuric acid. To restore the polish, take a hank of brown linen thread, knot one end of the hank securely, and then cut it open so the threads at one end stand free. Saturate the threads with oil, and then dust on some dry soft rouge and work it into the fibres of the thread. Secure the knotted end to your workbench. Now draw a few threads of this hank through between the setting and the stone, holding the free ends of such threads in your left hand, keeping them taut; then with the setting in your right hand, rub it vigorously back and forth, and the polish under the stone will soon be restored.

"Spirit Compass."—How are spirit compasses filled? I find it difficult to expel all the air, it will lodge in small places under the card.

Set the box of the compass level and fill it nearly full of spirits, then put the card in position and finish filling, so that when the glass is put on there will apparently be no air inside the box. Put the rubber packing in place and screw down the flange securely, to hold the glass in position. Then turn the compass on one side with the vent upward, then put your mouth to the vent and blow in to compress the spirits and displace any air. Fill completely and close the vent; then place the compass in an ice-box, to shrink the spirits as much as possible. When the spirits are contracted to the smallest volume by such artificial cold, remove the screw from the vent-hole, and with a small funnel fill up the chamber again and replace the vent screw. If the compass is to go into cold latitudes it would be well to use salt and pounded ice, as in an ice cream freezer, to bring the temperature of the spirits well down toward zero. The elasticity of the compass box provides for the expansion of the spirits by heat.

"Dynamo."—I must come to you for advice, like many more of your readers. I have a small plating dynamo made by Harrison Brothers, which used to give off quite a current; but I lent it to a friend for experimental purposes, to run as a motor with batteries, but he failed in his experiments. Since then it will not work as a dynamo, and I can find nothing wrong with the connections. What can I do?

If you have two or three cells of strong primary battery, you can probably locate the trouble. Try the field first by connecting the terminal wires with the two poles of your batteries set up in series, that is, connecting the zinc pole of one battery to the copper or carbon pole of the next, and so on through the series. If strong magnetic effects are produced in the pole pieces, probably they are all right. If you realize but indifferent magnetization, make another experiment. Connect one pole of your primary batteries with one terminal wire of your field magnet; then touch the bare iron of the field magnet with a wire leading to the opposite pole of your battery, and if you can get a spark the wire enveloping the field is in contact with the iron at

some point; then search for the place of contact. If the current passes freely through the wire wound around the fields, but you get but little magnetism in the pole pieces, the probabilities are that your insulated wires have broken through the insulation at some point, and are in contact. Again we say, search for the trouble. A little instrument called a magneto is invaluable in hunting up troubles with a dynamo or motor. Such magneto is usually a small hand-power dynamo with permanent magnets for a field, and the armature wound with fine insulated copper wire. It gives a current of high voltage and low amperage, the current merely serving to ring a small bell when the circuit is complete. Such an instrument serves a better purpose than the indication of a spark for a passing current. With a primary battery an electric bell placed in the circuit also serves better to judge by than a spark. The armature is also to be tested in the same way. If you fail after such tests, your better plan would be to send the machine to the makers. Usually a well-directed examination on the lines we have suggested will locate the trouble, and the proper way to remedy the defect will naturally suggest itself. If the insulation is broken, restore the insulation and you remedy the trouble.

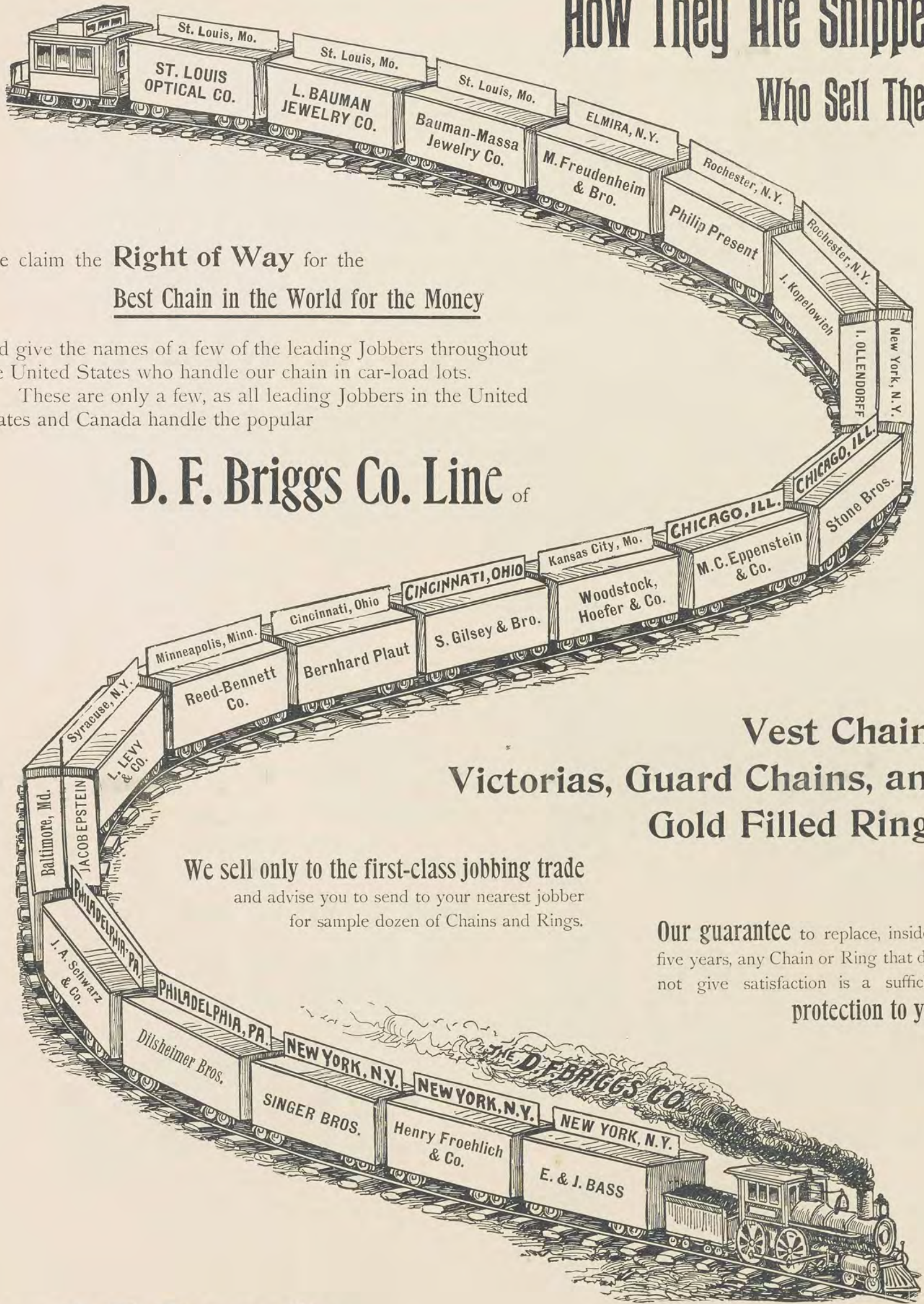
"Gun-Barrel" alias "F. D. H."—(1) How can I restore the finish to a fine browned gun-barrel which has been injured by cleaning off rust? (2) Who can I get to do such work? (3) Is there anything used to coat a gun-barrel with to prevent rust?

(1) Almost every gunsmith has his own favorite recipe for browning or bronzing gun-barrels, the underlying principle being the same in all the processes, that is, producing an even coating of rust over the outer surface of the barrel. If a breech-loading barrel is to be bronzed, both ends are closed with corks which have been dipped in melted beeswax. The coating of rust produced should be perfectly even. Dilute muriatic or nitric acid can be used, and time allowed for the oxidizing (rusting) effect to take place. A favorite composition for bronzing is made as follows: Aquafortis 1/2 ounce, spirits of nitre 1/2 ounce, alcohol 1 ounce, sulphate of copper 2 ounces, tincture of iron 1 ounce, and water to make 1 quart. Apply with a sponge or soft rag. Every trace of grease must be first removed, which is best accomplished by first washing in soda lye and then polishing with unslacked lime shaved from a lump, using alcohol and a piece of cotton flannel to apply it with. Two or three applications of the bronzing fluid should be made; then wash it away carefully, using a weak alkali, such as washing soda. Dry carefully with soft rags, then varnish with shellac dissolved in alcohol. Apply two or three thin coats of the shellac. Some artisans heat the gun-barrel and rub on beeswax. (2) E. K. Tryon, Jr., & Co., 10 North Sixth Street, Philadelphia. (3) Oils of various kinds prevent rust, as also does paraffine.

"Always Inquiring."—(1) Of what can a black varnish be made to use on metal surfaces like hairpins, and how is it applied? Is it burned or baked on? It lasts a long time, while that on other ironwork soon wears off. (2) Where can I obtain amber in its natural state, and in what can it be dissolved to use as a varnish?

(1) The black varnish used in finishing hardware is made from asphaltum dissolved in spirits of turpentine and a certain proportion of boiled linseed oil added. A fine quality of such varnish is the "black enamel" of the bicycle manufacturers. Such asphaltum varnish has been sold for many years in England under the name of Brunswick black. Professor Ure, in his "Dictionary of Arts, Manufactures and Mines," gives the following formula for its preparation: "In an iron pot, over a slow fire, boil forty-five pounds of foreign asphaltum (any except Egyptian) for at least six hours, and during the same time boil in another iron pot six gallons of oil previously boiled. During the boiling of the six gallons gradually introduce six pounds of litharge, and boil until it feels stringy between the fingers; then pour into the pot containing the asphaltum. Let the mixture boil until upon trial it will roll into hard pills; then let it cool and mix with it twenty-five gallons of turpentine, or until of the proper consistency." The hardness of such varnish after it is applied depends much on the baking to which it is subjected. An oven for properly baking asphaltum should be maintained at a temperature of about 350° F. for at least three hours. A lower temperature will in time dry and harden asphaltum varnish, but the temperature named is about the practical one. A very convenient plan for coating a quantity of small articles is to expose them to the vapor given off in the destructive distillation of cannel coal. The articles to be coated are placed in a sheet-iron chamber over an iron pot in which the cannel coal is put; and the pot is heated until the volatile portions of the coal are given off in vapor, which is condensed on the articles to be coated. It is a sort of direct coal-tar process and is said to produce very satisfactory results. (2) You can procure native amber of Bullock & Crenshaw, 528 Arch Street, Philadelphia, for about fifty cents per pound. We quote the process of making amber varnish from the same source as the asphaltum varnish: "For making varnish the amber must first be heated in an iron pot over the fire until it is soft and semi-liquid. The oil, previously heated, is to be now poured in, with much stirring, in the proportion of ten ounces to the pound of amber. After the incorporation is complete and the liquid somewhat cooled, a pound of turpentine is added." In the preparation of varnishes the oil used is boiled linseed oil. The only uncertainty about the formula lies in not stating the amount of boiling to be given to the oil. The quantities named, however, would indicate oil just brought to a full boil, to destroy a sort of mucilage which exists in linseed oil until heated to about 600° F.

# How They Are Shipped Who Sell Them



We claim the **Right of Way** for the  
Best Chain in the World for the Money

and give the names of a few of the leading Jobbers throughout the United States who handle our chain in car-load lots.

These are only a few, as all leading Jobbers in the United States and Canada handle the popular

## D. F. Briggs Co. Line of

### Vest Chains Victorias, Guard Chains, and Gold Filled Rings

We sell only to the first-class jobbing trade  
and advise you to send to your nearest jobber  
for sample dozen of Chains and Rings.

Our guarantee to replace, inside of  
five years, any Chain or Ring that does  
not give satisfaction is a sufficient  
protection to you.

**THE D. F. BRIGGS CO.**  
ATTLEBORO, MASS.

NEW YORK OFFICE: 200 Broadway.



Workshop Notes.

Persons 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.

“Aluminum.”—Can you give me any information as to how aluminum is made out of the raw bauxite?

Write to J. W. Powell, director of the United States Geological Surveys, Department of the Interior, Washington, D. C., for pamphlet on “Aluminum,” by Alfred E. Hunt, in which you will find the information you desire.

“Washington.”—How can I light my store and adjoining dwelling by chemical batteries? I want to use six and ten-candle lights. What would be the probable cost of outfit, and also the cost per hour for running?

We have repeatedly stated the fact that such lighting is not practicable, as the cost would be more than the same amount of light from wax candles.

“Soft Solder.”—Can you tell how to make a soft solder which requires no flux like chloride of zinc or rosin? The enclosed pieces will do it. I bought it from a peddler, but could not get him to tell me the secret of making it.

We made a partial chemical examination, but could detect nothing more than an alloy of lead and tin in about equal parts. Before making chemical test of the metals we placed the specimens of solder in a small vessel of distilled water for three hours; and then after drying placed them in chemically pure sulphuric ether. In neither solvent could we detect anything to act as a flux. In fact, neither the water nor the ether on evaporation left any residue.

“Depths.”—(1) I want to learn how to figure theoretically the number of teeth and pinion leaves for a watch; also the positions of pivot holes and exact depth. In fact, how to make a watch. (2) Can you inform me of any American treatise that will explain the matter without the use of algebra?

(1) The number of teeth employed for the train of a watch is mostly empirical, depending on the watch being quick or slow beat, also whether a high number of leaves are used in the pinions. This matter will soon be taken up in our articles “American Lathes and their Attachments.” The matter is too long for “Workshop Notes.” (2) We know of no American work giving the information you require. Saunier, in his “Modern Horology,” gives the information. Price of this work, \$15.00; can be had at this office.

“Swiss Cylinder.”—On all Swiss cylinder escapement watches I notice a pin in the edge of the rim of the balance, and also a punch mark on the balance; will you kindly explain what they are for?

The pin in the balance of a cylinder watch is called the banking pin. You will also find, usually on the side of the cock, another pin, but larger, called the banking stud. The object of these pins is to prevent the balance making more than a full revolution. If you will try some time to see what effect it will have on the escapement of a cylinder watch to let the banking pin pass the banking stud, you will find the tooth resting on the half-shell to drop into the banking slot at the back, locking the escapement. The dot, or prick mark, on the balance rim denotes the position of the hairspring stud as relates to the cut away portion of the cylinder, and if the original cylinder is still in the watch set the hairspring stud so it is in line with the center of the cylinder and the prick mark, and the watch will be in beat. Usually, there are three similar prick marks on the lower plate, which denote the angular motion of the cylinder in escaping.

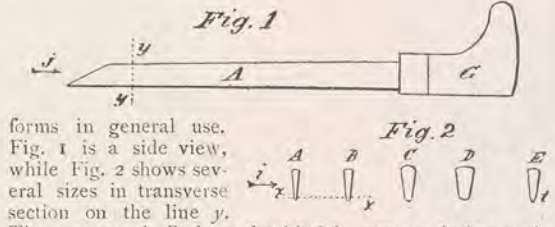
“Plating Solutions.”—(1) Give me a recipe for making nickel, copper, brass and bronze plating. (2) Would two Bunsen batteries connected together produce enough current for plating?

(1) The solution usually employed for nickel is composed of water and a compound salt of sulphate of nickel and ammonia in the proportion of three-quarters of a pound of such salt to one gallon of pure water. The solution should be boiled for an hour and allowed to cool before using. A favorite formula consists of double sulphate of nickel and ammonia 10 parts, refined boric acid 2½ to 5 parts, water 150 to 200 parts; all by weight. Copper solutions are of two kinds, acid and alkaline. Acid solutions are used for electrotyping and deposition on wax or gutta percha molds. They are also used for deposit on a copper mould. An acid solution is usually made by dissolving pure sulphate of copper in pure water to near the point of saturation, and then adding two ounces of free sulphuric acid for each gallon of solution. Alkaline solutions for copper electro-deposition are usually made up of cyanide of copper and cyanide of potassium. An alkaline solution can be made as follows: 10 parts of pulverized crystallized acetate of copper made into a paste with water, add ten parts soda crystals (sal soda) dissolved in 100 parts of water, well stirring the mixture. A green precipitate is formed; to this add 10 parts bisulphite of sodium dissolved in 100 parts of water. The precipitate now assumes a dirty yellow. 10 parts of

pure cyanide of potassium are dissolved in 300 parts of water and added, and the mixture well stirred. If the solution does not become colorless add more cyanide. This solution works well either hot or cold, and requires but a low voltage. A brass solution can be made as follows: Dissolve 2 parts of bisulphite of soda, 5 parts of pure cyanide of potassium, and 10 parts of carbonate of soda in 80 parts of distilled water. Add to this mixture 1 part fused chloride of zinc and ¼ parts of acetate of copper dissolved in 20 parts of water. To make a bronze solution, substitute chloride of tin for chloride of zinc. All parts compounded by weight. (2) Two Bunsen cells would not furnish enough current. You should have at least three of the large five-dollar size for either nickel or alkaline copper solutions. A small dynamo is what you require. It is a poor specimen of dynamo that will not equal four Bunsen cells.

“Balance.”—(1) Why, in poising a balance, is the roller left off? Would it not be nearer-correct to leave it in place? (2) Do wood engravers use the same kind of graters as we do on silver? (3) Where can I buy boxwood type-high for engraving upon?

(1) We think very few workmen remove the roller when poising a balance. The average table roller with passing hollow cut away will not show any perceptible variation in the poise of a balance, set it as you will, the jewel-pin and cement compensating in weight for the hole and passing hollow. (2) The shapes of graters for wood engraving are entirely different. We show at Figs. 1 and 2 the several



forms in general use. Fig. 1 is a side view, while Fig. 2 shows several sizes in transverse section on the line y. The cuts at A B show the kind known as tinting tools, which are supposed to cut lines of different widths when they enter the wood to the depth of the dotted line x. The tools C D are round-bottom and of different widths, for removing broad white spaces. The graver at E is a sort of compromise between a tint tool and a round-bottom, and is used for lettering and clearing out space in picture work. A little practice will soon teach one how to shape the cutting angle at t. (3) V. Grotenthaler, 621 Commerce Street, Philadelphia.

“Lost Verge.”—How do you find the right number of teeth of a lost verge or escape-wheel of a clock?

Where the escape-wheel of a Yankee clock is lost, usually the pinion on the same arbor is lost along with it. Now the number of teeth in the escape-wheel will depend on two factors: (a) The number of beats the clock makes in an hour; (b) the number of revolutions the escape-wheel makes in an hour. If the pendulum remains we can set it vibrating and count the vibrations for one minute; or we can get at the number of vibrations by measuring the length and comparing with the following table. The length is counted from point of suspension to the center of oscillation, which corresponds nearly with the center of the ball.

Table with 4 columns: Length of Pendulum in Inches, Vibrations per Minute, Length in Inches, Vibrations per Minute. It lists various pendulum lengths and their corresponding vibration rates.

The size of an escape-wheel has but little to do with its action, except to bring it to the proper depth with the pallets. The number of teeth in an escape-wheel also depends on the leaves in the escape-wheel pinion.

“Gold Dip.”—Will you please give a recipe for a gold dip solution for recoloring jewelry without the aid of a battery or dynamo?

The single cell process of gilding is never satisfactory. By the single cell process we mean a process by which local galvanic action produces the deposit of gold on the article to be plated. To make a pint of such solution, dissolve the contents of four fifteen-grain bottles of chloride of gold in four ounces of distilled water. Dissolve two ounces of chemically pure cyanide of potassium in another four ounces of distilled water. The vessel containing the dissolved chloride of gold should be large enough to contain at least eight ounces. It is good policy to use the same glass cell you intend to use for working your solution, also for making it in. Pour of the solution of cyanide of potassium into the gold solution as long as the cyanide solution produces a deposit. This mixture must be conducted with great care and no more of the cyanide solution added than just enough to precipitate the gold as cyanide of gold. Let the precipitated cyanide of gold settle perfectly, then pour off the super-

natent liquid; that is, the fluid standing on the sediment. Pour on the precipitated cyanide of gold some pure water—it need not be distilled, only clear, fairly-pure water. Let the cyanide of gold settle, pour off the water and repeat the operation two or three times to simply wash away all soluble matter which would tend to render your plating solution “chemically dirty” and impure. Next add of the dissolved cyanide enough to dissolve the precipitated cyanide of gold. Stir constantly as you add the cyanide solution, in order that you can stop the instant all the gold is dissolved. Add distilled water to make up to one-half pint. The article to be gilded is hung in the solution by a zinc hook. With such a solution you can only get a deposit of pure gold. The solution should be heated to about 120° F. We do not recommend the process, although it is the best of all the formulas for gilding without an electric current of some kind. In this day a small dynamo is as much a necessity as a polishing lathe.

“Clock Sign.”—(1) I am about to make a timekeeping clock sign with three dials, and each dial to be 3' in diameter. I would like to have it so that the time can be seen after night. Would luminous paint be satisfactory, and what would be the best material to make the dials of, wood, zinc or tin? Where can I get luminous paint? (2) I thought of using an eight-day movement, or would it require more power to run three dials than I could get in this way?

(1) Luminous paints do not wear well out of doors. Glass is the material for such dials, placing a light on the inside. Luminous paints can be had of Bullock & Crenshaw, 528 Arch Street, Philadelphia. Sheet zinc of the full width of the dial would be the best material. If the cost of plate glass of the size you desire is objectionable, you can make up a very nice dial of twelve smaller panes; the glass to be cut wedge-shaped and the edges set radial. This arrangement makes a pane of glass for each hour, and if the glass is nicely cut and the crevices between the edges are closed with some substance like insoluble gelatin, the effect is almost as good as if the glass was the full size of the dial. The inner ends of the taper panes should be set in a metal ring. (2) No ordinary eight-day movement affords power enough to run the hands on three dials 3' in diameter. The wind would overcome the power of the clock. You can use such an eight-day movement for time, but the motion work of the hands would require a secondary train of heavier wheels.

“Timekeeper.”—(1) How fine time should a sixteen-size American movement keep, having twenty-one jewels, end stones to escapement, double roller and the fork poised, said movement being adjusted to temperatures, isochronism and positions? (2) Can you give me the hour and minute when President Lincoln was shot? (3) Why are signs painted to nineteen minutes past eight?

The performance of any watch will depend in a great degree on the man who carries it. A man who keeps his watch in nearly the same position, day and night, will get the best performance out of it. Very few watches of the high grades will run through position adjustment inside of two seconds a day. A watch which really has a rate inside of one minute a month is about as good as one will get. We have seen watches do better for a month or two, but we doubt if they could be depended upon for closer rate the year through. (2) At about 8.20 o'clock P. M. (3) Many claim the incident of Lincoln's assassination was selected for painting watch signs to this hour. It is undoubtedly true, however, that hundreds of watch signs were painted for the hands to stand at nineteen minutes past eight scores of years before Lincoln was assassinated, simply because this disposal of the hands balanced well on each side of the seconds dial, and also left a wide space for the watchmaker's name on the upper part of the dial, where it is usual for them to place it. This disposal is merely a coincidence, and really not the origin of painting the hands at this hour.

“Sponges.”—(1) Please tell me where I can buy small sal ammoniac batteries, copper wire, etc., for electric bells. (2) What is the easiest method for cleaning and bleaching sponges?

(1) Partrick & Carter, Second Street below Chestnut Street, Philadelphia. (2) For cleaning sponges in large quantities the best device is something similar to a fullers' stocks. In absence of these, a barrel with a bottom made of slats which will retain the sponges but allow the dirt and small shells which are found in many sponges to fall through. In connection with such a barrel a “pounder” should be employed. Such a pounder is a familiar object in many kitchens, where they are employed with an ordinary barrel to facilitate laundry work. A pounder for our purpose would consist of a solid cylinder of wood about 6" diameter and 8" or 9" long. A hole about 1¼" in diameter is bored in one end, in which is inserted a wooden handle about 3½' long. The barrel with the slat bottom should be set in a large washtub or other vessel, to maintain a depth of water of about 6" in the barrel. A small constant stream of water should flow into the barrel while the pestle or pounder is actively employed to work the sponges. The sponges, after being partially dried, should be subjected to sulphur vapor as employed for bleaching straw hats. After the bleaching process the sponges should pass the pounding barrel with an abundance of water to remove the sulphurous acid. The sponges are finally soaked in water containing one-half of one per cent. of glycerine to keep them soft and prevent shrinkage in drying.

You, of course, want to be ready to take advantage of the promised improvement in business. In the matter of watch cases our line is so comprehensive as to meet your every requirement. The measure of improvement already manifest makes it advisable for you to rejuvenate your stock at once; but if you do not feel disposed so to do, it will pay you to cut these pages out, study them carefully, and lay them aside for reference when you are ready to buy. The goods on these pages are now in the jobbers' hands, but if you have any difficulty in getting what you want, let us know and we will put you in the way of getting your needs properly supplied.

**WHEN ORDERING** any case on these pages, don't cut out the illustration. It is only necessary to state the size, the number under the cut, and whether it is Open-Face or Hunting.

Keystone Watch Case Company.

*Here are a few of our New Designs in Keystone Solid Gold Cases:*

O SIZE.



8658



8619



8575



8595

16 SIZE.



8783



8779

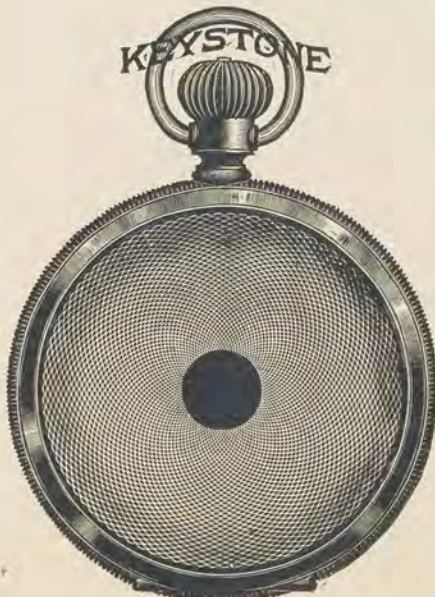


8604

18 SIZE.



8532




8768




8563

**Don't make the mistake** of accepting as a JAS. Boss, or Boss, or "As good as the JAS. Boss," any filled case which may be offered you.

There is only one JAS. Boss or Boss case—that made by us; and no other filled case is so good, and no other has stood the test of time.

Every case made by us has this general trade-mark 

Every JAS. Boss 14 K. case has in addition this special mark 

**WHEN ORDERING** any case on these pages, don't cut out the illustration. It is only necessary to state the size, the number under the cut, and whether it is Open-Face or Hunting.

Keystone Watch Case Company.

*Here are a few of our New Patterns in Jas. Boss 14 K.:*

Prices according to Keystone Key.

O SIZE.



A 7470  
Htg., \$13.00



A 7723  
Htg., \$14.00



A 7779  
Htg., \$14.00



A 7719  
Htg., \$14.00

16 SIZE.



A 7694  
Htg., \$22.00 O. F., \$20.00



A 7544  
Htg., \$20.00 O. F., \$18.00



A 7487  
Htg., \$22.00 O. F., \$20.00

18 SIZE.



A 7340  
Htg., \$22.00 O. F., \$20.00



A 7089  
Htg., \$22.00 O. F., \$20.00



A 7042  
Htg., \$22.00 O. F., \$20.00

**The latest favorite** in Jas. Boss cases is a *new style* of case which has been named "THE WINDSOR." It is made in both 14 K. and 10 K. grades, and in O-size only as yet. As seen in the accompanying illustrations, an attractive feature of "THE WINDSOR" is an oval border with star ornamentation. We made a special effort to make this case a market leader in O-size cases, and it is for you to judge of our success. In view of the growing demand for prettily ornamented small size watches, you need not hesitate about enlivening your watch case stock with a sprinkling of "WINDSORs."

**WHEN ORDERING** any case on these pages, don't cut out the illustration. It is only necessary to state the size, the number under the cut, and whether it is Open-Face or Hunting.

Keystone Watch Case Company.

Prices according to Keystone Key.

**The Latest—THE WINDSOR—so far made in O Size only.**



A 7633  
Htg., \$14.00



A 7627  
Htg., \$14.00



A 7630  
Htg., \$14.00



A 7632  
Htg., \$14.00



A 7625  
Htg., \$14.00



A 7626  
Htg., \$14.00



A 7634  
Htg., \$14.00



A 7628  
Htg., \$14.00



18616  
Htg., \$11.00



18614  
Htg., \$11.00





18610  
Htg., \$11.00



18608  
Htg., \$11.00

**Retailers have told us** from time to time during the depression that they were induced by insinuating salesmen to handle other filled cases than the Boss, and did so to their sorrow. They are now firmer friends of the Boss cases than ever, and commend our wisdom in keeping the Boss a fixed, standard quality on which jewelers and people can rely. Always the same, the people run no risk in buying Boss cases, nor do jewelers in selling them.

Every case made by us has this trade-mark 

Every Jas. Boss 10 K. case has in addition this mark 

**WHEN ORDERING** any case on these pages, don't cut out the illustration. It is only necessary to state the size, the number under the cut, and whether it is Open-Face or Hunting.

Keystone Watch Case Company.

*Here are a few specimens of our New Designs in Jas. Boss 10 K.:*

Prices according to Keystone Key.

O SIZE.



18594  
Htg., \$11.00



18344  
Htg., \$11.00



18580  
Htg., \$11.00



18269  
Htg., \$11.00

6 SIZE



18316  
Htg., \$12.00



18671  
Htg., \$12.00

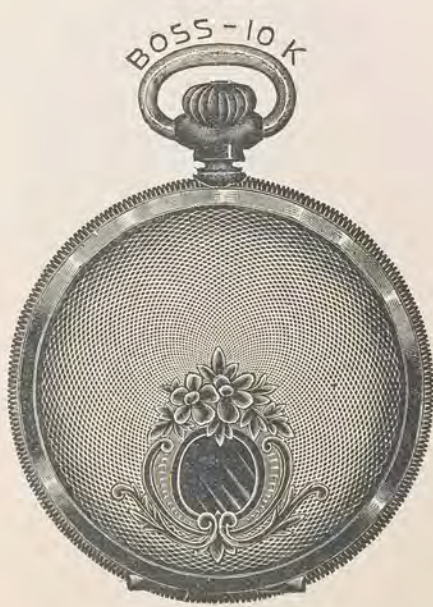


18669  
Htg., \$12.00

18 SIZE.



18309  
Htg., \$14.50 O. F., \$13.00



18528  
Htg., \$14.50 O. F., \$13.00



18311  
Htg., \$14.50 O. F., \$13.00

# New Jas. Boss Screw Cases

with regular screw bezel and back.

We have stopped making our former style of screw case, viz.: with center and bezel in one piece, and instead are now putting on the market a regular screw back and bezel case. The jobbers now have them in both 14 K. and 10 K. grades in plain bascine, Juergensen and engraved styles, so far in 18 size only. Other styles and sizes will follow.

**WHEN ORDERING** any case on this page, don't cut out the illustration. It is only necessary to give the number under the cut. Made only in Open-Face.

Keystone Watch Case Company.

*Here are a few of the Many Patterns of Engraving:*

Prices according to Keystone Key.

18 SIZE ONLY.



A 7871  
O. F., \$16.00



A 7863  
O. F., \$14.00



A 7868  
O. F., \$16.00



18771  
O. F., \$9.00




18769  
O. F., \$9.00



18770  
O. F., \$9.00

**A five-year guarantee** does not mean that any case so guaranteed is as good as the five-year case made by the Boss people. The CYCLONE rolled-plate cases are guaranteed by a *real* five-year guarantee, not the *alleged* guarantee with which many jewelers have become recently acquainted to their utter disgust. The CYCLONE cases are built on honor, just as Boss cases are, and comparatively are just as good value for the money.

Every case made by us has this general trade-mark 

Every CYCLONE case has in addition this mark **C**

**WHEN ORDERING** any case on these pages, don't cut out the illustration. It is only necessary to state the size, the number under the cut, and whether it is Open-Face or Hunting.

Keystone Watch Case Company.

*Here are a few of our New Fall Patterns in 5-year cases:*

Prices according to Keystone Key.



643  
6 SIZE, HTG., \$7.50



644  
O SIZE, HTG., \$7.00



641  
6 SIZE, HTG., \$7.50



610  
O SIZE, HTG., \$7.00



647  
1S SIZE  
HTG., \$8.00 O. F., \$7.50



646  
O SIZE, HTG., \$7.00



68 A  
18 SIZE  
HTG., \$8.00 O. F., \$7.50



**Sercomb & Sperry Co.**

SUCCESSORS TO  
PLATING DEPT.  
MERIDEN BRITANNIA CO.'S  
CHICAGO STORE,

No. 145 State Street,  
Chicago.



Yes.

Can this be Repaired?

- ☛ Silverware Repaired and Replated as serviceable as new.
- ☛ Toilet and Ornamental Articles Cleaned and Lacquered to prevent tarnish.
- ☛ Bronze Statues, Clocks, Etc., Repaired and Rebronzed.
- ☛ Silver Plating on Mining Plates, Signs, Etc., in all size sheets up to 12 feet by 6 feet.

**WE PLATE ANY ARTICLE you want**

in GOLD, SILVER, BRASS, BRONZE, COPPER, NICKEL, OXIDIZED SILVER, OXIDIZED COPPER, ANTIQUE BRASS, STATUARY BRONZE, AND ALL OTHER STYLES KNOWN TO THE ART.

**WE DUPLICATE ANY FINISH on Builders' Hardware.**

A. N. SPERRY, MANAGER.

ENGRAVING BY ALL METHODS SPECIALISTS IN HALF-TONE



PHILADELPHIA PHOTO ENGRAVING CO.  
147-149 15th St. PHILADELPHIA PA.  
PHILA. PHOTO ELECTROTYPE CO. CROSSCUP & WEST ENGRAVING CO.  
CONSOLIDATED  
PHONE 3550  
ILLUSTRATING OF BOOKS, MAGAZINES, FINE SOUVENIRS AND ALL PUBLICATIONS REQUIRING HIGH GRADE ENGRAVING.  
BILL & LETTER HEADS, CATALOGUES, SHOW CARDS AND ALL KINDS OF COMMERCIAL ENGRAVING FINE WORK ESPECIALLY SOLICITED.



PROF. JONES.

THE  
**Peoria Horological School,**

1426 Main, cor. Elizabeth St.,  
PEORIA, ILL.

This School has a thoroughly practical man at its head.

SEND FOR CATALOGUE.

In addressing don't omit Street or Number.

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

MANUFACTURERS OF BICYCLE SUNDRIES AND

**CLARK'S CELEBRATED LOOP WATCH KEYS.**



Our endeavor to make our **Celebrated Loop Watch Key** the best key, quality and price considered, in the market is a success, as thousands of watchmakers will testify. We solicit the continued sale of these keys for our mutual benefit.

We also manufacture **Crosby's Jewelry Tools, Manicures, Tweezers and Key Rings** in variety.

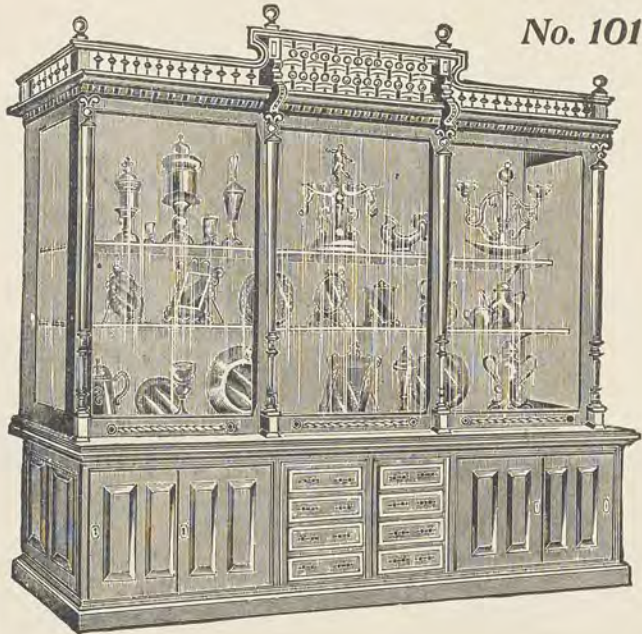
Order keys through your jobber, who will furnish them at our prices. **J. H. Walbridge & Co., Box 1895, New York,** are our agents for Tweezers, Key Rings and Manicures.

**American Show Case and Mirror Works**

L. G. HANSEN,  
PROPRIETOR.

27 Lake St., Chicago

BRANCH,  
SEATTLE, WASH.



No. 101

Our Cases are the finest made and always carried in stock

Wall Cases are made of Walnut, Cherry or Oak—in stock eight to ten feet, or made to order any length and height desired.

We make a specialty of

**STORE FURNITURE**

of best workmanship for the jewelry, silverware and kindred trades at reasonable figures. Complete Outfits made on shortest notice. Original Designs furnished upon application.

Send for our New Catalogue. Mention The Keystone. Call and see us when in Chicago.



**MARINE CHRONOMETERS,**

MANUFACTURED BY

**John Bliss & Co., 128 Front St., New York.**

We have on hand a number of Chronometers, by various good makers, not new, which have been in service for purposes of navigation, and are excellent instruments. They have been put in perfect repair, and will give satisfactory results as to performance. We will sell these Chronometers at low prices, either for cash, or on accommodating terms to suit special cases, or will hire them at moderate rates and allow the hire to apply on purchase.

SEND FOR CIRCULAR GIVING PRICES AND TERMS.

**Cuts, Electrotypes and Printing.**

We do the BEST WORK promptly and at LOW PRICES in  
**JEWELERS' CUTS, ELECTROTYPES AND PRINTING.**

PLEASED TO DO YOURS. SEE OUR BEAUTIFUL EXAMPLES OF HALF-TONE AND GELATINE WORK. Wedding Invitations, Calling Cards, Menus, Etc., Engraved or Printed.

**THE J. J. RYDER CO., 210 WESTMINSTER STREET, PROVIDENCE, R. I.**



No. 143



No. 130



No. 147



No. 136



No. 149

**KETCHAM & McDUGALL**  
MANUFACTURERS OF  
GOLD & SILVER THIMBLES  
AND THE AUTOMATIC EYE-GLASS REEL  
198 BROADWAY, N. Y.

SEND FOR CATALOGUE "E"



No. 144



No. 126



No. 129



No. 151



No. 139



## Without a Peer and Up to Date

The best in all America—that is what we say of W. F. A. Woodcock & Co.'s School, Winona, Minn. This School has been before the public since 1887, and has stood the test of time. It has prosperous graduates all over America and in other parts of the world. If you want to learn Watchmaking, Optics and Engraving, and learn them right, there is where you want to go. Terms reasonable. *Good board and room, \$12.00 per month.* We have everything to recommend this first-class school to your favorable consideration. Pupils are put on actual practical work at once, and advanced rapidly and thoroughly. We expect to have the largest school this season that we have ever had. Ours is a practical school, conducted by practical men, who were reared in the business, who are fully conversant and competent in every branch of the business, and who attend personally to every pupil. Attend this School, and you will never have cause to regret it. Everything will be done for you that can be done. Ladies and gentlemen admitted on the same terms. We have a fine building and everything else we need. We teach more, in less time and for less money, than any other school in America. Everything strictly first-class. Come with us and we will do you good. We fit pupils to take and hold the most difficult positions in watch and jewelry stores, in the largest cities. Let us hear from you in regard to this matter for yourself, your son, your daughter or your friend.

We are yours truly,

**W. F. A. WOODCOCK & CO.,**  
Fourth & Market Sts., WINONA, MINN.

## J. T. SCOTT & C<sup>o</sup>.

4 Maiden Lane, New York


WHOLESALE DEALERS IN

## Diamonds, Watches and Jewelry

FINE SILVER-PLATED  
AND  
STERLING SILVER WARE

WHOLESALE AGENTS FOR

## The Standard Cut Glass Co.

 Our new Catalogue for the Fall Trade is now nearly ready to be issued. It comprises about 325 pages, and illustrates a large variety of new goods in Diamonds, Watches, Jewelry, Silver Novelties, Silver-Plated and Solid Silver Ware, Cut Glass, Clocks, Canes, Pens, Emblem Goods, Badges, etc., etc. If you desire a copy, please send your name and address.

## “Nothing Succeeds Like Success.”

GOODS THAT SELL! Distributed at smallest possible expense. Up-to-date business methods. Prompt and careful attention to all orders. To this we attribute the rapid growth of our mail order business.



(Seth Thomas Name on Dials and Plates.)

No. 5. 6 Size, 7 Jewels, Nickel, Expansion Balance, Glass Enamel Roman or Arabic Dials, with marginal figures. Guaranteed to keep time as close as any 7 Jewel Movement in the market.



No. 1008. 18 Size, 15 Year, Filled, 10 K., Open-Face, Screw Back and Screw Bezel. Fitted complete with Seth Thomas Nickel Movement.

**\$11.96**, according to Keystone Key.  
TERMS NET CASH.



No. 1007. 15 Year, Filled, 10 K., Open-Face, Screw Bezel and Screw Back. Fitted with Seth Thomas Movement complete.

**\$11.96**, according to Keystone Key.  
TERMS NET CASH.



A 240

No. 240 and No. 246. 6 Size, 21 Year, 14 K. Gold Filled, Hunting Cases. Fitted complete with Seth Thomas No. 5 Nickel Movement.

**\$16.56**, according to Keystone Key.  
TERMS NET CASH.



A 246

We are not allowed by the manufacturers of these cases to advertise their name, but EVERY case bears their guarantee, which is recognized by every jeweler as a “guarantee that guarantees.”

**A. H. POND,** JOBBER OF Watches, Clocks, Silverware, Jewelry, Etc., 132 South Salina Street, SYRACUSE, N. Y.

## Items of Interest.

Weber & Phelan are a new firm of jewelers at Burlington, Ia.

E. B. Dabney is closing out his jewelry business in La Plata, Mo.

Charles Buckner has purchased the business of A. Maria, Cuero, Tex.

Chas. Freeman, Mt. Sterling, Ky., has opened a branch store in Seymour, Ind.

C. Morrison, Pierceville, Kansas, has removed his business to Cimarron, same State.

George B. Custer has started in the jewelry business at 1633 Larimer St., Denver, Col.

The Gem Jewelry Co. have succeeded to the business of Mrs. N. T. Smith, Louisiana, Mo.

Mrs. M. A. Selbert, Frankfort, Ky., has moved into her new and elegant store, which is handsomely fixtured.

Charles B. Shelberg, of Los Angeles, Cal., succeeds Al Riley in the store of H. C. Warner, Fresno, Cal.

Max Wolff has opened a wholesale and retail jewelry business at 236 East Tuscarawas Street, Canton, Ohio.

R. T. Smith, of Newton, Iowa, has closed out his business and has gone East to visit his father and mother.

J. A. F. Brownell has opened a new jewelry store in McKinney, Texas., having moved there from Rockwall, Tex.

Charles Niner, Santa Maria, Cal., is about to move into handsome new quarters. Mr. Lutnesky has also moved into new quarters.

A. R. Blackstone, formerly of Jefferson City, Mo., is now doing watch work for Edwards & Sloane Jewelry Co., Kansas City, Mo.

Fred. W. Reich and M. B. Clason have engaged in the jewelry business at 1034 Broad Street, Columbus, Ga., under the style of Reich & Clason.

Mrs. Van Kane has closed a contract with John Phillips & Co., Detroit, Mich., to furnish the fixtures for her jewelry store in Bowling Green, Ohio.

Herman B. Lodde, Lafayette, Ind., now occupies a new room adjoining his former location. The new room is commodious and handsomely fixtured.

J. W. Loyer, formerly with Ladage & Co., Grundy Center, Iowa, will open a repair shop in Newton, Iowa, and will do repairing for the Western trade.

Nathan Marcus, formerly of Wolf & Marcus, West Superior, Wis., has moved over to Duluth, Minn., and embarked in the jewelry business for himself.

Mr. Bulbick, of Hopkins & Bulbick, Edgerton, Ohio, is the happy father of a bouncing boy, who arrived with a surplus of animation and avoirdupois. THE KEYSTONE extends congratulations.

Walter J. Buckley, of Chicago, who was sent out by the Seth Thomas Clock Co., recently completed the setting up of a large four-dial clock in the spire of the city hall in Anaconda, Mont.

The new building to be occupied by A. S. Aloe Co., 517 Olive Street, St. Louis, Mo., is being erected. It will be a four-story edifice, centrally located in one of the best down town streets.

Teetzel & Hayden, of Benton Harbor, Mich., have of late been giving some fine window displays which have attracted a deal of attention among their townspeople as well as visiting travelers.

H. M. Williams & Co. have started in a factory in the Hayward Building, Attleboro, Mass. They will make a specialty of gold-plated seamless wire and tubing, which will be in the market about October 20th.

John Dalglish has bought out the jewelry department of Ladage & Co., Grundy Center, Iowa. His son, James D., will take charge of the business about April 1, 1897. He is now taking a course in Parsons' Watchmakers' School in Peoria, Ill.

Articles of incorporation were filed in the Recorder's office, Kansas City, Mo., September 4th, by the Michaels Loan and Jewelry Co., to operate a business in Kansas City for fifty years. The capital stock is \$3000, divided into thirty shares of \$100 each. The business is to be located at 1100 Walnut Street.

Geo. W. Ludwig, Chambersburg, Pa., recently gave a dinner in honor of his friend and guest, United States Senator-elect Wellington, of Maryland. Mr. Wellington was the orator of the day at the Lutheran reunion at Mont Alto Park, the occasion of his visit.

Wood Brothers, Nashua, Iowa, have succeeded Morse & Wood. Mr. Morse retired from the latter firm in July, and G. B. Wood continued the business in company with his brother, C. S. Wood. The Messrs. Wood are young men of business capability and enterprise.

Albert Feldenheimer, of Portland, Oregon, widely known as one of the leading retail jewelers of the Pacific Coast, has been carrying on a very successful auction sale the past month, previous to removal to his new store. P. J. Burroughs, the Chicago auctioneer, conducted the sale.

Miss H. B. Manning, Santa Barbara, Cal., has decided to continue the business of her father, who died last November, and to that end has purchased from her mother what remained of the stock. THE KEYSTONE commends Miss Manning's enterprise and wishes her all success.

Joseph B. Ingalls, with A. R. Knights & Co., Dubuque, Iowa, was married September 2d to Miss Katherine Kadel at the home of the bride's parents, Moline, Ill. Luther S. Hopkins, with the same firm, was married on September 19th to Miss Cora May Briggs at the home of the bride's parents, Marinette, Wis. THE KEYSTONE extends congratulations to both couples.

A. W. Ford & Son is the name of a new jewelry firm at Freeport, Ill., A. W. Ford having taken his son, Geo. H. Ford, into partnership with him. Mr. Ford, Sr., established himself in business in Freeport in 1855, and has been in business ever since, except eight years when he traveled for the Johnston Optical Co., Detroit. George Ford has been with his father for the past seven years.

Heeren Bros. & Co., Pittsburg, Pa., designed and manufactured an exceedingly handsome badge for the telegraphers in convention last month in that city. The badge was of silver and bronze, with the head of Morse in relief on one side and of Reed on the other. Five hundred of these were made, with ten solid gold ones. One of these was for Andrew Carnegie, who was once a telegrapher.

W. F. Sellers & Co., the new jewelry firm of Altoona, Pa., have opened for business. The firm is composed of Dr. S. M. Sellers and his son, William F. Sellers. Dr. Sellers was for many years one of Altoona's most successful pharmacists. The junior member of the firm was formerly with Rudisill Bros., but later graduated from the Waltham School of Horology and from the Foster School of Optics in Boston. The optical department of the new store will be in charge of Dr. L. M. Phillips, a well-known optician of Altoona. C. S. Nicholson, also a horological graduate, is connected with the firm.

The following pupils recently graduated in the South Bend College of Optics, South Bend, Ind.: C. B. Nox, Farmer City, Ill.; F. W. Terhune, Viroqua, Wis.; Dr. O. R. Wilson, Muskogee, Ind. Ter.; A. D. Long, New Richmond, Ind.; Dr. D. L. Davies, Nelson, Neb.; A. C. Clemens, Moorefield, Ohio; Miss Laura B. Bailey, Hamden Junction, Ohio; John H. Leslie, South Bend, Ind.; H. C. Rupe, South Bend, Ind.; H. M. Cook, Meyersdale, Pa.; H. G. Patton, Osborn, Ohio; Oscar Becker, Findlay, Ohio; E. A. Buder, Cairo, Ill.; C. S. Bates, Harmony Grove, Ga.

G. M. Tripp, Adrian, Mich., is credited with the most impressive display at the recent Tri-State Band Reunion in that city. The display was an elegant open landau drawn by a team of handsome white horses, with blue broadcloth blankets, on which was lettered in white, "Tripp, the Jeweler." The blankets were trimmed with heavy white fringe of white balls. Seated in the carriage was Miss Jennie Ladd, a flaxen-haired little beauty, who wore a sparkling tiara of white stones, her dress being black crepon with large sleeves. The yoke and edge were studded full of diamond studs, pins and brooches, while her hands were covered with jewels. The little lady carried a black satin parasol. On the end of each rib of the parasol was fastened a ladies' gold watch, also chains, spoons, etc. The harness was trimmed with blue and yellow satin ribbon, made in large bows with long ends, and the carriage handles, lamps, whip, etc., were trimmed in the same way, about one hundred yards being used. The horse that the mounted guard rode had blankets and bridle trimmed to match the carriage. The guard on the carriage and the one mounted were both armed, to guard the little queen and her costly adornments.

C. M. Kinsel, Columbus, Ga., has given an interest in the business to F. T. Petri, who has been an employee for the past ten years, and the title of the concern, after October, will be Kinsel & Petri. Mr. Petri will enter into another partnership of a more sentimental character on November 4th. THE KEYSTONE wishes him well in his matrimonial as well as his business venture.

Harry Harmon, Afton, Iowa, recently moved to his new brick building, where he has an exceedingly handsome store. Opening day was quite a local event. The store with its beautiful fixtures and stock was a dream, and during the entire day and evening a mandolin band discoursed the sweetest music to the delight of the many patrons. Mr. Harmon presented each customer with a pretty souvenir, consisting of a china sugar bowl and cream pitcher. Hundreds of them were carried away and will ever be a reminder of the grand opening of Harmon's new store.

*"I cannot get along without The Keystone. I think it is the best paper ever published for the jeweler."*—A. J. Turner, jeweler, Hebron, Maine.

### For Perspiring Hands.

NATICK, MASS., September 26, 1896.

In the August KEYSTONE you gave a receipt for keeping the hands free from perspiration. I have tried the following method with good success: Wash the hands with a good borax soap, using either hot or cold water—cold preferred—and let them dry in the air or sun; do not wipe them.

H. L. GLEASON.

### Hoist by His Own Petard.

"Will you please examine that diamond," said a man who had stepped into a downtown jewelry store yesterday, "and tell me what you think of it? If it is a good stone I think I will buy it."

The jeweler took the gem, which was unset, and looked at it critically for a moment. Then, in confidential tones, he said: "Well, to tell you the truth, that isn't a very good stone. It hasn't much fire; it is badly cut, and there is something here that looks very much like a flaw."

Then he held the diamond under a microscope and examined it carefully, finally observing:

"No, it isn't exactly a flaw, but I should not call it a perfect stone. Now, if you want something really fine, I have here—"

"Excuse me," the other man interrupted. "I guess I will not buy a diamond to-day. This is a stone that one of your clerks let me take Saturday on approval. I deposited fifty dollars on it. Please let me have my money, and we will call the deal off!"

The money was handed over without any comment, but there was a grieved expression upon the jeweler's countenance that told the story of a lesson well learned.

### The One She Thought the Best.

She had won the reputation in the highest social station  
Of being highly cultured and a critic, too, at that;  
She'd a literary training, and was through the country gaining  
Undoubted fame for lecturing wherever she was at.  
You could bet your bottom dollar she was just a finished scholar.  
And knew the why and wherefore of 'most every blessed thing;  
And, whatever crowd she sat in, she could talk in Greek or  
Latin,  
And wonderful the knowledge into argument she'd bring.

Once, when summer's heat was burning, she was on the coast  
sojourning,  
And a crowd of literateurs occupied the same hotel.

So she ruled the small dominion—they respected her opinion,  
For they knew not one among them could her mental gifts  
excel.

They knew nothing could escape her when she read her Sunday  
paper,

So they started a discussion, on one quiet day of rest,  
To determine, by their testing, which was the most interesting  
Article in all the paper, asking which she thought the best

Many a bright and potent critic thought some essay analytic,  
Or some tale of modern travel, would have influenced her most,

Or a scientific "reader," or a deftly written "leader,"  
Would have been the contribution of which she would likely  
boast.

But, alas for their conjectures! when this lady of the lectures  
Gave her very quick decision all her auditors were sad:

For, with little hesitation, she replied with animation,  
"I think the best of all is McIlrooney's dry goods ad."

E. R. Valentine, in "Fame."

|                   |                                     |                 |
|-------------------|-------------------------------------|-----------------|
| TRADESMAN'S PAPER | SEND FOR SAMPLE COPY OF             | DEALERS NEED IT |
|                   | <b>CYCLING LIFE</b>                 |                 |
|                   | IF INTERESTED IN<br><b>BICYCLES</b> |                 |
|                   | MONON BUILDING, CHICAGO, ILL.       |                 |

*You Want to Buy Good Goods at Low Prices.  
This is the Need of the Hour.*

We make them, have them in stock, and are headquarters for

## Diamond Mountings.

Our line is complete in the latest designs in Rings, Locketts, Pendants,  
Scarf Pins and Link Buttons.

## Mounted Goods

OUR SPECIALTY AND OUR PRIDE.

In DIAMONDS and OTHER PRECIOUS STONES we have a large variety.  
Goods sent on approval to responsible dealers. Special orders promptly  
executed.

## THEO. SCHRADER & Co.

Importers of Diamonds and Precious Stones and Manufacturing Jewelers,  
100 State Street, CHICAGO.

*SPECIAL.*—Our stock of Cluster Rings is more attractive than ever,  
we having added many new combinations of Diamonds, Rubies, Sapphires,  
Olivines, Emeralds and Opals.

ASK TO SEE our new line of popular price Stone Rings, in 14 K.

ESTABLISHED 1863.

# Victoria

The Best  
Kerosene  
Oil Stove  
In the World!

Free from Smoke, Smell or Danger.  
Safer than Coal or Gas.  
Perfect Combustion, and  
Great Radiating Surface.

In fact, we guarantee it to be the best Stove  
in the country for the money, and equal to  
many of the best \$12.00 Stoves. No family  
should be without one.



NO. 70. VICTORIA, FULL BLACK, \$6.50.  
NO. 71. VICTORIA, HALF NICKEL, 7.50.

## The George Bohner Company,

THE OLDEST AND  
ONLY EXCLUSIVE Lamp House IN THE WEST.

ILLUSTRATED CATALOGUE of our Immense Line of Fine LAMP GOODS and TABLES,  
on application, TO DEALERS ONLY.

83 & 85 Wabash Ave.,  
Chicago, Ill.

## One Thousand Elgin Movements

ALL NEW GRADES. JUST OUT.

|                                             | List Prices. |
|---------------------------------------------|--------------|
| No. 171, NICKEL, 18 Size, 7 Jewel, Hunting, | \$ 8.00      |
| " 172, NICKEL, 18 " 7 " Open-Face,          | 8.00         |
| " 175, NICKEL, 6 " 7 " Hunting,             | 10.00        |
| " 173, NICKEL, 0 " 7 " Hunting,             | 10.00        |

PRICES LESS Full Catalogue and Cash Discounts.

## How Many?

About October 10th look out for our New Fall Catalogue and  
Annual Price-List. Write us if not received.

## B. F. Norris, Alister & Co.

113 and 115 State Street,

CHICAGO, ILL.



**American Hand-Decorated Porcelain Manicure Set, 5 Pieces.**

Large Tray is 10 inches long. **SET, \$3.50**

MADE BY THE ART CHINA DECORATING CO.

A VARIETY OF HANDSOME DECORATIONS made in a hundred articles. The line consists of

- BRUSH AND COMB TRAYS,
- PEN TRAYS,
- PIN TRAYS,
- OLIVE DISHES,
- SALAD DISHES,
- CELERY TRAYS,

and many fancy, useful articles, at prices which compel ready sales. The articles are mainly such as can be sold for \$2.00 to \$5.00 each, and leave handsome profits. Sample packages of \$25.00 value upwards sent to any address on receipt of the money or New York references. The selections will be carefully attended to.

**Levy, Dreyfus & Co.,**

SOLE AGENTS for the Art China Decorating Co.,

9 & 11 Maiden Lane, NEW YORK.

**Printers' Ink Helps . . . Advertisers!**

It's a weekly journal, furnishing you with practical advice and reliable information about every detail of the business of advertising.

Enables you to profit by the experiences—and adopt the methods—of successful advertisers, as it gives complete information about every way of advertising which they have found to be feasible and profitable.

Instructs you—and exemplifies—how to write advertisements that will sell goods; or the "Ready-Made Ads." it contains can be used to accomplish the same object.

Contains timely hints about mediums, tending to aid you in selecting profitable ones to advertise in.

Address  
**PRINTERS' INK,  
10 SPRUCE STREET,  
NEW YORK.**

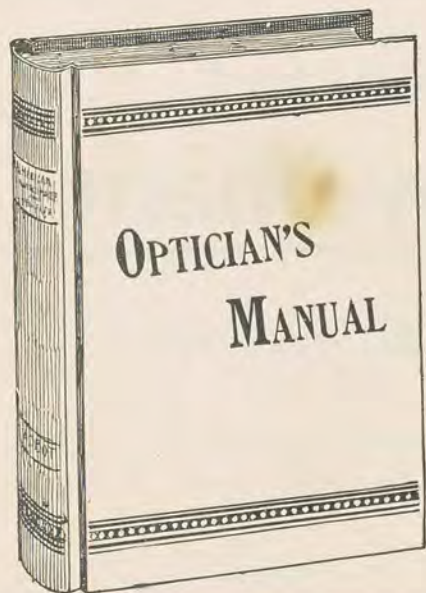
Subscription price, \$5 a year. Sample copy, 10 cents.

**S I G N S I G N S I G N S**

I make the largest and most perfect watch signs in the world. With or without illuminated dials. They are the latest improved, and have advantages superior to all others. They are as perfect in proportion as a watch case, and also very beautifully and artistically designed. They are made of heavy sheet zinc, painted with white lead and gilded with the best XX gold leaf, and warranted in every particular. These signs can be placed on a post, and are so constructed as to revolve, or they can swing on a rod from a building. I make different sizes. Weight of signs varies from twelve to eighty pounds. The best advertisement for your place of business is one of these elegant signs. They are sure to attract attention, and always prove a paying investment. Price-list and photos. furnished on application. Address

**Lon Barnhart,**

670 W. Madison St., Chicago, Ill.



**Standard Work on Optical Science**

At the urgent solicitation of the optical readers of THE KEYSTONE, we have published in book form the Optician's Manual, which has been running, as a serial, in our journal since April, 1890. KEYSTONE readers need not be told that this will be the standard work on Optics. It contains about 400 pages, is handsomely bound in cloth, and costs only \$2.00. To secure a copy of the first edition, order early. All remittances must be sent to

**THE KEYSTONE,**  
19th & Brown Streets,  
Philadelphia, Pa.

**The Latest Improved Francis Engraving Machine**

LIST \$50.00.

TYPE AND ATTACHMENTS EXTRA.

Complete with Nos. 3, 4 and 6 type, coffin-plate, hollow ware and ring and watch case attachments and ring tool No. 4, \$72.00.

Ninety days time given to responsible parties, or a discount of 6 per cent. for cash with order. When ordered by parties known to be responsible or when cash accompanies the order, the machine is always shipped on the day or day after the order is received. Address

**A. E. FRANCIS,**  
780 Cedar Avenue,  
CLEVELAND, OHIO.



**The Jeweler's School of Engraving**  
ESTABLISHED 1889  
8th Successful Year  
over 300 GRADUATES

"FIRST ENG. SCHOOL In This Country,"  
"ONLY SCHOOL recognized and patronized by our leading Jewelers and BUSINESSMEN"

Summer Class 1895

LETTER AND MONOGRAM Engraving Dept.

"BEST SYSTEM Practical, Individual INSTRUCTIONS: in artistic Lettering and Monograms, Designing, Etching CHASING, ENAMEL CUTTING"

1312 COLUMBUS MEML. BLDG. CHICAGO, COR. STATE and WASHINGTON-STs.

**RICHARD O. KANDLER, PROP'R.**  
and CHIEF INSTRUCTOR.

THE BARBER JEWELRY MFG. CO.  
39 VESEY ST., NEW YORK,  
MANUFACTURERS OF

**PYRITES**  
OR SULPHUR STONE  
**JEWELRY**

IN GOLD, STERLING SILVER AND ROLLED-PLATE,  
ALSO ALLIGATOR TEETH SEA BEANS, AND  
SATIN SPAR JEWELRY.

Something New, Useful and Practical.  
**THE SIMPLEX WATCH CAP STENCILS.**



The Simplex Watch Cap Stencils will save time for the best of engravers. To the novice they should prove invaluable, since with them he will be able to obtain results that otherwise would require long practice. Full set consists of Six Stencils (Brass 30 Ga.) bent to fit all sizes of caps. Flat Stencils furnished to order only. Price per set, 50 cents.

MANUFACTURED BY **ADOLPH MUEHLMATT,**  
S. E. Cor. 5th and Elm Streets, Cincinnati, Ohio.

**JEWELERS', PLATERS',  
WATCH CASE MAKERS'  
AND SPECIAL  
BRUSHES**

MANUFACTURED BY  
**EDWARD E. GNICHTEL,**  
15 TO 19 GREEN ST.,  
NEWARK, N. J.

**A CUCKOO!**

Amusing, Interesting and  
**ACCURATE TIMEKEEPER.**

Call on or write  
The Only Manufacturers of  
**CUCKOO CLOCKS** in America,  
**American Cuckoo Clock Co.**  
37 & 39 N. Ninth Street,  
PHILADELPHIA, PA.  
NEW YORK OFFICE, 45 Maiden Lane.

SEND FOR OUR CATALOGUE.

**ENGRAVING**  
OF THE HIGHEST ORDER  
BY EVERY PROCESS  
KNOWN TO  
MODERN ART.

*Grand Rapids Engraving Co.*  
**GRAND RAPIDS, MICH.**

**A. VESTER & CO.**  
24 Calender Street, Providence, R. I.

Specialists on  
*Metal Trimmings and Campaign  
Ornaments, Lapels, Stick Pins,  
Ribbon Badges, Bow  
Knots, etc.*

Also  
*Leather Findings, Novelties, But-  
tons, Scrolls, Comb and Pocket-  
book Trimmings.*

Which shall it be,  
**Gold OR  
Silver?**

You will be pleased  
with the results in  
either metal, if you  
try

**J. J. DONNELLY,**  
"Plater" to the Trade,  
73 Nassau St.,  
NEW YORK.

AWARDS FOR  
**H. H. Heinrich's Marine Chronometers.**  
CHICAGO, 1893 PARIS, 1889 BERNE, 1859

A large stock of new and second-hand CHRONOMETERS always on hand to rent or for sale at moderate prices; rent to apply on purchase. My second-hand Chronometers are made up equal to new, and adjusted to the average rate of 5 to 10 seconds per month. Special terms to suit convenience of customer.

Repairing, springing and re-adjusting Chronometers and Fine Watches for the trade.

**H. H. Heinrich,**  
102 Fulton St., Rooms 503-4, NEW YORK.

CAN'T YOU SEE  
THAT  
**SANGER'S  
RING BUFFS**  
ARE  
THE THING  
FOR YOU?

**C&O  
ROUTE**

**Chesapeake and Ohio Route**

"The Rhine, the Alps and the Battlefield Line."

The most interesting historic associations and the most striking and beautiful scenery in the United States are linked together in this system.

THE  
**Famous F.F.V. Limited**  
FAST FLYING VIRGINIAN

IS THE ONLY SOLID VESTIBULED TRAIN,  
ELECTRIC-LIGHTED, STEAM-HEATED,  
WITH THROUGH DINING CAR,  
BETWEEN

**New York, Philadelphia, Baltimore  
and Washington,**  
AND

**CINCINNATI,  
LOUISVILLE WEST**  
AND THE  
OBSERVATION CAR ATTACHED.

**H. W. FULLER,** GENERAL PASSENGER AGENT,  
WASHINGTON, D. C.

**SCHIRMER'S**  
**Gold and Silver Ferrules**  
for mending Riding Temples.  
Price, 75 cts. Put up assorted  
in three sizes so as to fit any size  
riding temple.

FOR SALE BY ALL JOBBERS.

**CAMPAIGN  
BUTTONS**

In Enamel and Porcelain.  
Colors "burnt in." Address,  
**O'HARA WALTHAM DIAL CO.**  
WALTHAM, MASS.

Price  
Reduced to  
**\$8.00**

No cheap imported imitation, but the genuine  
**Houghton  
Face-Plate**  
for \$8.00. Excellent finish, and warranted to run true. See that  
**J. HOUGHTON,**  
Manchester, N. H.  
is stamped on them.

**WHAT YOU WANT is**

**R. C. SCHNEIDER'S  
LATEST PRICE-LIST OF  
WATCH REPAIRING  
FOR THE TRADE.**

All work done in a first-class manner, guaranteed, and at short notice, at the lowest price consistent with good work.

**R. C. SCHNEIDER,**  
177 and 179 Broadway, Room 20,  
NEW YORK.

**B.F.E.C.**

In dull times like these, put in a Plating Outfit and increase your profits.

Our Eureka Dynamos are what is wanted for a small plant for electro-plating. They will plate with either gold, silver, nickel or copper, and with an extra armature will run one sixteen candle-power incandescent lamp or two of eight candle-power.

Our Wonder Bicycle Foot-Power Dynamo combines dynamo, polishing lathe and demagnetizer.

Our Gem and Excelsior Dynamos will do all kinds of plating, remove fire-coat, and run our Champion Demagnetizer. Dynamos and Motors of all sizes and powers.

Files recut by electricity. Recipe with all dynamos.

Our Improved Fuller Batteries for induction coils in producing X rays are unequalled for power and durability.

For anything in the electrical line, write to us.

**Ben. Franklin Electrical Co.**  
727 Filbert Street,  
Philadelphia, Pa.

**G.F. Wadsworth,**  
**Watch Case  
Manufacturer  
and  
Repairer.**

Everything in the line of  
**Watch Case  
Repairing,  
Gold and Silver  
Plating,  
Satin Finish,  
Engraving  
and  
Engine Turning**  
Old Cases  
Made New.  
Charges  
reasonable.

**182  
State Street,  
Chicago, Ill.**

**Campaign Badges, Cheap.**

We are closing our McKinley and Bryan badges out at **88 cents** per hundred. Cash with order.

**G. W. MARQUARDT & SONS,**  
103 STATE STREET, CHICAGO.

**\$35** Buys '96  
**Bicycles.**

Send for circulars and particulars.

We tell you how we can do it.  
**F. B. CATLIN, WINSTED, CONN.**

**IMPORTANT!**

Send your work to Olof Pearson, expert watchmaker for the trade; fine watch repairing, demagnetizing, etc., all kind of wheels cut to order at very lowest prices. All work guaranteed. Mail orders promptly attended to. Room 1313, Columbus Memorial Building, Chicago.

**Sterling  
Silver  
Novelties**

NO  
OLD STOCK

New and Attractive Designs  
New and Original Ideas

**H. E. GOFF**  
NORTH ATTLEBORO, MASS.

SEND FOR SAMPLE ORDER

Indispensable to the Retail Jeweler.

**Wells' Patent Ring Adjuster** lets the ring pass over large joints with ease; is a perfect guard for the ring, besides holding the top of ring in desired position. It can be fitted to any ring in five minutes, without marring the ring, and may be removed instantly. It also makes the ring a perfect fit and often saves cutting. 1 doz., assorted sizes, solid 10 K. gold, \$3.00 net. 1 doz., metal, assorted sizes, 75c. net. Ask your jobber for them, or I will send on receipt of above price (8 c. extra if registered). The retail price, fitted, is, gold, 50 to 75 c. each; metal, 25 c. each. Address, **CHESTER H. WELLS,** Jeweler, Meshoppen, Pa.

**Expert Watch Repairing  
FOR THE TRADE.**

Swiss, English and American Watches, Repeaters and Chronographs skillfully repaired by Expert Watchmaker with years of Swiss experience. All work guaranteed.

Send for Special Price-List to the Trade. Mail Orders promptly attended to.

**C. CULMAN,**  
Room 301 Globe Democrat Building  
ST. LOUIS, MO.

Complicated Watches a Specialty

Money and Labor saved by  
**SCHIRMER'S  
PIVOT CAPS** \$1.00 PER BOX.  
4 dozen Caps  
in a Box.

These Caps will fit the shafts of any wheel in any watch.  
FOR SALE BY ALL JOBBERS.

**HOBBS BROS.,**  
Trade Watchmakers, Wholesale Material  
Dealers, etc.

Will send the following Cabinet of Material, which every jeweler requires on his bench:

1 oak or cherry cabinet, with 12 drawers and 10 compartments, 10 3/4 x 4 x 4, just suitable for bench, \$3.50. 1 gross jobbing stones, assorted, \$1.50. 1 gross pin tongues, \$1.50. 1 gross catches, \$1.50. 1 gross joints, \$1.50. 1 gross saws, \$2.00. 1 dozen R. P. scarf pin backs, 70 cts. 2 dozen F. G. scarf pin backs, 40 cts. 1 dozen R. P. button backs, \$1.30. 1 dozen R. P. spiral stud backs, 70 cts. 1 dozen R. P. spiral extra heavy, \$1.30. 1/2 dozen R. P. bars, gents', \$2.00. 1/2 dozen R. P. bars, ladies', \$1.50. 1 dozen F. G. bars, \$1.50. 1/2 dozen R. P. swivels, \$2.00. 1 dozen F. G. swivels, \$1.30. 1/2 dozen carborundum hone, 4 x 1 1/2 x 1/2, \$1.00. 1/2 dozen bottle 15m. carborundum powder, 60 cts. 1/2 dozen carborundum wheel, 40 cts. 1/2 dozen fine watch tweezers, 80 cts. 1/2 dozen soldering tweezers, 20 cts. 1/2 dozen fine watch oil, 30 cts. 1/4 ounce silver solder, 70 cts. Total, \$28.20.

For \$21.00 net, according to Keystone Key.  
CASH WITH ORDER.  
Room 723, Mooney Building, BUFFALO, N. Y.





# THE JEWELERS' AUCTIONEER.

"On yester night two weeks—not quite"—said neighbor Giles to him,  
 "You were so queer, no jeweler so desperate and grim,  
 While now no one so full of fun; what brings you such good cheer?"  
 "My debts are paid, my sale was made by Triplett, auctioneer!"

But few jewelers have an auction "just for the fun of it," or to get rid of out-of-date goods. They want to make something—get some *quid pro quo*, alias "filthy lucre"—to pay for their time, trouble and advertising expenses. Now my experience enables me to show them just how to do this, and this experience is at their service—that's what I'm in the business for—not for my health!  
 My plans and methods do not emanate from theory, but are the development of years of study devoted solely to auctioning Jewelry and Fine Art Goods. This study and experience are worth dollars to you, if you choose to avail yourself of them.  
 To say that my plans and methods are far superior to those of other auctioneers would not be modest; to say they are not, would not be true. Imitated by all, they are equaled by none.

A Few Late References from over 400

John W. Haskins, Houston, Tex.  
 Carruth & Coleman, Denver, Colo.  
 Ira Border, Abilene, Texas.  
 Third National Bank, St. Louis, Mo.  
 F. W. Swan, Muscatine, Iowa.  
 Miller, Cherry & Co., Ft. Worth, Tex.

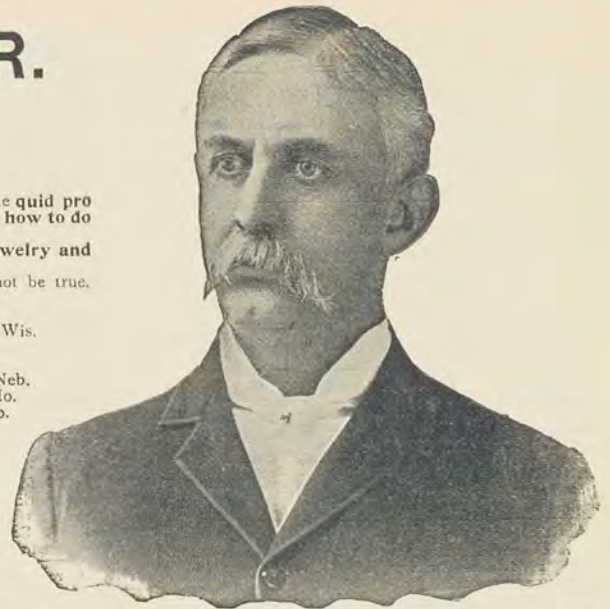
James Bros., Columbia, Tenn.  
 E. W. Mitchell, Waco, Tex.  
 J. W. Paulen, Fredonia, Kan.  
 S. P. Noel, Springfield, Mo.  
 S. H. Morrison, Nebraska City, Neb.  
 J. L. Sievert, Springfield, Mo.

G. A. McHenry, West Superior, Wis.  
 T. S. Euper, Van Buren, Ark.  
 W. W. Pearce, Wichita, Kan.  
 Arch L. Coleman, Plattsmouth, Neb.  
 Grimes & Venable, Lexington, Mo.  
 G. H. McKelvey, St. Joseph, Mo.

See back numbers for dozens of others. I also refer to manufacturers and jobbers of silverware and jewelry throughout the United States generally. Now is the time to date Fall and Winter sales.

For greater convenience of the trade, I have removed my office and residence to Kansas City, Mo.  
 Address all letters and telegrams:

**FRANK TRIPLETT, 1233 Harrison St., Kansas City, Mo.**



S. A. HASELTINE.

## Jewelers' Auctioneer

S. A. HASELTINE,

758 Lincoln Street, Springfield, Missouri.

Give value of stock, object of sale, etc.

**CORRESPONDENCE CONFIDENTIAL.**

My methods will turn your stock into cash and preserve your reputation.

**SATISFACTION GUARANTEED.**

(See pages 395, May, 410, June, 563, July KEYSTONE, for other references.)

FORT WORTH, TEXAS, September 5, 1896.

Col. S. A. Haseltine, of Springfield, Mo., has been selling for us for four weeks. He is an honest, hard worker, and gets and holds the confidence of the people. With his excellent and impressive description of goods he gets the best prices. We can recommend him in the highest terms. He has held two successful sales for us. In raising money he will not injure your reputation.  
 MOREHOUSE & McBRIDE.

March, 1896, Lawrence, Kan.—Wm. M. Rowe.  
 April, 1896, Pleasanton, Kan.—Geo. W. Waymere.  
 April, 1896, Salisbury, Mo.—C. M. Rumsey.  
 May, 1896, West Point, Miss.—Wolff & Leslie.  
 June, 1896, Sherman, Tex.—Burnett Ansley Jewelry Co.  
 July, 1896, Memphis, Tenn.—Thayer Jewelry Co.

## Here is a Man Who Can Save Your Home, Your Business and Your Reputation.

A man with twenty years' experience in every branch of the jewelry business; a man with ability and energy, who will put in goods on memorandum to freshen up your stock, make your sale, make you money and do it quick. Address

In Care The Murray Jewelry Mfg. Co.

Western Office,  
 Room 602, No. 126 State Street,  
 Chicago, Ill.

DAYTON, OHIO.



Your truly,  
 Dan I. Murray

Read what one Jeweler has to say, and I can refer to many more:

TO BROTHER JEWELERS:

I wish to say that Mr. Dan I. Murray, of Dayton, Ohio, just finished a five days' auction sale for me. He put in a line of cheap goods on memorandum that I made big profits on, and closed out my old stock and it more than averaged cost. He sold goods and got cost for them that had been in my house for five years, and were worthless. I can recommend Mr. Murray as a gentleman and honest and upright in his dealings, and he can make you money by his plans of selling, and do it quickly. It is with pleasure that I recommend him to the trade.

Very respectfully,  
 A. WHITTINGTON, Jeweler,  
 Jamestown, Ohio.

## Watchmakers! Watchmakers! Watchmakers!

### The Philadelphia College of Horology

has few equals and positively no superiors.

F. W. SCHULER,  
 PRINCIPAL.

1213 Filbert St.,  
 Philadelphia, Pa.

Now is the time to make application for a bench. It is not the largest, but the **FINEST** school in the country, because we only take a limited number of students, and give each student our personal attention. Therefore we can guarantee you success. Write for our **New Prospectus.**

**WE TEACH**  
 Watchmaking, Engraving, Jewelry Work and Optics.

**WE TEACH**  
 you thoroughly all branches of the Jewelry Business.



A KNIGHT OF THE HAMMER

## H. J. HOOPER,

Jewelers' Auctioneer,

220 SUTTER STREET,

SAN FRANCISCO, CAL.

Fifteen years' experience as Jewelers' Auctioneer.

Endorsed by Leading Jobbers of the Coast.

I guarantee the success of any sale I undertake.

TERMS REASONABLE.

ALL CORRESPONDENCE CONFIDENTIAL.

WRITE FOR PARTICULARS.

A few references of sales made during the dullest season in California:

Woodland, Cal., April 28, 1896.

TO WHOM IT MAY CONCERN:

Mr. H. J. Hooper has just finished a sale for me. He realized \$4800 for me in eleven days. I can highly recommend him as an auctioneer, orator and a gentleman.

Yours truly,  
 A. E. BOCKS.

Successor to Wm. Goeggel.  
 San Jose, Cal., July 29, 1896.

TO WHOM IT MAY CONCERN:

Mr. H. J. Hooper has just completed a successful auction sale of two weeks for me, at my place of business, known as the Ark Bazaar, the stock consisting of bazaar goods of all classes. I can highly recommend him to any firm who may wish to employ an auctioneer. I will also state that Mr. H. J. Hooper will faithfully fulfill any contract he makes. I shall be pleased to give further information by addressing mail to me.

Yours respectfully,  
 J. M. SCHLESINGER,  
 190 South First Street.

Modesto, Cal., August 24, 1896.

TO WHOM IT MAY CONCERN:

We do most cheerfully recommend Mr. H. J. Hooper as an **AI** auctioneer. He is an orator, both entertaining and amusing. He has just closed a most successful sale for us. After the second day we were compelled to move to the largest public room in Modesto, and then we could by no means accommodate the crowds. When the people once hear him they will not stay away. He is a first-class salesman and thoroughly understands diamonds, watches, clocks, jewelry and silverware of all the leading manufacturers. There is none better than Hooper.  
 ANDREWS & WOOD, Jewelers.

Modesto, Sept. 12, 1896.

TO WHOM IT MAY CONCERN:

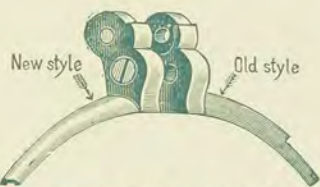
Mr. H. J. Hooper, of San Francisco, has just closed a most successful auction sale for us, and to say that we are satisfied with him is expressing it mildly, as we consider the sale phenomenal (amounting to \$45,000), considering the time of year and the condition of the country. We most cheerfully recommend him to any one. Respectfully,

L. E. GILBERT & SON.



We have just issued the most complete Optical Catalogue in the trade, with lowest trade prices.

The only trade catalogue for 1896 issued by a manufacturer. If you have not received one, send on your card.



**Gold Spectacles and Eye-Glasses**

Made by patented process owned and controlled by us, and guaranteed not to break at joints and nosepieces. Quality guaranteed. For prices see catalogue.

THE BEST KNOWN REMEDY FOR WEAK EYES



**The Great German Eye-Water**

Cures inflammation, scaly and granular eyelids. Recommends itself.

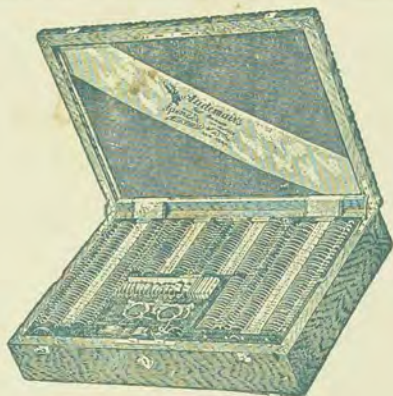


WE MAKE SPECTACLES AND EYE-GLASSES

of every material and grade, at prices that will secure your patronage.

RIMLESS OR SKELETON SPECTACLES AND EYE-GLASSES

that are made of Nickel Silver will not oxidize, rust, tarnish or corrode under ordinary climatic conditions, and have earned the name "Non-Corrosive."



**Audemair Trial Cases**

None better made. If you see it you will not be happy till you get one. Complete—Accurate. Best trial frame made. Antique oak or leather case.

# Optical Directory

WE MANUFACTURE AND IMPORT OPTICAL GOODS EXCLUSIVELY



## Audemair Opera-Glasses

NONE BETTER MADE

STYLE, QUALITY, FINISH AND LENSES UNEQUALED, AT PRICES THAT INSURE YOU RAPID SALES AND HANDSOME PROFITS.

### The Audemair Opera-Glass with The Spencer Patent Attached Focusing Handle

IS A THING OF BEAUTY AND JOY. HANDLE IS TELESCOPIC AND FOLDING, HENCE NOT AN INCUMBRANCE.

SEE CATALOGUE FOR PRICES, WHICH ARE LESS THAN ANY OTHER.

The items mentioned form a part of our 200-page Catalogue, which is up to date.

If you have not received one, send us your business card.

## OUR R DEPARTMENT APPEALS TO YOUR ATTENTION

in reference to

QUALITY, ACCURACY, LOW PRICE AND PROMPTNESS.

We return work same day.

Buy Spectacle and Eye-Glass Cases



direct from the makers and save a profit.

Special styles to order. Send your samples for estimate, and a trial order will convince you.



Gold Filled Spectacles and Eye-Glasses

rimless and with frames, made from Burdon seamless filled stock, are taking the place of low karat gold and give entire satisfaction. Made with plated, gold filled or solid 10 K. end pieces.



Reading Glasses in German Silver, Nickel and Celluloid at extraordinarily low prices.

Also Magnifiers of every description.



### The Spencer Optical Institute

"THE RECOGNIZED OPTICAL SCHOOL" FOR BUSINESS MEN. CLASSES CONVEY FIRST TUESDAY EACH MONTH. THE COURSE IS THOROUGH, PRACTICAL, COMPREHENSIVE, NON-CLASSICAL.

IF YOU CANNOT SPARE THE TIME, OUR CORRESPONDENCE COURSE WILL HELP YOU AND YOUR BUSINESS. SEND FOR AN APPLICATION BLANK.



We control the production of two large factories in Paris, and can supply

Opera, Field and Marine Glasses to suit your trade, at unheard-of prices.

**Spencer Optical Manufacturing Co. 15 Maiden Lane, New York**  
 FACTORIES—New York, Newark, Paris

**An inspiration of the depression** was a determination on our part to meet the good times with such an array of watch cases—new models, new styles, new patterns of engraving—as the trade had never before seen. We were encouraged to this undertaking by the certainty that the trying depression would reveal and discredit the dishonest watch case makers, and fix *our* product more firmly than ever in trade favor. We have the personal assurance of the jewelers that such is actually the result. It was due us, then, to make an extraordinary effort, and pages 806 to 811 in this issue will convey as good an idea as limited space will permit of the extent of our success.

**Keystone Watch Case Company,**

19th & Brown Streets, Philadelphia, Pa.