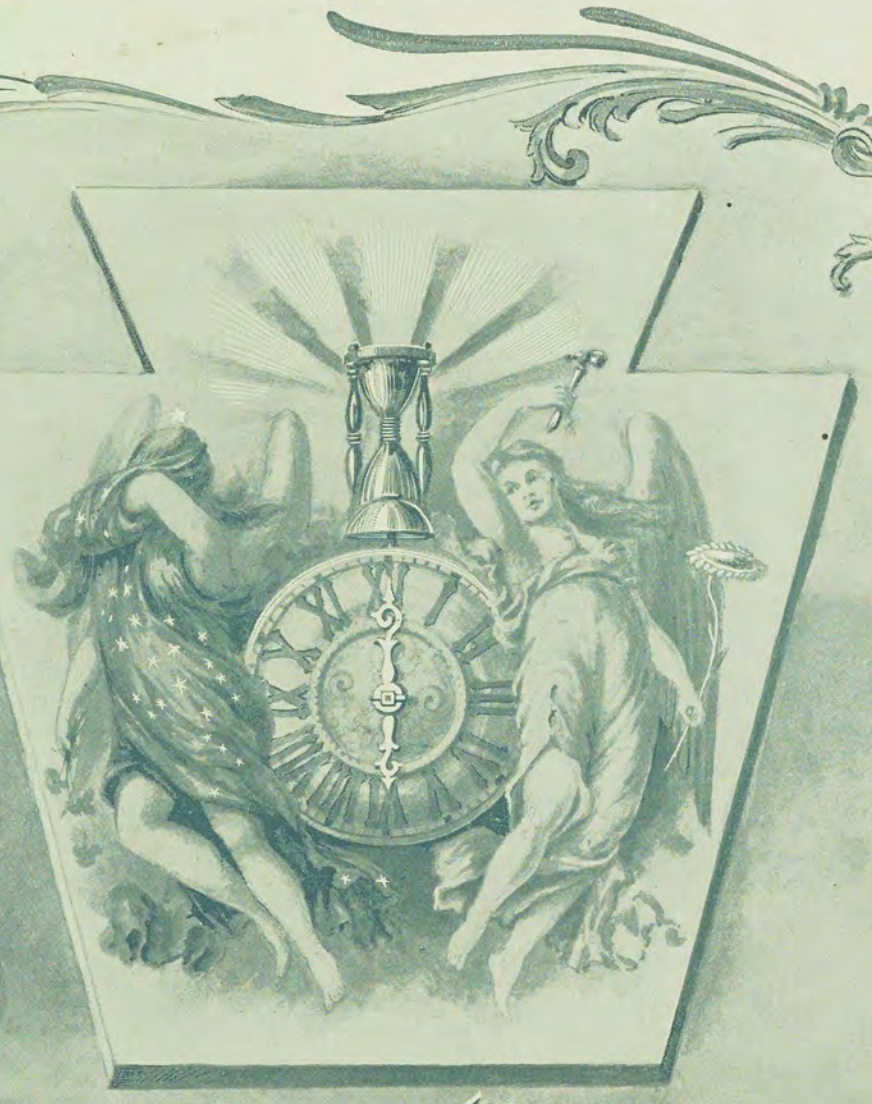
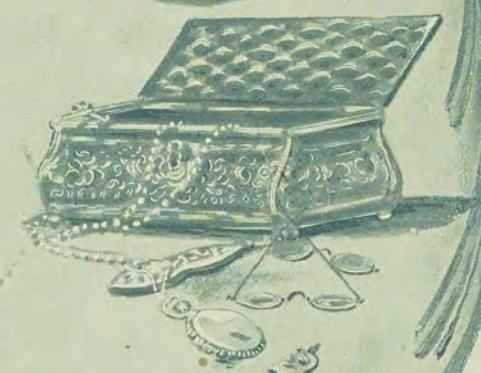


The Keystone

THE ORGAN OF THE JEWELRY & OPTICAL TRADES



Volume 19 Number 6

June, 1898

IMPORTANT

A Legal Decision of Especial Interest to the Watch Trade

UNITED STATES CIRCUIT COURT,

SOUTHERN DISTRICT OF NEW YORK.

ELGIN NATIONAL WATCH COMPANY

vs.

LYMAN G. BLOOMINGDALE and JOSEPH B. BLOOMINGDALE.

Motion granted enjoining the use of the word "Elgin," either alone or in connection with others, as a designation of watches sold by defendants not made by complainants. Injunction to run against marking, advertising, offering for sale or selling under such designation. Without prejudice to their right to insert in such advertisements or in any descriptions of the articles the statement that the *watches* were made in Elgin, if they were in fact made there: if, however, the *watch cases* only were made in Elgin the statement in advertisements, etc., must conform to the fact.

April 16th, 1898.

E. H. LACOMBE,
U. S. C. J.

A true copy,
JOHN A. SHIELDS,
Clerk.

F&B. TRADE MARK

The Cause of It

F&B TRADE MARK

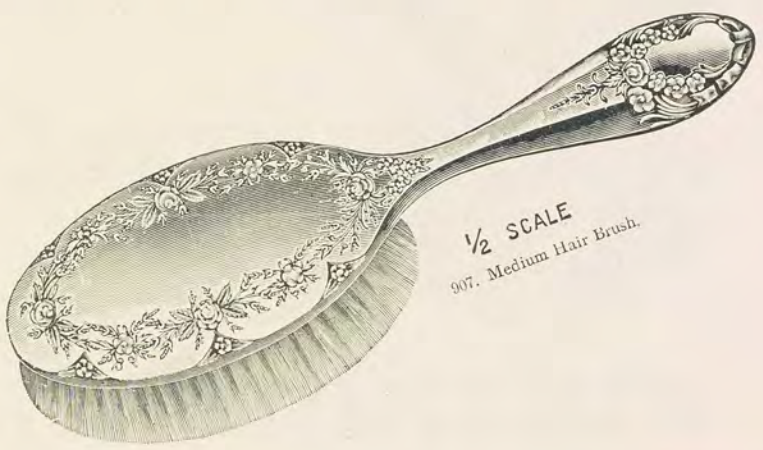
For every notable success there is a discernible cause—several causes, perhaps—but always one great, overshadowing cause.

The principal cause for the remarkable success achieved by the late firm of Foster & Bailey lies in the well-known fact that never, through all the craze for cheapness from which almost the whole trade has but recently emerged, did it allow the quality of goods to deteriorate in the slightest degree—never did it falter for an instant in its determination that the **F & B** trade-mark should always be recognized as the standard of high quality.

As the successor to that firm I shall maintain rigidly that policy. I shall continue to give my customers goods of unvarying reliability—of the highest possible quality.

JEFFERSON PATTERN

904. Large Mirror.
905. Medium Mirror.
906. Large Hair Brush.
907. Medium Hair Brush.
908. Large Cloth Brush.
909. Medium Cloth Brush.
910. Military Brush.
912. Velvet Brush.
914. Nail Brush.



½ SCALE
907. Medium Hair Brush.

916. Nail Polisher.
917. Cut Glass Paste Box.
918. Large File.
919. Large Corn Knife.
920. Large Cuticle Knife.
921. Large Shoe Horn.
922. Large Shoe Button Hook.
923. Large Tooth Brush.
888. Manicure Scissors.

ALSO A FULL ASSORTMENT OF MEDIUM SIZE IN SAME PATTERN

1482. Sterling
1103. Gold-Plate

1478

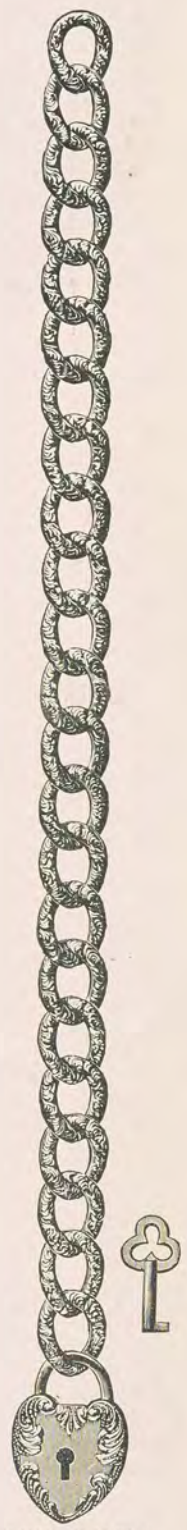
1450

1443

1452

1464

1479. Plain
1485. With Stone
Sterling



45/1085. Gold-Plate
237. Sterling
HEAVY WEIGHT

225. Gold-Plate
289. Sterling
LIGHT WEIGHT

I shall continue to supply the trade with a constant succession of original, unique and artistic designs, fully covered by patent, that will keep me where the former firm stood for so many years—at the head of the line.

I shall make it pay you to do business with me. I shall, by every possible means, except cheapening my goods, reduce my prices and extend my business until every jeweler in the land knows what so many know now—that the **F & B** trade-mark means the best possible goods at the lowest possible price.

A chance to prove this is all I ask.

The cuts shown here are a few of the scores and hundreds of rich and artistic designs which my great stock offers you.

Ask me for prices on any and everything you may need—I can save money for you.

THEODORE W. FOSTER

JEWELER AND SILVERSMITH

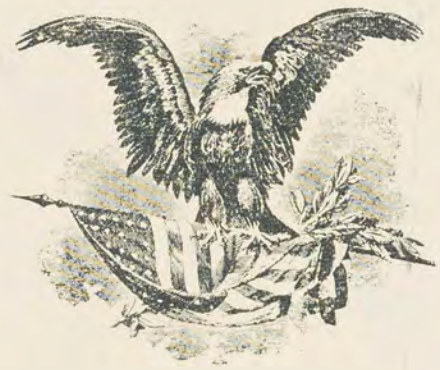
100 RICHMOND STREET PROVIDENCE, R. I.

SUCCESSOR TO **FOSTER & BAILEY**

ADMIRAL DEWEY

OUR COUNTRY'S LEADERS ON THE SEA

ADMIRAL SAMPSON



OUR COUNTRY'S LEADERS

in CHAIN MANUFACTURE are

R. F. SIMMONS & CO., ATTLEBORO, MASS.

The standard of reliability—in material, construction and finish—is represented in our

ROLLED-GOLD PLATED

GENTS' VEST CHAINS AND LORGNETTES

SOLID GOLD AND GOLD FILLED LOCKETS AND SEALS

They sell best, command highest prices and give best satisfaction, because they are designed by the best talent, made from the best stock, and finished with the greatest skill and care. All joints are soldered with gold solder.

FOR SALE BY ALL LEADING JOBBERS.

R. F. SIMMONS & CO.

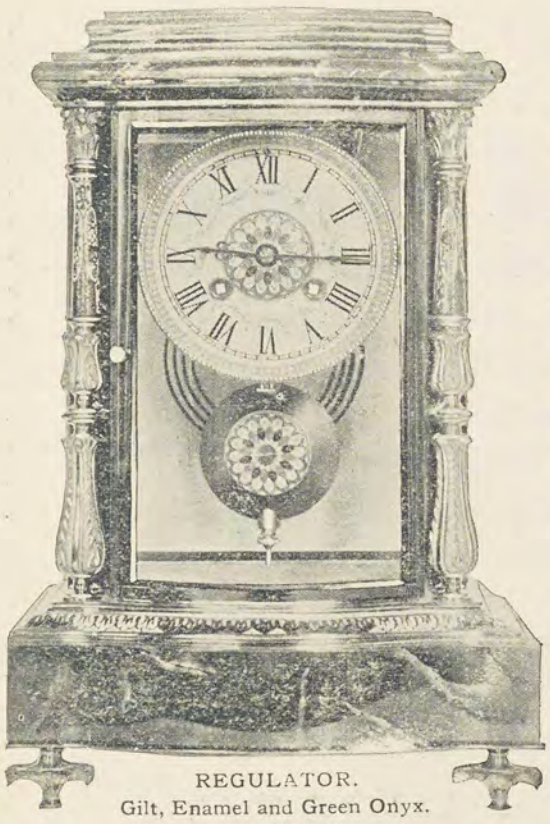
New York Salesrooms,
41 AND 43 Maiden Lane.

Factory AND Main Office,
Attleboro, Mass.

We have more Gold Cases than we need. If you are similiarly burdened with Cash, you can make a profitable exchange with us. Write for particulars.

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

Gilt Regulators.



REGULATOR.
Gilt, Enamel and Green Onyx.
A large variety in stock.

New styles constantly augmenting the most complete line in the country.

Junghans' quarter-strike Mantel Clocks are controlled by us. In Oak, Walnut and Mahogany Cases—Mantle chiming Clocks, the Westminister Chime on four gongs, and the Wittington Chime on eight gongs. A fine new line.

"ELITE" Weight Chiming Movements—the best in value and quality.

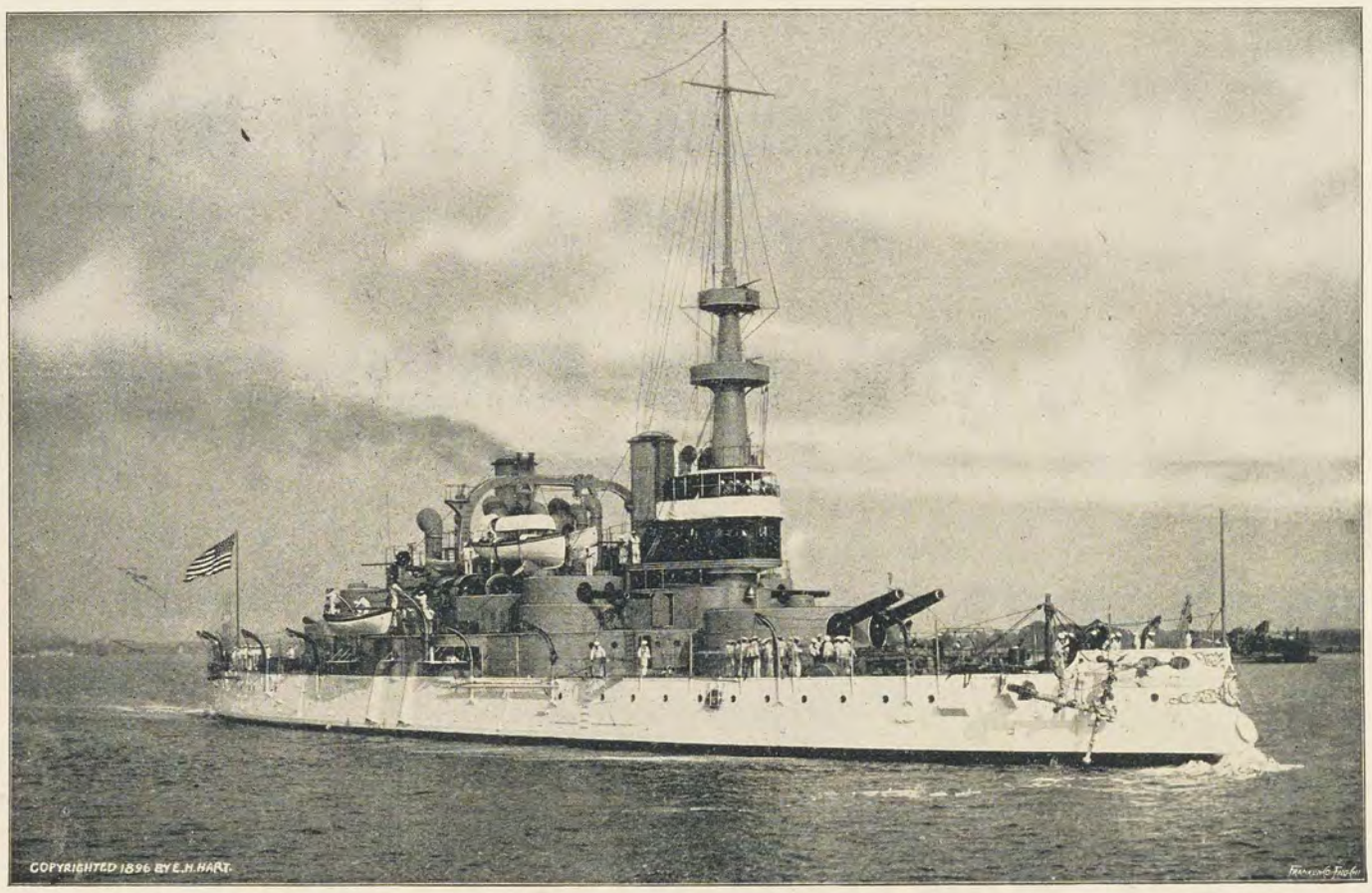
MATERIALS for all kinds of movements.

BAWO & DOTTER,

Manufacturers, Importers and Commission Merchants,
26, 28, 30 and 32 Barclay St., New York.

Byron L. Strasburger & Co.
Importers of Watches
and
Makers of Diamond Jewelry
17 Maiden Lane
New York

When in want of fine, fancy DIAMOND RINGS, write to us for selection package.



THE REAL VICTORS

are those who win their position in the right way. Our plan is a conqueror because it insures our customers fair treatment and that is what you are after. Add to this prompt returns and you have the advantages we offer you in soliciting your consignments of old gold and silver. This "plan" of ours is to value and remit for shipments the same day as received. Should this not prove satisfactory, we return consignment at our expense and pay all charges. Make us a trial shipment, and be convinced.

GOLDSMITH BROS.

SWEEP SMELTERS, REFINERS AND ASSAYERS

63 & 65 WASHINGTON ST., CHICAGO

Prompt and Accurate Assays on Ores.

J. T. SCOTT & CO.

Importers of

BROOCHES EAR DROPS STUDS SCARF PINS BRACELETS LOCKETS SINGLE & FANCY STONE RINGS

DIAMONDS

4 Maiden Lane, New York.

Whenever you have a Special Sale for FINE WATCHES, DIAMONDS, or JEWELRY, which you do not carry in stock, send to us for a selection on approval.

Send to us for our 1898 CATALOGUE of WATCHES, DIAMONDS, JEWELRY, SILVERWARE, CUT GLASS, CLOCKS, Etc.

THE FIRE

meant loss, hustling, a great amount of work, and numerous other inconveniences that the trade are not particularly interested in. But we beg to state, that we are now located in a new factory, with a complete equipment of new tools and machinery, manned with our old force of work-people, and are prepared to attend to orders. Our new Fall goods are *new* in every sense of the word.

Attleboro Mfg. Co.

Attleboro, Mass.

SILVERSMITHS AND JELWELERS

WE SELL TO JOBBERS ONLY

We are head 1/4 1/4 for GOLD SHELL RINGS, SPECIAL GOODS, BURGLAR-PROOF PIN TRAYS, GLASS CASES,

and all other paraphernalia and modern improvements pertaining to Rings.

Gold Shell.

No. 2103.

No. 2059.

No. 2162.

Over 2,000 Patterns, and *"NOTHING BUT RINGS."* New Patterns Every Month.

Send for our *"HOT CATALOGUE,"* Containing Cold Facts and Pretty Pictures.

CLARK & COOMBS,

21 EDDY ST., PROVIDENCE, R. I.

ORIENTAL FLUXINE

for Hard Soldering.

CONTAINS NO ACID.

Does away with dirty borax slate.
Always ready for use.
Clean; convenient.
Saves time and labor.
Does not gum like borax.

Recommended by Jewelers, Opticians and Dentists.

FOR SALE BY

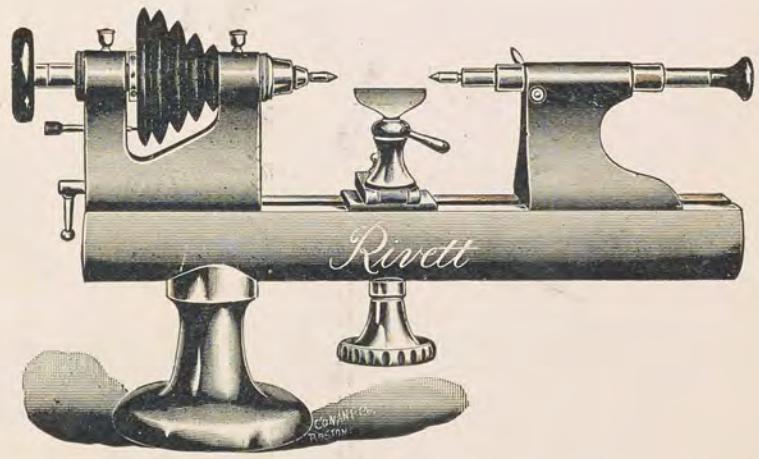
Jobbers in Materials and Supplies.

Cut ½ size.

Made only by **Elm City Chemical Laboratory,**

If your jobber can't supply you, send us **25 cents** in coin for bottle.

New Haven, Conn., U. S. A.



Don't buy a lathe without first seeing our New Catalogue.

Our aim is always to hit the mark with

QUALITY,

WORKMANSHIP,

AND PRICE.

Never a moment but our Mr. Rivett is working to improve, and merit alone has brought us to our present high position.

Our 1898 Catalogue tells all about our 1898 Lathe. SEND FOR ONE.

FANEUIL WATCH TOOL CO.

Brighton, Boston, Mass.

V.T.F.

Watch Glasses

are used by more watchmakers than all others.

---

are used by more casemakers than all others.

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are made in larger quantities than all others.

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cost no more and are better than all others.

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for sale by all leading Jobbers.

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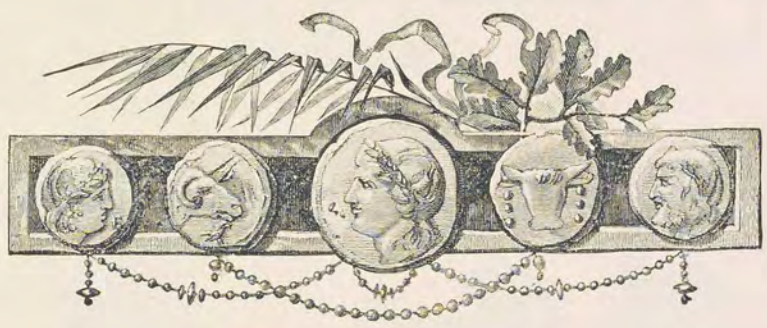
means everything that is first quality in a watch glass. Without **V. T. F.** on each and every label you are in danger of receiving inferior quality. Can you afford to?

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.

Manufacturers of Beveled-Edged Clock Glasses, all manner of Round Beveled-Edged Glasses, as well as Lenses for Bicycle and other kinds of Lamps. For information, address J. W. Riglander, 35 Maiden Lane, New York.



E. & J. SWIGART,

IMPORTERS AND
JOBBERS OF

JEWELERS' SUPPLIES AND OPTICAL GOODS,

No. 15 West Fifth Street,
CINCINNATI, O.

THE jeweler who keeps our special Staff and Jewel Price-List at his elbow is the one who will have the custom of people who want quick and thorough repairs.

Think of being able to bring to you quickly, by telegram or letter, any of these three lines:—

GENUINE FACTORY STAFFS AND JEWELS:

We always have in stock the grades and sizes used in the various American movements, all genuine and at factory prices.

E. & J. S. STAFFS AND JEWELS:

These are excellent quality, American-made, and accurately gauged.

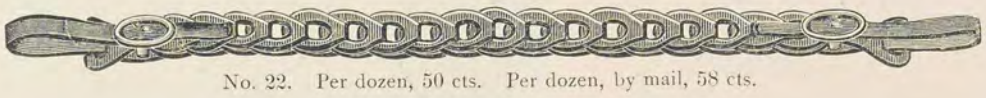
EAGLE BRAND STAFFS AND JEWELS:

This quality compares very favorably with material sold under other names, often at higher prices.

Novelty Leather Vest Chains.

No. 15. Per dozen, 25 cts.; by mail, 33 cts. Per gross, $2.88.
No. 15½. Same style in white leather, per dozen, 45 cts.; by mail, 53 cts.

No. 17. Metal Center. Per dozen, 40 cts.; by mail, 48 cts. Per gross, $4.50.



No. 22. Per dozen, 50 cts. Per dozen, by mail, 58 cts.

"CONFOUND it! I've broken my watch chain!"

The wheeling season is on again, and foolish wheelmen are every day snapping their gold chains over saddle or handle-bar.

Then they buy an unbreakable leather chain. The wise ones bought them beforehand. They are very popular.

Do you know you can sell a Novelty Leather Chain as low as ten cents and make ninety-eight per cent. profit?

It's by pushing these little specialties that an up-to-date jeweler keeps his store well known among the class that have money to buy what they want, and draws in larger business also.

OUR Book of Tools, Materials and Optical Goods is one of the most profitable helps that a jeweler can have.

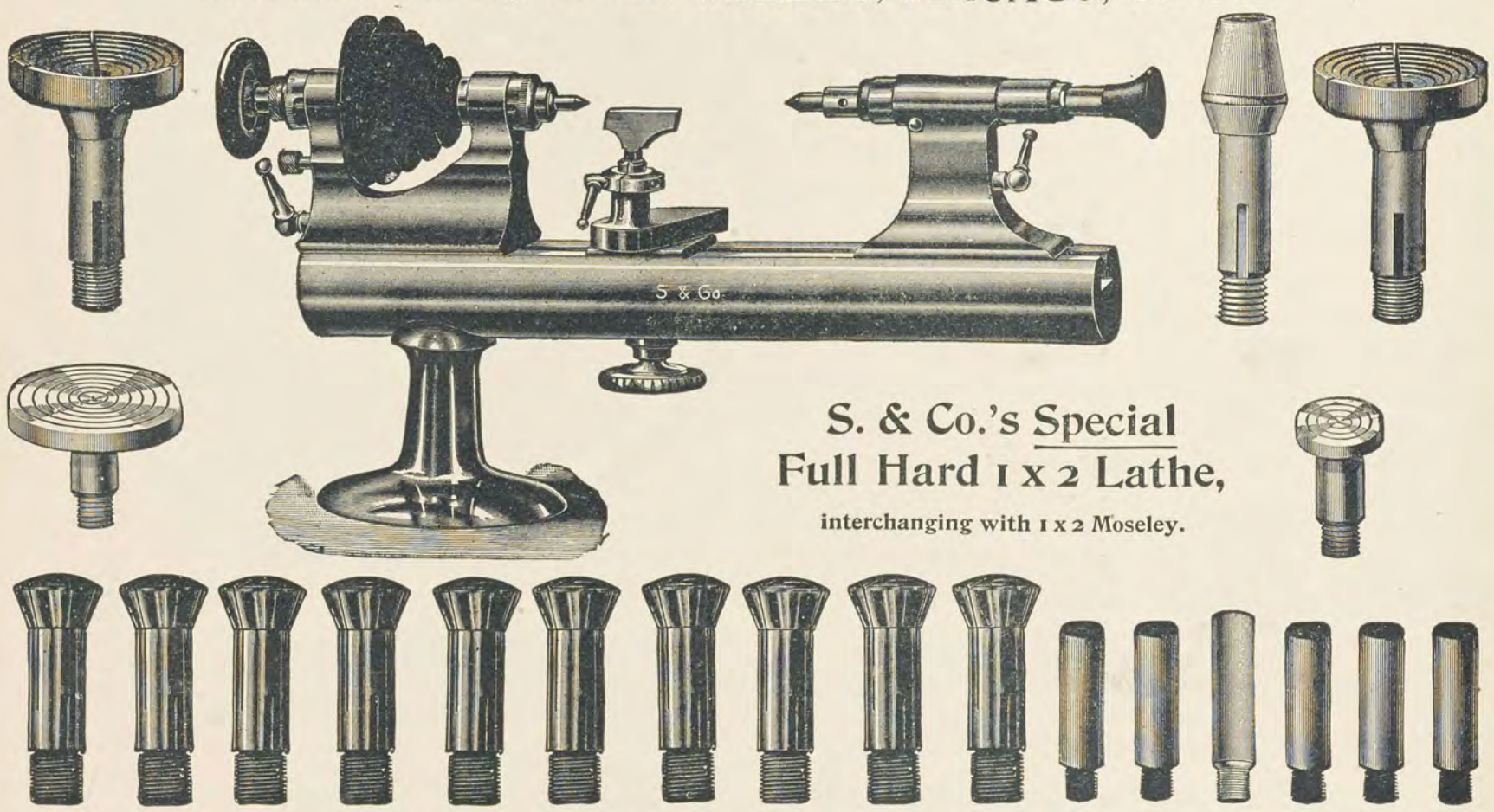
E. & J. Swigart,

CINCINNATI, OHIO.

SWARTCHILD & CO.

Exclusive Watchmakers', Jewelers' and Engravers' Supply House.

Silversmiths' Building, 131 to 137 Wabash Ave., CHICAGO, U. S. A.



S. & Co.'s Special Full Hard 1 x 2 Lathe,

interchanging with 1 x 2 Moseley.

OUR 1 x 2 S. & CO.'S SPECIAL HARD LATHE,

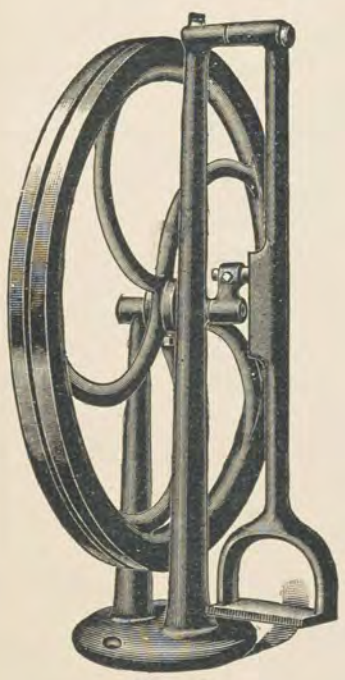
as illustrated above, will be found the best Lathe ever produced. It is full hard and warranted to be absolutely true, and will interchange with the 1 x 2 Moseley Lathe.

Price, complete, with the following outfit: Ten Wire Chucks, three Wheel Chucks, one Screw Chuck, one each ½ and ¾ and six ¼-inch Cement Chucks,

Face-Plate for above Lathe, **$7.00**

$22.50 NET CASH.

Slide-Rest for above Lathe, **$9.50**



No. 4714.

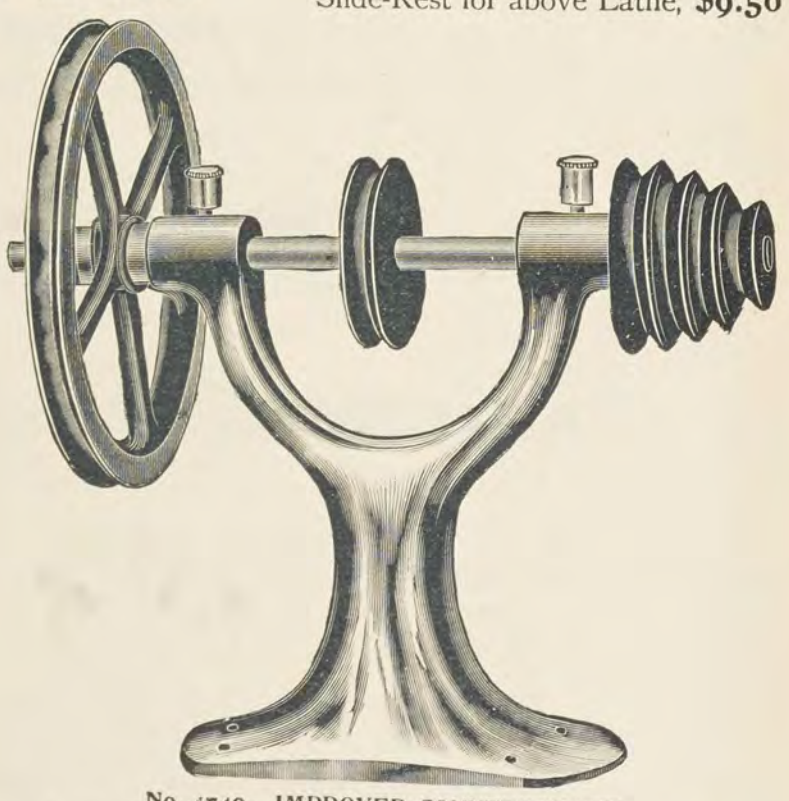
Price, $5.50.

SPECIAL OFFER for the WHOLE OUTFIT, as illustrated, including

Our 1x2 S. & Co. Lathe, with chucks.
Our No. 4714 S. & Co. Foot-Wheel.
Our No. 4740 S. & Co. New Improved Countershaft.

Price, Net Cash,

$29.50



No. 4740. IMPROVED COUNTERSHAFT.

This cut shows an improved countershaft embracing points of merit, as it is made with proper heft, large brass speed wheel, rubber cone and drive wheel, **self-oiling** cups, and has long bearings, which are ground.

Best Countershaft in the market for **$3.25.**

Our 1897 and 1898 664-page Illustrated Catalogue and 1898 Annex sent on application. Send your business card when you write. You will find this to be the best Catalogue ever issued.

SWARTCHILD & CO., Silversmiths' Building, **Chicago.**

Mighty Men O' The Hammer

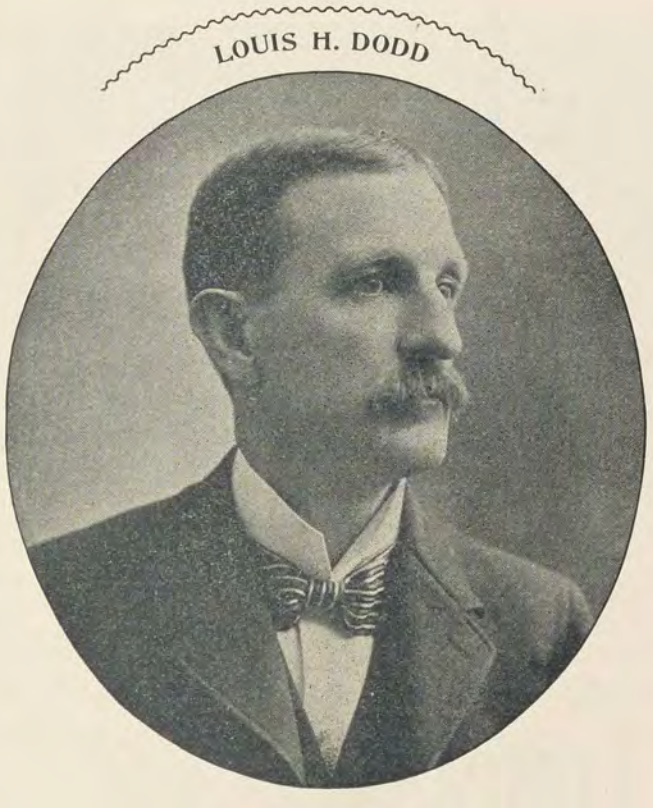
HERMAN G. BRIGGS

"The best and most gentlemanly auctioneer in America."
—*Chicago Times-Herald.*

America's Record Breakers.

In the near future we will issue a book of information in regard to jewelry and art auctions, also giving hundreds of references of unparalelled successful sales, such as are in fact incomparable with the record of other auctioneers.

LOUIS H. DODD



"Without a doubt the most rapid salesman in the country."
—*Daily Picayune, New Orleans.*

Enthusiastic Commendation

From the Tiffany of the South

A. M. HILL,
DIAMONDS, WATCHES AND JEWELRY,
631-635 CANAL STREET,
229 ST. CHARLES STREET,
UNDER ST. CHARLES HOTEL.

New Orleans, La., May 14th, 1898.

Having just concluded an auction sale which has been phenomenally successful, I feel it my duty to state the result for the mutual benefit of the gentlemen who made it and the trade. To me it is a task of pleasure to write this letter of recommendation for ***Messrs. BRIGGS & DODD,*** who so ably did the work. When first contemplating making the sale I looked carefully over the list of the few great public salesmen, listening to what their friends in Chicago and New York had to say in their behalf, visiting those cities for that purpose. Much depended on the result to me, my stock inventorying over $300,000. After mature deliberation, I concluded to employ the above gentlemen, and now have substantial reasons for being pleased with my choice. Friends endeavored to persuade me against having a sale ; a local auctioneer of good reputation in another line said he would wager any amount that it would be a failure, giving as his reasons that the city had not recovered from the yellow fever epidemic, general depressed condition of business, the great war scare, etc. Under these discouraging conditions the sale opened. The result was the greatest auction of an exclusive jewelry stock ever held in America ; it lasted nine weeks ; prices obtained beyond my most sanguine expectations. The marvelous skill and ability displayed on the part of ***Messrs. BRIGGS & DODD,*** in handling the sale, I have not the use of language to paint a word picture which would in a measure show the resources of these matchless salesmen ; each in his own inimitable way pursuing different original methods with the same result. Never in the history of auctioneering jewelry has there been so much talent offered the trade. Finding myself under such great obligations to these gentlemen, will with pleasure answer any letter of inquiry.

Very respectfully,

A. M. Hill

BRIGGS AND DODD,

334 Dearborn St., Room 1230,

CHICAGO, ILL.

Notice.

We have no connection with other auctioneers, and any one using our names to procure sales will be prosecuted.

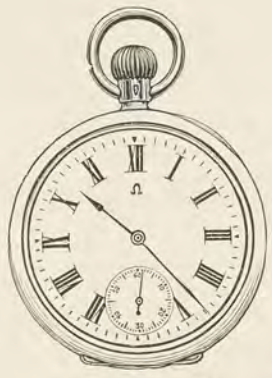
When writing to advertisers, kindly mention The Keystone.

OMEGA WATCHES

Have you seen them?

Over 1,000,000 in use.

Sold only to legitimate jewelers.



Made in five different grades.
Pendant set, 16 and 0 size, fitting Waltham Cases. All parts interchangeable.
Every Movement warranted.

EDMOND E. ROBERT,
3 Maiden Lane, NEW YORK.

CROSS & BEGUELIN,
17 Maiden Lane, NEW YORK.

SOLE SELLING AGENTS.

Send for Price-List.

Can you stand a raise in your Salary?

We can put you in a position to command a good salary by taking a course at the Philadelphia College of Horology.

M. F. W. SCHULER.

DEAR SIR: Previous to my entrance to the Philadelphia College of Horology I had no knowledge of designing or engraving. The above specimen was designed and engraved by me after a combined course of designing, engraving and watchmaking of three weeks only.

I am much pleased with the instruction and benefit I have received, and will cheerfully recommend the school to any one contemplating a course in watchmaking and engraving. Respectfully,

E. S. WOODBORNE, Uhrichsville, Ohio.

***WE TEACH* Watchmaking, Engraving, Jewelry Work and Optics** in a thorough, practical manner.

We will guarantee you success.

OUR MOTTO: We have few equals and positively no superiors.

Write for our new prospectus just issued. We have no vacations. School open all summer.

The Philadelphia College of Horology,

F. W. SCHULER, Principal. 1213 Filbert Street, PHILADELPHIA.

Our Efforts Would be Wasted

If we could not prove the advantages we claim. When we say to you that our Jewels and Staffs are first-class, and that our prices are lower than any other house in the trade for like quality, we stand ready to prove it to you. If you will send us a sample order and are not satisfied with our goods, and will return them in as good condition as you received them, we will refund your money. Our specialty is **Mounted C. & F. Jewels, Balance Staffs and Mainsprings.** They are all genuine American-made goods and guaranteed to fit and be well finished. We sell them at the followimg prices:—

Cock and Foot Hole Jewels to fit Waltham, Elgin, Hampden, Columbus and N. Y. Standard, 6, 16 and 18 size, and Rockford and Trenton 18 size only, at **$1.25 per doz.**

Balance Staffs for Waltham, Elgin, Illinois, Hampden, Columbus and N. Y. Standard 6, 16 and 18 size, and Rockford and Trenton 18 size only, at **$1.25 per doz.**

RED CROSS MAINSPRINGS.

Made from drawn wire, "not rolled." Guaranteed not to set in the barrel. If any break, return end with our trade-mark on, and we give you good ones for them. They are made for all sizes and makes of the above-named movements. We sell them at **$1.00 per doz., $11.00 per gross, net.**

A FEW SPECIALS FOR JUNE.

Elgin, Waltham, Hampden, Illinois and Rockford 0, 6, 16 and 18s Roller Jewels,	$0.25 doz.
Genuine American Case Screws, 6, 16 or 18s	.25 doz.
Silverine Watch Bows, 3 oz.	.25 doz.
Hour and Minute Hands, dozen pairs	.20
American Pendant Screws for holding in stem	.50 gro.
Spectacle Temple Washers	.10 gro.
Movement Washers, 3 dozen for	.10
10 K. Gold Filled Watch Bows, 6 size	1.50 doz.
10 K. " " 16 "	2.00 doz.
SPECIAL. 50 dozen 10 K. Gold Filled Watch Bows, 18 size, at	1.50 doz.

The above prices are net cash. We open no accounts. Cash must accompany order. **Your money back if you want it.**

TIDD & CO., Columbiana, Ohio.

GLOBE CURTAIN TOP BENCH.

Made of best seasoned solid oak or walnut, finely paneled and finished in best cabinet style. Total height, 50 inches; height to table, 40 inches; length, 44 inches; width, 26 inches. Has ten drawers, one of them arranged for chucks; apron drawer and cupboard. All drawers lock automatically when curtain is drawn down, also has lock and key. Both ends drop down to give light and space. Has vise-rest and casters. Price, **$16.00**, net cash. Same bench in poplar, finished in oak, walnut or mahogany, **$14.00**, net cash. Bench without curtain, solid oak or walnut, paneled and finished in best style, length, 40 inches; height, 40 inches; width, 20 inches. Has eight drawers, one arranged for chucks; apron drawer and cupboard, **$9.00**, net cash. Same, poplar, finished in oak, walnut or mahogany, **$7.50**, net cash.

T. R. J. AYRES & SONS,

Headquarters for Lathes, Benches, Foot Wheels and Globe Specialties

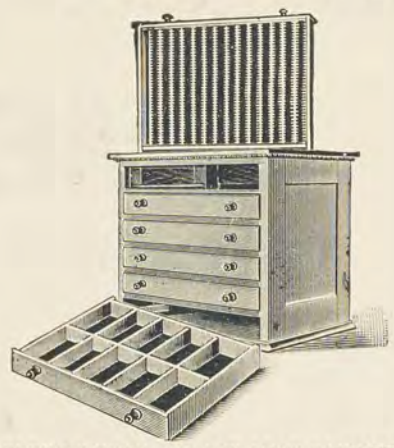
Gen. Boley Lathe, either W. W. or Moseley No. 2 Model, with 10 chuck combination, chuck block, belting, - - - **$24.00**, net cash
Webster-Whitcomb Lathe, - Write for special price
Globe Foot-Wheel, - - - **$5.50**, net cash
60-Punch Perfection Staking Tool, **8.75** "
50 " " " " **5.75** "
24 " " " " **2.50** "

Our Ball-bearing Globe Foot-Wheel will be on the market July 1st. Watch for our adv.

T. R. J. AYRES & SONS

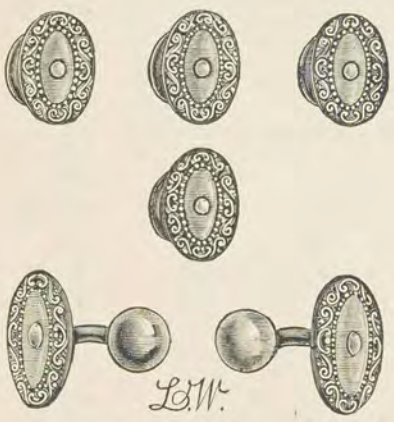
Manufacturers of the "GLOBE" SPECIALTIES

509-511 Main St. **KEOKUK, IOWA**



GLOBE SPECTACLE AND LENS CABINET.

The most convenient arrangement for carrying optical stock on the market. Has two drawers for lenses, with capacity of 480 pairs, two drawers arranged for spectacle frames, one drawer for eye-glasses and one drawer for temples and material. The lens drawers are so arranged that the slots will hold any size glass from three to double oo Eye. Made of solid oak, paneled and ornamented, finished in best possible style. Dimensions, height, 21 inches; length, 24½ inches; width, 16 inches. Price, **$6.00**, net cash.



(New York references requested.)

Factory—Newark, N. J.

Patriotic Girls will want the *Military* Shirt Waist Set and Belt Buckles. Price, $2.25 per dozen up. Our line of

Shirt Waist Sets

comprises all the novel, attractive and salable designs of the season.

Write for our **$10** assortment; sent express paid and subject to your approval.

L. Witsenhausen
37-39 Maiden Lane, N.Y.

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.

U. S. WARSHIPS

on Spoons, Match Safes, Cigarette Cases, Stamp Boxes, Bonbonierres and other Trinkets, make the most popular and best selling Souvenir Novelties.

YOU SEND THE GOODS. WE ETCH THE SHIPS.
AS FINE AS A BANK NOTE.

Special Price, $4.50 per Dozen.

GOLDSTEIN CO.,
45 Maiden Lane, NEW YORK.

AMERICA'S PREMIER AUCTIONEER

CHAS. E. MANOR

1016 & 1018 Main Street KANSAS CITY, MO.

J. E. SHELL — E. M. HARRISON

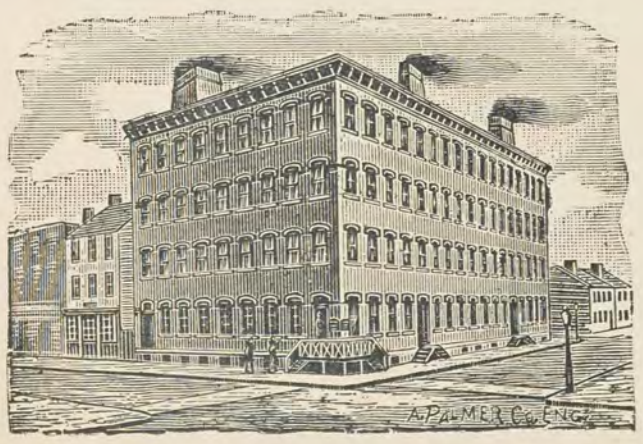
SHELL & HARRISON
JEWELERS AND OPTICIANS
40 SOUTH TRYON STREET

CHARLOTTE, N. C., February 15, 1898.

TO WHOM IT MAY CONCERN:

I take great pleasure in recommending Mr. Chas. E. Manor, of Kansas City, Mo., who has just finished a sale for me, and in spite of the hard times has realized better prices than I had anticipated. His manner of conducting a sale is gentlemanly and courteous, and the citizens of Charlotte are unanimous in their praises of him as an entertainer and salesman. Parties contemplating having an auction will make no mistake in employing Mr. Manor, as he is thoroughly competent to handle the very highest class goods. My stock consisted mainly of cut glass, solid gold and sterling silverware, and these goods he sold to our very best citizens at prices that were pleasing to me. Should I ever hold another sale, I certainly would endeavor to employ Mr. Manor to conduct it. Would be pleased to answer any and all communications from Jewelers in reference to his ability, etc.

Very truly, JNO. E. SHELL,
BELL & DIXON, Assignees.



SWEEPINGS OUR SPECIALTY.

L. LELONG & BROTHER,

GOLD AND SILVER REFINERS, ASSAYERS AND

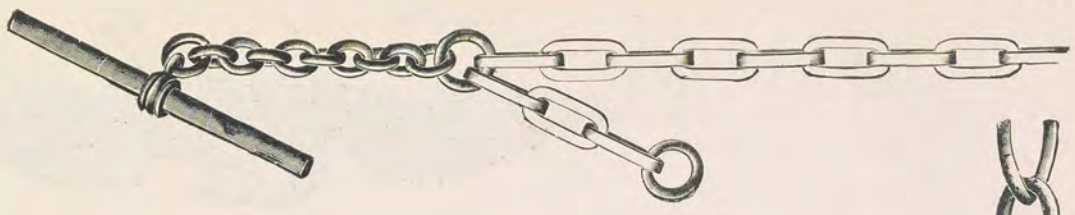
Sweep Smelters.

BULLION SOLICITED. SMELTING FOR THE TRADE.

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

Southwest Corner Halsey and Marshall Streets,
Newark, N. J.

HONEST GOODS AT HONEST PRICES



To the Retail Trade

If your customer insists upon having

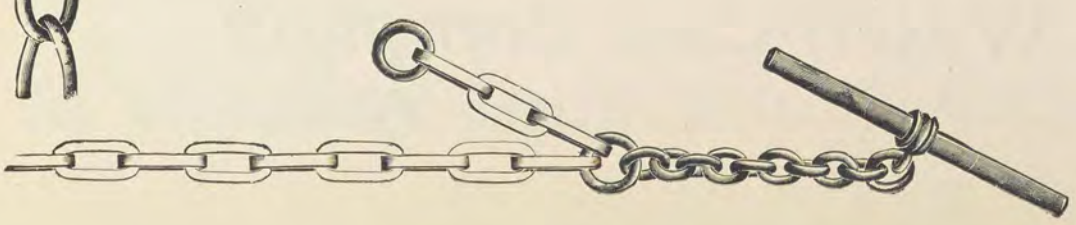
THE F. C. & F. CHAINS AND GUARDS

do not write to us for samples and prices, write to your jobber, and if he is among the *few* who do not handle our *line*, request him to obtain these *goods* for you, as a popular line like ours should be always on hand to give thorough satisfaction in every particular.

Our Vest Chain line consists of 2000 patterns.
" Guard " " " " 1500 "
" Dickens " " " 500 "
" Gold Filled Rings in all Band "
" Ladies' and Children's Bracelets and Neck Chains.

Any special pattern in any quality made up at short notice.

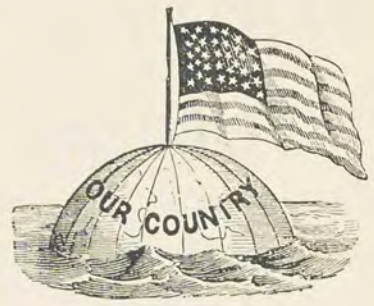
Represented by
F. T. BARTON.



FONTNEAU, CUMMINGS & FAGAIN

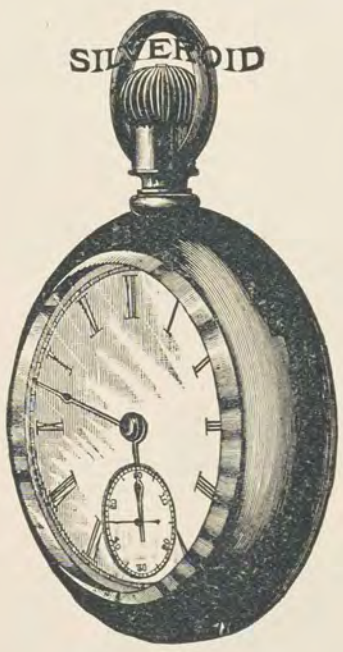
Factory and Office,

Attleboro, Mass.



Halt, Mr. Jeweler! Just a moment while we join you in the national rejoicing over the historic events of the past month. To-day "Old Glory" waves triumphantly in two oceans, proclaiming the emancipation of millions of our fellow-creatures from a despotic and barbarous thralldom! Ours was the self-imposed task, and ours alone is the glory; but the triumph is a triumph for humanity, civilization and progress. Here's to the victorious spangled banner, and may its stars never grow less effulgent!

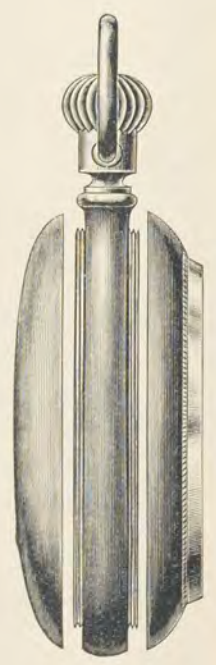
Keystone Watch Case Company.



126
PRICE, $2.00
PRICE ACCORDING TO KEYSTONE KEY

FIX THIS IN YOUR MIND

THE NEW 3-OUNCE SCREW SILVEROID



is a regular screw back and bezel case. **It is not made with center and bezel in one piece as formerly. Center and bezel are two separate pieces,** as in all screw cases now made by us.

The Screw Silveroid is perfect in construction, graceful in form, very strong and durable, with a lasting silver color. With cheap movements they sell on sight, and are very profitable to handle.

Keystone Watch Case Company

19th & Brown Sts., Philadelphia, Pa.

WAR WAGED ON DISHONESTY

In this sign there's victory
for the trade

Keystone Watch Case Company

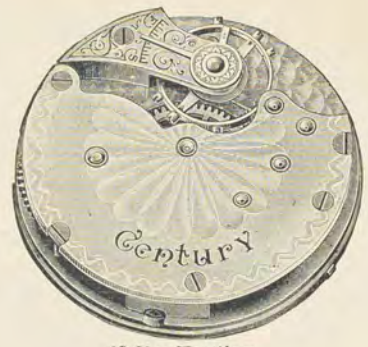
19th & Brown Sts., Philadelphia, Pa.

18 Size Open-Face.

THE POPULAR AND BEST AMERICAN-MADE
LOW-PRICED WATCH MOVEMENT

"CENTURY"

18 Size, ¾ Plate, 7 Jewel, Quick Train, Stem-Winding and Setting, Nickel Finish Damaskeened, Hard Enamel Dial with Depressed Seconds.
Fit all makes of cases.



18 Size Hunting.

FOR SALE BY

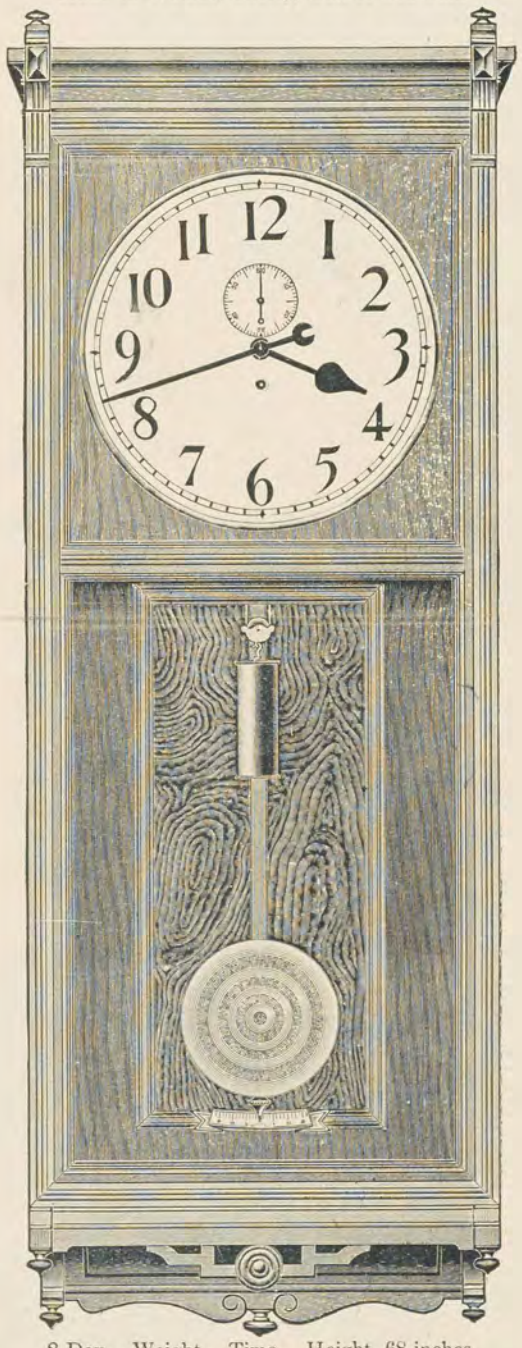
HENRY GINNEL & CO.,
31 Maiden Lane, New York.
LEON HIRSCH,
45 Maiden Lane, New York.

BENJ. ALLEN & CO., Chicago.
LAPP & FLERSHEM, Chicago.
B. F. NORRIS, ALISTER & CO., Chicago.
H. F. HAHN & CO., Chicago.

OSKAMP, NOLTING & CO.,
Cincinnati.
EISENSTADT MFG. CO.,
St. Louis.

REGULATOR No. 31.

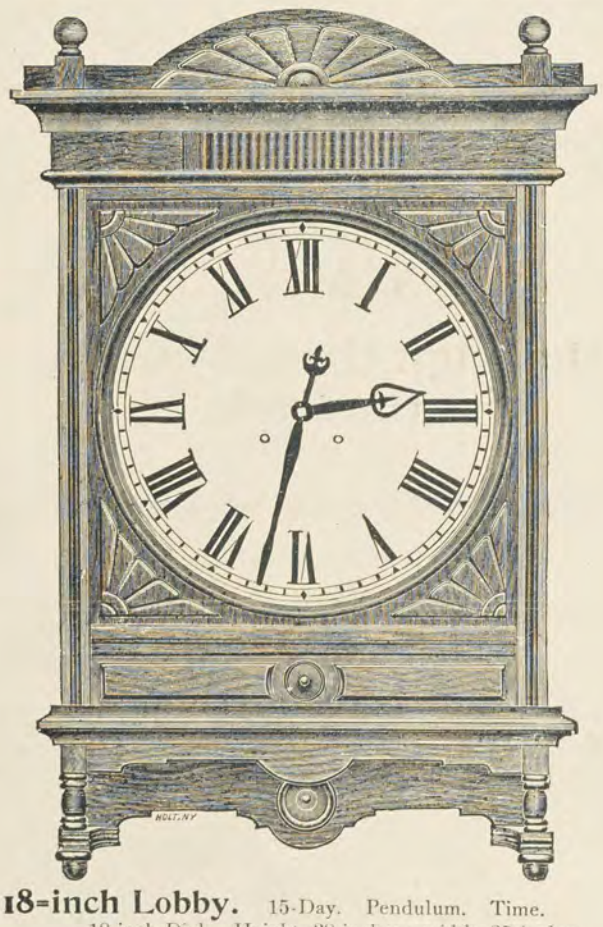
Made in Walnut, Cherry, Oak or Old Oak.



8-Day. Weight. Time. Height, 68 inches.
18-inch Dial, Roman or Arabic.
Large cut steel pinion movement.

LOBBY.

Made in two sizes. In Walnut, Cherry, Oak or Old Oak



18-inch Lobby. 15-Day. Pendulum. Time.
18-inch Dial. Height, 38 inches; width, 25 inches.

14-inch Lobby. 15-Day. Pendulum. Time.
14-inch Dial. Height, 30½ inches; width, 20 inches.

The illustration shows the 18-inch Lobby. The 14-inch Lobby has a light, straight railing at the top instead of the arched piece with knobs.

Clocks with large dials appropriate for large spaces, designed for "long distance" time-seeing.

We make a full line of "Lobby," also the well-known "Gallery" patterns, in various finishes, besides many styles of Regulators. All good timekeepers.

Seth Thomas Clock Co.

Makers of CLOCKS, REGULATORS,
WATCH MOVEMENTS and TOWER CLOCKS

49 Maiden Lane, New York
144 Wabash Ave., Chicago
126 Sutter Street, San Francisco

THE KEYSTONE

VOLUME XIX. PHILADELPHIA, JUNE, 1898. NUMBER 6

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.** To Foreign Countries **10 Shillings ($2.44) per year; single copies, 1 Shilling (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.

AGENTS FOR AUSTRALIA, S. MAYER & CO., 279 GEORGE ST., SYDNEY, N. S. W.

AGENT FOR GREAT BRITAIN, THE ANGLO-AMERICAN OPTICAL CO., 94 HATTON GARDEN, LONDON, E. C.

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CONTENTS.

TO UNWRAP YOUR KEYSTONE, SIMPLY PULL THE STRING

WE warn the trade against a swindler, who, purporting to represent a subscription agency, is soliciting subscriptions for THE KEYSTONE. No subscription agency has any authority to collect subscriptions for this journal. Do not give your subscription to any one not personally known you, or of whose identity and trustworthiness you are not positively assured. The swindler was last heard from in Texas, and trade in that section are especially warned against him.

AS an indication of the business situation, nothing is more reliable than the earnings of railroads. Statistics of 110 roads for the month of April show the largest increase in earnings of any month, with a single exception, for several years. The increase over April, a year ago, was $5,787,000, or 15½ per cent. The Pacific roads show the greatest increase, 32 per cent.; and of the total number of roads, but 16 show a decrease.

Bank clearings and mercantile agencies report that business in all parts of the country is improving. Large increases in bank clearings over last year are reported. At Minneapolis an increase is reported of 73 per cent.; Chicago, 41 per cent.; New York, 47 per cent. The increase on the Pacific coast is phenomenal: Portland, Seattle, and Tacoma show an increase of 141, 136 and 121 per cent. respectively. St. Joseph, Mo., leads the country with a gain of 204 per cent. The average gain for all the States is 36 per cent. over 1897, and 7 per cent. over 1892.

Progress of the War.

THE war operations during the month of May, though very favorable to the United States, have convinced the lay mind that the struggle with Spain may last longer than our self-confident people at first anticipated. The month opened with Admiral Dewey's historic victory in the Philippines, when Spain's entire Asiatic fleet was destroyed without the loss of a single American sailor, or the disabling of a single American ship. No such victory as this is recorded in naval history, and its overwhelming character justified and still justifies the hope of an early termination of the conflict. Our state of military unpreparedness, however, has been a delaying factor, and, notwithstanding our limitless resources in men, money and energy, only after the lapse of an entire month has the Government been able to ship sufficient forces to the victorious Admiral to reap, in the actual possession of the Philippines, the full reward of his famous victory. The task of fitting out so large an expedition for so long a voyage was, in truth, a stupendous one, and its accomplishment in a few weeks in face of so many obstacles was, in itself, a great military achievement for which the Government deserves due credit. The troops are now well on their way, and we can look forward, confidently, to our early, secure and, let us hope, permanent possession of the Philippines.

In home waters the war has progressed slowly owing to the avowed determination of the Spaniards to dodge a conflict. The greater portion of the month was consumed by our naval force in their impatient wait for and subsequent energetic hunt of the elusive Spanish fleet, relieved only by incidental exciting incursions into Cuban harbors and

Rear-Admiral Dewey.

the bombardment of the forts at San Juan, Porto Rico. According to latest reports, the enemy's ships are in the harbor of Santiago de Cuba, and at the present writing are being bombarded by Admiral Sampson's squadron, and their capture or destruction soon is assured. With the Spanish fleet "in chancery," our Government, it is said, has adopted a more vigorous and aggressive policy, and it is believed that an immediate invasion of Cuba and Porto Rico will be made. Attacks by land and sea will be made simultaneously, and the war prosecuted determinedly to a successful conclusion. To be prepared for all emergencies, during or after the war, the President has issued a second call for an additional 75,000 volunteers. When these are mustered the fully organized army will consist of over 250,000 men, a force that will prove ample, whatever unexpected developments may arise. As public interest is now centered on Cuba, Porto Rico and the Philippines, we will devote brief space to facts in relation to these countries.

CUBA

The area of Cuba is about 42,000 square miles. Its greatest length is 760 miles, and its breadth ranges from 20 to 135. It is said that there is no space of earth the equal in size to Cuba that can compare with her in the production of those things that are useful to man. Such is the fertility of the soil that a farm of some thirty acres in one year produces thousands of pounds of sugar, coffee, tobacco, cacao (chocolate), cotton, indigo, corn, rice, sage, bananas, and yucca. The choicest lands of California—noted for the variety and quantity of their products can not approach the soil of Cuba in this respect.

Even under Spanish rule Cuban commerce has grown to considerable dimensions. In 1893,

before the curse of war fell on the island, Cuba exported 718,204 tons of sugar, and produced 815,894 tons. Its exports of molasses to the United States alone in that year were 7,654 hogsheads. In 1893, the Cuban exports of leaf tobacco were 227,865 bales. Of manufactured cigars 147,365,000 were exported, and of cigarettes, 38,581,493 packages. Of the area of Cuba only ten per cent. is under cultivation, seven per cent. is not reclaimed, and four per cent. is under forests. Great tracts of land are practically unexplored. She had, in 1894, a population of a little more than 1,500,000. Of these nearly one-third have been starved to death during the present war. Cuba could support, in plenty, a population of 10,000,000. Her forests are stocked with the finest wood in the world—wood, several species of which are as hard as iron, turning the edge of the axe, and remaining imperishable under water.

Cuba has, besides, vast mineral resources, and almost all the metals are found there—gold, silver, mercury, copper, lead, and all the forms of asphaltum; antimony, magnesia, copperas, gypsum, red lead, ochre, salt, arsenic, talc, and many others. Thus favored by Providence a bright future is in store for the island republic.

Rear-Admiral Sampson.

PORTO RICO

Porto Rico lies seventy-three miles east of Hayti or San Domingo, is oblong in shape, and has an area of 3,530 square miles, measuring 110 miles from east to west and forty from north to south. The island was discovered by Columbus in 1493, and Ponce de Leon established the first Spanish settlement there in 1510. The islanders attempted to shake off the Spanish yoke in 1820–23, but were unsuccessful. The population of Porto Rico numbers 813,937, the negroes numbering 300,000. The capital town, San Juan, has 23,414 inhabitants; Ponce, 37,545, and San German, 36,146. The revenue of the island in 1894–95 was 5,454,858 pesos, a peso being 92.6 cents. The principal exports are coffee, sugar, molasses and tobacco. These exports increased from about $11,000,000 in 1850 to $16,864,765 in 1891. Among the imports are flour, potatoes, fish, meat, rice, manufactured articles, and coal.

PHILIPPINES

The Philippines are an archipelago consisting of from 1200 to 1400 islands, located southeast of Asia and separating the China Sea from the Pacific Ocean. They were discovered by Magellan in 1521, and half a century later came under Spanish rule. The population of the Philippines is 7,670,000, the capital, Manila, having 154,062 inhabitants. There is a small Spanish resident population and about 100,000 Chinese, in whose hands are the principal industries. The native inhabitants are mostly of the Malayan race. The government has been administered by a governor-general and a captain-general, and the forty-three provinces have been ruled by governors, alcaldes or commandants, according to their importance or position. The estimated revenue of the islands in 1894–95 was $13,500,000 and the expenditure, $13,200,000. There is an export duty on tobacco, and nearly every article imported is taxed. The chief products are sugar, hemp, coffee and indigo, and there are large coal fields, which are now being opened, so that it is expected that 5000 tons of coal per month may be mined. The imports in 1896 were about $12,000,000 and the exports, $20,500,000. There are seventy miles of railway on the islands, and 720 miles of telegraph.

The Philippine Islands are peculiar in having three seasons—a cold, a hot and a wet. The first extends from November to February or March. Europeans consider this period the pleasantest time of the year. The hot season lasts from March to June and the heat becomes oppressive, and thunderstorms of terrific violence are frequent. During July, August, September and October, the rain comes down in torrents and large tracts of the lower country are flooded. The islands are of volcanic origin, and there have been eruptions as late as 1867. Terribly destructive typhoons are of frequent occurrence, and earthquakes are so prevalent that they are taken into account in the construction of the houses. Despite these drawbacks the Philippines are a most desirable possession, and mean so much for American trade that their surrender or transference would be little less than a betrayal of our interests.

Law Against Dishonest Advertising.

TO New York belongs the credit of having placed on its statute books the first law devised with the special object of suppressing dishonest advertising. The law consists of a single section, and is as follows:

> Any firm, person, corporation or association of persons, or any employee of such or any of such, who in the newspapers or other periodicals of this State, or in public advertisements, or in communications intended for a large number of persons knowingly makes or disseminates any statements or ass rtions of facts with respect to his, its or their business affairs concerning the quantity, the quality, the value, the price, the method of production or manufacture or the fixing of the price, the method of production or manufacture or the fixing of the price of his, its, or their merchandise or professional work; or the manner or source of purchase of such merchandise; or the possession of awards, prizes or distinctions; or the motive or purpose of a sale, intended to have the appearance of an advantageous offer, which is or are untrue or calculated to mislead, shall be guilty of a misdemeanor.

This law makes the publication of any deceptive advertisement a punishable offence. It covers fraudulent "fire sales" and sales of alleged "bankrupt stocks." It covers also the sale of goods as all wool which are half cotton, and mixtures of cotton and silk as all silk, and lead articles as sterling silver, and ash furniture as quartered oak and stained cherry as mahogany, and wood-pulp paper as linen. Honest merchants welcome the law, because it will protect them from dishonest competition, and no trade has suffered so severely in this regard as the jewelry trade. A similar law should have a place on the statute books of every State in the realm.

Our Voluminous Export Trade.

ALMOST remarkable condition of our foreign trade is revealed in the official statistics just published, which show an unprecedented export trade with diminishing imports and a consequent voluminous inflow of gold in payment of the excess. Our exports, domestic and foreign, during April fell little short of $100,000,000 in value, a gain of 28 per cent. over one year ago, while our imports only aggregated $55,923,658, $43,502,000 smaller than our imports in April, 1897. Reflection of this exceptional trade showing is found in the gold-import movement, which shows an excess of imports over exports of $31,469,290 for the month.

WE learn from *Bradstreet's* that the figures for the ten months' period, ending with April, are no less remarkable, because they foreshadow, on the one hand, an unprecedented volume of export trade for the year, and, on the other hand, point to the smallest total of imports reported, with one exception, for at least eleven years past. The value of our exports of merchandise, domestic and foreign, for the ten months reaches the immense total $1,025,426,681, more than $125,000,000 larger than at the same time in the preceding fiscal year, which, it might be added, was the heaviest export year in our history. Imports, on the other hand, aggregate only $511,000,000, a decrease of $89,000,000 from the preceding year, and the excess of exports over imports amounts to $514,245,495, or a sum total greater than the entire aggregate of our imports during that period.

ONE result of the exceptional trade conditions above referred to is an enormous inflow of gold. Reports to the bureau of statistics show that the importations of gold during the fiscal year have been over $105,000,000, and deducting the exports of gold, which amount to about $15,000,000, leaves the net gain to our gold stock from importation a round $90,000,000, to which it is expected there will be added between this and the end of next month a sufficient sum to bring this year's net importations in excess of exports up to fully $100,000,000, a sum which exceeds that of any preceding year in the history of the country.

Opening of the Omaha Exposition.

IT would be unfortunate if the popular excitement over the war question should divert to any extent national attention from the vast undertaking which has been so promptly and magnificently consummated in Omaha, Neb. On June 1st, in that city, was opened with appropriate ceremonies, the Trans-Mississippi and International Exposition, now completed. This vast project was conceived on a scale of magnificence second only to that of its gorgeous proto-type at Chicago, and the execution has been fully up to the conception.

For those who still have pictured in their minds the great Chicago Exposition, comparison will have no disappointment. Once again a veritable wonderland is prepared for their enraptured gaze. Again they can revel in the indescribable grandeur of another city of palaces majestic of architecture and with an ideal scenic setting. There are the same enchanting accessories—blue lagoons, limpid streams and sparkling fountains, wooded islands and fairy-like grottoes. Imposing

statues of classic execution meet the view at every turn. Myriad vari-colored flags float from as many pinnacles, the whole presenting a scene of ravishing splendor. Brilliant by day in the summer sunshine, the scene by night is even more impressive. Thousands of electric lights outline roof and dome; illuminated fountains flash gorgeous colors into the heavens; the placid lagoons reflect the myriads of electric stars that twinkle on tower and turret, and brilliant displays of fireworks crown the nocturnal enchantment of the scene.

And all this pales before the wonderland within those white palaces. Here we see the marvelous triumphs of science, civilization and progress in this the greatest of all the centuries—everything, in short, that human ingenuity and the evolved talent of the ages has contrived to instruct, astound or bewilder. Such an exposition certainly merits the support and patronage of the nation. It is an impressive monument to the enterprise and almost incredible progress of the country beyond the Mississippi, and THE KEYSTONE echoes the national voice in wishing it success.

War and Window-Dressing.

IT is no taint whatever on our patriotism to reap whatever commercial advantage we can from the war. The most effective way to do this, available to the jeweler, is to make the war idea the basis of the attractive window displays which will serve the dual purpose of attracting trade and pointing a patriotic moral. In our last issue was given a design for a naval window display, and a flood of letters has told us of the benefit which accrued to the jewelers who used it. "It was truly a great attraction, and paid the subscription price to THE KEYSTONE in short order," write Hartman & Correll, Allentown, Pa., and equally enthusiastic have been other communications. We also gave a number of appropriate designs for Decoration Day windows which, we feel certain, proved of no less advantage. We take this opportunity to impress on the jewelers the fact that all the designs for window displays given in our columns are thoroughly practical, and, as far as possible, inexpensive. Only such as all, or a vast majority of the trade, can use to advantage are exploited by us. Many of our readers have gratefully informed us in the past that the use of even one of these ideas has often profited them many times the subscription price of this journal, and we hope to give still better service in future.

THIS month we cannot better utilize the space at our disposal than by publishing a few of the many ways in which the trade have turned the war idea to excellent account in designing window displays. Lewis M. Lea & Son, Sandusky, Ohio, have a card hung up inside the window, with the word "Bulletin," in large red letters that can be read across the street. Below this they hang up the latest dispatches relating to the war, incidentally mentioning something special they have for sale. They get the dispatches from the newspaper headlines, from the bulletins hung up at the newspaper offices, or any place, so long as they are reasonably sure of the reliability of the news. "It costs nothing," said a member of the firm, "but a little trouble to maintain, and it has attracted no end of attention. We have used it so far to make mention of small things such as people would buy on the spur of the moment, such as flag-pins and buttons. Some of our jeweler friends might try it to advantage." The plan is a good one while the thirst for war news is on, and its absolute inexpensiveness commends it.

A very attractive window was designed by Will A. Harper, with Jenkins & Co., Richmond, Ind. One window was occupied by a shallow tank filled with water, and in the water was shown the island of Cuba in miniature, though accurate as to outline, physical features, etc. This miniature island was ingeniously constructed under Mr. Harper's direction and was a very clever piece of work. The city of Havana was shown with Morro Castle and other fortifications in the vicinity reproduced with minute accuracy. Mr. Harper also constructed from wood and paper models of all of the chief battleships and other defense boats of the United States Navy, and these were floating about the miniature islands. It is needless to add that crowds viewed the display and, incidentally, the goods on exhibition.

A DISPLAY, only available to the largest stores, but which has been used with excellent results in New York, Philadelphia, Washington, etc., consisted of a United States flag, composed entirely of precious stones. The flag, as used by a Broadway, New York, jeweler, was five by three inches, made entirely of diamonds, sapphires and garnets. The Union was a mass of sapphires, on which reposed forty-five large diamonds. The stripes were made of bands of garnets and diamonds one-fourth of an inch. The effect was very pretty and attractive. R. Harris & Co., of Washington, D. C., showed a similar flag which consisted of 901 precious stones. The stars and white stripes were composed of 321 diamonds, the blue field for the stars of 247 sapphires, and the red stripes of 334 rubies. The flagstaff was a gold rod.

What proved an excellent advertisement for one firm was an announced flag raising on their store. The flag, in the case referred to, was some twenty feet in length, and in the folds were large numbers of small Cuban flags, with the firm's advertisement. As the flag unfurled the small ones were scattered far and wide by the wind. An immense crowd gathered, which filled the store and blocked the street. The Cuban flag attracted widespread attention, due to the spirit of the day, the newspapers making most favorable comment on the ingeniousness of the advertisement.

AN excellent attraction which has been used to good purpose by some jewelers is pictures of companies of local regiments. The public eagerly scan the faces in the pictures. Pictures of camp scenes since the soldiers were called out are also crowd-drawing attractions. Another instructive window accessory is a map showing the places most talked about in connection with the war with Spain. One jeweler showed a map of the Atlantic Ocean, on which he indicated daily the positions of the American and Spanish fleets. The public manifested a deep interest in this display. An exhibition in miniature of the various guns used on the warships also attracts much attention. One of the displays most used is an attractive arrangement of American and Cuban flags with some of the implements of war. Spanish and Cuban arms arouse special interest, and a comparison of modern and ancient weapons rivet attention. O. G. Tullis, Santa Monica, Cal., shows in miniature Havana harbor blockaded by a fleet of Uncle Sam's warships. Generally speaking, war has the call, and anything pertaining to it can be depended upon to draw the crowd—war bulletins, a warship, a gun, a fort, a mortar, a soldier in arms, or military pictures of any kind. We trust that every jeweler will use to advantage this opportunity, not forgetting, of course, to place the goods for sale so prominently that they can not fail to be seen.

Death of William E. Gladstone.

The most remarkable personality of the Nineteenth century has passed away in the person of William Ewart Gladstone, whose death last month was bewailed by all civilization. In the limited space at our disposal we cannot better convey an idea of his wonderful career than by the following chronology of the principal events in his life:

William Ewart Gladstone.

1809—Born at Liverpool.
1831—Graduated at Oxford.
1832—Entered Parliament.
1834—Junior Lord of the Treasury.
1835—Under Colonial Secretary.
—Resigned.
1838—Married.
1839—Published "The State in Relation to the Church."
1840—Published "Church Principles Considered."
1841—Vice-president of the Board of Trade.
1842—Revised the Tariff.
1843—President of the Board of Trade.
1845—Resigned.
—Colonial Secretary.
1846—Resigned.
1852—Chancellor of the Exchequer.
1855—Resigned.
1858—Lord High Commissioner to the Ionian Isles.
—Published "Studies of the Homeric Age."
1859—Chancellor of the Exchequer.
1865—Leader of the Commons.
1868—Prime Minister.
—Published "Ecce Homo."
—Published "A Chapter of Autobiography."
1869—Carried Irish disestablishment.
—Published "Juventus Mundi."
1870—Carried Irish land bill.
1871—Unveiling of his statue in his native city.
—Abolished purchase of army commissions.
—Abolished confiscation in penal laws.
1873—Resigned, but resumed power.
1874—Dissolved Parliament.
1876—Published "Homer Synchronism."
1879—Mid-Lothian triumph.
—Published "Gleanings of Past Years."
1880—Prime Minister.
1885—Resigned.
1886—Prime Minister.
—Irish Home Rule proposed.
—Resigned.
1892—Prime Minister.
1893—Irish Home Rule passed Commons; defeated by Lords.

This chronology shows a career of unparalleled parliamentary achievement. When only twenty-three years old he was already a promising debater in the House of Commons, and had boldly jumped into the arena of party polemics by the publication of an able but rather revolutionary essay on Church and State. During the subsequent sixty years he was uninterruptedly a member of the House of Commons and foremost in the political strife of that historic period. He ever battled for justice and popular rights against oppression and exaction, and his private and social life was as pure, exemplary and disinterested as his public one. Happy, indeed, was his world-famed title, "The Grand Old Man." He did not court nor would he accept any title of nobility, though any could have been his. Nature ennobled him, and the glamor of a title would but cloud the lustrous name of Gladstone.

The Customer Who "Bores" You.

WHAT is your general attitude toward him? Does it "pay" to endure him? What are the consequences of avoidance of him? Let us consider the relation of the merchant to this universal pest and endeavor to come to some conclusion on the question of expediency.

According to the *Century Dictionary*, a bore is "a dull, uncongenial person who tires or annoys by forcing his company or conversation on others, or who persists in uninteresting talk or undesired attentions." Each one of us instantly recalls one or more of these wretches among his personal acquaintances, and will recognize him on sight without a distinguishing label. We droop as he approaches, inwardly fret and fume in the continuance of his presence (whatever the amiability of our spoken words, or the external calm of our countenances), and thank Heaven in gratitude as he betakes his way; and we then and there solemnly resolve that, come what may in consequence, we will not submit to the imposition again—"resolve, and re-resolve and die the same!"

And one is justified to his business conscience in thus resolving; justified in electing to be rid of the pertinacious bore, whatever the petty loss of trade, if need be, that results from declining to listen to the tiresome fellow. It is simply a calculable problem; a question of determining the difference between profit and loss. If I gain more than I lose by refusing to be bored, unquestionably there is money in my "turning down" the nuisance. But *is* there? Is it *necessary* to take a loss in taking the gain?

The *loss* we suffer through the bore is twofold: loss of time and loss of vitality. Very serious losses, truly; for time is the most valuable of all our possessions, and we have need of all our nervous energy, our vitality, in these stirring modern times. Even if we are not busily engaged with some one else when the bore comes before us—if we are apparently doing nothing, and thereby furnishing him with excuse, or provocation for assaulting our quiet—we lose time in listening to him; for we *gain* nothing from his uncongenial, uninteresting chatter, and we *lose our quiet*. Resting is not waste of time; doing nothing in one's own company is often doing much to prepare us for the important work ahead; and we have a right to demand that we be permitted, sometimes, to indulge in the luxury of loafing and *thinking*. Then, again, the loss of nerve-force must be taken into consideration. The rasping of our sensibilities, the trial of our patience in having to sustain an *assumed* interest in an absolutely uninteresting recital, the constant tension of our endurance and the self-disrespect which comes from the constant practice of pretended interest, all count for ultimate draining of our nervous virility. When the ear of the soul is closed against the bore, the ear of the body should be, also. It is not required of us that we should be human buckets, to be continually pumped full of muddy water, without complaining. Against this loss of time that is either actively valuable to us in our needful work, or passively valuable in its healing and recuperative offices, and this loss, also, of vital nervous force, the *profit* in being bored (in retaining a customer's trade) is no offset. The ultimate balancing of the account will show a deficit. It pays to lose some trade some times.

But, after all, we may keep the bores' trade and yet not suffer his inflictions, if we are so-minded. The remedy lies with us. There are men a-plenty who do not possess the wit to escape a bore without the bore's witnessing to the escape; but there are those who have this happy faculty. It was none of the least remarkable of Abraham Lincoln's remarkable faculties that he "could shove a man out of the door with the appearance of holding on to him by the coat-tail;" and the same gift characterizes nearly all the very busy men who stand in the front rank of business and affairs. Such a man will receive, and listen to, and dismiss a score of men in an hour, without the appearance of hurrying any one of them; but he "never allows the bore *to get a fair start*," as one of them explained. He remembers, say, an important matter requiring instant attention at the other end of the store, and his polite regret is so well simulated that the bore is flattered instead of displeased. Or he "heads off" the bore by *himself boring*, apologizes after a minute or two of fast talking about nothing, promises not to "bore" his caller next time, shakes hands good-bye and again apologizes for taking up so much of the caller's time; and takes a few steps toward the door with the bore, in exuberant good humor and "isn't it lovely weather," good-bye. When the bore calls next time he will rise from his chair, receive him *standing*, and—call to a clerk to bring him a telegraph blank. No man need be bored the second time unless he *wills* to be; and he need not lose the good-will of the bore unless he lacks in wit. It is largely a matter of tact, of the saving grace of *good manner*, and the instinctive reading of human nature. You may save yourself from the bore's infliction, and yet save to yourself the bore's trade. Shove him out of the door but appear to be holding on to his coat-tail.

A Suggestion for a Fourth of July Window.

AS July Fourth comes too closely on the heels of the date of issue of the July number of THE KEYSTONE to enable our readers to make profitable use of our suggestion for a Fourth-of-July window, we publish the suggestion a month in advance of its practicable availability; but the interval can be profitably employed in *elaboration* of our ideas, and in the further development of the scheme which the ample time of preparation will permit.

Drape two fine flags immediately against the glass, on the inside, tacking the upper and lower edges of the flags to the top and bottom, respectively, of the window, and looping them back at the middle; the result being and aperture of this shape ◊, through which observers must look to see the goods displayed. (Whatever *teases curiosity* attracts an observer. Ten people will struggle to see what is partly hidden, where one will turn his eyes to what is in plain view.) The loops which tie back the flags should be a string of small firecrackers; or attach the crackers, laid one against the other, to the ribbon which would be otherwise used in the tying back. *Don't skimp* in the use of firecrackers in this display—they cost little and accent the Fourth-of-July idea which is intended to be conveyed.

Spread the floor of the window with heavy white paper, with a lustreless surface (large sheets of white blotting paper will answer), with the edges neatly joined. Around the entire floor of the window, to form a border or frame for the display, arrange two rows of firecrackers in two sizes, the larger size on the outside, the fuses of this row to point out, the fuses of the inside row of small crackers pointing in. For corner pieces employ four pieces of one of the various designs of "wheel" fireworks.

You can likely find, in your community, some treasured relics of Revolutionary times in the shape of flint-lock pistols, guns, or swords. Borrow them, if possible, to enable you to arrange a group on the floor of the window which will carry the thought of the observer back to the time when the Fourth of July was born.

From the center of the ceiling of the window hang a large old umbrella, with the handle cut off, the dome uppermost, after you have employed the deft hands of your wife, or your best girl, in covering it with red, white and blue cheese-cloth, gathered in broad pleats to the center, inside and out. This would form a concaved canopy for the window. From each rib-point, at the edge of the umbrella, suspend bunch of firecrackers.

Against the back of the window arrange a group of portraits of Revolutionary heroes (you can get cheap prints of a half dozen or more for twenty-five or fifty cents), each one framed in evergreen, or smilax, or other convenient leafage.

Now place your goods in the window—not too many, no large pieces, and a considerable variety of kinds. To each piece tie a firecracker.

In the exact center of the window place the largest firecracker you can find in town. On it place a card inscribed:

> "Put a lighted match to the fuse of any of these firecrackers and they will go off; but not more quickly than *these goods* will 'go off,' if you examine their quality and inquire the price."

Let the local newspaper reporter get hold of the fact that you intend giving all the firecrackers used in the display to the Childrens' Home, on the night of the Fourth (or to the children of John Smith, who was the victim of a recent accident in the mines, or to some similar charity), and get a "free reading notice."

"Reduced to 48 Cents."

THE department-store manager long ago discovered the peculiar fascination of the odd-figure price to the mind of woman; and he has persistently "worked it for all it is worth." It has been worth incalculable profits to that apt reader of feminine human nature.

The woman shopper does not possess an analytical mind. She compares the quality of goods with the price-card, it is true; but she does not attempt to study the mental process which occupied the writer of the price-card when he was determining the amount of the "reduction." Had she done so she would likely have been surprised to find that after the fundamental question of first cost at factory had been considered, and the subsequent factors of "fixed charges" had been taken into account, plus the factor of exclusive style, or minus the factor of staple and competing style, still another important matter was weighed in the scale of the advertiser's judgment: "How much can she be made to *believe*, on the claim of 'reduction in price'?" She would likely be bewildered if she knew the fact that an article of infrequent use, of which the value is little known, which would have been marked at fifteen cents in the regular course, is sold in large quantities on the bargain counter when marked, "Reduced to 19 cents—worth 35," whereas it would probably have lagged if offered in the regular way at fifteen cents, without the fascinating "marked-down" tag upon it.

Of course such a trick is not defensible, in point of morals; but its success in point of busi-

ness illustrates the helplessness of the female mind in presence of the odd-figure price. "19 cents" hints to the shopper that this must be the estimate of final possibility of reduction; that it is net cost to the dealer; that it couldn't be made *eighteen* cents without loss, or *twenty* cents without profit; and the woman jams into the crowd of the sisterhood at the counter, anxious to get her share of this "saving" before the precious opportunity passes. The odd-figure has done its work, and the merchant turns his back to hide his grin.

Run your eye down the poster-advertisements of most of the great department stores in any of the metropolitan dailies, and you will find scarcely an "even" figure quoted. It would be absurd were it not successful. "$9.98," "$4.98," "29 cents," "98 cents," "9 cents,"—thus runs the gamut of price. Ninety-five per cent. of these advertisements are written for woman's eye; the male eye is not appealed to. The fact is significant of the irresistible "fetchingness" of the clipped dollar to the eye of feminine thrift. The whole philosophy of the bargain-counter is bounded therein.

Nine-tenths of all the retail buying is done by women; of jewelry, no less than of dry goods. Would it be expedient, therefore, for the jeweler to employ the "odd-price" plan?

We think not. In the first place, the jewelry business is one which involves in an unusual degree the element of *personal confidence* in the fairness and integrity of the merchant, on the part of the customer. The success of the odd-price trick of the department store is because it applies to lines of goods in which the woman shopper *thinks* she can successfully exercise her knowledge of values. She flatters herself that she knows something of comparative worths in organdies and ready-made chemises and shoes and house-belongings; she measures her wit against the merchant's, and doesn't care a rap for his reputation so long as the nineteen-cent article seems to her to be good value at twenty cents. The personality of the merchant enters never at all into her calculations; for she "knows a thing or two" herself, and is happy in buying the "bargain" on her own judgment. But she has to confess to herself her hopeless ignorance of values in diamonds, or in qualities of rolled plate, or in differences in watch movements; she *must* depend on the representations of the jeweler. The personal equation figures in her contemplations *here*. "$4.98," on a placard, would *discourage* her purchase of the article which could be readily sold her at five dollars. She don't want to have to feel that her judgment is influenced by a two-cent difference in *price*, in a purchase wherein she has *no* judgment as to *value*. She simply wants to believe that the value is in the price the jeweler asks her to pay; and she trusts him, or she will not buy.

Then, again, the very fact that the jewelry business *does* involve so large a portion of personal confidence in its operations requires of it a certain dignity and character which must *reflect* that element of personality. The methods of the street fakir, of the Bowery clothier, are radically wrong for it. It must "look its station," as representing the aristocracy of trade. *Noblesse oblige*. Wherever the personal factor is predominant, the business should be "clothed about" with the dignities which appertain to the human creature, in some degree. The odd-figure price would not help such a business to success.

The Flag in Advertising.

Patriotism

The patriotism of a people finds its best expression in enthusiasm over the flag of the country. Whenever that patriotism is specially excited, as in case of threatened war or any disturbance which jeopards the national unity or honor, the mass of the people is instinctively stirred at sight of the flag, which is the concrete witness of the fact of nationality.

Reverence for the flag is therefore regarded universally as the test of the love of country. He who scorns it, or is not moved to patriotic fervor at sight of it, is properly regarded as alien to the spirit of the people who acknowledge it as the symbol of their common fealty and political brotherhood.

The love of country is all-pervading in a people who are governed by laws of their own making, and self-imposed. The highest expression of patriotism is found in a government by democracy, because each citizen of such country is an integral part of the governing power.

The Stirring-Up of the Patriotic Spirit

When the national spirit of such a country is waked to vigorous life by an appeal to its humanity, as, say, the appeal of a neighboring people who are starved to death by thousands by a cruel and vindictive oppressor; or when the good-will of the country is abused by treachery, as in the destruction of a war-ship, with hundreds of lives, while on a friendly visit to a foreign seaport; the patriotism of the nation, eager to vindicate its sympathy and swift to avenge an assault upon its integrity and honor, is centered on the flag of the country, and every reference to the flag adds fuel to the fire of patriotic devotion.

The Occasion To-day

To-day, in America, we see the kindling of this fire of patriotism, and the coincident enthusiasm of the people when the stars and stripes show to the breeze. It is one of those momentous times in the history of a people when the flag dominates the human interest over everything else, when

> "Our hearts, our hopes, our prayers, our tears—
> Our, faith triumphant o'er our fears—"

are centered in the bit of bunting we call Our Flag.

Applying Patriotism to Profit

This universal present interest in the flag, as the symbol of nationality, invites the use of it in directing attention to one's own business; and just here arises nice questions of fitness and propriety. We can *dishonor* the flag, and discredit ourselves in the eyes of right-thinking people by wrong use of it; and the laws of the country properly guard the flag from such forms of profanation as *printing on it*, or other too direct application of it to our selfish purposes. In all patriotic eyes it has a semi-sacred value; and some such care must be taken to preserve its purity as would influence us away from a suggestion to distribute Bibles interleaved with advertisements. In whatever form we employ the flag in our business, we must not *defile* it—we must preserve its integrity, its purity.

Solving the Question of Propriety

But there is an entirely *proper* way of using the flag for purposes of advertising; it may be used in *decoration*. The merchant who decorates his store with flags, in the present moment of the *renaissance* of patriotism, makes the most of opportunity in a legitimate way.

Even if there were no sentimental associations attaching to the Stars and Stripes, the piece of bunting, with its harmonious combination of the red, the white, and the blue, would of itself provide fine possibilities for decorative purposes. But when the bunting embodies a *soul*, as in the form of the flag of one's country, the decoration enlists the *imagination*, and the sympathy and affection of the observer transfigures the bit of paltry cotton-stuff into the red record of triumphant wars, the blue into the truth and sincerity of the national spirit, the white into the integrity and purity of the national concepts of human rights and dignities. The bunting, thus idealized, becomes the idol of our affections, the very center of our intensest feeling.

How to Decorate

The question of how to use the flags most effectively, in interior decoration of a store, must be solved by each jeweler for himself, according to the arrangement of his wall cases and the vacant spaces on his walls—our suggestion can help him only in a general way.

The familiar forms of arrangement are always pleasing. Take two flags (not on sticks); bring the stars together, "gather" the pendant flags in pleats and extend the upper line of the flags right and left from the star-field center, in a straight horizontal line. Bring the lower lines of the flags into crescent shape. The result will be two half moons joined in the center. In the ^ below the point of contact, place small wreaths of smilax or evergreen, enclosing portraits (newspaper cuts will do, if you cannot get "half-tone" cuts or photographs) of the prominent actors in recent events—President McKinley, Speaker Reed, Gen. Lee, Captain Sigsbee, etc.

A less expensive arrangement (because employing smaller flags) would be to cross the sticks of two 3-foot flags, putting the wreathed portraits in the space *above* the crossing-point. Handy feminine fingers can easily make a *Cuban* flag, from description, which could be draped *below* the crossed American flags, joining the sticks in a festoon.

Pillars should be wound about with the national colors; the chandelier stuck full of small flags; strips of red, white and blue bunting festooned around the inside of the wall-case glass; jewelry in the show-cases and in the window, displayed on red and white and blue jewelers' cotton; and the window be curtained on one side with a large United States flag, looped back with a string of firecrackers, and on the other side with a large Cuban flag, looped back with several whole leaves of Havana tobacco (which can be got at a cigar store).

The Personal Touch

Provide a lot of *tiny* silk flags on sticks, just big enough to look well in a button-hole. Give one to every visitor, enclose one in every package; but do not put your name on them. Have neatly printed *on the stick* some patriotic sentiment, as "Cuba libre!" or, "Remember the Maine!" or, "On to Havana!" You will not lose anything by leaving your own name off of the stick, for the recipients will not likely forget where they got the flag; and you will get credit for *not* mixing patriotism and profits too openly.

Not all who seem to fail have failed indeed;
Not all who fail have therefore worked in vain:
For all our acts to many issues lead;
And out of earnest purpose, pure and plain,
Enforced by honest toil of hand or brain,
The Lord will fashion, in his own good time
(Be this the laborer's proudly humble creed),
Such ends as, to His wisdom, fitliest chime
With His vast love's eternal harmonies.
There is no failure for the good and wise:
What though thy seed should fall by the wayside
And the birds snatch it;—yet the birds are fed
Or they may bear it far across the tide,
To give rich harvest after thou art dead.

—(*Author Unknown.*)

News from the Northwest.

The past month has been a fair one for dealers generally. The war excitement has been both harmful and beneficial. Anything with an American flag on it has been a good seller, and jewelers seemed to take hold just right and strike while the iron was hot.

Although each flag sold was but a small item, it is safe to say that that there has been one sold for each man, woman and child in this section. Enameled goods are selling equally as well as the silk goods.

The mobilization of Minnesota Volunteers, at Camp Ramsey, between the Twin Cities, helped business, as there were continual excursions to the camp while the soldiers were there.

Jobbers report collections coming in a little slow, but fair for this season, and all look for good future business as staple and high, and with wheat, corn and potatoes, etc., held at present prices there will be an enormous amount of extra money brought to our producers, which can not help but affect business favorably.

Grain prospects are good, as the cool weather has enabled it to root well, and with a little more moisture and no damage during the growing months the crops cannot but be large. The chief cause for the good feeling, however, is the confidence every one seems to have that business will be brisk. Travelers send in the most encouraging reports received for some time, and say that jewelers are following the advice taken so successfully by our farming community, which was to diversify and not confine their stock to one exclusive line, so that something will be selling all the time.

Gus. Reim, New Ulm, Minn., has made up his mind that having a lighted cigar in his mouth and experimenting with acetyline gas at the same time don't go any better than any other kind of gas, for it will burn, and one experiment is enough for him. Fortunately a good scare was the extent of the harm done.

Dr. A. J. Cox, Tyler, Minn., died last month. The business will be continued as before.

Geo. T. Hartman, of Sischo & Beard, St. Paul, paid a visit to his trade in Wisconsin last month.

Mankato, Minn., papers speak very highly of the work accomplished by Jake Hubb in organizing the recent "Dewey" celebration there. Jake is nothing if not patriotic.

R. B. Wegner, Wheaton, Minn., spent ten days visiting in Wisconsin, last month.

J. L. Rourdenna, Elk River, Minn., lost about $100 by fire, April 24th.

Axel Madson, of The Reed-Bennett Co., Minneapolis, has returned from his trip through Montana.

Sol. Davidson writes from Garnet, Mont.: "I am located here, high in the mountains, with perpetual snow, and think business will be O. K."

E. E. Church, Clear Lake, Wis., attended the opening of the base ball season at St. Paul, April 29th. He is somewhat of a ball-player himself.

J. Allen Larson, Cottonwood, Minn., has sold out to C. J. Wimmers, Minneota, Minn., to which place the stock has been moved. Mr. Larson will have charge of it as watchmaker and optician.

Wm. G. Swain, Everly, Iowa, was married, April 24th, to Miss Ida H. Davis. THE KEYSTONE'S best wishes follow the young couple.

Emil Wetzel, Monticello, Minn., paid Twin City jobbers a visit last month.

Edw. Borehardt, Sherburne, Minn., is tearing down his old store. He will rebuild with brick.

Julius F. Young, Owatonna, Minn., reports his new residence nearing completion.

Chas. Beard, of Sischo & Beard, St. Paul, paid his trade in Central Minnesota a visit last month. He reports them all feeling good.

Max Schenk, for several years with Henry Bockstruck, St. Paul, Minn., has started in business at Parker, S. Dak.

Bullard Bros., St. Paul, had one of their plate-glass windows smashed by would-be thieves, April 25th. The police heard the crash and appeared too soon for any further damage.

Henry Bockstruck, St. Paul, has greatly improved his store by putting in an entire new front.

Will Spielman, Shakopee, Minn., enjoys a bicycle ride, and last month visited the Twin Cities awheel.

J. E. Reid, Rochester, Minn., has opened a manufacturing jewelry establishment in the Horton Block. Trade work a specialty.

T. Hummel, of A. L. Haman & Co., St. Paul, has gone to Europe, where he will spend the summer visiting old-time friends.

A NAVAL WINDOW DISPLAY.

This illustration shows a window display of Hartman & Correll, Allentown, Pa. "It was designed," says a letter from the firm, "after your instructions in the April number of THE KEYSTONE. It proved a great attraction, and fully repaid the subscription price of your journal. As an advertisement of our store it was most successful." On the editorial pages of this issue of THE KEYSTONE will be found a number of other practical ideas apropos of these war times, which our readers are invited to use for their benefit.

Dorner & Co., Duluth, Minn., suffered a small fire loss last month. Insured.

A runaway horse took a special fancy to the artistic display in the large plate-glass windows of Bullard Bros., St. Paul, May 1st, and succeeded in demoralizing what the thieves did not break the week before.

Jake Marx, of D. Marx & son, St. Paul, is visiting his trade in Western Minnesota.

L. R. Barnett, with Geo. R. Holmes, St. Paul, is spending his month's vacation in Wisconsin.

F. H. Harm has moved from 16 West Sixth Street to 111 East Seventh Street, St. Paul.

J. L. Williams, Lumbrota, Minn., has bought the stock of Carl L. Strom, and will consolidate the two at his old stand.

Pixley Bros. succeed J. E. Frantz at Marion, Iowa.

A. Swanson, Pine City, Minn., suffered a $600 fire loss, May 9th.

G. R. Fillmer, Dodge Center, Minn., had his store totally destroyed by fire, May 10th; loss, $1000; insurance, $400.

F. H. Peterson, lately with A. S. Weller, has succeeded to the position vacated by J. W. Wegman, with M. L. Finkelstein, St. Paul.

J. W. Wegman, lately with M. L. Finkelstein, St. Paul, is now with M. Shapira & Son.

The Egan Jewelry Co., Hibbing, Minn., will open a store at Sixth and St. Peter Streets, St. Paul, about July 1st.

A. S. & L. S. Weller, former St. Paul jewelers, have decided to quit the jewelry field entirely, and will open a first-class restaurant there soon.

A. Hammerstein, Cokato, Minn., now writes P. M. after his name, by the grace of President McKinley.

L. J. Ritter, lately with F. L. James, Breckenridge, Minn., has started in business at Hankinson, N. Dak.

Martin Johnson, West St. Paul, Minn., has gone to Carver, Minn., where he will locate in business.

G. C. Fillmer, Dodge Center, Minn., was in the Twin Cities last month, buying tools, etc., to replace what had been destroyed by fire.

Twin Cities' jobbers have all agreed to close their offices at 10 o'clock Saturdays until September 1st. The manufacturers have agreed to give half their force a holiday every Saturday afternoon, alternately.

C. T. Thayer has moved from 13 to 17 South Fourth Street, Minneapolis, Minn.

J. R. Porte, has removed from Grand Forks, to Fargo, N. Dak.

T. J. Marshall, formerly at Webster City, Iowa, is now at Elysian, Minn.

J. Hames, Arlington, Minn., mourns the loss of his father, who died last month.

Emil Geist, St. Paul, paid a visit to Duluth, last month, looking after his business interests there, and at the same time to take a wedding trip, he having been married just twenty-one years.

E. D. Best, Minneapolis, paid a short visit to Chicago last month.

Geo. R. Holmes, St. Paul, has repapered and painted his store.

The Western Manufacturing Co. have begun a manufacturing and jobbing business at 600–602 Sykes Block, Minneapolis.

Frank C. Shinn, of S. H. Clausin & Co., Minneapolis, has returned from his northern trip.

Hauenstein Bros., Redwing, Minn., have started a trade repair shop.

C. F. Winter, River Falls, Wis., has completely repaired his fire-damaged store and is again ready for business.

H. A. Borreson, Ellsworth, Wis., has gone to Minneapolis, Minn.

C. C. Bergh, St. Paul, is treating his store to a liberal amount of paint.

Chas. C. Staacke, St. Peter, Minn., paid a visit to Camp Ramsey to see the Minnesota soldier boys, while on his way to Duluth, where he is to serve Uncle Sam as a juror.

Albert Mellin, Stillwater, Minn., has returned from a month's course of study at the Elgin Horological School.

Lew Schaefer, Shakopee, Minn., paid the Twin Cities a visit last month, making the trip on his bike.

J. E. Elliot has charge of the jewelry department of J. L. Moody, Ellsworth, Wis.

Weld & Sons, of Minneapolis, have redecorated and generally improved their store.

Trade visitors that gladdened the hearts and purses of Twin Cities' jobbers last month, were: E. E. Church, Clear Lake, Wis.; Emil Wetzel, Monticello, Minn.; A. J. Lee, Hudson, Wis., John Fredell, Center City, Minn.; Will Spielman and L. Schaefer, Shakopee, Minn.; Theo. Schael, Hastings, Minn.; John H. Reiner, Glencoe, Minn.; Aug. Gfrerer, Stillwater, Minn.; Chas. C. Staacke, St. Peter, Minn.; R. B. Wegner, Wheaton, Minn.; L. J. Ritter, Hankinson, N. Dak.; J. A. Robinson, Kalispel, Mont.; Will Fahey, Hastings, Minn.; G. R. Fillmer, Dodge Center, Minn.; C. O. Rouning, Walcott, N. Dak.; Albert Mellin, Stillwater, Minn.; Frank Lueck, Benson, Minn.; Martin Johnson, Carver, Minn.; Fred. Willman, Stillwater, Minn.; L. Diacon, Chaska, Minn.; Albert Asleson, Dawson, Minn.; W. W. McGuire, Northfield, Minn.

"Enclosed find one dollar for renewal of my subscription. I could not do without your paper at twenty times its price. My clerks, as well as myself, enjoy reaaing The Keystone."—A. J. Reinhardt, jeweler, Lincoln, Ill.

Philadelphia Notes.

The Public Buildings Commissioners, at a recent meeting, decided to install a pneumatic clock in the tower of the City Hall, and the tower committee was instructed to secure estimates from the Johnson Pneumatic Clock Co., Milwaukee, Wis., and to prepare a scheme for the installation of the clock and machinery in the tower. This pneumatic clock system consists in the employment of an accurate astronomical timepiece or master clock, placed in a room where the temperature is maintained thermostatically uniform the year around, the variation being not more than three degrees. To the master clock is attached a small valve connected with metal pipes or tubes containing compressed air. These pipes continue up and connect with the mechanism operating the hands of the dials and also with a number of smaller dials placed in various rooms throughout the building, all registering the exact time shown on the master clock. On the opening of the valve attached to the master clock, and which operates every half minute, the hands register a like movement on the dials. The power exerted is sufficient to overcome any possible impediment caused by sleet, snow or ice, even at the great altitude and with the immense size of the tower clock.

The regular meeting of the Philadelphia Horological Society, was held at Bank Hall, S. E. corner of Broad Street and Columbia Avenue, on May 5th. Owing to the lack of a quorum, due to the bad weather, no business was transacted. Mr. William Haines showed a watch made by A. L. Dennison, the original projector of the present Waltham Watch Co., and who was generally called "The Father of American Watchmaking." The watch was an 18-size, full-plate, one. It had a ratchet tooth escape-wheel, and was similar to the English lever then in vogue, with the exception that it had a going barrel instead of the fuzee arrangement for the mainspring. Mr. Haines also showed a key-wind going barrel watch, to which he had applied his device for showing the extent to which the mainspring was wound, which excited general approval from those present. At the next meeting he will show a *stem*-wind watch with this device attached.

The Philadelphia College of Horology has issued a prospectus of the school in the form of a handsome booklet, stating the advantages of the institution and giving illustrations of the work of pupils. The booklet is very artistically compiled, and will be found valuable by intending pupils of horology.

Joseph Bailey, of Bailey, Banks & Biddle, is traveling in Europe with his family. His trip will extend over the summer.

The Philadelphia Jewelers' Club has completed arrangements for a base ball game, to be played on June 25th, between teams representing the New York and Philadelphia members of the Club. The following jewelers will represent Philadelphia: L. P. White, William H. Long, Jas. W. Barry, Harry Hamilton, William Quinn, J. Warner Hutchins, Jos. Cadwalader, William Linker and A. G. Lee. The New York nine will be composed as follows: George Read, Ed. Eckfeldt, of Eckfeldt & Ackley; William Hamitt, Archie Rutherford, of H. A. Kirby & Co.; Vincent P. Tommins, of the Middletown Plate Co.; Frank Locklin, Mr. Rose Matthew Stratton, of Alling & Co.; and Charles Snedeker. Besides the glory of victory, the winning team will also be presented with a silver trophy. It is expected that a large number of jewelers will attend the game, and an enjoyable time is promised the visitors. The game will be played at the Wynnewood grounds, Twenty-ninth Street and Allegheny Avenue.

J. Albert Caldwell, of J. E. Caldwell & Co., sailed for Europe last month, accompanied by his wife and son. He will combine business with pleasure and visit the European markets for his firm. Hugh B. Houston, of the same firm, accompanied by his wife and daughter, also sailed for Europe on a like mission.

At the recent annual meeting of the Manufacturers' Club, Howard L. Roberts, Secretary and Treasurer of the Keystone Watch Case Co., was elected a vice-president of the Club and John F. Simons, of Simons, Bro. & Co., was elected a director. Mr. Simons was subsequently elected a member of the library committee.

Geo. Mayer & Co., wholesale and manufacturing opticians, recently purchased a large assortment, some 1,500 dozen, of the popular alumnico spectacles and eye-glasses, which are now at the disposal of the trade. Walter Mayer, of this house, is making a trip through the West, and reports a satisfactory business despite the war scare.

The Dennison Manufacturing Co. are now located in their palatial new quarters in the altitudinous new building at 1007–1009 Chestnut Street. They occupy the first floor and basement, which gives them much larger space than was available in their old quarters. The store and office are beautifully and regally finished and fixtured in carved Flemish oak.

Wm. P. Sackett, of John Wanamaker's jewelry department, secured the contract to furnish the prize trophies for the century runs of the Engleside Cycle Club, the Victory Wheelmen and the Tannhauser Wheelmen. He also secured the contract for the prizes for the People's Schuylkill Navy Regatta, to be held July 4th. Mr. Sackett sails, June 2d, on the Hamburg-American line, for Europe. He will be gone two months, and will visit all the leading markets of England and the Continent.

"I send you my dollar to-day, and will say I think more and more of The Keystone every issue I get, and am always looking for the next issue. I would not be without it."—G. L. Thompson, jeweler, Berkley, Va.

San Francisco Letter.

Rothschild & Hadenfeldt have made extensive alterations in their office. They have enlarged it considerably. The office is now one of the prettiest in the trade.

Peter Johnson, of Angels Camp, Cal., has recently opened a branch store in Sonora, Cal.

Bert Condy, of Stockton, Cal., joined the volunteers of the Sixth Regiment, which, it is expected, will soon start for the Philippines.

Frank Meriam, Spokane, Wash., nephew of General Meriam, has enlisted in the army service.

Keller & Praet, of Woodland, Cal., have dissolved partnership. Mr. Praet continues the business under his own name.

H. F. Wickman, the most prominent jeweler of Honolulu, arrived in this city last month. He is now in the Eastern market.

Wm. Dielschneider is taking an optical course with the Standard Optical Co., and not, as was reported in last month's issue, with the California Optical Co.

E. W. Lord has established a store at Bishop, Cal.

M. B. Coonley has accepted a position with H. Extrom, at Astoria, Cal.

F. R. Stearns has discontinued his business at Stockton, Cal., and gone East.

Mr. Phelps has just returned from the East.

A. Kaiser, who recently failed in business at Sonora, Cal., is about to open up a store at Stockton, Cal.

P. Forzani, of this city, has sold a part interest in his business. The concern is now Forzani & Co.

Geo. Daunt has established a jewelry business in Petaluma, Cal.

Frank Burr has opened up a very nice store at Winters, Cal.

I. Fiel, formerly of Grass Valley, Cal., has established himself at 1009 Broadway, Oakland, Cal.

B. Erb, formerly located in Colorado, has opened up a store at Eugene City, Oregon.

V. E. La Porte, formerly with D. Behmer, Santa Rosa, Cal., has accepted a position with Frank Ray, Visalia, Cal.

H. Thumann, of Healdsburg, Cal., offers his store for sale.

The E. Howard Clock Co., have the contract for the large tower clock to be placed on the tower of the Ferry Depot. This will be the largest tower clock yet erected on this Coast.

The Standard Optical Co. are now having a course of lectures delivered by Dr. Brown, of Chicago. The course will last six weeks, and they expect about twelve students to attend.

J. W. Pembroke, formerly of this city, is doing a good jewelry and optical business on the coast of Alaska.

L. M. Mendlesohn, traveler for the Standard Optical Co., is now on his Northern trip. He reports a good business in that section.

C. F. A. Sturts, formerly of this city, lost his entire outfit while crossing one of the passes on his way to the interior of Alaska.

Osize Lowenthal, the popular knight of the grip for Alphonse Judis, of this city, has just returned from an extensive trip.

John Hood, of Santa Rosa, has just newly refitted his store in elegant style. He has installed new fixtures throughout.

E. B. Chambers, of Santa Barbara, Cal., is very ill. He has been confined to his bed for some time.

The following jewelers were in town recently: E. W. Reynolds, Los Angeles, Cal.; A. B. Wilson, Martinez, Cal.; Peter Engel, Marysville, Cal.; Albert Hansen, Seattle, Wash.; J. F. Granas, Los Angeles, Cal.

St. Louis Jewelers See a Ball Game.

The hilarious aggregation of St. Louis jewelers, known *inter se* as "de gang," were the honored guests of Henry Barmeir, of the L. Bauman Jewelry Co., of St. Louis, at Sportsman's Park, on May 25th, to see the ball game between the champion Bostonians and the home team. It was one of the dry days during the recent "rainy season," but it was evident that even a wet day wouldn't frighten "de gang." They arrived on the grounds just in time to see Morris Bauman leave the ball park for the race track, just opposite, to return later a sadder but a wiser man. The members of "de gang" were H. Mauch, George Stumpf, Ger. Eckhardt, W. F. Kemper, (it would be no gang without them), F. W. Bierbaum, George Kohnert, of O. H. Kortkamp & Co.; Dick Pfeffer, St. Louis Clock & Silverware Co.; Chas. Schoen, local agent of the Barbour Silver Co., and Mr. A. Miller, representing the Seth Thomas Clock Co.

The host, Mr. Barmeir, who is secretary of the Sportsman's Park Association, had placed several boxes at the disposal of his guests, and the game, which was quite a spirited one, was hugely enjoyed. There was a dispute as to how many players were on the field, some maintaining that there were only twenty-six while others counted other duplicates of eighteen. It was a friendly difference of opinion, however, the result of it and the game being much alike, that is to say, "half-and-half"—Boston 8, St. Louis 4.

During the progress of the game, Eckhardt tried to arrange a few bets, but got mixed in the arrangement, making Stumpf, whose "one leg is longer than it really ought to be," fearful lest the other would be pulled also, and "Papa" Bierbaum shook his head, picked up his cane, and got his good foot near the box exit; visions of former leg-pullings rising before his eyes. But this interesting bit of by-play was interrupted by the appearance of Morris Bauman, with an invitation to go up and help spend his winnings, or rather, what he did not lose, which was easily done. At this stage of the game, Billy Kemper got a chance to get some of the cigars which he has helped pay for in the past six years, and distributed the same among "de gang" at the individual expense of handsome Herman Mauch. A return to the boxes for the finish of the game gave Messrs. Pfeffer, Schoen, Miller and Kohnert opportunity for arranging the closing exercises of the day's outing, which were faithfully carried out at the conclusion of the game.

Before going home a vote of thanks was extended to Mr. Barmeir, who responded with the statement that during the next home series of the club "de gang" would be favored with another invitation.

Iowa Retail Jewelers' Association.

The Iowa Retail Jewelers' Association met in Webster City on May 10th, a goodly number being present. A very interesting meeting was held, and great enthusiasm was shown by all the members. Letters on various subjects pertaining to the trade were read and discussed. It was decided to hold the next meeting on the second Tuesday of May, next year, in Des Moines, and it is believed that it will be the largest meeting of jewelers ever held in the State. The following officers were elected: President, E. G. Bowyer, Algona; vice-president, C. W. Dudgeon, Ames; secretary, F. W. Heron, Webster City; treasurer, Theo. L. Rogg, Des Moines. Directors: H. P. Holmes, Des Moines; B. G. Hough, Clarion; J. M. Higbee, Manson; C. F. Townsan, Belmond; J. M. Richardson, Webster City; W. DeNoyelles, Goldfield.

ARMY AND NAVY BELTS

The Most Timely Novelty in Belts

PRICES

HEAVY WEIGHT { Gilt Finish, $9.00 / Silver Finish, 8.00

MIDDLE WEIGHT { Gilt Finish, $7.00 / Silver Finish, 6.00

All Prices according to Keystone Key.

BUCKLES, without Belting, $1.50 Less

The only correct Regulation Buckles in Sterling Silver. Die work correct and artistically executed, gilt in regulation style, mounted on regulation gold webbing. **THE MOST SUCCESSFUL LADIES' BELT OF THE YEAR. Sell upon being shown.**

Two-thirds size of cut

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above the **OLD GLORY SHIELD** is the design of our newest patriotic Button and Scarf Pin. Made in Silver Gilt, artistically colored in hard enamel.

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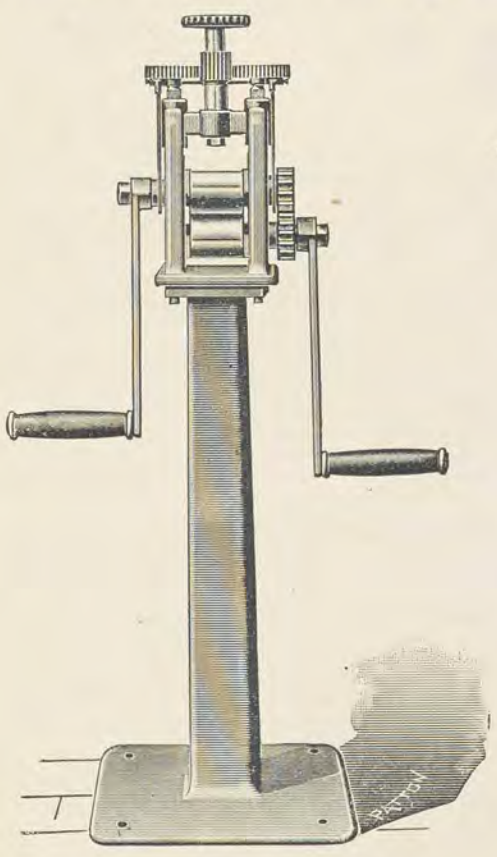

THIS interests you as it does every JEWELER. The modern shop is not complete without improved tools.

Your neighbor has them, why not you?

Write for our No. 12 Catalog. It will show you a large variety of tools which you need.

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VACHERON & CONSTANTIN TRADE-MARK.

Vacheron & Constantin

have received the following awards at the Annual Competitive Test for 1897, held at the Geneva Observatory, the results of which have just been announced:

The only First Prize for a series of Best Adjusted Watches.

The only First Prize for Single Watches.

A Second Prize.

A Third Prize.

This uninterrupted series of successes substantiates the enviable reputation of

Vacheron & Constantin Watches

EDMOND E. ROBERT,

3 Maiden Lane, NEW YORK.

★ JEWELERS' ROLL OF FAME ★

That ocean-guarded flag of light, forever may it fly!
It flashed o'er Monmouth's bloody fight, and lit McHenry's sky;
It bears upon its folds of flame to earth's remotest wave
The names of men whose deeds of fame shall e'er inspire the brave.

Timbers have crashed and guns have pealed beneath its radiant glow,
But never did that ensign yield its honors to the foe!
Its fame shall march with martial tread down ages yet to be,
To guard those stars that never paled in fight on land or sea.

THE KEYSTONE hastens to wish a hearty godspeed and safe return to the hundreds of jewelers who have left workbench, counter or office to fight under the flag. From the members of no other trade was there a heartier response to the call to arms. All who belonged to the National Guard responded with alacrity, eager to get mustered into the United States Army for active service in whatever clime or country the War Department decreed. From the factories at Elgin and Waltham, Providence, Attleboro and Newark; from the big jewelry stores in New York, Chicago, Philadelphia, etc., and the smaller jewelry stores in city, town and village all over the country sturdy young jewelers have bravely volunteered to do battle for the cause of down-trodden Cuba. May they all return safe, sound and soon, having accomplished the glorious task now before them.

We present herewith portraits of a few of those members of the trade who have taken a prominent part in the enlistment and mustering of troops. Captain R. E. Burdick, president of the Bowler & Burdick Co., Cleveland, Ohio, was ordered into service for the State on April 25th, with his command, Troop A, O. N. G., and instructed to recruit two other troops for the First Regiment, O. V. C., which he immediately proceeded to do, and left for Camp Bushnell, Columbus, Ohio, on May 5th, with about 250 selected cavalrymen for the Federal service. They were mustered in at Columbus on May 9th, as Troops A, B and C, of the above named regiments. These three troops are entirely officered by former members of the original Troop A, O. N. G., and are certain to give a good account of themselves when opportunity permits.

Captain Burdick has been connected with the Ohio National Guard for upwards of fifteen years in the cavalry service, and has been commanding officer of Troop A, for something over three years. The personnel of Troop A, is of the very highest order, and the recruits enlisted for the Troops B and C are all selected men of about the same social standing, being largely business and professional men of the city. Troop A was organized about twenty-one years ago, and its reputation is widely known, having on several occasions been ordered into service for the State to quell riots and insurrections, as well as being honored by escort duty for distinguished personages, the last of which being the Presidential escort at the inauguration of President McKinley, March 4, 1897.

Captain R. E. BURDICK,
Troop A, Ohio N. G.

Major Jos. B. CAUGHEY,
Third Regiment, Illinois N. G.

"Father Time's Soldier Boys."

To the Elgin National Watch Co. belongs the honor of having furnished quite a large contingent of soldiers.

In fact, few, if any, institutions in the United States has furnished a larger quota to the volunteer army now in the service of the United States. On April 23d there was posted in the factory the following notice:

> By direction, notice is hereby given that all employees who may enter the military or naval service of the United States in our war against the Kingdom of Spain will be reinstated in the employ of this company, if they so desire, whenever honorably discharged from said service.

The National Guardsmen (Third Regiment) in the factory who immediately repaired to Springfield were the following:

Major, Jos. B. Caughey.
Captain, Geo. W. Connell.
First Lieutenant and Adjutant, Geo. Houck.
Second Lieutenant, Fred. J. Smailes.
Sergeant, Bert Dodge.
Corporal, Walter Hanchett.
" Chas. Fuller.

Private,	Butler, Arthus S.	Private,	Hardiman, Lester
"	Colton, Irvin	"	Hagopean, Albert
"	Cash, Clarence	"	Hienemann, Max
"	Cloudman, Mortimer M.	"	Marvyne, William
"	Eyre, William	"	Rendell, Benj.
"	Flemming, George	"	Scarisbrick, Albert J.
"	Gieske, William	"	Zornow, Frank

Private, Dolph, Isaac N.

Other of the factory employees who enlisted May 9th, and went to camp at Springfield, were:

Damon, Henry	Hunt, Charles	Nass, Richard
Farrell, John	Howard, Joseph	Thompson, Wm. Allen
Gilles, Frank	Howard, Harry	Taylor, Carl C.
Hanson, Rudolph O.	McQueeney, Frank	Veuve, Marcus
	Bennorth, Alfred	

All these, now known as Father Time's soldier boys, have since been mustered into service as the One Hundred and Fifty-eighth Regiment Volunteer Infantry. The factory hands are very proud of their formidable soldier contingent, and feel certain that they will make the enemy "walk Spanish" faster than the "double quick." We present herewith the portraits of Major Joseph B. Caughey, First Lieutenant and Adjutant George Houck, and Second Lieutenant Fred. J. Smailes, formerly of the Third Regiment, I. N. G., now of the One Hundred and Fifty-eighth Regiment Volunteer Infantry of the United States Army.

Major Joseph B. Caughey has been employed at the Elgin factory since 1880, beginning as an errand boy. He has worked himself up to a position as finisher. For years he has acted as "factory guide" to show visitors through. He is a capable and popular man, and has won his spurs both in the military and in factory work upon sheer merit only. Major Caughey is about thirty years of age, unmarried and is a native of Illinois. He enlisted in the State militia fifteen years ago, and has worked his way up from private to Major of Battalion.

First Lieutenant and Adjutant George Houck has been employed at the Elgin Watch Company's factory for the past seven years in the escape, train and plate departments. He is quite a young man and a soldier every inch of him. He is a native of Belvidere, Ill.

Second Lieutenant Fred. J. Smailes, is an Elgin boy, having been born and raised in the "Watch City." His family are well-known, and he is a bright and promising young man who will make a brave and enthusiastic soldier.

The entire factory force is deeply interested in the military contingent, and feel confident that it will make a name for itself if only the opportunity is afforded it. The soldiers, themselves are impatient for the fray, and are perfectly willing to follow the flag to the ends of the earth. THE KEYSTONE wishes them success, and predicts for them an unusual measure of glory.

Soldiers from Jewelry Factories.

★ So many of the employees of the Providence and Attleboro factories belong to the military, that the war is not unlikely to result in a dearth of skilled workmen. Among the militiamen in the employ of the Howard Sterling Co., Providence, were John Coughlin, of the First Light Infantry; Frederick Opper, a musician in the same regiment; John Corey, corporal in Battery A, and Robert Lease, also an artilleryman. In Hancock, Becker & Co.'s factory were Lieutenant Stafford, of the machine gun battery, and several members of the Naval Reserve. Herbert S. Tanner, the well known retail jeweler of 64-66 Westminster Street, is major of the First Regiment, R.I. M., and Lewis Patstone, manufacturing jeweler, is captain of Company B of the United Train of Artillery. Besides those who previously belonged to the State militia numbers have enlisted, and have gone to the front.

★ Numbers of skilled mechanics are missing from the Attleboro factories, having substituted the gun for the lathe. Company I of the Fifth Regiment, Massachusetts Volunteer Militia, largely made up of jewelry factory hands, has been ordered into service, and there are numbers in other regiments. Herbert A. Clark, of Horton, Angell & Co., is in military service. A list of names of the trade soldiers from Providence and Attleboro alone would take well nigh a page of THE KEYSTONE. May they make a record worthy of their country.

★ Frank Durkee, with Roehm & Son, Detroit, Mich., has donned his war clothes.

★ Harry Heeren, of Heeren Bros., Pittsburg, Pa., enlisted in the Washington Infantry.

★ Harry Ward, with W. J. Johnston & Co., Pittsburg, Pa., enlisted in the Naval Reserves.

★ Geo. G. Lhamon, of Tracy, Minn., tendered his services to the Government the morning after the *Maine* was destroyed. He has since been accepted.

★ D. C. Percival, Jr., of D. C. Percival & Co., Boston, Mass., left for the war, with the First Corps of Cadets.

★ George Tracy, of Smith, Sturgeon & Co., Detroit, Mich., is with the reserves. Charles Henry and Clarence Wurtzburger, with the same firm, are with the infantry.

★ The employees of the jewelry department of John Wanamaker, Philadelphia, Pa., were informed that not only will their positions be retained for them and their salaries paid in full while away, but that he will insure the life of each and every man for $1,000, to be paid at their death, if such should happen while in the country's service, to be payable to any one the policy holder shall designate. The following salesmen enlisted from the jewelry department: Richard M. Shoemaker, of the First Regiment; Charles Gallegher of the Naval Reserve, and L. Biedenbach, of the First Regiment.

★ Lore Gismond, of Tarrant & Gismond, is a member of the Second Regiment of New Jersey, recently mustered into the service of the United States.

★ James W. Glassford, Sheldon, N. Dak., is in military service. The business will be continued in his absence.

★ Clarence A. Fisher, of Litchfield & Fisher, was one of the first young men to answer the call for recruits for the Fifth Regiment.

★ Geo. L. Rochat, of St. Paul, Minn., and I. Reiner, of Hutchinson, Minn., enlisted for military service.

★ Martin Walsh, an employee of Eustis Bros., Minneapolis, Minn., enlisted in the National Guard of Minnesota.

★ Capt. Geo. Leonard, of Urbana, Ohio, with his company, has been mustered into the United States service.

★ Geo. A. Forsythe, of Thornton Brothers, Providence, R. I., enlisted in the army and is the senior captain of the First Rhode Island Volunteers.

★ E. F. Renaud, manager of Jules Renaud & Son, Keokuk, Iowa, was called into service as second lieutenant of Company A, Second Infantry, I. N. G.

★ Harvey Mansfield, with the Cowell & Hubbard Co., Cleveland, Ohio, is a member of Troop A, O. N. G., and has gone with that organization. Before leaving the city he was made first sergeant.

★ George Goldberg, with W. & S. Blackinton, was a member of the Seventy-first Regiment, N. G. N. Y., which enlisted for the war. W. & S. Blackinton will hold his position open for him, and will pay his salary for one year during his absence.

★ Among the jewelers of Denver, Col., who belonged to the militia were Lieut. Chas. B. Lewis, of the Lewis Jewelers' Supply Company; M. Oppenstein, Oppenstein Brothers; Sergt. E. E. Vicary, with Lehman & Hamilton; L. R. Rose and Walter Roschlob, with the Bohm-Bristol Jewelry Company, and F. L. McCraken. All will, no doubt, have a chance to distinguish themselves.

★ W. B. Pinney, Pine Bluff, Ark., answered the call to arms as a member of the Third Regiment of Arkansas State Guards.

★ John Rosenstihl, of Rosenstihl Bros., Birmingham, Ala., was named captain and adjutant on the staff of Major Tom O. Smith, Third Regiment Alabama National Guard. The regiment has been called into service. Capt. Rosenstihl is a brother of secretary William Rosenstihl, of the Alabama Retail Jewelers' Association.

★ H. S. Seibel and C. F. Bauer, of Saginaw, Mich., members of the Michigan Naval Reserve, have entered the service of the Government.

★ Harry Carswell, of Jaccards, went to camp as the principal musician of the Third Regiment Missouri National Guard.

★ William F. Genicke, the Michigan Avenue retailer, Detroit, went to Island Lake, Mich., with the State troops as a corporal in Company D. His brother will manage the business until the war is over.

★ Geo. L. Rochat, a watchmaker, of Pleasant Avenue, St. Paul, Minn., volunteered for service in the army.

★ Captain Lewis B. Patstone, Providence, R. I., organized a company of recruits for active service.

★ F. J. Breckbill, of Bridgeport, Conn., is the captain of Company K, of the Fourth Regiment of the National Guard of that State, mustered into the service of the United States.

★ Victor Desbouillons, the son of A. L. Desbouillons, Savannah, Ga., and a salesman in his father's store, enlisted as a member of the Chatham Artillery.

★ Edward Phillips, of Miles Grove, Pa., joined the Fourteenth Regiment, N. G. P.

★ Charles Tipson, a son and employee of William Tipson, manufacturer, San Francisco, enlisted with the First Regiment of California Volunteers.

★ Those of the force of Shreve & Co., San Francisco, who enlisted were: Sergeant Failiss, Arthur Lunberg, T. H. Trumbull, R. F. Armstrong and S. E. Kelly.

★ F. B. Searle, of Milaca, Minn., has enlisted in the Minnesota Guards.

★ Arthur E. Soper, of the American Watch Tool Company, Waltham, Mass., has enlisted in the naval service of the United States.

★ Charles G. Otwell, of Seaford, Del., who is an expert rifleman, is instructing the Delaware volunteers in rifle practice.

★ Ray Warner, of Edwards & Sloane Jewelry Company, Kansas City, Mo., was one of the boys who enlisted last month, and is now looking forward to a meeting with the wily Spaniards.

★ Colonel Hugh T. Reed, formerly president of the Crown Pen Co., Chicago, and more recently an author and writer on military subjects, has organized a regiment of 1,200 men to act as volunteer Illinois troops. If called out Colonel Reed will head his regiment.

★ C. V. Mount, Shenandoah, Iowa, is captain of a company in the National Guard.

★ Major Ed. H. Lovell, several years in the employ of Clemens Hellebush, Cincinnati, Ohio, enlisted in the First Ohio Regiment.

★ John Haslem, with Clemens Oskamp, Cincinnati, Ohio, enlisted in the First Regiment Ohio National Guard.

★ C. D. Sandison, of Huntsville, Mo., enlisted in the United States Cavalry.

★ Fred. Straub, Faribault, is sergeant-major of the Twelfth Minnesota Volunteers.

★ Clarence D. Stuart, with Heeren Bros. & Co., John Glenn, with Sol. Cerf & Co., Theodore Webber, 1000 Carson Street, and Will Klein, with Sheafer & Lloyd, all of Pittsburg, Pa., belong to the Washington Infantry, which became a State organization subject to the President's call.

★ Frank B. Ross, an expert engraver in the store of F. F. Bonnet, Columbus, Ohio, and another employee of the same store, are organizing a company of volunteers for service in the war with Spain. The recruiting office is in Mr. Bonnet's store, and the young men are meeting with success in securing members. They have a plan by which they expect to get into the service whether another call is made for Ohio troops or not. This they are not quite ready to explain at present. Both are excellent young men and mean business in this matter.

★ August Schnell, of Troy, N.Y., presented to Major Lloyd, of the National Guard, a silver watch with his name inscribed on it.

★ M. F. O'Brien, of the Illinois Watch Company's shipping department, is the captain of one of the militia companies of Springfield, Ill., which have been called into the service of the United States.

First Lieut. and Adjut. GEO. HOUCK, Third Regiment Illinois N. G.

Second Lieut. FRED. J. SMAILES, Third Regiment Illinois N. G.

Cleveland and Northern Ohio.

If we were to consider the number of buyers from out of town as any criterion of business, we would be compelled to believe that nearly all the jewelers have joined the army. They certainly have not been in this market the past month. The travelers for the different houses report a fair trade in this State and the Northwest. Among the local retailers it has been a fairly good month.

If the wedding season is as brisk with unfortunates this year as in seasons past, the jewelers will have no cause to grumble over the spy business.

The jewelers seem to have been "in it," as far as our local firms go, in military preferment, Mr. R. E. Burdick being appointed a captain in the regular service, and Harvey Mansfield a first sergeant. Mr. Mansfield is with the Cowell & Hubbard Company. Captain Burdick was presented with a magnificent Kentucky thoroughbred by the Chamber of Commerce.

The Cleveland Optical Company, for many years located in the Wilshire Block, have removed to the fourth floor of the New England Building. Every month sees additions to the trade in the block between Bond and Erie Streets. It will be a good thing to center thus in such a prominent part of town.

I. Crawford, credit man for Sigler Bros. Company, is again at his post, after a serious illness.

O. B. Klein, with the Solomonson Optical Company, is in New York in the interest of his company. He will visit several of the optical factories in the East before he returns.

Leo Wormser, representing the Julius King Optical Company, spent a week here the first of the month, renewing old acquaintances and calling on the trade.

Arthur D. Weed, formerly with Burt Ramsay & Co., is now associated with the Bowler & Burdick Company, in the wholesale department. Mr. Weed will represent the firm on the road part of the time.

S. G. Stiles, optician for Sigler Bros. Company, suffered with an attack of congestion of the spine and partial paralysis the first of the month, and is now recuperating at Wakeman, Ohio. Mr. Stiles hopes to resume his duties soon.

Grant Whittlesey, of the Grant Whittlesey Optical Company, is in the East on business for his company. He will return the middle of June.

Harry G. Dean, with the Cowell & Hubbard Company, was married to one of our local belles this week. THE KEYSTONE extends congratulations.

Webb C. Ball entertained, the past week, a prominent party of railroad officials from Baltimore, who, during the previous week, had attended the Brotherhood Convention in St. Louis. Mr. Ball's party were delighted with our city, which, from our point of view, could not be otherwise.

Wm. F. Laubach, of Frank, Laubach & Nutt Co., Akron, Ohio, was recently married to one of that city's charming daughters. THE KEYSTONE extends its best wishes.

H. F. Warren, Garrettsville, Ohio, was a buyer in the wholesale houses the last of the month.

E. E. Critz, Elyria, Ohio, was in town last week and called on the jobbers.

W.J. Higgins, Shelby, Ohio, was a recent buyer.

Mr. Dillon, of Dillon, Wheat & Hancher Co., Wheeling, W. Va., was in town recently and paid the trade a social call. Mr. Dillon had been in Toledo, the guest of H. A. Lozier, the bicycle manufacturer.

A. W. Bogani, well known to the trade as the former traveler for L. H. Keller & Co., is in town calling on acquaintances. Mr. Bogani is now manufacturing felt buffs and reports business as very prosperous.

J. A. Babcock, Painesville, Ohio, has sold his business to Wood & Kerr.

The jewelers of this city are agitating the question of Saturday afternoon closing during the summer months. All will close if it can be made unanimous. All but one Superior Street firm have agreed to do so, and it is hoped that that firm can be persuaded to come into line.

John Brenner, of Yonngstown, Ohio, is selling out at auction a branch store in Niles, Ohio.

C. N. Frazier, Norwalk, Ohio, was a trade visitor the last of the month.

A slick attempt to defraud Eastern jobbers and some retailers came to light here last month when the police arrested a party by the name of C. H. Clark, who had rented the top floor of 208, 210, 212 Superior Street and was using the name of a prominent business man, Caleb Davies, to get jewelry sent on to him on consignment. Mr. Ed. Quinland, with Bowler & Burdick Co., became suspicious of the man and notified the police. When arrested over $2,500 in jewelry was found, and also many letters saying that goods would be shipped soon. Clark was bound over to await trial at the next session of the United States Court.

H. H. Brainard, Medina, Ohio, was in the city last week, replenishing for the wedding season.

The departure of the troops from this city was made the signal for a great burst of patriotism. All the business houses closed, and the citizens turned out by the thousands to cheer the soldier boys.

Business interests here are much pleased over the passage by the Ohio Legislature of the law prohibiting the giving of preferences, and all, wherever located, who do business in the State will also feel gratified at the passage of the measure. It is a triumph of right over injustice, for the privilege of preferences was a never-failing source of dishonest trickery and business demoralization. The passage of the law is a credit to the State, and will be a great benefit to it also.

Kansas City and the Great Southwest.

The Kansas City wholesale market for the past few weeks has not been booming, still there is a fairly good business being transacted. In the jewelry lines jobbers report trade as decidedly dull. While the falling off is quite perceptible in comparison with business up to the first of April, the May business will more than likely prove a good ways ahead of business for the same period of last year. The Meyer Jewelry Company and the Edwards & Sloane Company, manufacturers, say they have about all the work they can handle, but mail orders among the wholesalers are quiet. Reports from the traveling salesmen show that there is little life to business on the road. The first half of May the weather was greatly against business of all kinds, but this is the dull season in the wholesale line, and not a great deal is expected. The rain throughout the country early in May is reported to not only have stopped the farmers from putting in their crops, but has also kept them away from the towns so that merchants throughout the country have been denied the farmer trade until the farmer gets through with his planting. Out of town buyers the past week report the farmers very busy and the outlook for a most bountiful harvest as great. Crop prospects are as fine, if not finer than they ever have been at this season. In all portions of the Southwest, western Missouri, Oklahoma, Kansas and Nebraska, there are more acres in wheat than ever before, and this wheat, with the exception of a very few localities presents a beautiful appearance and is growing at a great rate, the soil and weather conditions being just about right. The farmers are not only banking on a big crop, but look for big prices as well, as from present indications all farm products will rule high for the rest of the year. Those who have any of their old crops on hand are realizing big profits, and the farmers all over this territory are more encouraged over the outlook than they have ever been before. This being the case the trade of the retail jeweler throughout the great Southwest should be active when things open up. We have the courage to believe that this is a condition that is not far off, but very near—therefore, we believe the outlook most encouraging.

With the retail trade there is nothing startling to report this month in the way of good business. There never is at this season. It would seem that the jewelers have had a pretty dull month. When dealers are asked as to business they mostly lay poor trade to the excitement of the war, or the weather, and it would appear that about all the business men are of the opinion that the retarding effect of the Spanish war on trade will be of very short duration.

Jeweler J. A. Hart, of Oskaloosa, Kan., recently met with a painful accident, having had one of his toes smashed by a plank falling on it.

W. A. Harding, of Red Oak, Ia., passed through Kansas City, recently on his way to open up in the jewelry business at Silver City, New Mexico.

W. A. Kirkham, of Leavenworth, Kan., has closed out his store here, after a very successful auction sale.

O. H. Stevens, of this city, is building a fine white stone residence, which, when completed, will be the finest occupied by any jeweler in Kansas City.

T. B. Robertson and wife have left Kansas City and taken up their residence in Dallas, Texas. Mr. Robertson will have charge of the retail store of Jos. Linz & Bro., jewelers, who are well known among the trade throughout Texas.

J. M. Earp, of Lamar, Mo., has about completed his new brick business block. When completed Mr. Earp will occupy one of the swellest stores in the State.

Mr. Boyle, of Boyle Bros., Louisburg, Kan., was in the city recently.

A. L. Dickman, Sedalia, Mo., will be married this month.

W. A. McReynolds & Co., Springfield, Mo., have moved into new quarters, and are much better located than formerly.

Robert Armel, of Armel Bros., Holton, Kan., paid us a call on his way to Fort Scott, Kan., where he attended the State Meeting of the Knights of Pythias.

S. J. Huey, of Excelsior Springs, Mo., was in town recently. Mr. Huey has just moved in a new store, and has a room by himself now.

Jeweler W. E. Palmatier, Oberlin, Kan., died the early part of last month. His death was due to consumption.

C. O. Corbin, of Fairplay, Mo., drugs and jewelry, has added new fixtures and increased his stock of jewelry.

Jeweler Russell G. Colvin, of Hastings, Neb., was married to Miss Maud Crane, at Janesville, Wis., May 11th. We extend our best wishes.

R. J. Gilbert, of "Jaccards," has been troubled with an affliction which troubled Job a number of years ago. At last accounts Mr. Gilbert had the boils blockaded.

Jeweler W. H. Steele, of Horton, Kan., is putting in a few months on the road in the interest of an agricultural house.

O. H. Woodfill and wife, of Nevada, Mo., spent a few days here recently, visiting friends.

S. H. Horner, of Caldwell, Kan., showed his smiling face here early in last month.

Jeweler Geo. Brown, of East Twelfth Street, has been on the sick list, but is now able to be out again.

Wm. Lick, of Rich Hill, Mo., watchmaker for the Beasley Mercantile Company, spent a few days here last month.

Jeweler G. E. Finley, of Cottonwood Falls, Kan., was burned out recently.

J. C. Croy and wife, of Pryor Creek, Ind. Ty., were trade visitors here last month.

F. C. Helt has opened up a new store at Edna Tex.

M. F. Kohler, the jovial jeweler of Parsons, Kan., made us a short call last month. Mr. Kohler had been in attendance at the Grand Lodge, Knights Templar, which was held in Topeka, Kan.

C. H. Morrison and wife, of Topeka, Kan., spent a few days in Kansas City last month.

Jeweler E. R. Matters, of Neosho, Mo., we are informed, is running for recorder of deeds, but I am unable to say on what ticket. We hope, however, he is on the winning side.

Bert Zimmerman, of Zimmerman Bros., Warrensburg, Mo., was in the city a few days ago. We wonder why he pays such frequent trips here. Are you the next on the list, Bert?

R. H. Parr, of Carthage, Mo., has added to his fixtures a fine, new burglar and fire-proof safe.

T. W. Roe, of Pratt, Kan., was in St. Joe attending the Jubilee celebration the early part of last month.

H. K. Herbert, Eldorado, Kan., spent a few days in St. Joe, last month.

J. B. Hayden, of Topeka, Kan., has been in New Orleans the past month attending the conclave of Elks being held in that city.

Charles Blattner, of Blattner & Glick, Junction City, Kan., was in town last month making purchases.

L. Yanslin, of Axtell, Kan., has patented a very handy, useful and ingenious contrivance, which he calls "a postage stamp holder and stamper." The device holds about fifty atamps, and by touching to a damp pad the stamp is moistened and affixed to the letter, the stamp being fed in position. It does away altogether with putting the stamp to the mouth.

J. B. Lowe, for some months past in South Carolina, where he has interests in a gold mine, has returned to Independence, Mo., and expects to stay a short time.

K. H. Clark, formerly in business at St. Joseph, but now with the Meriden Britannia Company, was in this city the early part of last month in the interests of above named firm.

Dr. A. J. Zimmerman, for the past six months sojourning in California, passed through the city a few days ago on his way to Warrensburg, Mo., his home.

Reinhold Starcke, of Junction City, Kan., has sold out his business to C. F. Blades. Mr. Starcke will remain with Mr. Blades in the capacity of watchmaker.

L. H. Oatman, who has been with W. H. Steele, Horton, Kan., has resigned and accepted a position with Theo. L. Rogg, Des Moines, Ia.

Wells Goodhue and F. H. Ertel, members of the staff of the financial publication, *Bonds and Mortgages*, Chicago, are in the city preparing an illustrated article setting forth the commerce of Kansas City.

Recent buyers in this market: W. Calvert, Washington, Kans.; S. J. Huey, Excelsior Springs, Mo.; Geo. Young, Kearney, Mo.; J. W. Whiteside, Liberty, Mo.; C. H. Morrison, Topeka, Kan.; Fred. Essig, Plattsburg, Mo.; C. E. Dale, Bennington, Kan.; O. Burkland, Osawatomie, Kan.; H. W. Selts, and L. C. Buchmann, Clay Center, Kan.; S. F. Barton, Ellsmore, Kan.; J. J. Fagin, Lathrop, Mo.; M. Goldsmith, Leavenworth, Kan.; J. Eller, Richmond, Mo.; J. V. Merchant, Cherryvale, Kan.

A large number of jewelers are using, in these stirring times of war, an envelope with a picture of Old Glory and the words "Long may she wave!" on their business card.

Jeweler W. Calvert, of Washington, Kan., was in town last week. Mr. Calvert never seems to grow old.

L. M. Smith, formerly for a number of years in the jewelry business at Pittsburg, Kan., is now engaged in the real estate business at Salt Lake City, Utah.

Edgar S. Haines, this city, is happy over a new arrival at his house in the shape of a 9½-pound girl.

F. D. Cosby, of Lawrence, Kan., has sold out and is contemplating removing to Colorado.

The J. M. McLucas store, on Independence Avenue, was burglarized last month. The robbers did not succeed in getting into the safes, and only got away with a small amount of plated jewelry.

Harry Bower, the enterprising jeweler of Delphos, Kan., was united in marriage to Miss Georgia Reese, May 4th. We extend our congratulations.

"Positively no 'kick' coming, for The Keystone is absolutely king of all."—T. V. Maynard, jeweler, Albuquerque, N. Mex.

Advertising Ideas.

MT. PULASKI, ILL., May 10, 1898.

ED. KEYSTONE.—I herewith submit you two of my advertisements. One is a fake telegram that I had delivered to every house in the city, and the other (owled) one is clipped from our paper. While running this (owled) ad., I had in my window a display of Jas. Boss and other cases arranged in attractive manner, and in the center of the window I placed a large stuffed owl, on which I placed a pair of gold nose-glasses and a chain, then beside the owl I placed a nicely printed card bearing these words:

"Any owled thing will do,
But these owled bargains are a wise purchase."

This idea with me was an original one, and to say it attracted attention would not half express it; in fact, it was the hatching of a new by-word for "any owled thing" seemed to be in every one's mouth after that.

However insignificant this may seem to you, I trust my object will not be lost, since at the present day there is scarcely a jeweler but who appreciates the value of advertising his goods,—goods, as a rule, that people do not purchase through necessity, but through having their attention drawn to them.

I have noticed, as I am a constant reader of THE KEYSTONE, time and again various ideas illustrated, and there is nothing that I consider of more direct benefit to the retail jeweler.

Leaving this with you, I am, Very respectfully
W. W. MAYER.

The Yankee Spirit.

Old Uncle Sam he sez, "I guess
I'm gittin' played out," sez he,
"They're growin' so in the big U. S.
That they've got no use for me.
The East and West don't seem ter hitch,
And the North and South won't mix,
And all that jibes with their pesky tribes
Is money and politics."

Old Uncle Sam had said his word
And he set him down and sighed.
But a sneakin', mean, little rascal heard,
That lived on the other side.
"Well now," sez he, "I can pay my grudge,
That feller is almost gone,
Here's a chance ter lick." So he fetched a kick
On Old Uncle Sam's pet corn.

Old Uncle Sam he felt the whack,
And riz with a kinder moan,
"My folks hain't standin' behind my back,"
Sez he, "I must fight alone;"
He stopped, fer up from the land behind,
In thunderin' crash and beat,
Rang out the hums of a thousand drums
And the tramp of a million feet.

Old Uncle Sam he turned his head
And looked at a monstrous throng
Who sang with the starry flags outspread,
The old "Star Spangled" song.
And there wa'n't no North and there wa'n't no South
And there wa'n't no East nor West,
But each was part of a mighty heart
That beat in a Nation's breast.

Old Uncle Sam he heard 'em yell
In a voice like the Ocean's roar,
"Go in, and we'll back yer up as well
As our fathers done afore.
We'll give yer money, we'll give yer men,
We're with yer heart and hand
And we'll strew our slain from the Gulf ter Maine
Fer the honor of Yankee Land."

Old Uncle Sam he whirled around,
And his face was all aglow,
And he sorter smiled at that furrun hound
And he sez "Well, I dunno,
We may seem lost in the greed for gold,
Divided and all upset,
But when we're right and we've got ter fight,
I reckon we're true blue yet."

—*L. A. W. Bulletin.*

AFTER THE STORM THE SUNSHINE

then the

RAINBOW

A quaint old legend tells us that at the end of every rainbow is a pot of gold. Perchance, however, fairy stories do not interest you.

PRISCILLA. DUCHESS. EMPRESS PENELOPE.

This bow of promise
will be intensely interesting to you.
Later in the season you will wish to know
more about the good things of which it is composed.
In due time we'll explain. Bear with us if we still request you to

WATCH US FOR WATCHES. &Co.

C. G. ALFORD & CO., 195 & 197 Broadway (Western Union Building), New York

June, 1898

THE DEWEY SOUVENIR!

BATTLE OF MANILA.

We are giving you a first-class chance to make money handling our latest novelty. Unlike most novelties it combines utility with good looks and intrinsic worth. The idea is this:—It is an Aluminum-Covered Memorandum Book, with engraved cover bearing the words "**Dewey Remember the Maine?**" To carry out the idea still further, we have had pads made of the best Manila paper to go in these covers. It's a great hit. Above the words appears the American Flag, engraved and **appropriately colored.**

ALL WHO SEE IT WANT ONE OR MORE.

We sell them in lots as small as ½ dozen. A sample will be mailed to any address on receipt of twenty cents in stamps. If you get a sample you'll want more of them.

A catalogue of the **ONLY Engraving Machine, the Eaton-Engle,** is yours for the asking.

EATON & GLOVER

111 Nassau Street, New York.

DIAMONDS

WE ARE LARGE IMPORTERS OF

DIAMONDS

AND MAKERS OF

DIAMOND JEWELRY

DIAMONDS

We are also the Largest Manufacturing Jewelry House in Kansas City. OUR SPECIALTIES are **Watchmaking for the Trade, Engraving for the Trade, General Manufacturing for the Trade,** and **Diamond Setting.**

We also carry a line of **JEWELERS' SUPPLIES.** A large and complete line of **DIAMOND MOUNTINGS** always on hand.

MEYER JEWELRY COMPANY,

Our Constant Aim
has been, is, and always will be, to turn out the best work at a reasonable price. GIVE US A TRIAL.

1016 AND 1018 Main St., KANSAS CITY, MO.

FROM NEW YORK

The usual large number of firms moved into new quarters last month. The moving was this year attended with greater confusion than heretofore, because the new quarters in some cases were not in readiness for the intended occupants as soon as expected. The delay in completing the Gill Building was especially vexatious; but all are now settled in their new offices, which, as a rule, are much more desirable than the old ones. The war continues to have a detrimental effect on business, but the scare has almost spent itself, and the prospects are excellent.

Sigmund Nichthauser, who was formerly with Stern Brothers & Co., is now in the retail business at 65 Broadway, Brooklyn.

John Schwarz, successor to Billhardt & Schwarz, has moved from 15 John Street to 61 Nassau Street.

Frank Richardson, of Enos Richardson & Co., has been elected president of the Nassau Bank, this city.

William Wise, of William Wise & Son, of Flatbush Avenue and Fulton Street, Brooklyn, celebrated his eighty-fourth birthday last month and was showered with congratulations, presents and floral souvenirs of the occasion.

A contract to install a time system, consisting of sixty-eight clocks, in the high schools of Newark, N. J., was recently awarded to the Prentiss Clock Improvement Co., of this city.

Ciner & Seeleman, formerly at 60 Maiden Lane, have moved to 35 Maiden Lane.

John W. Block & Brother and Block & Bergfels have moved from 5 to 13 Maiden Lane.

T. Quayle & Co. and William Smith & Co. have moved from 5 to 13 Maiden Lane.

C. F. Wood & Co. have concluded to remain in their present offices at 14 Maiden Lane, instead of moving into the Gill Building as contemplated.

Camerden & Forster have been incorporated to conduct a watch, clock and jewelry business, with a capital of $75,000. Their principal office will be in New York. The directors are James V. Forster, Daniel Adams, Selwyn R. Bowman and John M. Tate.

The new quarters of the Board of United States General Appraisers is on the ninth floor of the Appraisers' Stores, at Greenwich and Christopher Streets.

George W. Shiebler spent part of last month in Atlantic City, N. J., and is now sufficiently convalescent to attend to business. The glad news gives joy to his numerous friends.

Leo Wormser, of the Julius King Optical Co., and his wife returned last month after an eleven weeks' tour to the Pacific Coast, in the course of which he visited all the principal cities, and reports having had a very pleasant and profitable trip. His many friends are joking him regarding the long accounts that appeared of the railroad hold-up which he figured in. He insists that he can explain everything satisfactorily, but when the boys insist that the cigars are on, he smilingly produces a "Perfecto."

The Mauser Manufacturing Co. have secured additional space in their building at 14 Fast Fifteenth Street, and now occupy the entire building. The new space acquired in the upper floors will be devoted to manufacturing purposes. The company's increasing business made it imperative that they have additional facilities, and they have added a number of men to their force, and are just now running full time on their military and naval badges, and other popular goods that they are making.

Edmond Sussfeld, of Sussfeld, Lorsch & Co., left for Europe May 14th. He will spend most of his time abroad visiting his relatives in Paris.

Henry Zimmerman & Co., of this city, have secured the sole agency of the well-known Fleming corrugated case springs, and hereafter the sole output of these springs will be marketed by this firm.

The Providence Optical Co. and George H. Cahoone & Co., of Providence, R. I., have leased offices in the Gill Building, at 9 to 13 Maiden Lane. They were formerly in the Hayes Building.

Henry Freund & Brother have moved to 13 Maiden Lane.

Hamann & Koch are now located in their handsome new store at 9 Maiden Lane.

Kohn & Hoffman have moved into more desirable quarters, adjoining the room formerly occupied by them at 37 Maiden Lane.

S. Levinson moved from 65 Nasssau Street to 59 Canal Street.

Louis Strasburger's Son & Co. have moved from 16 to 13 Maiden Lane.

H. N. Squire's Son has moved from 18 John Street into a new store at 1 Maiden Lane.

Mayhew & Carrington have moved from 200 Broadway into their new quarters at 1 Maiden Lane.

James H. Whitehouse, designer, recently completed forty years in the service of Tiffany & Co., and his associates of the engraving and designing department, of which he has charge, presented to him a handsome silver loving-cup, appropriately inscribed, and holding forty American Beauty roses.

The importations of precious stones at the port of New York, for April, 1897 and 1898, reported to Appraiser Wakeman by Jewelry Examiner Mindil, are:

	April, 1897.	April, 1898.
Precious stones, cut, . . .	$134,142.80	$336,172.04
Precious stones, uncut, . .	31,671.58	109,256.79
Total, ...	$165,814.38	$445,428.83

James Kahn's Son's, importers of diamonds and precious stones, have removed from 182 Broadway to 12 to 16 John Street.

The Regina Music Box Company has moved into the building at Broadway, Twenty-second Street and Fifth Avenue.

The Wilcox Silver Plate Company moved early last month from 6 Maiden Lane, into its new store at 11 Maiden Lane, where they have one of the finest salesrooms on the Lane.

Henry Karsch has moved from 65 Nassau Street to 14 John Street.

The offices, in this city, of Waite, Thresher Co., Providence, R. I., have been removed from 178 Broadway to Corbin Building, 11 John Street, corner Broadway.

C. G. Alford has been on his annual fishing trip to Saranac Inn, Franklin County, N. Y. Mr. Alford is an up-to-date disciple of Isaac Walton, and is an expert at alluring the finny tribe to their doom.

Hermann Baum, formerly Tenner & Baum, has removed his office and factory to the Knapp Building, 41 and 43 Maiden Lane.

The Merchants' Specialty Co., of New York, has been incorporated to manufacture silverware and jewelry, with a capital of $15,000. The directors are John H. Vahjen, of 634 East 138th Street; August Lindenham and Charles H. Koch.

The New York Standard Watch Co. has been elected to membership in the New York Jewelers' Board of Trade.

The firm of J. T. Scott & Co., 4 Maiden Lane, has been dissolved, S. C. Scott retiring. The business will be continued under the old firm name by J. T. Scott and William P. Wallace, who has been with the house many years.

Codding & Heilborn Co., North Attleboro, Mass., have moved their office in this city from 178 Broadway to 11 John Street. Mr. C. A. Vanderbilt is in charge.

R. Blackinton & Co. have put handsome fixtures in their new office at 3 Maiden Lane. A prominent part of the new furniture is a large show-case, in which silver goods are displayed.

J. B. Bowden, of J. B. Bowden & Co., was requested by Mayor Van Wyck to act as a member of the committee to raise a fund for a monument to commemorate the dead of the battleship *Maine*. Mr. Bowden issued a circular soliciting contributions, and many firms responded.

An American flag composed of diamonds, rubies and sapphires, and reputed to be worth $18,000, was exhibited in the store of E. M. Gattle, jeweler, at Broadway and Twenty-seventh Street.

E. A. Neresheimer, formerly of Neresheimer & Co., diamond dealers, 20 Maiden Lane, is a director in the Theosophical Publishing Company, a new incorporated concern with a capital of $20,000.

Zimmern, Rees & Co. are now located in their new quarters at 13 Maiden Lane.

Charles Kahn has moved from 48 to 54 Maiden Lane.

Joseph L. Kutz has moved from 4 to 14 Maiden Lane.

Bradford H. Knapp has moved from 65 Nassau Street into the building at 54 Maiden Lane.

L. Witsenhausen, of 37 Maiden Lane, moved into larger quarters in the same building, and will now be better equipped than ever to fill his customers' orders promptly and satisfactorily.

William Barthman is again located in his store at 1 Maiden Lane, which is now one of the handsomest jewelry stores in the city. The sales department is large, the fixtures lavishly rich and ornamental, and the stock is all-entrancing. It is an ideal store.

Points About Traveling Men.

A bill was recently introduced in the Iowa legislature for the traveling men, requiring 1000-mile books to be sold at the flat rate of twenty dollars. The bill has not, as yet, become a law.

The Supreme Court of Maryland has decided that the purchaser of a berth, or a section, of a sleeping-car has the right to give another person the use thereof if he leaves the car before it reaches the end of the trip for which the berth was bought. A passenger secured a section, rode in it for part of the trip, and then sold his section ticket to another passenger, he leaving the train. The second purchaser was refused the use of the section by the conductor of the car and was ejected, whereupon he brought suit with the above result.

"Few evils are more widespread or far-reaching in working injury to the various branches of industry, especially the jewelry and kindred trades, than price-cutting," said a bright, level-headed salesman the other day. "No matter where one may go, or in what line of business one may engage, he will be certain to meet with this evil. It is at once the commonest and greatest obstacle to be overcome in the business world. Its ravaging and all-consuming presence is perhaps due to the inability of the average traveling salesman to talk quality rather than low price more than to any other one thing. One of the most difficult tasks of a business man's life is to secure the services of traveling salesmen that will work for the interests of the house for which they travel. And this is all the more so, because the average retail dealer is not familiar with the different grades of goods and can be easily imposed upon. High and low-grade goods look alike to the majority of country merchants, and it naturally follows that the lowest price secures the order. Price-cutting is indulged in most freely when business is dull, and traveling salesmen feel that it is impossible to do business without resorting to heroic measures; and yet, no matter how active business may be, there will be some one foolish enough to keep on cutting prices."

An Albany dispatch is as follows: "Governor Black has signed Senator Krum's Mileage Book bill." It provides that steam roads now issuing these books shall issue ten dollar as well as twenty-dollar books, and that the coupons need not be exchanged for a ticket, but shall be accepted by the train conductor in lieu thereof. It also provides that the member of a firm or family of the holder of a mileage book, or a salesman of such firm, may use the book.

H. F. Wells, Northern traveler for Woodstock, Hoefer & Co., who has been confined to his home in Estherville, Iowa, for a number of weeks by sickness, has recovered his health, and is now out again over his territory hustling for business.

Ed. B. Gallagher, formerly Northwestern traveler for C. H. Knights & Co., has accepted a road position with Benj. Allen & Co.

Z. E. Chambers, Missouri, Kansas, Iowa and Nebraska traveler for B. F. Norris, Alister & Co., has resigned his position with the expectation of entering other fields.

Robert V. Erskine, for four years past traveler for the Chicago office of the Rogers & Hamilton Company, was married May 16th to Miss Abby Newell Watson, at the home of the bride's parents in Terre Haute, Ind. The young couple will make their future home at Lake Forest, a northern suburb of Chicago. Mr. Erskine is quite well known in the Chicago and Western trade, having served with the Towle Manufacturing Company four years, and the same period with the house above mentioned. THE KEYSTONE tenders its most hearty congratulations to Mr. Erskine and his bride.

Charles Berkey, formerly Michigan traveler for Benj. Allen & Co., Chicago, has accepted a traveling position with the Eugene Deimel Company, of Detroit, and will cover his old territory. He takes the place of E. H. Pudrith, who will probably enter the employ of a Cincinnati wholesale house. Mr. Berkey began his first experience on the road under the late Eugene Deimel, and his new position will seem like getting back home.

REMEMBER THE MAINE

Thing for a business man to consider: "Am I buying my goods right?" Well bought is half sold. The following are hard time prices:

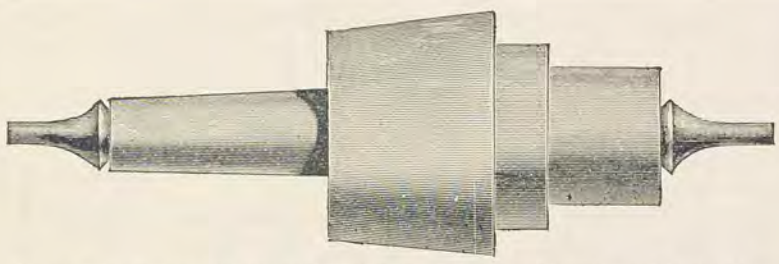
6 size, 14 K. Filled, E. T. or Engraved, Hunting.							Guaranteed for 10 years,			$3.37
18	"	"	"	"	"	"	"	"	"	3.60
18	"	"	"	"	"	0. F. Screw.	"	"	"	3.40

You will always find me low in price, high in quality of goods handled, and courteous in service. Try me.

Yours for business,

WM. I. ROSENFELD,
19 MAIDEN LANE, NEW YORK.

I will be pleased at any time to forward a liberal selection of anything you may need in *WATCHES* or *DIAMONDS.* The selection will be varied and choice. The price under the market every time. Write for an assortment to-day—any day.



Genuine American Delhi Material Co.'s Balance Staffs and Jewels, for all makes of American Watches, at $1.25 per dozen.

Waltham,	18, 16, 6, 0 sizes.	
Elgin,	18, 16, 6, 0 "	These STAFFS and JEWELS are superior to any in the market for the money.
Hampden,	18, 16, 6 "	
Columbus,	18, 16, 6 "	
Illinois,	18, 16, 6 "	

We also have a very fine Mainspring for all makes of American Watches, warranted against breakage or setting in the barrel, at **75 cents** per dozen. Tool or Material orders filled from any catalogue, and a cash discount of 10 per cent. allowed. Our stock is complete. Send trial order.

ROSENZWEIG BROS.,
SUCCESSORS TO DELHI MATERIAL CO.,
WATCHES, DIAMONDS AND JEWELRY. *52 Maiden Lane, NEW YORK.*

MAINE SOUVENIR COFFEE SPOON.

The Bowl has in it the wreck of the MAINE, with the American eagle hovering over it in the act of screaming. The Handle is a cannon on which Uncle Sam is shown in the act of giving President McKinley fifty million dollars for defense. Fair quality silver plate. Gilded bowls. Price, **75 cts.** per dozen, and 7 cts. per dozen mailing, or **$7.50** per gross.

SOUVENIR COMPANY, 3 Maiden Lane, New York.

FLAG PINS, ETC.

American or Cuban, $1.50; with picture of Dewey, etc., $2.50 gross. Heart Brooches, flag in center, $6.00 gross. Ladies' Hat Pins, Army and Navy designs, coat size, $5.00 gross, Jacket, $4.50, Vest, $4.00, Blouse Sets, 15c. each. Cash with order.

Schlechter, Mfg. Jeweler, Reading, Pa.

MUSIC BOXES

The **OLYMPIA** is the most improved music box with tune disk. Owing to its very fine quality and finish, it is specially adapted to the jewelry trade.

E. L. CUENDET, Gen'l Agt.,
Send for Catalogue. **21 John St., New York.**

"Extra" To Watchmakers and Jewelers "Extra"

NEW "Regent Specialties"

Rolled-Plate Lever Link Button Backs,	per dozen,	$ .75
" Ball " " "	"	.75
Silver " " " "	"	1.00
Gold and Silver-Plated Pin Stems for Military Buttons,	"	.25
Aluminum Screw-Drivers, sets of five sizes,	per set,	.35
Grooved Ring Gauge, Allen's sizes, (Can be used for both Plain and Stone Rings.)	Each,	.75
Adjustable Watch Hand Remover, (Will positively remove the firmest set hands without breaking the dial.)	Each,	.50

REGULAR "Regent Specialties"

American and Swiss Mainsprings, (Handsome Oak Cabinet furnished with first order of one gross.)	per gross, $10.50; per dozen,	$1.00
American Balance Staffs and Jewels,	per gross, $7.50; per dozen,	$ .75
American Roller Jewels,	per gross, $1.50; per dozen,	.15
American Hour and Minute Hands,	per gross, $2.00; per dozen,	.20
American Second Hands,	per gross, $1.00; per dozen,	.10

All of the above prices subject to a discount of 6 per cent. for cash.

Send for our { Pocket Price-List of *TOOLS and MATERIAL* for 1898. *SILVER NOVELTY* Catalogue. Just out. Pocket Price-List of *WATCHES.* Monthly. *ANYTHING* or *EVERYTHING* in our line.

Agents for Hamilton Movements.

CROSS & BEGUELIN,

Importers, Exporters and Manufacturers,
Watches, Diamonds, Jewelry, Silver-Plated Ware, Etc.,
17 Maiden Lane, New York.

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18 SIZE | ELGIN | Class 2

Perfection Main Springs

EVERY ONE GUARANTEED.

IMPORTED BY
SISCHO & BEARD,
The Jewelers Supply House,
ST. PAUL, - - - MINN.

OUR PERFECTION MAINSPRING

is all its name implies. Put up in the most convenient form and absolutely guaranteed.

PRICE **$15.00** per Gross.
1.25 per Dozen.

Mainsprings Are Ripe.

Do you want a spring that will give you satisfaction? We have them for all makes of American Watches.

Each spring coiled and tagged.

SISCHO & BEARD,
Northwestern Headquarters for
Jewelers' Tools and Materials,
ST. PAUL, MINN.

Special Offer, FREE.
Our elegant Solid Oak 20-Drawer Cabinet FREE with a gross order. Springs assorted to suit you.

SIZE | | |

Eureka **Eureka . . .**
Main Springs

Manufactured Especially for
SISCHO & BEARD,
The Jewelers Supply House,
ST. PAUL, MINN.

THE EUREKA MAINSPRING

is guaranteed the best Spring in the world for the money.

PRICE { **$12.00** per gross. **1.00** per dozen.

Among the Trade.

Arizona.

E. G. Capo has purchased the business of E. J. Pierpont, of Tucson.

Arkansas.

Frank McGaughey, of Rogers, Ark., is prospering, has a pretty store, a well-selected stock, and is onerof the up-to-date young jewelers of the State.

Sidney Smith, watchmaker and optician for R. H. Stearns & Co., of Pine Bluff, enjoys the reputation of being a bright and rising man in his line, and, like all successful men, is an enthusiast in his work. He speaks highly of the usefulness of THE KEYSTONE, and says there is nothing like it as a trade magazine.

E. B. Hall, of Fayetteville, gives considerable time and effort to store decoration. Visiting travelers tell us as a result he has one of the most tastefully arranged stores in the State. One of the features of his decorations is a large Japanese umbrella covering all the show cases, which is most clever and noticeable.

Jeweler J. M. Cook, of Bentonville, is up in the mountain country, at Fayetteville, for the benefit of his health.

The J. L. Duke Jewelry Co. have succeeded to the business of the late J. L. Duke, at Fayetteville. The new firm has recently made extensive improvements in their store by putting in new furniture and increasing their stock. The business is now under the management of B. F. Jeffords, for a number of years watchmaker for J. L. Duke, deceased.

Alabama.

D. J. Coates has begun business in Attalla, as a manufacturer of jewelry and silver novelties.

California.

A. B. Coonley has moved from San Diego, to San Francisco.

Charles Coleman is enlarging his stock and improving his store at 1306 Market Street, San Francisco.

G. Reber has recovered his health and has again started in business in Angel's Camp, this State.

The City Council of San Jose, recently passed an ordinance imposing a license fee of $100 semi-annually on all persons who peddle jewelry.

John Hood, of Santa Rosa, has remodeled his store, which is now one of the finest in the city.

Keller & Praet, of Woodland, have dissolved partnership. Mr. Praet will continue the business.

Canada.

Baker & Dobson, of Port Elgin, Ont., have dissolved partnership. The business is being continued by J. W. Baker in his own name.

D. R. Dingwall, of Winnipeg, Man., has sold his Moose Jaw, N. W. T., branch to R. E. Plaxton.

K. Gillies has begun business in Douglass, Man.

Amedee Lechasseur has begun business in Levis, Que.

H. N. Rivard, of Magog, Que., has added stationery to his jewelry stock.

M. L. Hamilton, of Welland, Ont., has sold his business to Jonas House.

J. Beaudry & Son, of Montreal, have moved into their new store on St. Lawrence Street.

P. W. Ellis & Co., the Toronto jewelry manufacturing firm, will shortly double the size of their present premises and equip their factory with a complete plant of the best machinery.

Colorado.

The A. F. Wehrle Jewelry Company, Denver, is now located in its new quarters at 921 Sixteenth Street, between Curtis and Champa Streets.

Robert & Loup, of Denver, have only recently moved and are now located in a new building at the corner of Eighth Street and Santa Fe Avenue, where they have a handsome and attractive store. The firm enjoy a repair trade second to none in Denver, for the reason that they give particular attention to this branch of the business. Mr. Loup, of the firm, is a Swiss-American, and has the reputation of being a very fine workman. Their splendid success in repair work is attested by the fine patronage they have built up among the railroad men, and the fact that six years ago they started in business with comparatively nothing, and to-day they own the brick store building they occupy, and have a nice stock of goods.

J. P. M. Butler & Son, Trinidad, have a very handsome store, and enjoy to an unusual extent the confidence of the public.

J. N. Collins, of Pueblo, has moved into new quarters.

Will Jeweler Ashby, of Colorado Springs, be able to get his clock hung up, is a disputed question in that city. Mr. Ashby invested $300 in a big clock, which he proposed to hang out in front of his establishment in the Bank Building. It is a mammoth affair and is regulated by electricity, and could be seen all the length of Tejon Street, especially when lighted at night. When he got ready to hang it a competitor objected on the grounds that it was contrary to city ordinances for such an obstruction to stand on the streets. The public grounds committee of the council has been studying over the matter and may accept the clock as city property, so that it can be placed. In that case it could not be used as an advertisement.

Connecticut.

J. H. G. Durand, New Haven, is now located in his new store, 71 Church Street and 42 Center Street.

C. J. Monson, Jr., & Co., New Haven, are now located in their new store, which is contiguous to their old location. They have now double the space in their former store. The new store is the original store in which Mr. Monson's father, the founder of the firm's business, C. J. Monson, started in the jewelry business many years ago.

A tramp recently discovered hid in a swamp near New London, Conn., a large quantity of sterling silver-ware, which was stolen last summer, from the summer home of J. F. Pratt, at Crescent Bench, Indianapolis. The tramp, fearing to offer it for sale, told Mr. Stone, of Perry & Stone, New London, the jewelers who sold the ware to Mr. Pratt. Mr. Stone recognized the ware and rewarded the tramp. When the silver was brought to the store it was counted and there were 162 piececes of sterling, besides thirty pieces of plated ware. Mr. Stone, after looking at the goods, estimated that they were worth about $500 from a commercial standpoint.

Delaware.

Henry Erbsmehl has moved from Milford to Laurel.

Samuel H. Baynard, Wilmington, has been elected president of the board of trustees of the Brandywine Summit Camp Meeting Association.

Charles Welch, North Berwick, has purchased lines of jewelry and clocks.

Florida

W. J. Dombrowski, of Jacksonville, was nominated for mayor of his city by the Citizen's League.

Georgia.

The Davidson Jewelry Company has begun business at 308 Second Street, Macon.

Idaho.

August Lundberg has opened a new store in St. Anthony.

Illinois.

R. H. McFadden, of Mattoon, has moved into new quarters.

E. B. Sherman, of Grayslake, is erecting a new building, into which he will move his business.

Andrew H. Fransden, formerly with H. A. Johnson, of Monmouth, has begun busihes in that city on his own account.

Indiana.

The jewelry firm of C. H. Ankeny & Co., La Fayette, has gone out of existence, Louis N. Philbin having disposed of his interest to Mr. Ankeny, who will hereafter conduct the establishment alone. Mr. Philbin, who has been with the establishment since 1873, will shortly open a jewelry store of his own in the city.

Cheney Brothers have opened a new store in Covington,

C. W. Pulver has succeeded H. E. Gregg, of Lowell.

A terribly destructive fire occurred in Loogootee a few weeks ago. Among the sufferers were Jeweler J. E. Porter whose loss amounted to $450, without insurance.

Iowa.

The Ellsworth Jewelry Company has begun business in Ellsworth.

J. E. Frantz has sold his store on North Eleventh Street, Cedar Rapids, this State, to Pixley Brothers, lately of Elgin, Ill.

Miss Clemia Heffelfinger, of Carroll, returned last month from Omaha, Neb., where she has been studying optics and engraving.

F. E. Bastian has begun business in Duncombe.

H. D. Gay has begun business in Shenandoah.

George Davis has begun business in Milford.

John A. Reed has purchased the business of N. H. Knowles, of Humboldt.

George Lerew, Sidney, has rented a building in Hamburg, Ill., where he will open a branch store.

H. Jenkins & Co., Preston, have sold their stock to W. O. Veach, who will continue the business.

Though a bit late, we want to mention the original and pretty Easter display made in the show window of Jeweler Theo. Ernst, of Fort Madison. It consisted of figures riding bicycles, the latter being composed of dials of watches and small clocks. The figures, prominent among which was Uncle Sam, were made up of Easter eggs. The artist who did the clever work was Mr. Ernst's daughter, Miss Clara.

The Morgan Jewelry Co., of Des Moines, has moved into better quarters in the Hamilton Building.

W. H. Jackson has purchased the J. E. Vail jewelry and furniture stocks in Mount Ayr.

The officers and some of the members of the Iowa Jewelers' Association held a meeting in Webster City recently for the purpose of fixing the place and date for the next annual meeting of the association.

Kansas.

Jacob Welker has purchased the business of C. W. Dingman, of Summerfield.

E. H. Goldman has opened a store in Harper.

A. Weatherly has purchased the business of W. H. Munger, of Harper.

I. F. Barney has opened a store at 133 North Main Street, Wichita.

Kentucky.

A recent issue of a journal of Cloverport, this State, contained a highly eulogistic notice of F. N. D'Huy, of that place. It said: "Mr. D'Huy is an ideal citizen. He has been prominently identified with every important movement inaugurated in this city to promote its growth and welfare and has freely devoted his time and means toward the achievement of this end. He has acted in the capacity of city clerk since 1883, and has always discharged his duties in a faithful manner. He is president of the Gold Fortune Gas and Mineral Company and manager of the Pipe Line."

J. P. Barnes, surviving partner of C. P. Barnes & Brother, of Louisville, recently formed a limited partnership with Robert M. Jewell, twenty years an employee of the firm, to continue the business. The firm name is the J. B. Barnes Jewelry Company, and the address 816 Columbia Building.

Louisiana.

A. D'Orsay has begun the manufacture of jewelry and badges in New Iberia.

A. J. Wutke & Co., of Donaldsonville and Plaquemine, have dissolved partnership by mutual consent. Mr. Wutke will continue the business in Plaquemine, and Frederick Linde that one in Donaldsonville.

Maine.

F. Brisson has moved from Somersworth, N. H., to Old Orchard Beach, this State.

J. M. Allen, of Brooklyn, N. Y., has opened a branch store for the season at Bar Harbor, this State.

W. C. Bryant, Bangor, will move to another building while extensive repairs are being made in the store now occupied by him. When these are completed Mr. Bryant will have one of the finest stores in Maine.

P. A. Freeman, Biddeford, has purchased a shoe business which he will conduct in addition to his jewelry store.

Maryland.

Jacob Shapiro, Bel Air, has remodeled and generally improved his store.

Massachusetts.

F. M. & J. L. Cobb have succeeded Cobb, Evans & Cobb, Mansfield.

Morris Meyer has opened a store at 52 Mechanic Street, Brockton.

M. Patton, Fitchburg, has moved into larger quarters.

A. B. Pulsifier has succeedad I. O. Converse, of Fitchburg.

A. G. Hill and A. E. Hersey, partners in the firm of A. G. Hill & Co., Boston, recently dissolved partnership by mutual consent. The business will be continued by A. G. Hill at 7 Water Street, under the old name of A. G. Hill & Co.

(Continued on page 453)

THE CAMERA OF '98

Yale

No. 1 and No. 2

50c. TO $2.00

CAMERA AND COMPLETE PHOTOGRAPHIC OUTFIT.

The Camera and Outfit securely packed in a neat carrying box, consists of the following: One Yale Camera No. 1, one package (half dozen) Yale Dry Plates, one package Yale Developer, one package Yale Hypo, one package Yale Toning Powder, one package Yale Ruby Paper, one package (one dozen sheets) Yale Silver Paper, one Printing Back, two Trays, one Book of Instructions.

"THINK OF IT!"

Eastern Office,
176 Broadway, NEW YORK.

MANUFACTURED BY *YALE CAMERA COMPANY,*
Office and Factory, CHICAGO, ILL.

Reputation

THE reputation of any article of merchandise—if good, does half toward selling it.

The Reputation of

"THE BRAND WITHOUT A RIVAL"
ROGERS ANCHOR BRAND
SILVER PLATED WARE.

makes it easy to sell

People have learned to look for the **"ANCHOR"** symbol which stamps the real genuine quality. You can place confidence in it always.

FACTORIES
HARTFORD, CONN.
WALLINGFORD, CONN.
NORWICH, CONN.
TAUNTON, MASS.

Made only by WM. ROGERS MFG. CO., Hartford, Conn.
New York Office—149 Church St.
Philadelphia Office—506 Commerce St.

THE BEUTELL MFG. CO., ATLANTA, GA.

Designers and Makers of
Modern Jewelry Store Furniture

Show Cases

Designs and Estimates Furnished
WRITE US

MOST COMPLETE

OUR MATERIAL AND FINDINGS DEPARTMENT

THE EUGENE DEIMEL CO.

WHOLESALE JEWELERS

157 Jefferson Avenue — Detroit, Michigan

Among the Trade.

(*Continued from page 452.*)

Massachusetts.

John F. Hurley has reopened his old store at the corner of Washington and Norman Streets, Salem.

W. B. Knapp, diamond merchant, of 76 Boylston Street, Boston, has moved into new quarters at 61 Temple Place.

Wm. Pratt, watchmaker and optician, Boston, has moved from 191 Tremont Street, to 195 Tremont Street. His new quarters are much more desirable.

E. R. Whiting, lately watchmaker for W. C. Bryant & Co., of Bangor, Me., will open soon in Pittsfield, this State.

Michigan.

W. F. & W. W. Wurzburg, Grand Rapids, have been succeeded by the American Jewelry Co.

W. J. Gladstone, formerly of St. Louis, this State, has begun business in Ashley.

Schoch & Hallem, of Marquette, Mich., have just completed extensive improvements in their store, which they have refitted handsomely, putting in a new plate-glass front and otherwise making it more attractive than ever. They now have one of the really fine jewelry establishments of the Upper Peninsula.

W. H. Skeman has begun business as a repairer in Wyandotte.

Minnesota.

W. S. Dippo has opened a retail store at 61 East Seventh Street, St. Paul.

Jahn A. Arbuckle, of Wadena, has opened a store in Bemidji.

Henry Bockstruck has remodeled his store at 28 East Seventh Street, St. Paul.

M. S. Churchill, of Hayfield, has moved into more desirable quarters.

W. Aicher, of Maple Lake, will add lines of silverware and clocks to his stock.

A. J. Marshall, of Webster City, Iowa, has opened a store in Elysian, this State.

M. N. Berg, Duluth, recently moved into a new store, which is well stocked and handsomely fixtured.

Carl T. Thayer, Minneapolis, has removed his store from 13 to 17 South Fourth Street.

Clarence L. Cate, Des Moines, Iowa, has opened a jewelry business in Welcome, this State.

D. W. Smith, of Pipestone, has added a line of photographic supplies to his stock.

Carl L. Storm has sold his business in Zumbrota, to J. L. Williams.

Mark Swedberg was recently nominated by President McKinley for Postmaster of Luverne.

T. G. Mahler was unanimously elected City Clerk of Le Sueur, in a recent election, on the Republcan ticket.

J. C. Hamiel, of Farmington, took first prize at an amateur photographers' contest.

Mississippi.

Shepherd Poorsine, one of the most popular citizens of Yazoo City, Miss., lost his life last month in an attempt to cross the Big Black River with horse and buggy. The river was much swollen, and Mr. Poorsine failed to locate the bridge as he expected to.

Missouri.

W. A. Mitchell, of St. Joseph, has moved into more desirable quarters at 515 Edmond Street.

J. M. Earp, Lamar, has erected a new store building which he is finishing with quarter-sawed oak. The completed store will be very attractive.

J. A. Wilson, Kansas City, Mo., reports that one day recently a colored man came into his place of business, and after having been shown several watches, picked out one and remarked: "I'll take this one." He did so and ran. The man was captured and is now languishing behind the bars.

Jeweler J. M. Gibbs, of Hannibal, had a very striking and pretty Easter decoration in his main front window, which the local papers speak of highly. Though rather late, THE KEYSTONE desires to describe the window, for such items are always interesting to the trade. It consisted of a stack of arms—three Springfield rifles—the kind used by the Missouri National Guard, and a bugle, together with a part of guidon and a large amount of bunting, with all kinds of jewelry sprinkled about. The local papers speak of the display as attracting a good deal of attention.

Alfred L. Deckman, Sedalia, was married on May 25th, to Miss Stella Ingram Meredith. THE KEYSTONE extends congratulations.

Jeweler Leopold Reinheimer, of Joplin, has been spending several weeks at Hot Springs, Ark., for the benefit of a severe case of rheumatism.

A. C. Loker, watchmaker for Jeweler H. P. Hall, of Carthage, is also an expert photographer. He made a large picture of the Home Guards before the "boys" left for the front, which has since been in great demand among the people of Carthage.

Montana.

L. V. Berckmoes, formerly of Hillsboro, Ore., is now located at Anaconda, this State.

Towle & Winterhalter, Butte, have moved from 36 to 28 West Park. The new quarters are a great improvement on the old, being furnished with several handsome plate-glass show cases for the purpose of displaying the many beautiful designs in silverware. The store has been remodeled throughout and the stock has been largely increased, an entire new line of silver novelties having been added.

Fidel Huber, Butte, will open a branch store in Virginia City, Mont., which will be in charge of his brother, Fred Huber.

Nebraska.

L. T. Smith, of Lexington, has erected a new store building, which he has recently moved into. He now has an up-to-date establishment, and reports business as fine, with excellent prospects for fall trade.

W. D. Godfrey, of South Omaha, has remodeled and beautified his store.

A. Santa Maria & Co. have obtained a concession for the sale of cameos and Byzantine jewelry in the Trans-Mississippi and International Exposition in Omaha.

The drug and jewelry firm of Renkin & McCaw, Hooper, was recently dissolved. W. H. McCaw succeeded to the business.

E. A. Polley has removed his store in Seward into new and more commodious quarters.

Otto Weilanders, formerly watchmaker for M. Wollman, in Council Bluffs, Iowa, has bought a store at Gothenburg, this State.

Daniels Bros., of Kearney, have recently moved into a handsome new store in the Bank Building, on one of the most prominent corners in the town. Travelers tell us that they now have one of the finest jewelry stores in Nebraska, outside of Omaha. The firm is to be congratulated upon their enterpsise and success, for they have had much to contend with. Western Nebraska has certainly had its full share of hard-times troubles the past five years, but this firm has kept right on with their hustling, notwithstanding. Now that their section is again prosperous and happy, they are right up in the front line of prosperity's procession.

Jeweler E. Baldwin, of Lexington, has just moved into enlarged quarters. He now has a most attractive and modern store. Mr. Baldwin reports his trade thus far this year as quite satisfactory, and believes the outlook good for a fine fall business; the present fine crop prospects in Western Nebraska, and the excellent prices now being realized for farm products justifying the prediction.

T. L. Combs & Co., of Omaha, have moved from 118 South Fifteenth Street to 1520 Douglass Street, one of the choicest locations for business in Omaha. Their new store is a handsome and attractive one.

Fraley & Surber, of Davenport, recently dissolved partnership. Each will continue alone.

New Hampshire.

D. Whittier, of Raymond, has moved into better quarters.

New Jersey.

Charles Rixton has opened a store in Passaic.

S. T. Morrow, of Elizabeth, is now located in better quarters at 111 First Street.

Joseph Northwood, of Jersey City, has moved from 101 Montgomery Street to 142 Newark Avenue.

Calvin Solliday has purchased the business of John Heath, of 17 North Union Street, Lambertville.

Theodore C. Botham, formerly with F. Terstegen, of Elizabeth, has opened a store of his own at 225 Broad Street in that city.

New York.

Ackerman & Schroedel, Rochester, N. Y., have dissolved partnership by mutual consent, Mr. Schroedel retiring. F. A. Ackerman will continue the business under his own name.

M. Oppenheim, Whitehall, has greatly improved his store.

J. L. Hastings, Mohawk, has made great improvements in his store.

Commerford Bros., of Ellicott, Square Building, Buffalo, N. Y., have moved into larger quarters, 14 South Division Street.

C. E. Winters, of Attica, N. Y., recently enlarged his stock of watches and jewelry, and now feels as though he is doing justice to Wyoming County friends.

The stock of O. D. Ruggles, of Buffalo, has been moved into the department store of Knowles & Gardner. Mr. Knowles is in charge of the department.

Frank Newell, of Schuyler Lake, has moved his repair shop into better quarters.

H. Y. Burlingham, of Sherburne, has moved into more attractive quarters.

Reider & McLoughlin have opened a store in the Calvert Block, at 30 Main Street, Cortland.

Walter Ware, of Waverly, has moved into a new store.

Albert W. Sing, Tarrytown, has greatly improved and enlarged his store by removing a partition and doubling the floor space.

Chas. R. Sing has greatly improved his store in Nyack.

Albert Kemp, Sing Sing, has opened a branch store in Pleasantville.

C. V. Baker, Poughkeepsie, has removed to a new store at 328 Main Street.

Charles H. Schiller, of Utica, has moved into better quarters at 123 Genesee Street.

The Joseph Seymour Manufacturing Co., Syracuse, which recently organized with a capital of $25,000 to carry on a silverware manufacturing business, has been incorporated with the Secretary of State at Albany.

North Carolina.

E. F. Gordon, of Southport, has been elected Mayor of that city on the Democratic ticket.

J. G. Friesland, of Maxton, has moved into larger quarters.

J. M. Pollard, of Mexico, has greatly improved his store.

L. F. Hanes has begun business as a repairer in Ruthferdton.

J. E. Boling has begun business as a repairer in Carthage.

James Mahler, of H. Mahler & Son, Raleigh, was married May 1st.

L. D. Giddens, Jr., a popular young jeweler of Goldsborough, enjoys quite a reputation as a skillful engraver. He displays a number of fine specimens of his handiwork at his store which are highly spoken of by visiting travelers. Mr. Giddens has recently been tendered a position in the engraving department of Tiffany & Co., New York—a well merited compliment to his ability in this line.

North Dakato.

J. R. Porte has removed from Grand Forks to Fargo.

Ohio.

I. E. Spreng, formerly of Mansfield, Ohio, is now located at Sycamore, Ohio.

C. H. Harris, of Portsmouth, has moved from 412 Chillicothe Street to 417 Chillicothe Street.

Jack Robinson has discontinued his business in Marion, this State, and has entered the employ of a firm in Birmingham, Ala.

J. J. Dean, of Mansfield, has moved into the office building of the Wells-Fargo Express Co., where he occupies more desirable quarters.

S. B. Porter, lately of Perryton, has engaged in business in West Carlisle.

Adam F. Bordner has begun business as repairer in New Washington.

J. C. Sharer, of Alliance, has been appointed watch inspector for the Alliance and Northern Railroad and the Ohio River and Lake Erie Railroad.

Guthman Brothers, of Youngstown, have moved into more desirable quarters.

Pennsylvania.

R. Barber, formerly of Ephrata, will continue business in Lancaster.

George W. Ludwig, Chambersburg, recently graduated in medicine. Senator Wellington delivered the address to his graduating class April 19th, at Ford's Opera House, Baltimore, Md.

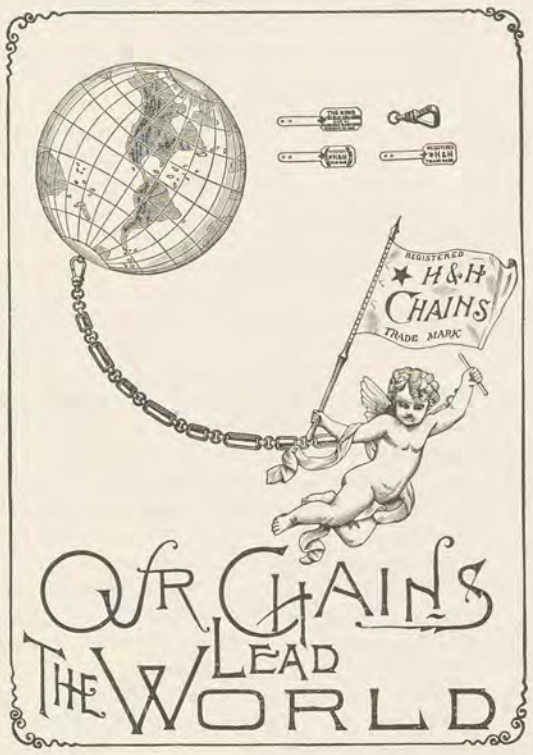
(*Continued on page 456.*)

★H&H

Our Registered Trade-Mark is a Guarantee.

STAMPED ON SWIVEL AND LINK OF EVERY CHAIN.

Hamilton & Hamilton, Jr.
Providence, R. I.



"Busiest Jewelry Plant in 45 States"

An Unsolicited Testimonial!

A jobber writes us:

DEAR SIRS:—It may interest you to know that the result of a recent test by one of our best customers of your **King Filled Stock Chains,** against those of another prominent manufacturer, proves beyond doubt that your Chains are so greatly superior that there is practically no comparison. Accept our congratulations.

OUR CHAINS

have always been in the front rank, and still hold their place.

They are the standard of quality.

In style, quality and finish we challenge comparison at the same price.

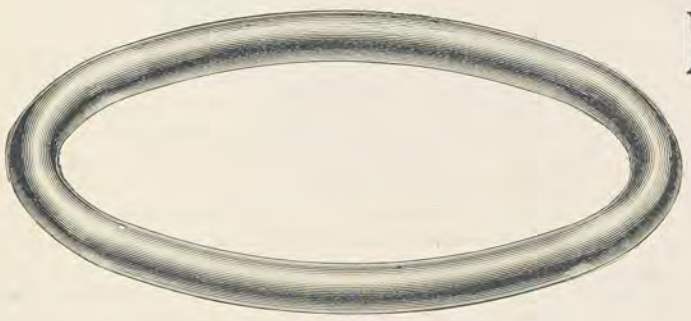
OUR GOODS SELL.

Do not need to be put out on consignment.
Send for quotations through your jobber.

MAIN OFFICE, Providence, R. I.

BRANCH OFFICES: New York, Chicago, San Francisco, London.

ADDRESS ALL COMMUNICATIONS TO MAIN OFFICE.



No. 3924

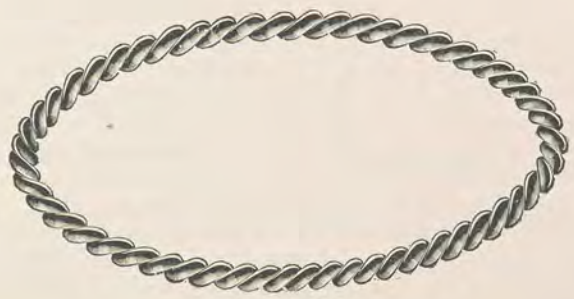
NETHERSOLE BRACELETS

ALL SIZES

PLAIN AND CHASED

No. 4051/1

U. S. ARMY BUCKLE



No. 4029

U. S. NAVY BUCKLE

THESE BUCKLES, MOUNTED ON OUR RED, WHITE AND BLUE SASH BELTS, ARE EXCEEDINGLY EFFECTIVE

STERLING SILVER. No. 4057. GILDED.

Simons, Bro. & Co.

SILVERSMITHS
THIMBLE MAKERS and
MANUFACTURING JEWELERS

PHILADELPHIA

NEW YORK CHICAGO
SAN FRANCISCO

STERLING SILVER. No. 4053. GILDED.

Among the Trade.

(*Continued from page 454.*)

Pennsylvania.

M. F. Maley, Shenandoah, is now located at 110 South Main Street.

C. Schmidt, of Braddock, has opened a branch store at 910 Braddock Avenue.

J. A. Smith, of Mechanicsburg, recently purchased for $3,000 a beautiful home.

A. Levene, formerly of Carbondale, has opened a store in the National House Block, Pittston.

John B. Smyth, of Renovo, attended the recent reunion of the Order of Elks, in New Orleans, La.

South Carolina.

Eduard Scholtz, of Newberry, has moved into better quarters.

Jeweler Scholtz, Newberry, is now located in his new stand, where he has elegant quarters and a comprehensive stock.

Jeweler A. W. Biber, of Spartansburg, has recently made improvements in his store by putting in new fixtures and otherwise beautifying his establishment.

South Dakota.

A. F. Snyder has begun business in Deadwood.

Harrington & Ernstene, of Parker, have dissolved partnership. The business will be continued by Mr. Ernstene, and Mr. Harrington will conduct a similar business in Sioux Falls.

Tennessee.

G. W. Meyer, of Chattanooga, has discontinued his auction. The sale was conducted by P. J. Burroughs, of Chicago.

Julius Buck, formerly in the jewelry business at Memphis, has recently accepted a position with jeweler G. T. Broadux, of the same city.

James P. Pendleton & Bro., Bristol, are perhaps the only firm of deaf and dumb jewelers in the United States. They have been in business for twelve years, are successful, and have the leading store of their town. As mechanics they enjoy the reputation of being experts.

Hope Bros., well-known dealers of Knoxville, have nobly shown their patriotism in their novel and unique window displays during the month just past. Their window decoration has attracted a great amount of attention and favorable comment. They report a nice trade.

John N. Mulford, the well-known jeweler of Memphis, has thoroughly refitted his store this season, putting in new wall-cases and new show-cases; the latter in the shape of a horseshoe. Travelers tell us that Mr. Mulford now has one of the prettiest establishments in all the Southland.

Texas.

H. H. Hawley has opened a store in Terrell.

Krulewich Bros. have succeeded I. M. Pearlston & Son, Waco.

The Armstrong Jewelry Co., of Brownwood, has moved into new quarters.

The drug and jewelry firm of Burge & Gunn, Ector, has been dissolved, and A. S. Burge will continue alone.

E. A. Gomez, Richmond, was married last month to Miss Rosina Goodman, of Navasota. THE KEYSTONE extends congratulations.

The M. Dorenfield Jewelry Co., of Corsicana, has been incorporated, with a capital of $5,000, by J. J. Lane, M. Dorenfield and M. Lane.

Virginia.

Jeweler J. S. Ehrich, of Lynchburg, has recently returned from New York, where he went on a purchasing trip.

F. D. Johnson & Son, of Lynchburg, have closed out their entire stock and fixtures at auction They expect to resume in the jewelry business in the near future.

Jeweler E. Hibarger, of Roanoke, has recently taken his son into a partnership in his business. This firm are local time inspectors for the Norfolk and Western Railroad.

Lumsden & Son, of Richmond, are a progressive and popular firm. They have one of the really pretty stores of the old Dominion, and report an improving trade this year over last.

Washington.

William Lynn, Winlock, has greatly improved his jewelry and optical store.

O. H. Johnson, Garfield, has built a rear-end addition to his store and has increased his stock of jewelry and stationery.

Wisconsin.

C. C. Chase, of Elroy, has greatly improved his store.

H. Wilson, Platteville, has moved to a more desirable store.

W. H. Lynn has removed from Stevens' Point to Stanley.

L. Neuberg, lately of Random Lake, has moved to Appleton.

A. F. Roach, Nekoosa, is overjoyed because of a recent arrival at his home. Here's to the little lady.

Richard Seidel, Milwaukee, who had been more than a quarter of a century at 161 Reed Street, recently removed to Second Street and Grand Avenue.

Wyoming.

The Murchison Jewelry Co., of Rawlins, has succeeded to the business of Murchison Bros. The new firm will be under the management of Mr. Conrad Murchison, late of Chicago.

Miscellaneous.

Carl Olsen, formerly located at Milford, has removed to Lake Park, Iowa.

E. Arnold has accepted a position as watchmaker with C. C. Ingvoldstad, Milford, Iowa.

G. R. Filmore, of Dodge Center, Minn., was burned out the middle of last month. His stock was covered by a small insurance."

Jeweler D. H. Glenn, of Ruthven, Ia., is attracting crowds by the novel manner in which he has his window dressed. Mr. Glenn has put in quite a large tank, in the middle of which he has constructed the island of Cuba, and several other smaller ones off the coast of Florida. On the island of Cuba "Old Glory" floats, and quite a number of miniature war vessels can be seen on the look-out for Spaniards. Mr. Glenn caught the idea from last issue of THE KEYSTONE.

S. C. J. Peterson, the well-known jeweler of Morris, Ill., has been taking advantage of our national event in his window dressing the past month. A local paper praises his show-window highly, and describes it as being dressed up in true war fashion. A large picture of the ill-fated battleship *Maine* was the center of interest. Other war pictures and decorations were artistically arranged. The local sheet winds up its praise by saying, "Altogether it was a window that not only jeweler Peterson should feel pride in, but the whole population of Morris should be proud of."

The death of H. C. Held, the pioneer jeweler of Grand Island, Neb., has been announced. He died April 28th after several years of continual suffering from a throat trouble known as tuberculosis of the larynx. Mr. Held has been a patient but great sufferer for over five years past, he having been forced to sell out his business last year on account of failing health; in fact, for the past three or four years he has been unable to give his business much attention. Mr. Held settled in Grand Island in 1871, when he immediately embarked in the jewelry business. He was successful from the start, and for several years before his death he enjoyed the reputation of being the wealthiest retail jeweler in Nebraska. The writer has long been acquainted with Mr. Held, and takes pleasure in testifying to his many fine qualities as a man. Of quiet and unassuming disposition he gave the impression to strangers often that he was cold and indifferent, but to those who knew him well he was anything but cold and indifferent. Mr. Held was devoted to his business, as he was rarely absent from it when in good health. In his death the trade loses a most worthy member—one who leaves behind a fine record as a man and craftsman.

Cincinnati Letter.

One of our well-known men in the trade who has just returned from the South, said the country is intensely interested in the war with Spain, but that the conflict is having no appreciable effect on business. The railroads have carried vast numbers of soldiers through that section to the front the past month, and the boys have had a continuous ovation all along the lines. This gentleman said that the Southern people generally felt that the war was already proving a positive benefit to their section. In a measure the South will be the scene of operations, and the supplies for the 100,000 troops will have to be furnished mainly by Southern farmers. Already large contracts are being placed for mules, and an animal that would not have sold for $50 sixty days ago, now finds quick sale at $75 to $100. Other commodities are looking up, and as the South can furnish everything needed in the way of edibles, the benefit to the farmers will be realized at once. The Southern States will enthusiastically furnish more than their full quota of volunteers, and side by side with the sons of the G. A. R. will be found the sons of the Confederate veterans, fighting as bravely for Old Glory as did their fathers in that unfortunate conflict among brothers thirty-five years ago.

There is no lack of the patriotic spirit among the trade here. From all the wholesale manufacturing establishments flags and bunting hang from every house, and the leading retail stores are elaborately decorated.

The Queen City Watch Case Company have received a number of special orders for fine cases the past month. This firm is enjoying a good run of business this season.

Dorst & Co. are enjoying brisk times in their factory. Orders for school medals have been coming nicely for the past month. This firm is certainly getting its share of the medal work this season.

Neuhaus, Trounstine & Co. were the successful bidders for the Grocers' button. It will be a handsome badge, beautifully designed.

A. Herman & Son, after the adjustment of the D. Schroder & Co. assignment, will open a store and conduct a jobbing business similar to the old firm. Mr. Herman has recently returned from a trip among his customers, and they all assure him they will give him support.

The bill prepared by the Credit Men's Association of this city to prevent a failing debtor from diverting his assets from the payment of his legitimate debts will become a law November 1st. It provides, in fact, that any sale, conveyance, transfer, mortgage, assignment, and every judgment permitted and every act resorted to in contemplation of insolvency with the design to prefer one or more creditors to the exclusion of all others, shall operate as a general assignment for the benefit of all creditors.

H. H. Mithoefer, the well-known retailer, is one of the prominent members of the committee of arrangements for the National Jubilee Saengerfest to be held in Cincinnati next year, at which something like 50,000 people will be in attendance. Mr. Mithoefer is one of the building committee, and has just made a report, denominating the site for the big building to be erected (to accommodate 20,000 people) for the occasion.

The Queen City Watch Case Company have recently issued a handy and neat booklet containing their price-list and inducements to customers. You should have a copy, and it is yours for the asking.

Michie Brothers, of this city, manufactured the handsome jewel presented last month by the Grand Lodge of Odd Fellows of the State of Ohio to Past Grand Master William S. Bell.

"Dewey Day" was celebrated in Cincinnati May 21st, with great eclat. It was a memorable affair, and will be long remembered. The jewelers did their full share of decorating, and were highly complimented.

The sister of Theodore Neuhaus, of the manufacturing jewelry concern of Neuhaus, Trounstine & Co., and herself for a long time connected with the Duhme Jewelry Company, Miss Lillian Neuhaus, was quietly married two or three weeks ago to Mallon Clarke. The marriage was kept a secret for a time, and it was the intention to keep it so for a time longer, but it leaked out. Miss Neuhaus is one of the popular ladies of the city, and when the fact of her marriage was known she was warmly congratulated by everybody in the trade here.

Neuhaus, Trounstine & Co. have recently received an order for emblematic pins for the Woman's Press Association of Cincinnati.

S. Lindenberg, of Bene, Lindenberg & Co., sailed for Europe the early part of May, accompanied by his family. They expect to remain abroad about three months.

QUEEN CITY WATCH CASE MFG. CO.

C. A. REMME, MANAGER.

Makers of HIGH-GRADE { GOLD and SILVER WATCH CASES.

Special Cases to Order.
Altering, Changing and Repairing.
Cash for Old Gold.
Send for Catalogue. Special Attention to Plating.

S. E. Cor. Fifth and Elm Streets,
LION BUILDING, *CINCINNATI, OHIO.*

LION BUILDING.

DORST & CO.

JACOB DORST, Manager,

Manufacturers of

Diamond Mountings,
Medals, Badges, Class Pins,
Masonic Jewels, Rings, etc.

We make a specialty of
All Kinds of Repairing and
Special Ordered Work.

SEND FOR CATALOGUE.

S. E. Cor. Fifth and Elm Streets,
LION BUILDING,
CINCINNATI, OHIO.

LISTEN!

This is one of the dull times *WEDGES* we spoke about last month.

No. 17012

Full heavy plated (guaranteed) Stand, handsome polished green glass Dish. **Can be retailed for $2.25.**

A few of them prominently displayed will not only attract trade but make you money.

QUEEN CITY SILVER CO.

Factories—933 to 941 Fillmore St. CINCINNATI, OHIO.

TRADE (&Co.) MARK

Neuhaus, Trounstine & Co.

Gold and Silversmiths

MANUFACTURERS OF

STERLING SILVER WARE

CLASS PINS AND MEDALS

SPECIAL DESIGNS

Cincinnati, Ohio

No. 795

No. 796

5-Year
12 Size Case with
6 Size Movement,
O.F. or Htg., with 7 Jl. Walt., $5.50
" " " " Sun Dial, 4.90

NET CASH.
NO DISCOUNT.

No. 793

No. 801

JULES ASCHEIM, 41 Maiden Lane, New York.

Observed and Noted.

BY JOHN TWEEZER.

The Inconvenience Of Conveniences

Conveniences are sometimes inconvenient. At present, the country is suffering from the modern convenience of the newspaper and the telegraph. We would all be the gainers if we did not have the privilege of knowing hourly what is going on in the world, in this particular juncture of affairs.

Trade is dull, and there's no denying it. But *why* dull? Why, with wheat at $1.50, plenteous crops in prospect, factories humming, no disturbing threats as to the stability of the medium of exchange, no disquieting fears as to changes in tariff schedules, no sign of civil disturbance or serious social discontent—why does trade languish and the jeweler grieve?

"The war," you say. But no sane man dreams that the enemy will land on these shores and destroy any part of the machinery of prosperity; nor fears that his own person is in danger; nor seriously doubts that his left pocket will fill more rapidly, because of the money put afloat for the emergency of war, than his right will empty from the payment of increased taxes. Why, then ——?

Here is my "guess": We are suffering from too much bulletin-board, too many hourly extras of the daily paper, too many conveniences in the way of ocean cable. Our eyes are focused so intently on headlines that they go tired to the task of looking at merchandise-lines; our ears are deafened by the yellow-paper newsboy's yell, and can't be quickly attuned to the mellower note of the salesman's story; our hands wave so frantically in gesture of joy over Dewey that they go nerveless to the task of pivoting a staff; our brains are so loaded with particulars as to the movements of fleets that there isn't a little corner left for sometime pondering over making the cash discount. We are bedeviled by the dreadful telegraph.

Old timers will recall just such a condition during the first six months of the Rebellion; but our lot is worse now, to the amount that news facilities have increased in the interim. But you old fellows will remember that *after* the few months of paralysis, trade took heart and prospered amazingly. It ought to revive, now, and will shortly; and "we'll all be happy yet." But we shall have to struggle against the handicap of overmuch "news," alas!

The Stain on the Century

Is any one giving thought to the possible condition of the reconcentrados of Cuba, in these stirring times? We are engrossed with war news and our own responsible relation to passing events, and the gruesome horror of the situation of these Cuban wretches is forgotten by us in the joy over Dewey's victory in the antipodes. But unless we win success quickly, the whole noble purpose of our armed intervention in behalf of these reconcentrados will be defeated—for in another month it is unlikely that a single one of the half million native Cuban women, children, and old men outside of the insurgent ranks, will be left to the guardianship of the nation which espoused the cause of humanity.

With increasing scarcity of provisions in the blockaded island, and increasing need that these provisions be sequestered for the Spanish troops, it is not probable that the authorities are giving thought to the burdensome outside population which represents the friends and kindred of the enemy; and when the Cuban flag flies finally over Morro Castle, there will be no Cuban children to cheer in shrill treble in the hour of victory, no Cuban wives and sweethearts to welcome the victors to their inheritence, no widows and orphans left to tell the grief in glorious success.

A half million people starved to death! When civilization gets into focus of that dreadful fact, when sober humanity, the world over, comprehends the full significance of the most terrific crime in the history of modern nations, Spain will sink beneath the outraged scorn of the world, and the vengeance of eternal justice will blot her nationality from the map.

"Though the mills of God grind slowly,
Yet they grind exceeding small;
Though with patience He stands waiting,
With exactness grinds He all!"

Profitable Extravagance

We entered into the present war with the certainty that we would spend some hundreds of millions of dollars, and the reasonable probability that we would have nothing in return except the sense of duty done; for the President's message distinctly disavowed any intention of our acquiring Cuba. But whether we retain the Philippine Islands or not (and their acquisition would recoup us for the probable cost of the war), we shall be fully repaid in another way. England has been brought into closer sympathy with us than she has felt for one hundred and fifty years, and the amazing news comes to us, as I write, that her government wishes to contract an alliance with ours on practically our own terms.

The full significance of this proposition cannot be measured at a glance. It is a virtual admission, by the greatest nation, of our potentialities; it is the final and definite estimate of our place among the great powers. The United States of America walks arm in arm with England at the head of the procession; and it is given to us to solve the destiny of nations.

It is folly to insist on our ability to stand out against the world united against us. Jingoism that goes to that extent of boasting is asinine. England needs us, probably, to carry out her schemes of empire in the East; but we shall need her no less in the international crises that threaten the future. We cannot look elsewhere in an emergency. Russia is our traditional friend; but it is a friendship between alien and unlike peoples, with opposite instincts, habits and the processes—a friendship that at any time may fall asunder under the hard practicalities of national development. But an alliance with England is consistent with the laws of nature and the racial tendency. Speaking one tongue, inspired by one faith, moved by the same impulses in furtherance of the humanities, honoring the same forefathers, breathing the same atmosphere of civilization, the two great families of the Anglo-Saxon race may profitably go into an alliance for their mutual security and welfare. The trade warfare between them will continue; they will lose no part of their respective national individualities; but they would stand invincible before the world in any measures affecting their joint interests. The processes of civilization would be enormously advanced; the general weal of mankind would be secured. It would be the crowning glory of a glorious century.

Some Significant Spanish Proverbs.

A proverb is the boiled-down wisdom of a people. The peculiar romanticism that is such a conspicuous element in Spanish character has nurtured an immense growth of Spanish proverbs that bear a hybrid fruit—the graft of the modern decadent wit upon the old stock of the vigorous Spanish intellect. It is the singular retribution of modern Spain that she is condemned by the very proverbs that speak the character of her moral and intellectual life.

For instance, the proverb, "A cada malo su dia malo"—*to every evil doer his evil day*—might be "writ large" on the doorposts of every governmental office for the past two centuries, with finger-boards pointing to every land over which she has held dominion; and the truth of the proverb needs no further demonstration, to living observers, than that presented by the slow-moving but certain retribution which has overtaken Spain in her tortured and oppressed colony of Cuba.

Forgive once him who errs, but never twice, wrote one of her early philosophers. But not twice, nor thrice, nor less than a score of times has Spain demanded the forbearance of the civilized nations for her repeated and monstrous offences against the established codes of conduct and the higher humanities. Transgressor again and again of every law of right and every rule of good behavior, as fixed by the brotherhood of civilized nations, she speaks to deaf ears in her last appeal to Europe in this crisis of her history.

"Aquellos son ricos que tienen amigos"—*they are rich who have friends*. How poor, indeed, by this token, is Spain. The bankruptcy of her treasury is not so bad a showing, in her balance-sheet, as the poverty of her resources of friendship and sympathy and good will—for she has alienated every self-respecting nation, except those bound to her by the ties of kinship, as Austria, or by the self-interest of the creditor, as France.

Good words and bad deeds deceive both wise and simple. Speaking "good words" and acting otherwise seems to be the rule of conduct in Spanish diplomacy and government; and it *did* deceive, for some years, the wise men who conduct American affairs at Washington, as well as, for a longer period, the simple natives of Cuba, who trusted in the promises of the throne at Madrid. But the most deceived, finally, was the deceiver, in expecting that confidence could eternally find sustenance on the husks of "good words." *Silence and look out*, says another proverb, *we shall catch both hen and chickens*; but the insurgent hen, from her safe retreat in the Cuban mountains, is calling to the home-revolution chicks, and both will cackle in chorus of triumph.

"Cada uno es hijo de sus obras"—every man is the son of his own works; and Spanish oppression is the father of Spanish suppression!

Since I wronged you, I have never liked you. If the armistice had been accepted by the insurgents, and peace had been arranged, it would have been perfectly safe to predict that in a little while Spanish oppression of the native Cubans would have recommenced with relentless and vindictive fury. It could not have been otherwise, from the very nature of Spanish character, as shown in her history and reflected in her proverbs.

Tell a lie, and you will bring out the truth. It is remarkable how large a proportion of Spanish proverbs hint at the expediency of the lie. Lying, deceit, seems to be the very warf and woof of the fabric of her national character. Distrust is the burden of a hundred of these maxims. A study of the vast number of Spanish proverbs must inevitably strengthen the conviction of the underlying depravity in the moral and intellectual life of that people.

J. T.

By a Very Narrow Escape

we were spared from injury by the recent

Destructive Fire in Attleboro

and while we deeply sympathize with all who were less fortunate, we can assure our many friends, and the trade generally, that we are still able to give **PROMPT ATTENTION TO ALL ORDERS** with which we may be favored.

Our representatives will shortly call upon the trade with

OUR NEW SAMPLE LINES

which are complete and filled with

Attractive Patterns

ROLLED GOLD PLATED

Vest Chains,
Lorgnettes,
Guard Chains,
Chain Bracelets,

AND

FILLED GOLD RINGS,

and in every line we have maintained our guarantee to produce

THE BEST IN THE WORLD FOR THE MONEY,

and will continue to do so.

The D. F. Briggs Co.

NEW YORK OFFICE,
200 Broadway.

Attleboro, Mass.

ST. LOUIS OFFICE,
Commercial Building,
Sixth and Olive Sts.

Electro-Metallurgy.

IV.

Removing Fire-coat.

MANY jewelers who are tolerably conversant with electro-deposition, and can gild and silver-plate very nicely, are unaware of the fact that the process of "stripping" or removing "fire-coat" can be readily accomplished by simply reversing the process of electro-gilding. That is, by placing an article of gold jewelry, which has a sickly green color, after hard-soldering, in a strong cyanide solution and letting it play the part of an anode for a few seconds, when it will be restored to its original color.

Restoring Color After Hard Soldering

We do not mean by this that a workman can bring a job out with a high polish and all scratches removed, but the gold alloy will have its original color. The plan to pursue is to first use care that the surface of the article to be hard-soldered is well protected by some anti-oxidizer. There are many anti-oxidizers in use. A favorite mixture is composed of borax acid and talc. Some call this substance French chalk. These substances are ground to a fine powder and mixed in about equal proportions, and when used, the compound is mixed with water and applied as a paste to the article to be hard-soldered.

Charcoal dust—you can buy it at the druggists under the name of "charcoal powder"—mix this with equal parts of pulverized borax, and add water, as before, to make a thin paste. Now, with a camel's hair pencil brush, paint over the surface of the gold, except where the solder is to flow. Let this coating dry before heating. For hard-soldering we know of no flux equal to simple borax ground up on a bit of roughened glass with water into a thin paste. The gold or silver solder is cut into little pieces and kept in a little box with the small pencil-brush used to apply the borax paste.

The pencil-brush is first "loaded," as a painter would say, with the ground-up borax and water, and then touched to a bit of hard solder, to which it adheres, and is readily lifted. Transfer the bit of solder to the borax slate, and smear it around in the borax paste; lift it again, and with the pencil-brush place the bit of solder on the joint where it is to flow. It is important that the bit of solder should be coated on all sides with the borax paste. So, also, must the entire surface of the gold, where the solder is to flow, be coated.

Tricks in Hard-Soldering

It is not important that there should be any great quantity of borax-paste on the job, but it is important that the entire surface of the metal, where the solder is to flow, should, when you heat it, be covered with a perfect coating of fused borax glass. The philosophy of all soldering is, a flux of some kind dissolves any oxide on the surface of the metal to be soldered, and also on the solder; under these conditions the solder, which is fluid when melted, flows into any crevice, the same as water would into a crack in the floor. Capillary attraction is what makes solder flow better into a close joint than into a wide (open) one.

Hard-soldering is, we are aware, not a branch of electro-metallurgy, but it is an important auxiliary, or preliminary to an explanation of how to remove fire-coat. Any reasoning man should know that if a deep coating of oxide is allowed to form on a metal surface, that it will not be practicable to remove such oxide and have the surface bright. To get the best results, we should protect the surface of a gold job all we can, and then the surface of the metal will come up to the proper color very quickly in the "stripping" solution.

There are many (so-called) secret formulas for restoring color, but we never found anything better than a plain solution formed by dissolving two ounces of good cyanide of potassium in one quart of water. The electric current for removing fire coat is the better for being of rather a high intensity, say from twenty to twenty-five volts, but a current of six to eight volts will do it. The "stripping" solution is the better for being hot, but the process can be very well effected with the solution at the temperature of the workshop. The article to have the fire-coat removed should be moved rapidly back and forth in the solution.

Remember, the process is exactly the reverse of gilding; that is, the article to be "stripped" is attached to the copper or carbon pole, and a plain plate of copper to the zinc pole. A few seconds effects the object, if everything is working right. We would beg to say, before closing this article, that the two formulas we gave for holding the color, or anti-oxidizers, we do not consider the very best, but "good." The best recipe for an anti-oxidizer we have given repeatedly in THE KEYSTONE, and consists of a mixture of yellow ochre borax and boric acid. The formula is given complete in our reply to "Anti-oxidizer," on page 40*l*, January, 1896, THE KEYSTONE.

Providence and Attleboro.

A damper has been thrown over this section by the destructive fire of May 18th in Attleboro, which consumed property valued at $1,000,000. There is little else talked of at this writing. The fire is described elsewhere, and the losses of individual firms estimated.

There has been no noticeable change in business during the month. There is still a run on war emblems, which are being turned out in enormous volume and in infinite variety. In staple lines some manufacturers report an average business, while others report slow ordering.

Chappell, Taipe & Co., have moved into larger quarters at 40 Clifford Street, Providence, where they have several times more floor space than in their old location. The change was made necessary by the firm's growing business, which has been very rapid for the short time they have been in business. They are now getting out their new fall line, which is the largest they have yet shown.

B. P. King has been chosen chairman of a committee to arrange for the construction of new schoolhouses in Attleboro.

The new Norton and Attleboro Electric Street Railway is now completed. This road will be a great advantage and convenience to this section.

A new firm, to be known as Culver & White, will manufacture jewelry and novelties in the Hayward Building, Attleboro, where the Chaffee & Thompson Tool Co. was recently located.

At the recent annual meeting of the Providence Athletic Association William N. Otis, of Otis Bros., was elected second vice-president, and George H. Holmes, of G. H. Holmes & Co., was elected a member of the governing committee to serve till 1900.

The wife of the well-known refiner, John Austin, of Providence, recently returned from a four month's sojourn in Egypt and the Holy Land.

The firm of Bennett, Melcher & Co., manufacturing jewelers, 4 Butler Street, Providence, have dissolved partnership, Woodbury Melcher retiring. The remaining members of the firm will continue the business under the style of Bennett & Bradford.

S. E. Fisher, formerly of S. E. Fisher & Co., North Attleboro, is now a clerk for the North Attleboro Gas Company.

Sumner Blackinton, of W. & S. Blackinton, Attleboro, returned from Europe a few weeks ago.

Charles L. Potter, and old-time manufacturing jeweler, died at his home in Providence, on May 9th. Mr. Potter was formerly in the pearl manufacturing business, but for the past nine years has been foreman of the pearl department in the factory of O. C. Devereux & Co.

The R. M. Derick Jewelry Company has furnished quarters in the Horton Block, Attleboro, and will manufacture novelties.

A movement for cheaper gas has been started in Attleboro. Among the leaders are the Bay State Optical Co. and Horton, Angell & Co.

Frank C. Miller, of Attleboro, recently sent to President McKinley an anchor charm made of a piece of the battleship *Maine*. It is large and heavily gold plated, and was made by W. & S. Blackinton.

The Torrey Jewelry Co. and Chas. M. Robbins, Attleboro, have enlarged their plants, the former by hiring a floor of the Robinson Building No. 2, the latter by securing part of the Walter E. Hayward Building

Albert A. Ellis & Co., Attleboro, have moved into the South Main Street Building of James E. Blake & Co.

The E. Ira Richards Building, North Attleboro, recently destroyed by fire, is to be replaced by a big brick structure.

John B. Mainteen & Son, North Attleboro, now occupy the new factory just erected by them.

Among those recently elected vestrymen of various Episcopal churches in Providence we find the following: John Austin, All Saints' Memorial Church; Dutee Wilcox, the Church of the Epiphany; Joseph H. Fanning, Saint James' Church, and George D. Briggs, the Church of the Redeemer.

The Providence Board of Trade has issued its *Manual* for 1898, which is an admirable compilation. Besides containing abundance of information in regard to the city and its manufactures, it is finely embellished with half-tone pictures of the principal buildings of Providence.

It is reported that a new jewelry factory will be built in North Attleboro, near the High Street railroad station, for the accommodation of G. K. Webster. The *Chronicle* says it will be 200 feet long, with a two-story head house, and the remainder of the building one story in height. A sixty-foot ell is to be constructed on one side for a packing room.

An exhibition of the Drawing and Modeling Class was held last month in North Attleboro. J. E. Straker, Jr., of Strakes Bros., is the instructor of this class.

A large flag was raised at the factory of T. I. Smith & Co., North Attleboro, last month. The flag was purchased by the firm and its employees. A large crowd greeted the raising, and a salute of twenty-one guns was fired.

The Dyer Land Company Building, Providence, was shut down part of last month while new boilers were put in and other repairs made. The tenants in this building are: The Waite, Thresher Company, Waite, Mathewson & Company, John T. Mauran Mfg. Co., C. H. Cooke, Walter S. Hough, Jr., S. Albro Company, E. A. Potter & Co., S. M. Lewis & Co., and E. A. Brown & Co.

The third annual competition for prizes offered by the New England Manufacturing Jewelers' Association to the students of the Rhode Island School of Design, of Provdence, was held recently and the prizes awarded. The subject was a hair brush back in silver. The first prize was awarded to S. G. Mandalian, of Attleboro; the second to Harry L. Avery; the third to Louise B. Fredrici, and the fourth to B. Wilson Tripp. All four designs were exceptionally beautiful and many that fell short of prizes were highly creditable to the school.

William Blakely, of George H. Cahoone & Co, Providence has been elected a vice-president of the Rhode Island Society for the Prevention of Cruelty to Animals.

J. D. Lincoln & Co., Plainville, has added large boilers to their plant, and made many other improvements in their factory.

August Schilling, formerly chainmaker in the Draper Building, North Attleboro, has discontinued his business and has accepted a position with A. H. Bliss & Co.

Martin S. Fanning has been elected a member of the board of directors of the Brown University Athletic Association.

At the recent annual communication of the Grand Lodge of Free Masons of Rhode Island George H. Holmes, of George H. Holmes & Co., was elected District Deputy Grand Master; John Kelso, Junior Grand Deacon, and William N. Otis, of Otis Brothers, Grand Marshal.

S. O. Bigney was the leading spirit in organizing and making successful the great I. O. O. F. patriotic parade held in Attleboro last month.

Destructive Fire in Attleboro.

Big Jewelry Manufacturing Buildings Destroyed and Many Firms Burned Out.

The most destructive conflagration on record in the jewelry trade broke out at midnight of May 18th, in Attleboro, Mass., destroying two blocks of buildings covered with jewelry factories, and also a number of adjacent buildings. The losses are estimated at about $850,000, and over 1,000 hands were affected by the fire. The fire was discovered in the basement of the Bates & Bacon Building (occupied by J. T. Inman & Co.) by two young ladies, Misses Anna and Nellie Coughlin, who had just stepped off the train from Providence, arriving in Attleboro at 12.05. The general supposition is that it was caused by combustion of lacquer. The night watchmen were hunted up, and an alarm soon sounded from box No. 9, which is situated in the heart of the jewelry district, and is the most dreaded alarm of the city system. The fire department was at work in a short time, as an engine house is located but a block from where the fire started. The fire spread with great rapidity, as all the buildings were constructed of wood. By the time the firemen appeared, the fire was sweeping through the entire Bates& Bacon Building, which was occupied by Bates & Bacon, W. & S. Blackinton, C. H. Allen & Co., Daggett & Clap, and J. T. Inman & Co. The firemen then turned their attention to the adjacent building occupied by the Bay State Optical Co., H. Wexel & Co., J. C. Cummings & Co. and Short, Nerney & Co. As an instance of how rapidly the fire spread, the superintendent of the Bay State Optical Co., had entered the building before it caught fire, and rapidly inspected the seven safes of the company to see that all were properly closed. When he had completed his rounds, the building was on fire, and the heat and flames compelled him to make a hasty retreat.

Ruins of the Attleboro Fire—Looking South. (From Photograph by Edwin P. Wells.)

Chief Engineer Packard thought that he would not be able to combat the flames, and directed that appeals for assistance be sent out to neighboring towns; in response to which special trains were soon on their way with fire companies with their apparatus from Taunton, Providence, Pawtucket and Mansfield. The North Attleboro firemen were also soon on the scene. A strong wind blowing at the time soon swept the flames through the rest of the block, and the power house and the new Bates & Bacon factory, on the furthest end of the block, were soon ablaze in spite of the determined fight made by the firemen to confine the flames to the buildings on the western end of the block. The new factory building was occupied by S. O. Bigney & Co., Regnell, Bigney & Co., and the Attleboro Mfg. Co.

Meanwhile the flames had communicated to the Hayward Building, situated across the street on the north from the building where the fire started. Sweeping through this it communicated with the smaller building in the rear, and it was only after a determined struggle that the firemen kept it from sweeping further northward. As it was, the building occupied by Jas. E. Blake & Co., and others, caught fire several times, but was saved after being well deluged with water. At this time the flames were burning fiercely over a block and a half, but the work of destruction was not complete, as the wind carried the flames across Union Street, and communicated to the Hose Company's house, which was entirely destroyed, along with several business structures and dwellings. It was not until about 3 o'clock that the firemen were enabled to gain control. For a time it was feared that the adjacent factory buildings, which go to make up the largest section of the Attleboro jewelry factories, would also be swept away. This feeling was exhibited by the statement of Will Tappan, of the D. F. Briggs Co., to THE KEYSTONE representative the morning of the fire, when he stated that a visitor could have had their factory and contents for two postal cards, had he made the offer about 1.30 during the fire.

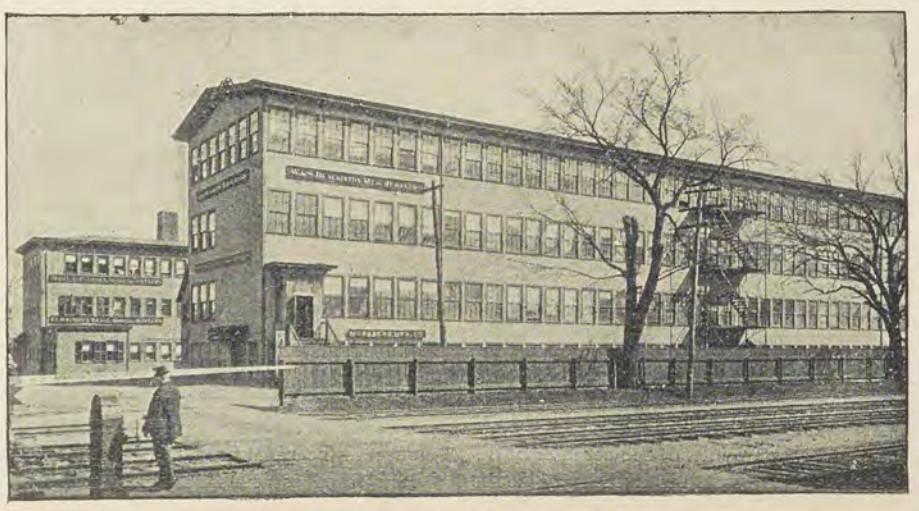
The following firms were the sufferers by the fire, besides those already referred to: Walter E. Hayward & Co., H. M. Williams & Co., Hutchinson & Trafton, E. T. Bright, W. E. Dunham, J. B. Ellis, J. Anthony, Culver & White, and Chas. M. Robbins.

Most of these firms immediately set to work the morning after the fire to find new quarters, and resume business at the earliest possible date. The town, however, will lose several of the firms burnt out, as W. & S. Blackinton and S. O. Bigney & Co. have secured factory space at Providence. It is expected that new buildings will at once be built with more fire-proof construction, to take the place of those destroyed.

The losses are estimated as follows: Bates & Bacon, $200,000, partially insured; W. & S. Blackinton, $150,000, partially insured; S. O. Bigney & Co., $50,000, partially insured; Daggett & Clap, $50,000, insurance, $35,000; Bay State Optical Co., $40,000, partially insured; J. C. Cummings & Co., $30,000, insurance, $15,000; W. E. Hayward & Co., $25,000, insurance, $16,000; H. Wexel & Co., $25,000, insurance, $15,000; Regnell, Bigney & Co., $20,000, insurance, $10,000; J. T. Inman & Co., $20,000, partially insured; Attleboro Mfg. Co., $15,000, partially insured; H. M. Williams & Co., $10,000, partially insured; C. H. Allen & Co., $5,000, insurance, $3,000; Hutchinson & Trafton, $5,000, partially insured; John Anthony, $3,000, insurance, $2,250.

J. M. Bates, of Bates & Bacon, was by far the heaviest loser by the fire, as he is the owner of three of the four principal factories that were burned. The greater part of his loss will be caused by the worthlessness of the large vault in the building. This vault ran up for three stories, and contained the stocks of the tenants in the northern end of the building, all of whom considered the vault thoroughly fire-proof, and consequently carried little insurance on the stock that they kept in the vault. The vault collapsed entirely with the heat and weight it was subjected to, and the contents were totally ruined. The tenants who had placed their faith in the vault felt very bitterly over the evidence of its weakness the morning after the fire, and stated that had they known of its frailty, they would have carried more insurance and safes than they did. Mr. Bates will probably rebuild the factory, and it is also thought likely will continue in business, although this was thought doubtful for a time.

W. & S. Blackinton have located permanently in the Manufacturers' Building, Providence. This firm have been talking of moving to Providence for a year or two past. Every effort was made to have them remain at Attleboro, as the community hated to lose such a large concern, and one which was held in such high esteem. The firm at once bought new tools and machinery, and having a complete sample line at their New York office, they expect to be in the market again with their fall goods, in the course of a month or so.



Bates Building, No. 1, Where Fire Started.

S. O. Bigney & Co. have also leased quarters in the Manufacturers' Building, at Providence, but it is thought that they will move back to Attleboro when new factory facilities are available, as Mr. Bigney is deeply interested in financial and political affairs at Attleboro.

The Attleboro Manufacturing Co. was the first of the burnt out firms to

(*Continued on page 460 d.*)

Types of Warships—Principle of the Classification—General Plan of a Battleship, Cruiser, Monitor, Torpedo Boat and Torpedo Boat Destroyer.

We have received a number of letters from subscribers requesting us to give them such information in relation to warships as will enable them to read the news of the sea fights more intelligently, and help them to form a more correct idea of the relative strength of the fighting forces. This we will endeavor to do as fully as our limited space permits.

The Principle Underlying Classification.

There are ten principal classes of vessels in the United States Navy, distinguished one from the other by the differences in their uses and by their strength and speed. The general principle underlying their construction is that a vessel which is not strong enough to fight one of her own size must be fast enough to run away. Any vessel which is inferior in armament and has no compensating superiority in speed is outclassed. The same is true of any vessel which is equal in armament but inferior in speed to an adversary.

The size of a vessel is measured by its displacement. This displacement is the number of tons of water she will push aside to make room for herself. A vessel of 10,000 tons will take engines of a certain weight and power to drive her at a given speed, and the larger the engines the larger the boilers and the greater the supply of coal required. Now, if it is necessary to give this vessel heavy protective armor and big guns, the additional weight of this equipment must be saved somewhere else, and usually in the engine room, reducing the speed of the vessel. Following out this principle, it will be found that the fastest ships carry the lightest armament, and that those which carry the biggest guns in their batteries and the thickest armor on their sides are comparatively slow, the extreme variation among vessels of the same displacement being about eight or nine miles an hour.

ARMORED CRUISER NEW YORK

In the matter of attack and defense, vessels are distinguished by the number and weight of the guns they carry and by the distribution and thickness of their armor. Protective armor is of two kinds, that which surrounds the guns, so as to protect them from the enemy's fire, and that which protects the motive power of the ship, so as to prevent the engines from being rendered useless.

Battleships and Monitors.

The maximum of guns and armor and the minimum of speed are to be found in the first-class battleship, which is simply a floating fortress, so constructed that she need never run away, but can stand up and fight as long as her gun turrets will revolve. The general plan of construction in a battleship is to surround the engines, boilers, and magazines with a wall of Harveyized steel armor eighteen inches or so thick and seven or eight feet high, which extends about four feet below the water line and three feet above it. This armor belt is not only on the sides of the ships, but is carried across it fore and aft, immediately in front of and behind the space occupied by the engines and magazines, and the whole affair is covered with a solid steel roof, three or four inches thick. Outside this central fortress and extending from it clear to the bow and stern at each end is a protective deck of steel, three inches thick, which is placed several feet below the water line. Everything above this deck and outside this fortress might be shot away, and the vessel would still float and fight.

On the roof of the fortress are placed the turrets containing the big guns. The largest of these guns, 13-inch calibre, weigh about sixty tons each, and will carry a shell weighing 1,100 pounds about twelve miles. The turrets are circular, as a rule, large enough to hold two guns and are made of face-hardened steel from fifteen to eighteen inches thick. They revolve within a barbette or ring of steel eighteen inches thick which protects the machinery by which the guns are trained. Further back on the roof of the fortress are other and lighter turrets made of 8-inch steel and carrying 8-inch guns, and at other places are stationed rapid-fire guns of lighter calibre, protected by thinner armor.

If all this secondary battery is stripped off, leaving nothing but the turrets with the big guns, and these are brought down close to the water, and the armor belt is reduced to seven or eight inches in thickness, the type of vessel known as the monitor is reached. It is simply a battleship on a reduced scale. Such vessels are very slow and cannot stand rough weather, on account of their low freeboard. The speed of monitors is seldom more than twelve or fourteen miles an hour, and they are intended to act in coast defense, usually in connection with shore batteries. The best types in the navy are the *Terror* and the *Puritan*.

The speed of a battleship is about eighteen miles an hour. The best specimen in the navy is the *Indiana*, declared by its admirers to be the most powerful battleship afloat.

Second-class battleships, like the *Texas*, are smaller vessels, usually about 7,000 tons, and they have a much lighter armor belt, about twelve inches, and do not carry so heavy an armament as ships of the first class. The *Maine* was a second-class battleship. Her largest guns were of 10-inch calibre; her armor was twelve inches thick and her turrets were eight inches thick only.

The Armored Cruiser.

The first step in reducing the armament from that of the battleship proper, at the same time increasing the speed, produces the armored cruiser. This type of vessel may carry no guns of more than 8-inch calibre, and the armor belt is reduced to three or four inches in thickness. Instead of the roof over the armor belt, the protective deck is carried all over the ship, but it is not flat, nor is it of equal thickness, as in a battleship. On the top and in the middle it is three inches thick, but the sides are six inches, and they slope abruptly to below the water line. Between these sloping sides and the thin armor belt coal is stored, so that a shell would have to penetrate the outer belt, six or eight feet of coal, and a sloping belt of steel six inches thick, the total resistance of which is calculated to be equal to a solid horizontal armor plate fifteen inches thick.

A cruiser is not supposed to fight with a battleship, because it could not accomplish anything with its 8-inch guns against the 18-inch armor of its heavier rival, while one well-directed shot from the 13-inch guns of a battleship or monitor would probably sink any armored cruiser afloat. For this reason the cruiser must be faster than the battleship, so that she can run away, and the weight that is saved in the armor belt and big guns is therefore put into the engine room. The average speed of an armored cruiser is about twenty-four miles an hour, and the best types of this class in the navy are probably the *Brooklyn* and *New York*.

Some vessels, like the Spanish *Vizcaya*, are about half way between a battleship and a cruiser, having the heavy guns of the former and the speed of the latter. The *Vizcaya*, although a cruiser, carries 11-inch guns with a 12 inch armor belt, and has a speed of twenty-three miles an hour.

Protected and Unprotected Cruisers.

The next step in reducing armament and increasing speed produced the protected cruiser, which carries no armor belt, but retains the protective deck, upon the sloping sides of which is stored the coal. The turrets disappear altogether, and there is usually only one 8-inch gun, the battery being principally made up of 4-inch rapid-fire guns and 6, 4, and 1 pounders. As this class of vessel is not able to cope with the armored cruiser, it must be faster, for the general principle holds good that the weaker the vessel becomes in point of offensive weapons or defensive armor, the greater the necessity that she should be able to run away. The best types of the protected cruiser in the navy may be found in the *Columbia* and *Minneapolis*, which have a speed of about twenty-seven miles an hour.

The weakest class of all is composed of the unprotected cruisers, which have neither armor belt nor protective deck, and carry only light batteries of rapid-fire guns. When these vesels are slow, like the *Detroit*, they are intended for long voyages and for duty in foreign countries and are of little use in a sea fight. The very fast unprotected cruisers, like the American line steamers *St. Paul* and *St. Louis*, attach little importance to their armament and rely for protection upon stowing the coal behind the place occupied by the armor belt in other vessels. All the beautiful wood work which was so much admired in these vessels has been ripped out to make room for these coal bunkers, which are sufficient to protect them from anything but the heaviest guns. On account of their extreme weakness as fighters, these cruisers are necessarily the fastest of all the large vessels, and can run away from anything. For this reason no concern was felt for the *Paris* by those who know the principles which govern the safety of modern vessels.

The various types of cruiser are not expected to fight with any but vessels of their own class, which they may encounter in the discharge of similar duties, such as scouring the seas as the advance guards of the slower lines of battle ships, preying upon or escorting merchant vessels, blockading ports, and acting as convoys for troop ships. Gunboats are simply light-draught cruisers, and are intended for use in shallow waters and rivers.

The Katahdin and Vesuvius.

By far the most unique ship in our navy, and, indeed, the only craft of its kind in the world, is the armored ram *Katahdin*. The ram as a weapon of naval warfare is one of the most ancient of which we have any recorded history. It was used with deadly effect in the naval fights of Greece and Rome, and in later times, as at Lissa and during our own civil war, it proved a terrible engine of destruction.

The value of the ram as attached to the huge and swiftly moving warships of modern navies has yet to be determined, and many authorities claim that the ship which uses the ram is liable to be only less badly strained and shaken up by the shock than her opponent.

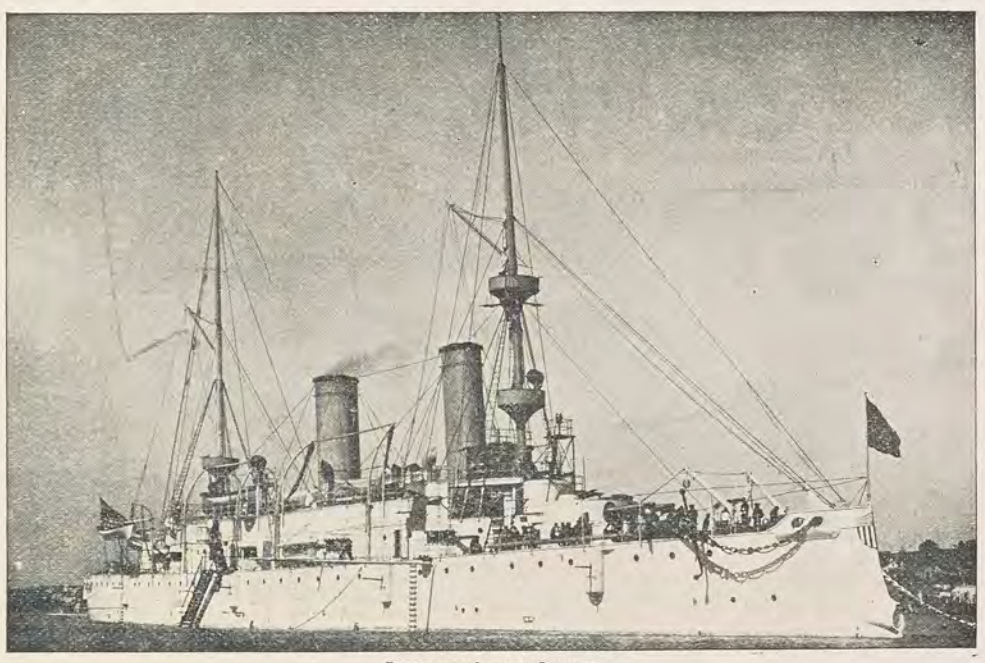
The *Katahdin*, however, was designed for the express purpose of ramming, and her hull has been constructed with a view to her being able to withstand the terrible wrench which a ship that runs its nose at full speed into a moving vessel is certain to suffer.

The *Vesuvius*, like the *Katahdin*, is a type of vessel that is only to be found in the United States Navy. She was designed for carrying dynamite guns of considerable range and enormous power, and it is upon these that she depends for her offensive power. Actual tests of these unique ships are awaited with much interest and curiosity.

Torpedo Boats and Destroyers.

Torpedo boats, as their name implies, depend entirely upon the torpedo as a weapon of attack and they carry no guns except a few very light calibre rapid firers to keep off small boats. Their success depends on their ability to approach a vessel very rapidly, launch their torpedo, and retreat before they are detected and sunk. Speed is their great requisite, and a torpedo boat like the *Porter* can steam thirty two miles an hour. Naval experts consider their bark worse than their bite, because with the modern system of lookouts and searchlights and the accuracy and rapidity of the secondary batteries, it is impossible for a torpedo boat to get within range without exposing itself to instant destruction, and after a torpedo fleet has once met with a serious repulse, it is believed that it would be almost impossible to get the crews to go into action again.

The torpedo boat destroyer, contrary to general belief, does not carry any heavy guns, but depends on its great speed and its ability to cripple a torpedo boat with its six-pounders while keeping out of range of the enemy's tubes. All torpedo boat destroyers carry torpedo tubes themselves, so that they can be used against the enemy's battleships or cruisers if the occasion offers. The fastest boat in the navy is the destroyer *Bailey*, which can steam thirty four miles an hour.



PROTECTED CRUISER OLYMPIA

The Whitehead Torpedo.

The Whitehead torpedo is 16 feet 5 inches long, 17.7 inches greatest diameter, and weighs, ready for service, 1,160 pounds. It carries 220 pounds of wet gun cotton at a speed of about twenty-eight knots per hour, and at that speed it has a range of about 850 yards. This torpedo is built of steel and is propelled by two two-bladed screws, revolving in opposite directions on the same axis, to neutralize the rolling tendency of the torpedo. The screws are operated by a three-cylinder engine driven by air compressed to 1,350 pounds per square inch; and an intricate apparatus, called the Obry gear, is used to automatically keep the torpedo pointed straight during the run. This Obry gear is essentially a gyroscope controlling the valve of the steering engine, which operates two rigidly connected vertical rudders.

What a Knot Is.

Probably there is no nautical term more frequently used during the present naval war than the word "knot." The word is synonymus with the nautical mile, or 6,080.27 feet, while, as every one knows, the geographical mile is 5,280 feet. This would make the knot equal to 1.15 of geographical miles, and, therefore, in order to compare the speed of a boat expressed in knots with a railroad train it is necessary to multiply the speed in knots by 1.15. Another point to remember is that speed means a distance traveled in unit time, so that when one speaks of a boat having a speed of 20 knots it is not necessary or proper to add per hour, as the word itself when employed as a unit of speed signifies nautical miles per hour. A cruiser that makes 21 knots travels 24.15 geographical miles per hour. The fastest speed yet obtained by any boat is said to have been attained by the yacht *Ellide*, which is known to have a record of one geographical mile in one minute, thirty-six and a half seconds, 38.2 miles an hour. In fact, a recent article in one of the engineering journals states that a record of forty miles an hour has been made by this boat.

Pay of Officers in Army and Navy.

The pay and corresponding ranks of officers in army and navy are as follows: A General gets $15,000 a year; an Admiral, $13,000; a Lieutenant-General, $11,000; a Vice-Admiral, $9,000; a Major-General gets $7,500; a Rear Admiral, $6,000; a Brigadier-General, $5,500; a Commodore, $5,000; a Colonel gets $4,500; a Captain the same; a Lieutenant-Colonel gets $4,000; a Commander, $3,500; a Major, $3,500; a Lieutenant-Commander from $2,800 to $3,000. A Captain in the army gets $2,500, a Lieutenant in the navy from $2,400 to $2,600; a First Lieutenant in the army gets $2,000, a Lieutenant, junior grade, in the navy gets from $1,800 to $2,000; a Second Lieutenant gets $1,540; an Ensign gets from $1,200 to $1,400. Even the cadet at West Point gets $540, as against $500 for the naval cadet at Annapolis. On shore, the navy pay is cut down by from one-sixteenth to one-fifth. We have on the active list neither General nor Lieutenant-General, Admiral nor Vice-Admiral.

Time Here and in Manila.

The dating of the telegrams from Manila has caused some confusion on the time question. The fact that telegrams have reached us from Hong Kong apparently before they were sent calls for the following explanation:

Manila is situated very nearly half-way around the globe from Philadelphia, reckoning westward. Its distance is such that the sun in its apparent daily course around the earth (due to the earth's rotation on its axis), having reached the meridian of Philadelphia, and having thus marked for us the hour of noon, must travel for nearly eleven hours before it reaches the meridian of Manila. At the end of that time our clocks will, of course, indicate eleven P. M., while at Manila it will be noonday. In other words, our time is eleven hours in advance of Manila time. The attack of Commodore Dewey on the Spanish fleet was made "about daybreak"—on the morning of Sunday, May 1st. At that time the hour was four P. M. with us in Philadelphia.

The Date Line.

But was the day with us Sunday or Saturday? The answer to this question depends on the position of Manila with reference to the "Date Line." The day was then Sunday with us, and we get at this fact in this way: The "international date line"—the line at which by the common consent of nations the day is conceived to begin—is commonly, and, generally speaking, correctly stated to be the 180th meridian of longitude, located half way around the globe from the "prime meridian" of Greenwich. The day has different names on the two sides of this line. When it is Sunday on the east side it is Monday on the west side; Monday on the east side, Tuesday on the west side, and so on through the week, although the same sun shines and it is really the same day. The reason for this rather curious arrangement will appear at once if one will imagine himself to travel westward around the earth as rapidly as the sun travels, or appears to travel; that is, so rapidly that the sun will seem to him to stand still in the heavens. He starts from Philadelphia, we will say, at noon on a Sunday. In three hours he reaches San Francisco. The sun is still on the meridian and it is still noon for him, though in Philadelphia the time now is three P. M. Across the ocean to Hong Kong. It is still noon. On to London, speeding across Asia and and Europe at the rate of fifteen degrees of longitude every hour, and still it is noonday. At the end of twenty-four hours he is back in Philadelphia, and there also it is noon.

If he has been unconscious of the lapse of time he may imagine that it is still Sunday; but really it is now Monday at Philadelphia. The question arises where in the course of his flying journey did the day change its name—what part of his trip was performed on Sunday; what part on Monday? The answer is that it was Sunday until he reached the 180th meridian, and after crossing that line it was Monday.

Now, the Philippine Islands lie westward of this meridian—four hours westward, Manila being very nearly in longitude 120 degrees east from Greenwich. Accordingly, if this scheme of dating were adhered to strictly when it is Sunday at the Philippines it would be Saturday on our side of the line. But for some reason—doubtless a good and sufficient reason—the actual date line, as it is laid down upon a chart, does not follow exactly the 180th meridian. It come down through Bering Strait, which is ten degrees east of this meridian, then, taking a southwesterly course, running parallel with the eastern coast of Asia, quite close to but east of the Japan Islands, it curves around the Philippine Islands, passing between them and the continent, and then, taking a southeasterly course, passes eastward of Australia and New Zealand.

Manila Has American Time.

The Philippines being thus located eastward of the "date line" have American time, so to say. Hong Kong lies on the other side of the line, and accordingly, although the difference between Manila and Hong Kong time is less than half an hour, the day bears different names in the two places. At the time when Commodore Dewey began his attack, which all accounts say was on Sunday morning, it was Monday morning—about 5.30—according to the Hong Kong calendar. This fact is brought out very clearly in the brief dispatch from Hong Kong, dated May 2d, announcing, prematurely, however, that the bombardment of Manila had begun.

We need to keep these points well in mind to avoid confusion respecting dates in following the Eastern events.

Another point, since it is Monday morning in Hong Kong while it is still Sunday afternoon with us, a telegram coming to us from Hong Kong seems to reach us before it was sent. Thus, the *McCulloch* arrived at Kong Kong "in the forenoon" of May 7th. The cablegram announcing the fact reached us about daybreak on the same day. On the other hand, a dispatch direct from Manila, however, quickly it may come, must seem to us to have been about eleven hours in its transmission.

The question of time in different sections of the globe is one which interests every horologist, and hence this lengthy explanation.

Destructive Fire in Attleboro.

(*Continued from page 460a.*)

get to work. When THE KEYSTONE representative visited them the morning of the fire they had twenty girls at work in the Wilmarth Building, and were having a new factory rapidly fitted up to accommodate their new force, which they expected to have at work within a few days. It is said about town that Sam Einstein, the hustling manager of the company, was the first man in Providence that morning to buy tools and machinery, and he had selected what he wanted before 7 o'clock that morning. It is also reported that the firm shipped out six packages of goods the evening after the fire, all of which had been made in their new factory.

Walter E. Hayward did not find his confidence in vaults misplaced, as did his neighbor Bates on the other side of the street, as the vault in the Hayward Building stood the fire very well and remained intact. Work was at once resumed on the construction of a new factory, which will be much better than the one destroyed.

The Bay State Optical Co. at once purchased the King Building, to the north of the station, and set about equipping it as rapidly as possible. They were fortunate in saving a number of their most important small tools, which were kept in the safes, and stated that they will be turning out goods in thirty days. They moved to an office in the Odd Fellows' Building, where they transacted business the morning of the fire with some of their largest customers who happened to be in Attleboro on that day. The company leased part of their new factory to H. M. Williams & Co., who soon expect to be in operation.

J. T. Inman & Co. have secured quarters in the R. F. Simmons & Co. factory, and propose to get their new line out as quickly as possible,

Daggett & Clap secured quarters with Jas. E. Blake & Co., and will complete further arrangements for getting out their fall line at an early date.

Regnell, Bigney & Co. and J. C. Cummings & Co. early secured quarters in the B. A. Bushee Building, and set about installing new machinery and tools at once, and expect to be in the market at an early date with their new line.

The other firms affected have also secured quarters, and all went to work with a will to gather new stock and machinery to get out their new fall lines. At the time of the fire nearly all the Attleboro firms were working on their fall samples, and while the fire will cause a great loss and inconvenience to many of them, it will mean scarcely more than thirty days' delay in showing their new samples to the jobbing trade, and illustrates the commendable pluck and spirit with which all hands have accepted the inevitable, and their determination to soon regain their old position.

The Attleboreans feel that the duty of the hour is to build quickly and erect substantial structures. High wooden buildings are always objectionable on account of their inflamability, and the big fire is yet another warning to builders.

The adjusters of the various insurance companies who had placed risks upon the burned-out districts have been busy in adjusting losses on claims. The work is progressing as fast as possible, and nearly all have been adjusted.

Chicago News.

WESTERN BUREAU OF THE KEYSTONE,
ROOM 811,
COLUMBUS MEMORIAL BUILDING,
CHICAGO, May 26, 1898.

Trade Conditions

Never mind the war. Go on with the jewelry business. Keep trade moving. And we all will be wearing diamonds before the year is over. We are led to make the above remarks because it is true that the excitement of war has caused business to fall away somewhat on a good many lines, and among them is jewelry. People are still reading daily papers and bulletins instead of preparing for the future. We are glad to note, however, that here in Chicago the people are paying much less attention to the war and more attention to business than at this time a month ago. This war excitement cannot last much longer, as the West has just finished putting in a great big corn and oats crop; and the prospects for wheat all over the middle West and the Northwest, is better than it was last year at this time. The big jump in the price of wheat has encouraged farmers in the wheat sections to branch out as buyers, and in the corn belt there is a belief that corn will follow wheat in price, and all this makes our Western farmers feel pretty good. The facts of the present business situation are that nothing seems able to check the rising tide of prosperity in this country. As the *United States Investor* remarks: "When the present situation is studied in its broader aspects, there is every indication that the financial and commercial interests of the United States are about to enter upon an era of prosperity such as, perhaps, we have seldom witnessed. Lagging energy will be stirred to new activity, the American intellect will be a keener instrument for some years to come, broader views regarding markets and methods will prevail. In short, the pent-up energies of the people of this country are bound to assert themselves with force." This is but a characteristic expression of the general feeling prevailing throughout the country, and it must be admitted that it is founded upon both fact and reason. The present demand for American manufactures has never been equaled in the history of the country. In iron, the output is the greatest ever known, and the steel trade has been augmented during the past week by large orders for armor plate from England. Textile works, including even cotton, are increasing their working forces and their output, and there is scarce a mill in the country that is not running to its full capacity. The distinguishing feature of the situation throughout the country is the absence of apprehension regarding the future, and there appears to be a complete return of that confidence so essential to continued prosperity. There was never a brighter outlook in the United States than exists to-day.

A retail jeweler away out on the prairies of Nebraska has the present situation down fine. He writes this office under a very recent date: "We feel that the war will help us out here. Wheat is selling for a dollar and fifteen cents a bushel in our streets to-day. I am so excited over war news that I can't half attend to business."

The war fever continues to rage unabated. Patriotism is increasing. The man, woman and child who doesn't bloom forth in some form of patriotic display these days has something radically wrong in their make-up. Never in the memory of the oldest member of the trade was there such a demand for patriotic jewelry—Old Glory badges, Old Glory belts, flag-pins and the like. Dealers everywhere are clamoring for fresh supplies, and jobbers and manufacturers are unable to keep pace with the demand.

The Effect of War on Business

There is no evidence yet that the war has had noticeably unfavorable effect on business in the West; indeed, in some lines, a great stimulus has been imparted on account of important government contracts. We do not mean to argue for a moment that war is helpful to business, speaking broadly; but many lines are helped by war. There is a distinction here that must be kept in mind. But speaking of lines that are helped in these times of war, we will mention the packing and biscuit manufacturing industries. They are reaping a rich harvest. A large portion, and perhaps the bulk, of army provisions consists of bacon, canned meats and hard bread, since they are best adapted to the use of troops in the field or at sea, being portable and easily preserved in any climate or condition of weather. The hard army bread, like the fresh meats, is put up in air-tight tins, and thus protected against the action of moisture. Government contracts to furnish these supplies in enormous quantities are keeping the packers and the biscuit makers busy day and night. Major O. H. Smith, the commissary agent at Chicago, bought up, last Thursday, nearly the entire market supply of canned roast beef, taking 1,000,000 pounds from the Hammond Packing Co., Armour & Co., Nelson Morris & Co., and Libby, McNeill & Libby, at 14 cents a pound. From the International Packing Co. he purchased 225,000 pounds of bacon, at an average of 7 cents a pound. This was a rush order from San Francisco, evidently for the troops which are to be sent to the Philippines. The purchases for the week, on contract and in the market, are said to have amounted to 3,000,000 pounds, while the government has ordered since the declaration of war about 10,000,000 pounds of meat supplies from the packers of Chicago. The factories of the National Biscuit Co., in Chicago, St. Louis, and the East, are working on the two largest orders known in the industry, which were received during the week. One came from the commissary department at Baltimore, and called for 1,000,000 pounds of army bread, which was to be furnished by Tuesday of this week. The execution of this order will require 50,000 barrels of flour. A few days previous, the company's bid for 600,000 pounds of army bread, to be delivered at St. Louis, was accepted by the commissary department at that point, and the company has been asked to bid on a supply of 200,000 pounds for New Orleans. These extraordinary orders may be evidences of the determination of the administration to force the campaign in Cuba.

The Northwestern farmer has been cleaning out his wheat bin during the past fortnight so that he might avail himself of the great opportunity that comes in a lifetime, says the *Northwest Trade*. May wheat sold at $1.70 in Minneapolis last week, and No. 1 Northern wheat sold there close to $1.60. This means a dollar a bushel profit to farmers who had wheat to sell, and it emphasizes the great shortage of wheat the world over, which is a guarantee of a good price on the next crop. The whole West has prospered greatly by this large advance in wheat, in which provisions and coarse grains are also participating in sympathy.

The crop outlook in Nebraska is excellent. This we glean from the last report of the State Board of Agriculture. The Board has been receiving statistics during the past month from each county, showing the acreage of all cereals, progress of the work, condition of the winter wheat, and a comparison of all cereals complete. Each branch of agriculture is touched upon. In substance, the reports agree that the crop of winter and spring wheat, according to the acreage in sight, is almost one-third heavier than last year's big acreage. There is a greater percentage of spring wheat, because much more was put in this spring, after the war became imminent and wheat took such a shoot upward. The same theory accounts for the extraordinary increase in corn acreage. About one-fourth more acres will be put in corn than last year. Last year was a record-breaker for cereal acreage in Nebraska, therefore, the increase this year brings the average way above anything of the kind in the State's history. Other grain is in similar proportion. Nearly all corn has been put in. Winter wheat is in fine condition. This is because of the favorable winter and wet spring. The fields look better than usual at this time of the year.

In conversation with a well-known Western traveler yesterday, who had just returned from a trip through Kansas, THE KEYSTONE representative learned that the conditions for an immense grain crop in Kansas were never so favorable as they are to-day. It was his opinion that the acreage of wheat in that State was larger this year than any previous season, that the yield will be greater, and that the quality will be superior.

Trade in the West

Elsewhere something has been said about the immediate effect of war hostilities upon the general business of the West, and incidentally upon the jewelry and allied trades. This is not all that may be said. There seems to be a general agreement that the naval war which is now being carried on will result in many people residing in the East, who have usually gone to the seashore or spent their summers in Europe, seeking the Northwestern and Colorado summer resorts. There is to be a wonderfully extensive Exposition at Omaha this summer, and the excursion rates from all parts of the country will be to Omaha, instead of to the South and East, as has commonly been the case. The general public do not yet appreciate the extent and character of Trans-Mississippi and International Exposition, which is to be held at Omaha between the first of June and the first of November; but when they do, there is going to be a tide of travel to that point and to the West whether war is in progress or is ended. No such Exposition has been before prepared on this continent, if we except our own Columbian Exposition. It will surpass the Centennial and the recent creditable expositions at Atlanta and Nashville, which attracted wide attention. With this particular magnet, and with the tide turned toward the West, we are of the opinion that the West will be reasonably prosperous whatever may be the outcome in other directions. This may not effect the jewelry trade materially, but it will not be without its results. The West has had much the best of the business situation for the past year. This condition is going to continue—mark the prophecy. The business man who accepts any other view of the matter is likely to regret his conservatism.

The report of the national banks of Chicago as to condition on May 5th shows the absence of anything like financial alarm in the West during the war. Deposits of fifteen leading institutions increased nearly $3,000,000, or 14-5 per cent., since February 18th, the period covering all the war developments. This report gets at the temper of country banks, since their balances are held largely by the national institutions. New York City has suffered a drain of $80,000,000 in deposits.

Foreign Trade of the United States

In the rush of war news and war rumors, there is one piece of information we do not want our war readers to overlook. It is embodied in a report as to the foreign trade of the United States for the current fiscal year. This report shows that before the year ends next month we will have sold to foreign nations $600,000,000 of our products in excess of merchandise purchased from them during the same time. If any one had prophesied a year ago that such a report could have been truthfully made, they would have been looked upon as visionary, yet such is the fact, and it shows to how great an extent this nation has been gathering to itself the wealth of the world. It is well known that the amount of American securities held abroad is less than ever before, so that in spite of the interest charges which we have to pay foreigners for carrying all our foreign freight, in spite of the large sums spent by Americans abroad, in spite of the interest charges which we have to pay foreign investors in this country, there still remains an enormous balance due this nation which must be paid practically in gold. The amount of gold received during the past year is but a small portion of the amount still to come, and while we may not be obliged, or deem it desirable to collect the balance due and have the money actually shipped to us, it will remain to our credit and place us in a much stronger position abroad than we could possibly have hoped. In connection with the above we have seen a brief statement made by our Treasury Department, and from it it would seem that our reports have not been wholly agricultural, but that our manufactured goods have been shipped abroad in steadily-increasing amounts.

Personal Mention.

O. C. Zinn, of Hastings, Neb., is spending this week in Chicago, combining business with pleasure. Mr. Zinn was met in one of our wholesale houses and said to THE KEYSTONE representative that prospects never looked brighter in Nebraska. That wheat had sold on the streets of his town for $1.15 per bushel within the past few weeks, and corn at 27 cents. This was bound to make good times, he thought, and that the people in his country were feeling mighty good over the outlook for fall business.

President Holbrook, of the Gorham Manufacturing Company, spent the first week of the month in Chicago. He expressed himself as well pleased with trade conditions in the West, and thought the outlook most promising for fall trade.

Wm. Helberg, formerly engaged in the retail jewelry business at Sioux City, Iowa, has just opened a handsome retail store at 315 North Avenue, this city.

A. B. Hudson, retail diamond dealer on the thirteenth floor of the Columbus Memorial Building, has gone to Europe. He and his brother, Jeweler J. B. Hudson, of Minneapolis, are doing the Continent together. They are expected home sometime during next month.

Charles H. Hamman has accepted a position in the diamond department of Spaulding & Co. Mr. Hamman was formerly with J. B. Chambers & Co.

Frank Barger, of M. F. Barger & Co., is out on the road on his regular annual trip among his Iowa, Missouri and Kansas customers. He expects to be absent about three weeks.

F. A. Hardy, of F. A. Hardy & Co., is in New York this week, in attendance upon the meeting of the American Optical Jobbers' Association.

(*Continued on page 460 f.*)

Chicago News.

(*Continued from page 460e.*)

Fred. H. Smith, secretary of the Geneva Optical Co., is spending two weeks visiting the Eastern cities in the interests of his firm. He is in New York this week, in attendance upon the meeting of the American Optical Jobbers' Association.

A. L. Sercomb, Chicago manager for the Meriden Britannia Co., is enjoying a two weeks' outing at the West Baden Mineral Springs—the Carlsbad of America.

A. M. Shepard, the well-known Northwestern traveler, has accepted a position with the F. C. Happel Company, and will travel his old territory in Michigan, Wisconsin, Minnesota and the Dakotas. He is now out on his first trip, and his firm are already having good reports from him. Mr. Shepard is one of the most popular men on the road, and his old friends will be glad to welcome him back to his old field.

Assistant Superintendent Cloudman, of the Elgin Watch Factory, was in town last week, accompanied by Mrs. Cloudman. They were on their way to Camp Tanner, Springfield, to say good-bye to their young son Mortimer, who was about to leave with his regiment (the Third Illinois) for the front. Young Cloudman is a fine specimen of physical manhood, and is made of the right kind of stuff to make a brave soldier. It did not take him long to make up his mind to enlist, as he enlisted one day and left home for camp the next. He is a chip of the old block, for his father went out in Company H, Sixteenth Volunteers, in the sixty's. When he told his father he wanted to enlist, the veteran of the other war said: "If you've got the fever, go it. I had it, and went, and it was the only way to cure me."

J. A. Schoenthaler, for ten years past order clerk for C. H. Knights & Co., has embarked in the retail diamond and jewelry business and opened up in room 404 of the Columbus Memorial Building. Mr. Schoenthaler, familiarly known as "Joe," is classed among the bright and rising young men of the Chicago trade, and his many friends will wish him success in his undertaking.

A. W. Crawford, the widely and favorably known Western traveling salesman, for a number of years with G. W. Marquardt & Sons, is now at Phœnix, Arizona, on account of his health, which was so poor in Chicago that he was forced to seek a milder climate. Mr. Crawford is connected with the jewelry business of Geo. H. Cook, and writes that trade is good in Arizona and that his health is improving.

George Baker, Providence, R. I., has succeeded Sam. K. Huston as Chicago and Western representative of Martin, Copeland & Co., Eastern manufacturers. Mr. Huston has also handled other lines than the above, which he will continue, besides he will add one or two new lines to his list.

Lem. W. Flershem, of the firm of Lapp & Flershem, and his estimable wife, were royally surprised upon the occasion of the twenty-fifth anniversary of their marriage, by a number of Mr. Flershem's friends in the trade, in the presentation of a rich and elegant sterling silver loving cup, which was ornamented with three buckhorn handles and beautifully etched. The piece was a handsome one, in the best art of the Gorham Manufacturing Co., and measured seven pints. On one side was the inscription: "Mr. and Mrs. Lem. W. Flershem, April 29, 1873–1898." On another an etching of a bride and groom returning from the altar, the work being done by Spaulding & Co., and on a third side: "In testimony of good fellowship," and below this the names of the donors: D. N. Smith, C. C. Offerman, John M. Cutter, George Weidig, S. C. Payson, George Gubbins, H. M. Carle, Herbert Van Houten, T. Y. Midlen, Sol. Kaiser, and R. A. Kettle.

James A. Todd, Chicago manager of the Towle Manufacturing Co., returned, the early part of the month, from a two weeks' visit to their factory.

Mrs. Habbeler, wife of W. H. Habbeler, of W. H. Habbeler & Co., wholesale jewelers, at 78 Dearborn St., has written a song which has just been published, entitled, "Admiral Dewey on Manila Bay." Though only out a few days, it is already quite popular and in large demand.

W. B. Tompkins, who has been confidential man for the house of G. W. Marquardt & Sons the past seven years, has accepted the position of manager of the jewelry department at Robert Johns, wholesale notions, 452 Wabash Avenue. He took charge May 15th. Mr. Johns is to be congratulated upon securing such a widely-known and efficient man as Mr. Tompkins. All his friends unite in wishing him success in his new field of labor.

Sam. Dripps, the faithful head of the watch department at Benj. Allen & Co.'s, leaves, Decoration Day, for his annual two weeks' vacation trip. Few men deserve a vacation more than Dripps, and few men can get more out of one than this same man Dripps.

Obituary.

Carlton J. Horton.

At six o'clock Sunday evening, May 8th, at his quiet home, 695 Forty-ninth St., this city, Carlton J. Horton, aged forty-eight years, for twenty-two years in charge of the material department in the Chicago office of the American Waltham Watch Co., breathed his last, leaving a loving wife, two bright children and a host of friends here and elsewhere, to mourn his death. Mr. Horton had not enjoyed satisfactory health for several years past; in fact, he was never what would be called a strong and robust man physically. The disease which terminated the life of this estimable man began to manifest itself several years ago. It appeared at first to be an affection of the kidneys, and while at times he suffered intensely and was nearly incapacitated for his work, it was not thought inconquerable, and all along it was hoped that he would eventually be permanently cured. At the urgent request of his employers and those near and dear to him, he sought change of climate and was taken to several health resorts, but while he would for a time seem much improved, the old malady would reappear, each time apparently more severe and alarming, until it developed into that dreaded disease—consumption. He was able to attend to his duties at the office of the Waltham Company up to the Tuesday before his death, when he bid the boys in the office, where he had been a familiar figure for so many years, "good night" for the last time, and went home never to return. Carlton Horton was born in Palmyra, N. Y., in 1850. At an early age he came with his widowed mother to the West, locating at Hudson, Mich., where he grew up to manhood. While yet in his teens he entered the employ of Jeweler Phil. Seewald, of that town. In this store he rapidly developed into a practical watchmaker and jeweler, and by reason of his ambition to learn and progress, his strict attention to business, and his correct and exemplary habits, he won the esteem and friendship—a friendship bordering on parental interest and consideration—of his employer. In 1872 he came to this city and entered the employ of N. Matson & Co., our most prominent retail house at that time, where he remained over four years, a valued and trusted employee. He was then tendered a more responsible and lucrative position in the Western office of the Waltham Watch Company, which he accepted and where he remained until his death one of the most faithful of men. Mr. Horton was quiet and unassuming, he was a man with a profound sense of duty. He loved the good, the true, the noble; he was to his family all that could be expected of a faithful, God-fearing, home-loving man. Through his long years of physical suffering, he bore it all with a patience and calmness that stamped him as what the world loves to call a man. Brief services were held at his late home Tuesday morning, May 10th, after which the remains were taken to Tiffin, Ohio, where funeral services were held at the home of Mrs. Horton's parents, Mr. and Mrs. Louis Seewald, the next afternoon, and interment made in the Tiffin Cemetery. The floral tributes from his former employers and associates in this city were numerous and most elaborate, and told eloquently of their love and esteem for the dead man.

Charles A. Biller, the well-known Western jewelry and clock salesman, is dead. He died suddenly, Tuesday evening, May 24th, in his room at the Harper House, Rock Island, Ill., the cause of his death being somewhat of a mystery. At the time of his death, Mr. Biller was representing the wholesale jewelry firm of Trier Bros., New York; he also sold Gilbert clocks from the Chicago office of that company. Mr. Biller was out on one of his regular trips. The evening before he died he was complaining of feeling unwell, and said his stomach was bothering him somewhat. He did not get up the next day. When he did not appear after dinner, the hotel people forced their way into his room and found Mr. Biller in slight convulsions and unconscious. Two physicians were summoned, who worked with the patient all afternoon in the hope of prolonging his life, but it was to no avail, and Mr. Biller died at the time stated above. His parents reside at Davenport, Iowa, and they were immediately summoned. His aged mother, a sister and a brother at once came to Rock Island, and were at his bedside until the end. Mr. Biller was forty-four years of age. He was an old traveler in the Western territory, and has many friends and acquaintances in the trade, who will be sorry to hear of his sudden demise.

Gossip Among the Trade.

Edwin F. Leopold & Co., makers of photo. novelty jewelry, 802 Columbus Memorial Building, have removed to 601 Champlain Building.

In our last issue we called the attention of our readers to a ruling of the post office department prohibiting the use of the name of a business or occupation as part of the superscription of a postal card. The following order, since promulgated, is self-explanatory:

"The rule that has heretofore existed excluding from the superscription of a postal card words indicating the occupation or business of the addressee is hereby revoked.

"In the future these additions, or others of like general character, will be held to be constructively a part of the address, and therefore permissible.

"JOHN A. MERRITT,
"Third Assistant Postmaster-General."

The old-fashioned bar-pin is with us once again. It comes in gold, silver, or plate, shaped like coaching-horns, riding-crops, whips, and golf sticks. It is worn by both sexes, and is especially popular with the "fashionable set" in the State Street push any fine day.

The Chicago Plating and Enameling Co. has been incorporated by A. G. Bagley, A. E. Harris and W. F. Ryan, with a capital of $10,000.

The Parker Clock Co. removed its Western salesroom from 708 Masonic Temple into the Silversmiths' Building, at 131 to 137 Wabash Avenue, where it occupies Room 918.

C. Rogers & Bros., H. G. Nye, manager, have removed to the eighth floor, Silversmiths' Building, taking the quarters vacated by the Pairpoint Manufacturing Co.

The Elgin Watch Co. have lately placed in the wholesale offices throughout Chicago's jewelry district, a large, handsome, gold etched sign, massively framed in oak, size 3 x 4 feet. It shows the heroic figure of Father Time (trade-mark), with the legend, "Elgin Watches—the World's Standard," in large block gold letters right beneath. It is certainly a most tasteful and elegantly appearing sign.

The new diamond catalogue just issued by Lapp & Flershem is a dainty little volume of sixty-four pages, well printed on good paper, and presents in a compact form a complete list of diamonds, diamond goods and high grade gold jewelry, which this firm carry in stock. It will be found especially valuable to dealers on account of its compactness and elegance. The retailer, wherever he may be, who has not already received a copy of this catalogue, will do well to write the above firm, asking for this new diamond book. Don't forget to mention THE KEYSTONE.

The 1898 general tool and material catalogue of Benj. Allen & Co., which has just been issued, is a large and finely printed book of 640 pages, bound in heavy cover and is thoroughly illustrated, with prices and descriptions of everything new, useful and standard in tools, materials, findings and miscellaneous supplies for watchmakers and jewelers. To show the extensiveness and completeness of this trade hand-book we mention that 263 of its pages are devoted to listing and describing watch materials, 6 pages to clock materials, 2 pages to music box materials, 42 pages to watch case materials, 50 pages to jewelers' supplies and findings, 190 pages to tools and materials, and 80 pages to miscellaneous jewelers' supplies. This catalogue will be sent on application to members of the trade.

Out-of-Town Visitors.

F. M. Riley, of Riley & Patton, Jefferson, Iowa, was in the city recently on a business trip.

W. E. Downie, formerly in the jewelry business at Decorah, Iowa, was in Chicago for several days last week, selecting a stock of goods for a new store he has just opened up in Decorah. Mr. Downie was of the opinion that Iowa would enjoy a fine trade this fall. For that reason he felt this an opportune time to embark in business.

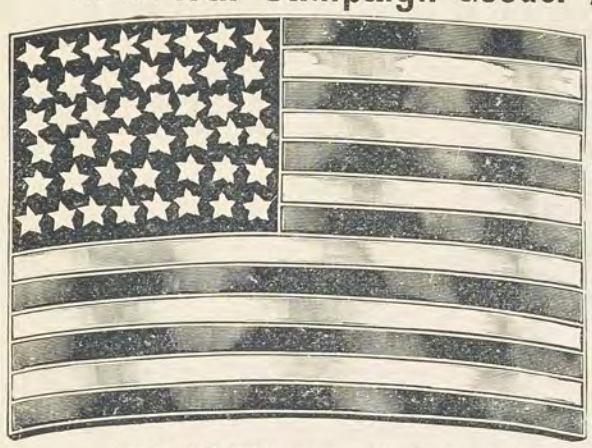
E. D. Best, optician, Minneapolis, Minn., was in the city recently, making purchases from our optical houses.

W. F. Fairchild, of Monticello, Ky., was in this market last week, making purchases for his home store.

(*Continued on page 460h.*)

RED, WHITE and BLUE **War Campaign Goods.**

SEND FOR SAMPLE LINE.
ALL BIG SELLERS. PRICES NET CASH.



Ladies' Belt Buckle, white metal; gilded; enameled.
No. F 500. Price each, **30c.**

Bound for Cuba, Gosh Darn Yer.
White metal, enameled. Stick Pin.
No. F 501. Price per dozen, **40c.**

No. F 148. No. F 149.
America and Cuba Flag Stick Pins.
White metal, enameled in the colors of their respective countries. Price per dozen, **15c.**

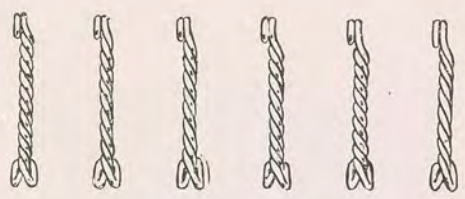
Old Glory, enameled flag, white metal, gilded.
No. F 504.
Price per dozen, **63c.**

Cuba Libre, enameled flag, white metal, gilded.
No. F 505.
Price per dozen, **63c.**

A. C. BECKEN,
103 State Street, CHICAGO, ILL.

"Old Glory" Souvenir Spoon.
Cut full size. Silver-plated, beaded edge, gold-lined bowl. Old Glory beautifully enameled in the national colors.
No. F 510. Price per dozen, **$1.85.**

THE ORIGINAL
Ladies Beauty Pin
WAIST SET



THE GREATEST SELLING

popular-priced novelty ever introduced to the Jewelry Trade.

EVERY JEWELER IN THE LAND SHOULD AT LEAST SEND FOR SAMPLES.

Our Original Ladies' Beauty Pin is made of one piece Seamless Gold-Plate Wire. To meet all possible demands, we can furnish them put up six on a card or will furnish them put up one gross or half gross on a handsome white satin pad. Display pad with fancy border. They sell at sight, and retail for **5c.** each.

Our own exclusive idea,

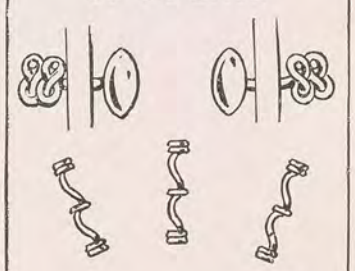
The Original Ladies' Beauty Pin Waist Set.

Has never been shown before anywhere.

Consists of a pair of links, one collar button and three beauty pins. Bound to sell equally as well as the pins, and up-to-date merchants will place a sample order at once.

Retails for **25c.**

UP TO DATE



THE ORIGINAL LADIES BEAUTY PIN
WAIST SET

J. Floersheim, Kunstadter & Co., Importers and Manufacturers of **Jewelry, Novelties in Belts, Girdles, Etc.**

S. W. Cor. Jackson & Market Streets, Chicago.

Established 1872—26 Years of Uninterrupted Success. When ordering, please mention THE KEYSTONE.

The Jewelers who buy these Cases **won't** be like the dude soldier who wanted

A Cushion for the Seat of War.

These prices will make it **easy** fighting competition.

$4.25 for 0 Size Htg.
$4.85 for 6 Size Htg.
$5.90 for 16 Size Htg. Elgin or Waltham model.
$5.90 for 18 Size Htg.

14 K. Gold Filled 20-Year Guaranteed Cases.

Standard make, and guaranteed by a reliable manufacturer.

$4.75 for 0 Size Htg.
$5.50 for 6 Size Htg.
$7.60 for 16 Size Htg. Elgin or Waltham model.
$7.60 for 18 Size Htg.

14 K. Gold Filled 25-Year Guaranteed Cases.

Up-to-date engravings in a large assortment of designs.

Order a sample. See what they are. You'll want more.

Sproehnle & Co.

Established 1880. **Chicago.** **Watch Jobbers.**

Stewart Building, Cor. State & Washington Sts.

New Goods and Inventions.

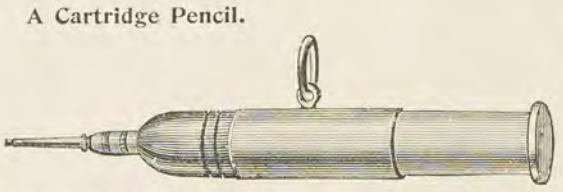
[The illustration and description of new goods and inventions as hereunder is a *permanent* feature of THE KEYSTONE, our twofold object being to keep the *merchant* jeweler thoroughly posted on the very latest and most salable goods, and the *practical* jeweler equally well posted on the newest inventions 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.]

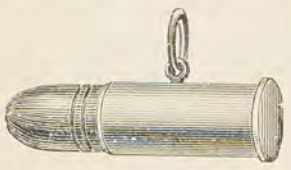
A Low-Priced Camera.

Few sciences have developed in recent years as has photography, and there has been a no less wonderful development in the camera manufacturing industry. By perfection of processes and extreme economy of manufacture, serviceable cameras are now within reach of all. Among the really serviceable ones, at an almost incredibly low price, is the No. 1 Yale camera, manufactured by the Yale Camera Co., 225 Dearborn St., Chicago. The No. 1 Yale camera is a perfect and carefully constructed camera, with accurately ground lens. The plate is placed in back end of camera, enabling the operator to adjust them in an instant. With the camera comes all the necessary material for making complete pictures. It is a marvel at the price, and should be very profitable for the trade to handle.

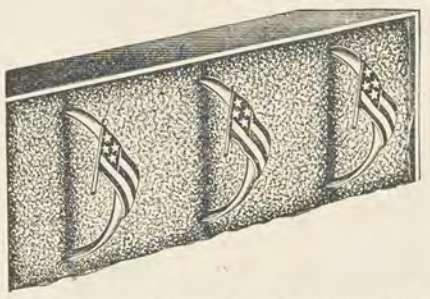
A Cartridge Pencil.

A war-goods novelty that has all the elements of a rapid seller is shown in our illustration. It is a gold-plated charm cartridge pencil, and very handsomely finished. It is an accurate reproduction of the cartridge design, and the idea is so much in harmony with the spirit of the times that the trade can handle it with certain profit. The pencils are being furnished to the retailers by Aikin, Lambert & Co., 19 Maiden Lane, New York, and their popularity is attested in the demand for them. The illustrations show the pencil open and closed.





Patriotic Ornamentation for the Person.



Every article in common use for personal ornamentation has been made emblematic of the patriotic spirit that now animates our people. Complete and very comprehensive lines of such goods have been placed at the disposal of the trade by Averbeck & Averbeck, 16 and 18 Maiden Lane, New York. The flag rings, here illustrated, are very pretty and sell quickly. This firm shows, besides, large assortments of flag buttons, scarf pins, brooches, etc., all prettily and patrioticaliy designed. A quick seller is their "Old Glory" belt buckle, colored in hard enamel, and they show also large assortments of regulation army and navy buckles for ladies.

Handsome War-Time Specialties.

It is rather a fortunate coincidence for the trade that the belt fad and war fever are cotemporaneous, and the successful manner in which the manufacturers have blended them is a credit to their enterprise. An exceptionally fine line of these fast-selling war goods—military belts, patriotic buttons and scarf pins, etc., is made by the Mauser Mfg. Co., 14 East Fifteenth Street, New York. The naval and military buckles are made in sterling silver, heavy weight and middle weight; the die work is correct to the smallest detail and artistically executed, and they may be had gilt in regulation style or with silver finish. A popular button and scarf pin of this company's manufacture shows the eagle above the "Old Glory" shield. These are made in silver gilt, artistically colored in hard enamel.

Chicago News.

(*Continued from page 460 f*)

Joseph Coffman, for fifteen years connected with Jeweler E. J. Hervey, Grand Rapids, Mich., stopped over a day or two in Chicago, last week, on his way to Prescott, Arizona, where he proposes to embark in business for himself. Mrs. Coffman accompanied him. Mr. Coffman goes to the far West as a matter of choice, believing that opportunities are greater there for a beginner than in the Middle West. The people of Prescott will find Mr. Coffman an up-to-date, whole souled, worthy man to deal with, as well as an accomplished craftsman. THE KEYSTONE joins with Mr. Coffman's friends in the trade in wishing he and his wife good luck in their new home.

Jeweler John H. Nelson, of Toronto, S. Dak., has been in the city the past ten days, as a student at the McCormick Optical College.

Chas. Christianson, of Jewell, Iowa, was in town this week on a purchasing trip.

F. B. Starke, of Mt. Morris, Ill., was in Chicago recently on a business trip.

Jeweler M. Pepperman, of Greenville, Miss., was a welcome caller on the trade here recently.

Will H. Beck, of Sioux City, Iowa, was among the out-of-town men of prominence who were in this city recently on business.

Jeweler N. V. Cole, of Michigan City, Ind., was a welcome trade caller in this market last week.

The well-known jewelry firm of Clock & Barnes, of St. Joseph, Mich., was represented in this market last week by Capt. M. C. Barnes.

S. C. J. Peterson, of Morris, Ill., a familiar buyer in the Chicago market, was here last week on business.

C. L. Patterson, of Exira, Iowa, was buying goods here last week.

F. M. French, of Albany, Oregon, was in Chicago, recently, on a business trip.

Chas. Zeitz, of Allerton, Iowa, was a recent buyer in this market.

A. H. Frandsen, for several years past with Jeweler H. A. Johnson, of Monmouth, Ill., was in the city for a few days the early part of the month, laying in a stock for the new store he has just opened at Monmouth.

Gus Bosen, of Astoria, Ill., was a trade visitor in town recently.

A. S. Kilby, with Charles Bachman, Ottumwa, Iowa, has been in the city the past month, pursuing a course of optics at the Chicago Ophthalmic College. He was a pleasant caller at KEYSTONE headquarters the other day.

Prior Tinsley, a well-known jeweler of Harlan, Iowa, has been in the city, the past month, attending a course of optics at the Chicago Ophthalmic College.

W. R. Weld, who has recently sold out his interest to his partner in the business of Balliett & Weld, Waterloo, Iowa, has been in Chicago, the past three weeks, pursuing a course of optics. Mr. Weld will hereafter devote his entire time to the optical profession.

W. B. Ankeny, of Ankeny & Carmichael, Corning, Iowa, was in the city, the early part of the month, on a business trip.

H. C. Utley, of Lind & Utley, Rolfe, Iowa, has been in the city, the past month, pursuing a course of optics at one of our optical schools.

The well-known retail firm of Bunde & Upmeyer, Milwaukee, Wis., were represented in this market, last week, by Mr. Bunde. This firm anticipate occupying their new store, in the Pabst Building, about July 1st. It is expected that the new establishment will be one of the really elegant jewelry stores of the country on account of its rich appointments and the splendid taste displayed in its arrangement.

E. J. Hill, of South Haven, Mich., was in Chicago, recently, on a business trip.

August B. Eggler, of Dundee, Ill., was in town, last week, on a business trip.

E. C. Long, of Shabbona, Ill., accompanied by Mrs. Long, was among the out-of-town retailers buying goods in this market last week.

E. Henry Newhouse, of Newhouse Bros., jewelers and opticians, Red Cloud, Neb., has been in the city, the past month, pursuing a course of optics at the Chicago Ophthalmic College. Mr. Newhouse was a congenial caller at THE KEYSTONE'S Chicago office several times during his stay. He is a bright young man and an enthusiast in optics, who has a bright future before him.

A. E. Barre, president of the Barre Bros. Company, the leading jewelry house of Winnipeg, Manitoba, was in Chicago, for a day or two, the early part of the month. Mr. Barre is a pleasant gentleman to meet, and his trip to Chicago was a combination of business and pleasure. He was an interesting caller at THE KEYSTONE'S Chicago office, and said, in reply to our question as to how was trade in the far North, that times were prosperous, money plenty, and the outlook for the future most encouraging in his section.

H. W. Mansir, optician, Grayling, Mich., was in Chicago, recently, on a purchasing trip. Mr. Mansir is one of Michigan's pioneer and most successful refractionists, and a warm admirer of THE KEYSTONE'S optical department. He said he could not well get along without it, even at five times its subscription price.

Among the prominent Western jewelers in this market, the past few days, was C. S. Raymond, the well-known jeweler of Omaha, Neb.

Morris Eisenstadt, secretary of the Eisenstadt Manufacturing Co., St. Louis, Mo., was a visitor in Chicago the early part of the month. He said business in the Missouri metropolis was not affected by the Spanish war any more than it was in Chicago. He thought the outlook for fall was as good as it ever had been.

J. L. Nichols, of Trenton, Mo., is in town to-day buying goods for his home store. Mr. Nichols tells us that they have had an unusually wet and backward spring this season, and as a consequence much of their usual acerage of corn has not been planted as yet. However, there is time enough for that, and they were hopeful that crop conditions would change for the better very soon.

Louis Niveth, of the jewelry firm of Louis Niveth & Son, Sulphur Springs, Texas, spent last week in Chicago. Mr. Niveth was met in one of our wholesale houses by THE KEYSTONE representative, who found him a mighty pleasant man to meet. Mr. Niveth informed us that business was improving right along this year in his section of the State, and that the outlook for the fall trade was fine. He said that war talk and excitement had been intense in the Lone Star State, but that it was now settling down and business was proceeding as usual. Mr. Niveth said that Chicago was all right as a market, and remarked that he had found a number of "good things" for the home trade.

"Enclosed find one dollar, with compliments and best wishes. The Keystone is like 'seed to the sower and bread to the reaper.' The dollar is the seed, The Keystone the bread."—J. H. Wilson, jeweler, Rockwood, Tenn.

St. Louis Letter.

There has been no perceptible change in the jewelry trade within the past month. Notwithstanding the war excitement everything is going on as usual,with no immediate indication of a change. If anything, it may be said that business is a little livelier since receiving the report of the unparalleled victory of Rear Admiral Dewey. The demand for patriotic jewelry has been growing almost every hour. In fact, manufacturers have not been able to keep up with the demand. The flag is the thing, but how to bring it out in its most striking form is the point aimed at.

Many of the store windows have a warlike aspect, aside from the display of flags and their fac-similies. Some have crossed swords, while others have thick plates of steel perforated with holes made by steel bullets. Every jewelers' window is filled with patriotic jewelry.

The buildings are literally festooned; that is, many of them. Never has there been such a display of the Stars and Stripes as is now seen floating from buildings in all parts of the city. Never was patriotism at a greater fever heat than now.

All through the jewelry district of St. Louis one hears very little but discussion and speculation on the outcome of the hostilities between the United States and Spain. That the talk of war, the thoughts of war, and the actualities of war have combined to throttle business somewhat, they all admit; but that the present stagnation will be of long duration no one believes. There is no complaint on account of business, however, and the trade is unanimous that business will soon find its way into regular channels. Speaking of the situation, Morris Eisenstadt, of the Eisenstadt Manufacturing Company, said: "The Spanish war has demonstrated one thing: that is, that a foreign war is not nearly as destructive to business as a bitterly-contested presidential election campaign. The war has aroused the people, developed patriotism, silenced party clamor, obliterated the pessimistic demagogue, and made the erstwhile discordant elements of the country more cohesive and homogeneous. The successful daring of Admiral Dewey in sailing into a Spanish *cul de sac* at Manila makes every American proud of his nationality. It was one of the most magnificent achievements of history, and it will live in song and story as long as the English language endures. As a nation we are self-critical, and almost self-abasing at times; but in serious emergencies all that is splendid in humanity comes to the surface. We are the greatest nation under the shining sun, and nothing can stop our manifest destiny, which is to demonstrate to the *effete* and decadent despotisms of Europe and Asia that a free people fighting in the cause of humanity are invincible."

At its third annual banquet held recently, the Manufacturers' Association decided to adopt heroic measures to enforce its demand for a St. Louis bill of lading. No goods will be shipped over those roads which are unwilling to bill their freight as St. Louis shippers wish them billed. An effort is also being made to induce other business organizations to join the Association in forcing the railroads to time. J. W. Van Cleave, chairman of the traffic committee, in his report, urged radical measures on the part of St. Louis shippers to secure bills of lading from all the railroads, and named each of the railroads which, the committee said, were favoring or opposing St. Louis, and stated the manner in which it was being done. The report said: "The issuing of St. Louis bills of lading to all points of the compass is an accomplished fact. The signed documents upon which the above statement is based are in the hands of your committee. The task of perpetuating and forcing into common usage St. Louis bills of lading at St. Louis rates of freight is now handed over to the shippers of this city. To make St. Louis a basing point governing all Mississippi River rates of freight is within the reach of the shippers of St. Louis. To remove the transfer arbitrary, and to go further and remove the transfer and terminal charges, is only a second step to be taken by the shippers of this city. The shippers of St. Louis have never asked of the railroads more than those same railroads have conceded to competing cities. Some of the railroads asking the tonnage of this city still refuse to comply with your request to be placed upon the same terms and conditions of other cities. The only way to gain the desired concession from the roads refusing to issue St. Louis bills of lading, is to change your requests into demands, and enforce those demands." J. B. Desnoyers moved that one thousand cards be printed and distributed, showing the list of roads favorable and unfavorable to St. Louis, these cards to be conspicuously displayed in shipping rooms of all business houses. Shipping clerks will be instructed to favor the lines printed in red, those making St. Louis bills of lading.

Our young friend, Joe McKenna, of the Bauman-Massa Company, so rumor has it, will become a benedict sometime during the present month.

The joint commission of the Manufacturers' Association and the Business Men's League have held several meetings of late to take steps looking toward a vigorous stand against the laws of twenty-eight states, which levy a tax upon all corporations doing business within their borders. It was decided that no objections can be raised against taxing corporations, maintaining offices, warehouses, etc., in the various States. The National Manufacturers' Association, so it was claimed, is now considering the advisibility of instructing its members to refuse to pay its unjust tax, as test cases have invariably been in favor of the firms and the law is considered to be unconstitutional.

C. S. Poole, the well-known jeweler of Joplin, Mo., was a trade visitor here recently.

Phil. Herbert, of Murphysboro, Ill., was a welcome trade visitor here last month.

Daniel Copeland, of Marshall, Texas, was in St. Louis last month on a purchasing trip.

Aaron H. Rider, son of S. A. Rider, of the S. A. Rider Jewelry Company, and vice-president of the concern, died at seven o'clock A. M., April 29th. He was twenty-seven years of age, and a young man of exceptional business ability. The business community deeply sympathize with his family in their loss.

St. Louis jobbers expect to be benefited by the shut-down of the Texas-New York steamship lines. These have been abandoned until the close of hostilities. Rates have been greatly demoralized for some months on account of a rate war going on between two steamship lines—the Mallory and Lone Star—freight being hauled as low as two cents per hundred. This state of affairs somewhat demoralized St. Louis trade and forced business houses into meeting water rates.

A. F. Huffmann has opened a new jewelry store at 3804 South Broadway, and the store of the Eugene Hyke Jewelry Co., 508 North Grand Avenue, has been discontinued, as a consolidation has been effected by this concern with the Phil. Frech Jewelry Co.

The regular monthly meeting of the board of directors of the Retail Jewelers' Association of Missouri took place on the evening of May 4th. Routine business was transacted. The applications of two new members and one resignation were received. It was decided to hold the annual picnic either on August 14th or 21st, and propositions for several sites were submitted. The matter was left in the hands of the entertainment committee, who will decide as to the place and exact date of the picnic.

Manager Goodman King and A. F. Strasburger, of the Mermod & Jaccard Company, left early in last month for a ten days' trip in the East, during which they will visit the larger cities. The object of their trip is to inspect the most modern fire-proof buildings, with a view to introducing the latest improvements in the building to be erected for their company on the site of the one destroyed by fire just prior to last Christmas. Immediately upon their return plans will be made for the erection of the building, which is to be thoroughly modern and fire-proof.

The permit for the new building to be occupied by the Mermod & Jaccard Jewelry Company, at the northwest corner of Broadway and Locust Street, was issued May 10th. The building will have a frontage of 100 feet on Broadway, and will run back 127 feet on Locust Street. It will be eight stories high, and cost in the neighborhood of $275,000. When completed it will be one of the handsomest jewely establishments in the country.

Herman Mauch has been elected a member of the executive committee of the St. Louis Public School Patrons' Alliance.

"Can't Do Without It."

UNION, S. C., May 20, 1898.

ED. KEYSTONE: Our last KEYSTONE told us that our subscription had expired, so we haste to renew it, as we would not be without it for twice the present price per year. We cannot do without it. We think it one of the best trade journals that we have ever seen. We never intend to be without it as long as we are in the jewelry business.

M. E. TINSLEY & CO.

Automatic Figures for Show-Windows.

It is no exaggeration to say that the show-window to-day sells more goods for the average merchant than the best clerk in his employ. And the success of the window as a salesmaker is directly proportional to its attractiveness. Therefore, anything that will make the window attractive, that will arrest the attention of the passer-by and make him look at the display is money in the jeweler's or optician's pocket.

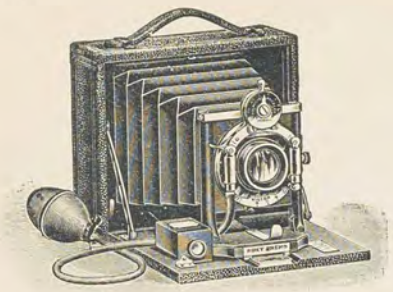
"Uncle Sam." Price, $7.00.

One of the most novel and successful methods of attracting attention is by means of automatic mechanical figures, popular samples of which are here shown. There are babies, white and colored, sailors, Uncle Sams, dudes, tramps, policemen, etc., all made so life-like by the rolling of the eyes, comical expressions, and adjustable positions of hands, etc., that they fairly fascinate passing pedestrians. Crowds always surround them. There are some adapted to

"Our Darling." Price, $5.00.

any business and very timely, such as Uncle Sam and the sailor: others are specially adapted to the jewelry business. One of these is here illustrated, and nearly all may be appropriately bedecked with jewelry. Yet others, such as the bespectacled figures, (and glasses may be put on any of them) are specially suited for opticians' windows. The fact that the arms are pliable, and readily placed in any position, enables the window-dresser to arrange the figure to hold placards, spectacles, watches, or merchandise of any sort. War bulletins held in their hands would now-a-days rivet attention. A single figure may not necessarily become monotonous, for a slight change in the hat, headdress or clothes makes it look entirely different. A stars and stripes costume would be occasionally appropos.

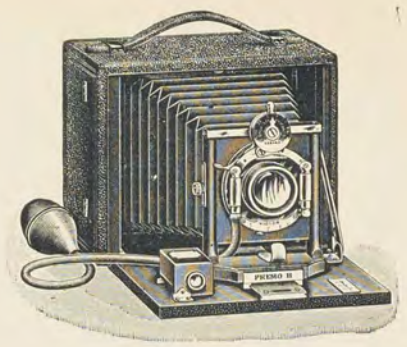
The mechanical eye movement winds with a key and runs from seven to eight hours. The figures are very durable, and the clothing is of the finest material. The standing figures are from twenty-eight to thirty-two inches high, and perfectly proportioned. These figures can be supplied at prices given by THE KEYSTONE. Remittance must accompany the order.



Pony Premo—Open.
Price, $22.00

SEASONABLE GOODS

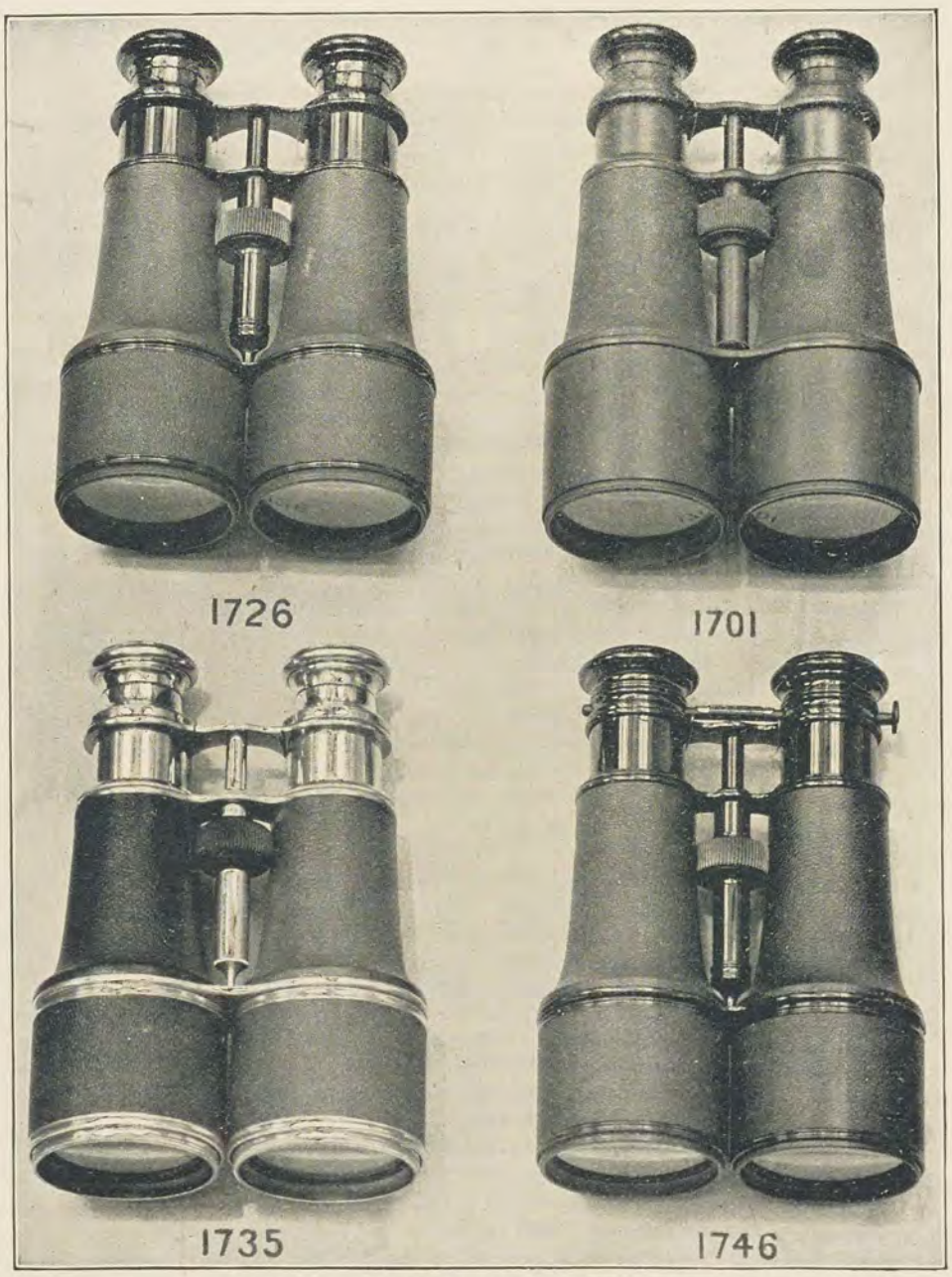
THAT ARE



Premo B.
Price, $21.00

PROFITABLE SELLERS JUST NOW

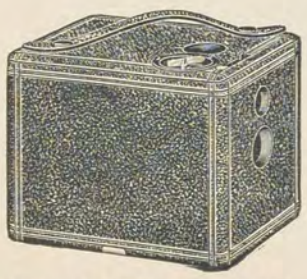
BECAUSE WAR TIMES MAKE A DEMAND FOR FIELD GLASSES, AND AMATEUR PHOTOGRAPHY IS THE FAD OF THE DAY



JEWELERS AND OPTICIANS WILL FIND OUR STOCK STRONG IN THESE LINES. YOUR ORDERS SOLICITED, ON WHICH WE WILL GUARANTEE UNIFORMLY LOW PRICES

WRITE FOR PRICES ON FIELD GLASSES

GENEVA OPTICAL COMPANY



Regular 3¼x3½ Buckeye.
Price, $8.00

67 AND 69 WASHINGTON ST.

CHICAGO

Premo V.
Price, $5.00

OPTICAL DEPARTMENT

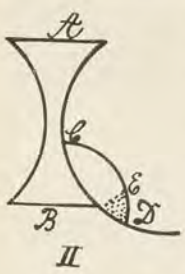
Reviews of Current American and English Ophthalmological Literature.

Why Bifocal Spectacles are Sometimes Uncomfortable.

Every optician, no doubt, has met with cases in which the bifocal glasses could not be worn, although the same glasses in separate frames gave great comfort. One cause of the trouble would certainly seem to lie in the fact that the wearer of the bifocal glasses in walking loses the distinct vision in the lower part of the field and has to bend his head forward in order to see the objects near his feet distinctly through the upper part of his spectacles. But another cause is brought forward again, in a paper by Dr. A. G. Bennett, in the April, 1898, number of the *Annals of Ophthalmology*. This lies in the incorrect centering of the lower segment, especially if the inaccuracy is greater in the one lens. As he gives no drawing we will insert here a little figure that will clear up the question. Figure I shows a biconvex lens *A B*, to which a + segment has been added, this + segment *B C E* being part of the convex meniscus *D C*. As in looking down while reading we use the lower part of our glasses for distance, so that the visual line runs about 8 mm. below the geometrical and optical center, it is evident that this lower part of the distance glass acts as a prism with its base up.

I

But it will be clear at once from the same Figure 1 that the displaced added segment *B E C* acts like a prism with the base down, therefore neutralizing the prismatic effect of the distance glass more or less, according to the relative strength of the hypermetropic and presbyopic correction.



II

Figure II, however, demonstrates that the prismatic effect of the lower part of the myopic correction (prism base down) is not neutralized by the convex presbyopic sphere, but rather increased. If both glasses for distance are the same we only get a deviation of both visual lines exactly equal to each other, either up or down; and this equal deviation would probably not cause very great trouble. If, however, the equal glasses are decentered differently, or if the patient has anisometropia where the same decentering will produce very different effects, we have to deal with more or less hyperphoria, the most troublesome of the muscular disturbances. To enable the reader to calculate the prismatic effect of decentration in his work we give here a table from Dr. Bennett's paper:

Diopters.	7 mm.	8 mm.	9 mm.	10 mm.
0.25	0.19°	0.22°	0.24°	0.27°
0.50	0.38	0.43	0.49	0.54
0.75	0.57	0.65	0.73	0.81
1.00	0.76	0.87	0.67	1.08
1.25	0.95	1.08	1.22	1.35
1.50	1.14	1.30	1.46	1.62
1.75	1.33	1.51	1.70	1.89
2.00	1.51	1.73	1.95	2.16
2.25	1.70	1.95	2.19	2 43
2.50	1.89	2.16	2.43	2.70
2.75	2.08	2.38	2.68	2.98
3.00	2.27	2.59	2.92	3.25
3.25	2.46	2.81	3.17	3.52
3.50	2.65	3.02	3.41	3.79
4.00	3.03	3.46	3.90	4.33
4.50	3.41	3.90	4.38	4.87
5.00	3.79	4.33	4.87	5.41
5.50	4.16	4.76	5.36	5.95
6.00	4.54	5.18	5.84	6.49

This table tells at a glance that for example a + 4. D. lens, if decentered 8 mm., or if looked through at 8 mm. from its center, as is done in reading, produces a deviation of objects downward the same as given by a 3.46° prism base up. Of course, a — 4. D. lens under the same conditions would act like a prism of 3.46° base down, that is, produce so much deviation upwards.

As before mentioned, hypermetropia and presbyopia usually give rise to less trouble, especially if the decentration is the same for each eye. How important, however, the question of centration may become in myopia and anisometropia the reader may judge by the author's own examples:

"It is, however, in cases of myopia and anisometropia that the greatest difficulties occur. In myopia we have exactly the reverse condition to that found in hyperopia. If a + lens with the point of vision below the optic center gives the effect of a prism with base up, a — lens under like conditions will give the effect of a prism base down. As myopia is apt to run into very much higher degrees than hyperopia, and requiring for its correction correspondingly stronger glasses, so will the prismatic displacement be necessarily greater. The effect also of grinding the segment with a razor-like upper edge, instead of tending to neutralize this displacement, only exaggerates it, and what was bad before, is made worse. A prescription somewhat like the following is not uncommon: Right and left for distance — 6.00 D. sph. For reading — 3.00 D. sph. in bifocals. If the distance between the geometric centers of the distant and reading correction is 8 mm., the effect of such a pair of lenses will be that of a pair of prisms, base down of 7.77 degrees. The main lens 8 mm. below the optic center has a displacement equal to prism 5.18 degrees base down, and the reading correction, which will be decentered probably the same amount, a displacement equal to a prism base down of 2.59 degrees. Our unfortunate patient who has to wear such a combination, therefore, will have to overcome at the near point an artificial katophoria of nearly 8 degrees, and while he may have an artistic looking pair of spectacles, I am sure he won't have a comfortable pair. But bad as the effect is in myopia, it is infinitely better than is the case in anisometropia. With the vision unequal in the two eyes the prismatic effect of the main glasses will also be unequal. If one eye is hyperopic and the other myopic, the lens before the hyperopic eye will have the effect of a prism base up, and the myopic eye will have to overcome a lens giving the effect of a prism base down, and so an artificial hyperphoria is established varying in degree with the amount of anisometropia. Consider for a moment the effect of this prescription:

R. E. + 1.00 distant correction.
L. E. — 1.00 distant correction, with a presbyopia of 2.50 D.

Referring to the table before given it will be seen that with 8 mm. decentration a 1.00 D. lens is equal to 0.87 degree prism, and that a 2.50 D. lens is equal to 2.16 degree. The right main lens being + is equivalent to a prism base up, and the left being —, to a prism base down. The right segment, being stronger than the main lens, will more than neutralize its prismatic effect, and the combined action of the two will be a prism 1.29 degrees base down. The left segment will increase the effect of the left main lens, and their combined action is equal to a prism 3.03 degrees base down, leaving at the reading distance a right hyperphoria of 1.74. I think all ophthalmologists will admit that a hyperphoria of 1¾ degrees can hardly exist without causing discomfort.

The remedy for this prismatic action caused by decentering the lens is, of course, obvious. We must insist that our opticians make the segment with the optic and geometric centers coincident, even if in some cases the artistic effect is lost. Accuracy is of the most importance and must not be sacrificed for elegance. It will be found necessary in most cases of myopia to grind a prism in the segment and place it with base up. This makes apparently a clumsy piece of work. With the first pair I had made in this way I was afraid that the thick edge of the segment would prove an unsurmountable objecton and be an obstacle to distant vision, but the patient wore them with distinct relief, after becoming discouraged with a pair made in the ordinary way."

Figure III roughly shows how in the concave lens *A B* with the convex lens *C D* the prismatic deviation of the lower combination can be avoided by using the lower part of the sphere *C D*. If properly placed the downward deviation of this spherical lens *C D* is entirely balanced by the upward deviation of the lower part of *A B*. This arrangement indeed does not seem to improve the cosmetic appearance of the spectacles, but then we agree with the author that proper adjustment and centration must ever be paramount in the work of the careful optician.

III

New Test for Simulated Monocular Blindness.

In the *Philadelphia Medical Journal* of April 16, 1898, Dr. E. Jackson describes three tests for the detection of pretended blindness in one eye, two of which are new, and the third of which is not usually mentioned in the books. The first test, suggested by Dr. G. C. Harlan, is made as follows: After having determined, by ophthalmoscopy or skiascopy, the refraction of the eye which the patient alleges to be more or less blind, place the correction, thus found, before the "blind" eye and another glass, too strong to allow distinct vision, before the good eye. The malingerer, not knowing that his good eye now can not see distinctly with the lens, continues to read as before and thus betrays himself. But how is it if the person is shrewd enough to momentarily close his "blind" eye, to see what is being done to his good eye? Then, of course, the test must fail, and here it is where the second test, a modification of the first, comes in. This modification, as proposed by Dr. Jackson, consists in placing before the good eye a combination of cylinders equivalent in refractive value to the refraction of this eye while the "blind" eye is provided with the lens as determined objectively. Suppose, for example, that the refraction of the good eye was equal to + 4 D. sphere or emmetropic, then we would have to replace, in the first case, the + 4 lens by two + D. cylinders at right angles to each other, and in the second case we would have to use a + 4 or 5 D. cylinder with a — 4 or 5 cylinder, their axes being parallel to each other. A slight touch to one of the cylinders will, of course, obscure the sight decidedly, which touch might be given while seemingly adjusting the frame to the face of the malingerer. But, though this test would seem to avert the suspicion of the examinee, still it is not beyond it, and a momentary closure of his "blind" eye from time to time would soon disclose to him that his good eye was being blind-folded. The third test, first proposed by De Welz and later by Priestly Smith, is free from the last objection. It consists in holding a prism before the "blind" eye, a prism of six or eight degrees, weak enough to be overcome, but strong enough to cause a noticeable movement of the eye. The eye before which the prism is held moves to avoid diplopia, and on taking the prism away the eye turns back to its former position. This objective movement is quite decisive, but its application is limited to those who enjoy binocular vision, as is fortunately the case in most people.

(*Continued on page 465.*)

464 *McCormick Optical College,* (*Incorporated*),

84 Adams St., Chicago.

Indisputably the Best Course in the World.

The Work of Our Graduates Proves This.

BOOKS.

"Practical Optics for Beginners," $1.00
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For Prospectus, see April or May Keystone.

Our Students are given practical work in fitting patients after the second day's instruction, and "practice makes perfect," you know.
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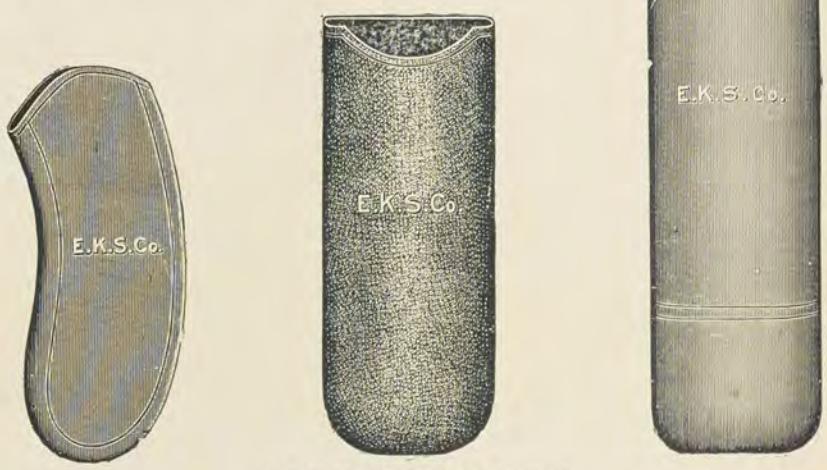

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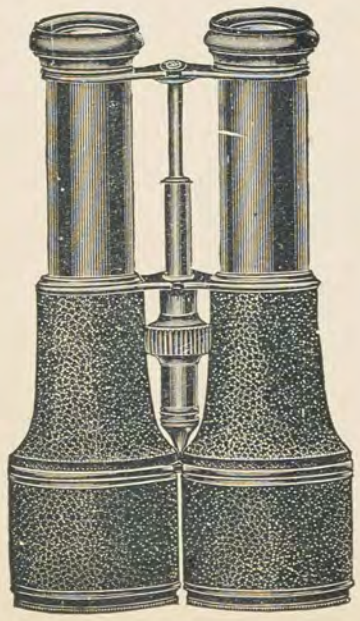

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ALL PRICES, from $2.00 upward.
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New England agents for the celebrated **High-Power "Trieder" Binocular Glasses,** manufactured by Goerz, Berlin.

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All our instruments contain the genuine **Wollaston Bi-Refringent Prisms.** They have the large graduated disc, which shows the axis of the cylinder at the same time as the amount of Astigmatism is read by the overlapping of the mires. All improvements, such as perpendicular adjustment of the entire instrument, rack and pinion on the movable mire, graduated indicating dial on telescope, and improved metal base with Skeel swinging eye-shield and glass artificial cornea.

Adjustable Table—Cloth-covered oak top, heavy metal stand, with raising and lowering device.

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Optical Prescription Work a specialty.
Send for new revised price-list and prescription blank book.

104 E. 23d Street, NEW YORK.

Reviews of Current American and English Ophthalmological Literature.

(*Continued from page 467.*)

A New Treatment of Cross-Eye.

In the *New York Medical Journal*, Charles Prentice advocates a new method of treating cross-eye or strabismus convergens (convergent squint). He gives the patient a strong + glass (usually about five D.) and makes the patient read with this glass at the farthest point of vision, his object being to relax the ciliary muscle entirely, in the hope of thus *repressing* the undue innervation of the internal recti muscles. On account of this repression of nerve force he calls this method the "repression" method.

The Refraction of the Eye in the New-born, and Its Causation.

It is a well established fact that the difference in refraction of the eyes of different people does not depend on a difference in the refractive power of cornea and lens, but rather on a difference in the length of the eye-balls; so that eyes too short in their antero-posterior diameters show hypermetropia, whilst eyes too long in their axes give rise to myopia. This fact was observed in adult people, but that it can not be so in the new-born is clearly shown by Axenfeld in the *Zeitschr, f. Psych. u. Phys. d. Sinnesorgane, XV.* In his article, entitled "On the Refractive Value of the Cornea and Lens in the New-born, with Remarks Concerning Ophthalmometry on the Eyes of the Dead," he rightly states that if the refractive power of the refractive media was the same in the new-born as in older individuals the shortening of the axes in the new-born with their small eyes would give rise to a hypermetropia of about thirty-four dioptries, instead of the actually existing average hypermetropia of 2 to 4 D. The explanation of the comparatively high refraction, as expressed by the low hypermetropia, was by him found to be partly in the cornea, which showed a somewhat higher refraction than at a later age. But the main cause he demonstrated to be in the lens, which he found to be more spherical than in the adult, and which showed, on that account, a refractive power about seventeen D. higher than the adult lens.

The Ophthalmoscope.

To the progressive readers of THE KEYSTONE we would recommend a neat volume of 159 pages, written by the well-known G. Hartridge, whose book on refraction is probably known to every optician. This book is the third edition of "The Ophthalmoscope."* It comprehends an optical introduction, reproduced from the author's popular volume on refraction, the description of the ophthalmoscope and the methods of examination, direct and indirect, including focal illumination and skiascopy.

These subjects occupy eighty pages. The remainder is devoted to the description of the normal appliances of the back part or fundus of the eye, the cornea, anterior chamber, iris, lens, vitreous, choroid, retina and optic nerve. In an appendix of these pages the author briefly recapitulates the plan of examination recommended. The book is a clear and elementary presentation of this important subject which every progressive reader ought to be familiar with.

Rotation of Axis of Astigmatism During Ophthalmometric Examination.

At the third annual meeting of the Western Ophthalmological and Oto-Laryngological Association, in Chicago, April, 1898. Dr. L. R. Culbertson reported two cases in which, during the keratometric examination with a Javal's ophthalmometer, the meridian changed in the one case from 90° to 95° and in the other case from 90° to 120°. As he was very careful in the adjustment of the patient's head before and during the examination the change of axis can only be explained by a rotation of the eye around its antero-posterior axis. This rotation, in the opinion of the reviewer, was probably caused by the act of convergence of the unobserved eye behind the screen, because, it is well known by the researches of the physiologists that such rotations do occur during convergence, though they seldom amount to more than a few degrees. The author advises to give the axis, as found by monocular examination with the test-types while the eyes are fully atropinized. We believe that atropine can hardly help to elucidate the question, but that in those cases of high astigmatism where, on account of painful reading, such a rotation of the eye during convergence is suspected, or where it is actually observed with the ophthalmometer, a separate determination of the position of the axis during near work, and a special glass for near work with the axis changed acccordingly would give most relief to the patient.

**THE KEYSTONE can furnish "The Ophthalmoscope," by Hartridge, on receipt of $1 50.*

"The Keystone does not need any improvement. I think the 'Optical Department' of one issue pays for the year's subscription."—W. A. Defibaugh, optician, Bedford, Pennsylvania.

Among the Opticians.

— J. C. McConnell has opened an optical store at Richford, Vt.

— A. B. Lee, optician, has opened a store in Big Rapids, Mich.

— M. J. Reed, optician, of Newton, Mass., has discontinued business.

— H. J. Viles will begin business as an optician in Gloucester, Mass.

— Arthur E. Newall will open an optical store at Wareham, Mass.

— T. N. Worthley, Jr., has reopened his optical store in Woburn, Mass.

— Fred Fiedler, Milton, Pa., is in Philadelphia taking a course in optics.

— C. M. Gleason, optician, of Lynn, Mass., has discontinued business.

— John J. Egan, optician, Waltham, Mass., has greatly improved his store.

— J. E. Dennell, optician, of Haverhill, Mass., has discontinued his business.

— George L. McGertie, optician, of Springfield, Mass., has discontinued business.

— Joseph Lawton has opened a new optical store on Temple Place, Boston, Mass.

— William E. Sanderson will open a summer optical store on Peak's Island, Me.

— The partnership of Hearn & Harrison, opticians, Montreal, has been registered.

— George Barrett, optician, Montreal, has moved uptown to 2365 St. Catherine Street.

— C. C. Babbitt, of Manchester, N. H., has opened optical parlors in Fitchburg, Mass.

— H. D. Martin, optician, has opened an office at Perkins' jewelry store, St. Albans, Vt.

— Albert J. Bowers, optician, of Quincy, Mass., has moved into more desirable quarters.

— E. G. Arnold has begun business as an optician in the Bosworth Building, Putnam, Conn.

— Dr. Wakefield will begin business as an optician on South Tryon Street, Charlotte, N. C.

— F. J. Ives, formerly of Norwich, N. Y., has begun business as an optician in Oneonto, N. Y.

— D. Clark has begun business as an optician in the Bradford Building, in North Adams, Mass.

— C. A. Gager, optician, Cleveland, Ohio, has moved from 80 Euclid Avenue to 11 Colonial Arcade.

— A. Hersch, of Hersch & Kaiser, opticians, San Francisco, Cal., last month visited the Eastern cities.

— The Lamb Eye Shield Company has been incorporated in Portland, Me., for the purpose of manufacturing eye shields, jewelry and other articles. The capital is $60,000.

— Buchbinder & Shempf, opticians, Pittsburg, Pa., have leased the whole store room at 442 Penn Avenue.

— A. L. Barber, of the Globe Optical Company, Boston, Mass., last month visited his father in Hibbing, N. H.

— C. Sypes, optician, of Chicago, recently entered the employ of the Murchison Jewelry Company, of Rawlins, Wyo.

— E. Hewitt Griffin, optician, formerly of San Francisco, Cal., is now in the employ of the L. Manasse Company, of Chicago.

— S. E. Lucas, recently from the East, has established optical parlors in the Love Building, Fort Street, Honolulu, Hawaii.

— J. W. Davis, treasurer of the California Optical Company, San Francisco, Cal., has moved to his summer residence in San Mateo, Cal.

— The Southbridge and Sturbridge Railway Company has run a track to the works of the American Optical Company, in Southbridge, Mass.

— C. L. Merry, of the C. L. Merry Optical Co., Kansas City, Mo., has started on a trip East, and will visit New York, Boston and other Eastern cities.

— Louis P. Aloe, of the A. S. Aloe Optical Company, St. Louis, Mo., was a delegate to the convention of the Order of Elks, recently held in New Orleans, La.

— It is reported that J. F. Brown, optician, of Chicago, will organize a class in San Francisco, Cal., for instruction in optics, in the interest of the Standard Optical Co.

— W. R. Weld, of Balliett & Weld, Waterloo, Iowa, has sold his interest in the firm to his partner, C. O. Balliett, and will study optics before again engaging in business.

— C. E. Davis, optician, Park Square and Winter Street, Boston, has given up his Winter Street store and will hereafter conduct his entire business at the Park Square establishment.

— George H. Snow, eye specialist, watchmaker and jeweler, has opened an office in Allderige's art store, Center Street, Wallingford, Conn. Mr. Snow is a graduate of the Chicago Ophthalmic College and Hospital.

— The *News*, of Illion, N, Y., of May 12th, contained a cut of the optical rooms of G. H. P. Stone, in the Harter Block, which he has recently refitted and refurnished. The parlors, in their new dress, are very handsome.

— The Gundlach Optical Company, Rochester, N. Y., recently raised a flag on their factory with appropriate ceremonies. The beautiful silk banner 18 x 20 feet in size was hoisted by Henry H. Turner, president of the company, amid the cheers of the 150 employees present.

— The Berteling Optical Co., San Francisco, Cal., recently held their annual meeting and elected officers. Joseph Nordman is the new president, vice E. A. Berteling; Harry Nordman, vice-president; Leon Nordman, treasurer, vice Joseph Nordman; and A. W. Kirk, secretary.

— The Cleveland Optical Company, Cleveland, Ohio, has moved into new quarters at 129 and 131 Euclid Avenue, where it occupies the fourth floor of the New England Building. It has installed new lens-grinding machinery, and added greatly to its facilities in all departments.

— The following students graduated last month from the Kansas City Optical College, Kansas City, Mo.: Louis Wilson, Jasper, Mo.; George S. Peck, Mt. Vernon, Mo.; J. Miller Strickler, Kansas City, Mo.; Oliver P. Strickler, Kansas City, Mo., and Gustave S. Catchadal, Superior, Neb.

— William Shaw, who was for over twenty years connected with the optical trade of New York, died last month. Mr. Shaw was the father of Alexander Shaw, optician, 1145 Broadway, with which business he had long been connected under his son's predecessor, H. W. Hunter, who retired two months ago. The deceased was sixty-three years old.

— THE KEYSTONE notes with pleasure the growing excellence and dignity of the advertising now being done by opticians. In the samples of booklets and newspaper advertising that have recently reached us the average of excellence is unusually high, and we regret that space forbids individual commendation. The opticians' acknowledgements of their debt to THE KEYSTONE for advertising instruction are encouraging and appreciated, and we expect to be of still greater service in the future.

☞ *Address all letters to Dr. C. H. Brown, 1824 Diamond Street, Philadelphia, Pa.*

The Philadelphia Optical College

A SCHOOL FOR PRACTICAL INSTRUCTION IN OPTICS

INCORPORATED — CHARTERED.

J. ALBERT JOHNSON,
Logan, Utah.

Was born in the Empire of Russia, thirty years ago. At fifteen years of age he started to serve a five years' apprenticeship at watch-making, on the completion of which he sailed for America, in 1888. After spending another five years with one of the largest wholesale houses in Chicago, he accepted a position with T. B. Cardon, of Logan, Utah, where he has remained ever since, working his way up until at the present time he is a Director and Vice-president of The Cardon Jewelry Co.

He saw the necessity of improvement over the old way of selling glasses, and as Mr. T. Le Roy Cardon was one of our graduates, he entered on our Course of Instruction, with which he was highly pleased, and for which he was amply repaid, expressing his thanks in a most cordial letter to Dr. Brown.

NOT ECONOMY.

A man can go from New York to San Francisco without riding in the cars. It will take him a long time, and he will suffer many inconveniences, but then he saves his car fare.

A man may pull through a spell of sickness without a doctor. He will suffer more and stay in bed longer, but he finally recovers and saves a doctor's bill.

Is this economy, or is it the most foolish extravagance?

In the same way a would-be optician may do without a Course of Instruction. Of course he will lose many customers who patronize the other optician. He must stifle his ambition and be resigned to not getting ahead, but then he saves his tuition fee. After all, does it pay?

Dr. Brown's Ophthal-Dynameter.

The latest instrument and the only practicable one for the measurement of the accommodation. See description on page 393 of May KEYSTONE, also our May adv. **Price, $25.**

If you wish to place your finger on the pulse of improvement and keep posted, send five cents for our Elaborate Booklet which contains "The Key to Success" and much valuable information.

Dr. C. H. Brown,
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Spectacles and Eye-Glasses

WARRANTED 10 K. FILLED

TRADE *G* MARK.

See the editorial in May number of THE KEYSTONE, page 396*g*, as to the practicability of using Gold Filled Spectacles and Eye-Glasses,—

And then note that our goods have a **uniform** thickness of 10 K. one-tenth rolled gold plate covering **all** exposed parts.

The prices of such goods are determined by the quality and thickness of the gold plate—the cheaper the goods, the thinner the plate.

We guarantee all Gold Filled Spectacles and E. G. of our make bearing our trade-mark, and will replace with new goods at any time, should plate wear through.

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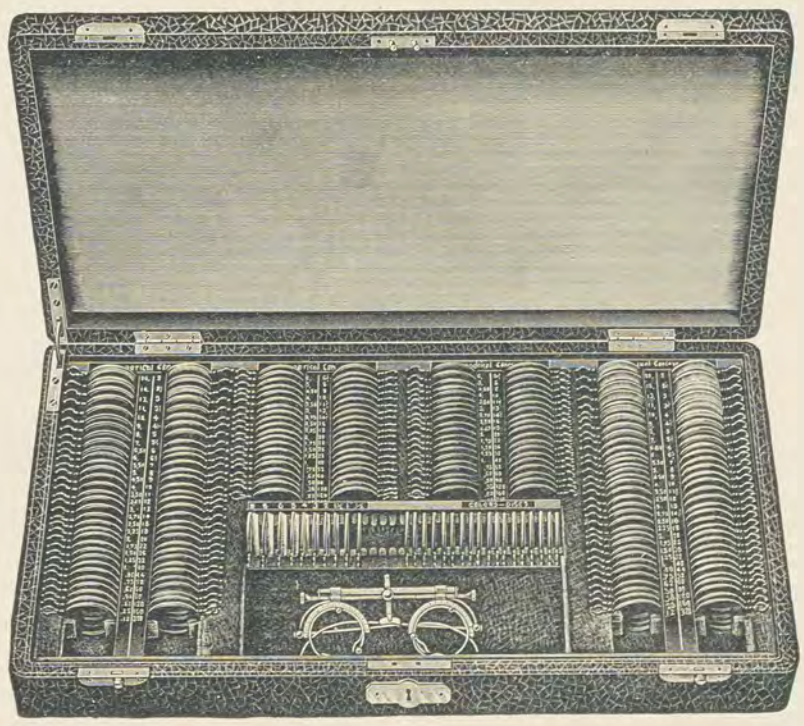


If so, ***Dr. W. McCaw's New Book*** on the use of trial lenses would be invaluable to you. It's a plain and practical instruction in the use of test lenses, and by its aid you can obtain a knowledge of optics without leaving your home to attend an optical school. Sent postpaid on receipt of **$2.50.**

We are doing a constantly increasing prescription business. Why? Because ***Geneva* Ⓡ *Work is Accurate.***

GENEVA OPTICAL CO., Geneva, N.Y.

The Development of Optics During the Present Century.

A LECTURE DELIVERED BY GEORGE LINDSAY JOHNSON, M. A., M. D., F. R. C. S., AT THE MANSION HOUSE, APRIL 21, 1898.

The dawn of optics lies in immemorial antiquity. As soon as man began to think he must have been struck by the fact that he was able to see; and light, which he naturally associated with the sun, moon, and stars, must have seemed to him an impenetrable mystery. He noticed the colors of things around him—the flowers, the trees, and the blue sky—the rosy tints accompanying the rising and setting sun, and many-colored rainbow, which he could only associate with divine manifestation. He saw his image in the water, and his staff seemed bent when he thrust it in the stream.

The earliest historical records furnish evidences of some optical knowledge. The long, straight passage in the great pyramid, pointing towards the polar star, formed a primitive transit instrument. The Greek philosophers theorized on light, and had the library at Alexandria not been destroyed, we should doubtless know what optics were taught in the Agora and the Museum. The ancients seemed to have believed that sight was due to something emitted from the eye which lit up the object. **Euclid** already was aware that light traveled in straight lines or rays. **Lucretius** (100 B. C.) propounded the theory of *simulacra* which seems to have prevailed for a considerable time. According to him every object throws off an impalpable skin or *simulacrum*, having its form and color, whereby we are not only able to see it, but also to dream of it. Lenses are said to be of great antiquity, but they were unknown to the Greeks and Romans, who, at an early date, however, made metal mirrors not only plane, but also convex and concave. **Pliny,** at the commencement of our era, mentions mirrors made of glass backed with lead and tin, and **Seneca,** about the same time, discusses the similarity of the colors of the rainbow to those seen when sunlight is reflected by water spray or corrugated glass.

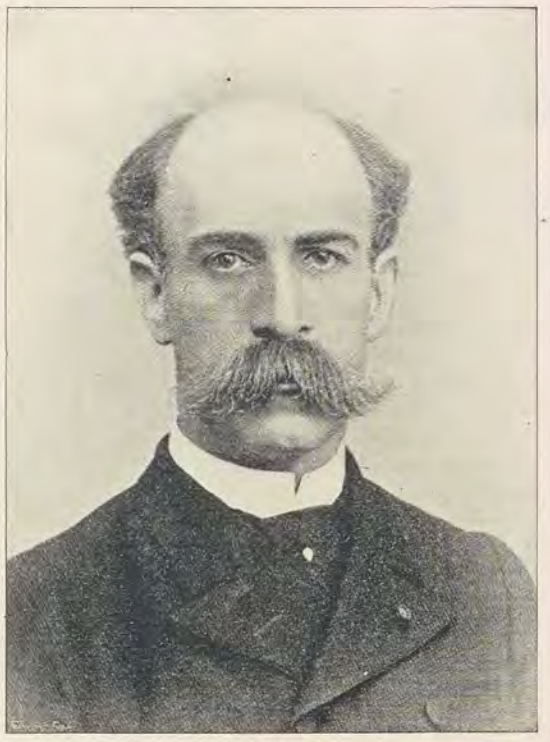
During the middle ages science was pronounced profane knowledge in all Christian countries, but the Mohammedans devoted themselves assiduously to experimental inquiry, and made surprising discoveries in all branches. Among the brilliant intellects of this Mohammedan golden age, the colossal genius of **Al Hazan,** who lived in Spain in the Eleventh century, towers above all. He may fitly be called the father of optics. He found that light existed independently of the eye, discovered refraction, explained the mirage, made a simple microscope, found the relation of conjugate foci, and described the effect of lenses when placed before the eyes.

Two hundred years later spectacles were invented. According to Dr. Plott the honor falls to our illustrious countryman, **Roger Bacon.** He was a diligent student of Al Hazan's works, and first applied his theories to spectacle-making in the year 1280. The invention was usually, however, ascribed to Silvanus Amatus, and the date given is 1285. On his tomb in Florence may be seen the inscription, typical of the time: "Here lies Silvanus Amatus, the inventor of spectacles—may God pardon his sins." Who can say whether these men knew of each other, or whether they worked independently. This great discovery, which has contributed to the happiness and comfort of millions of human beings, attracted considerable attention, and spectacles were made in a number of places; but it took centuries before lenses were applied to any other purpose.

In 1560 a boy, only fifteeen years of age, **Battista Porta**, in Naples, made a tiny hole in a shutter and noticed pictures of objects outside appearing on the wall of the darkened room. He had invented a camera obscura. Later on he placed a convex lens in the aperture in the shutter, thus improving his camera, and further experiments led him very near to the discovery of the magic lantern. A knowledge of Al Hazan's works enabled him to account correctly for the phenomena he had discovered, and he was struck by the similarity between his camera and the eye.

In the beginning of the Seventeenth century, a Dutch spectacle maker, **Hans Lippershey**, by fixing a lens at each end of a tube, constructed an instrument which made distant objects look larger and nearer. **Galileo** heard of this in Venice, then already since three centuries renowned for its glass factories, in which silvered glass mirrors were first made. By means of a piece of an old organ pipe, a convex objective and a concave eye-piece, he contrived to make a telescope which magnified eight times. With this wretched instrument, which could not even be adjusted, he scanned the heavens and made his startling discoveries. **Kepler,** by replacing the concave by a convex lens, constructed the first astronomical telescope, and obtained greater magnifying power. He also worked out Porta's comparison between the camera and the eye, and obtained a fairly accurate idea of the purpose of the retina and the optic nerve.

From our Gallery of Optical Celebrities.



DR. LANDOLT.

Dr. Landolt, of Paris, France, is one of the best known oculists of the world. He is famous as a successful surgical operator on the eye, and has made valuable researches in the optical field. He is one of the greatest living authorities on the subject of refraction.

In 1621 **Snellius,** a Dutch mathematician, expounded the law of refraction, and his countryman, **Drehelius,** made the first compound microscope. About the same time a French philosopher, **Descartes,** discovered that color was an innate property of light, and that by means of a prism the colors of the rainbow could be produced.

But it was reserved to **Isaac Newton,** the greatest master mind of his age, to crystallize into a scientific method that which had been done during the first half of the century. To describe Newton's work in optics and the convincing experiments he made, would lead me far beyond the scope of this lecture. He constructed a reflecting telescope, by substituting a mirror for the receiving lens, thus removing the colored fringes which Kepler had observed in objects seen through his telescope. He took Descartes' prism, determined the behavior of colored rays, and by means of a second prism collected them, so as to form the original beam of white light. Notwithstanding repeated experiment, however, he could not get rid of the colored fringes around objects seen through lenses, which led him to the conclusion that this could not be accomplished.

Contemporaneously with Newton, **Bartolinus,** a Danish physician, discovered the double refraction of light when seen through a crystal of Iceland spar. Newton examined this phenomenon, and called the altered condition of the rays *polarization*. The astronomers Roemer and Bradley, by independent methods, determined the velocity of light, and **Huyghens,** of the Hague, who greatly advanced the knowledge of refraction, first attributed light to wave vibrations in an all-present medium which he termed *ether*. Newton declined to accept this theory, being convinced that light was due to the emission of a continuous flow of infinitesimal particles of matter.

Newton's idea prevailed for over a century, and the work he had done, more especially for the advancement of the mathematics of optics, so dazzled the minds of men, that very little progress was made during the Eighteenth century. The only discovery to record is that made independently by **Chester Hall** of Essex, and **Dollond** of London, who found a method of correcting the colored fringes produced by lenses, with which Newton had battled in vain. They made so called *achromatic* lenses by combining two lenses of different kinds of glass.

Thus, although at the beginning of the present century achromatic lenses were made, and reflecting telescopes of considerable power were constructed, the microscope was very primitive indeed; spectacles were made with spherical glasses only, and for want of the necessary physiological knowledge, they were fitted in quite an empirical manner; prisms and cameras were used as toys; the large majority of our present optical appliances were unknown; though sextants were used they were wanting in precision, and torch or coal beacons, or at best oil lamps with parabolic reflectors protected by a dome of glass, warned the mariner on his approach to land.

Before the Seventeenth century, discoveries were made by a few isolated investigators; gradually communications improved, and the work of the one assisted the other. In the present century the number of workers has steadily increased, and with them the number of scientific societies, each publishing its proceedings. Whenever a new idea is originated it is at once placed at the disposal of the scientific world—the thought of the one engendering thought in thousands of others. Every advance made in one science assists the other, and technology active in all its branches, is constantly placing new or more perfected material at our disposal.

In the first year of this century **Thomas Young,** a native of Somersetshire, noticed that when two converging pencils of light were thrown on a screen in a dark room, dark bands appeared where they overlapped. He and **Fresnel,** a celebrated French physicist, continued investigations as to this phenomenon, known as the *interference* of light, and the outcome of their work resulted in Newton's emission theory being finally abandoned; and the wave theory of light, first expounded by Hughens, became at length established. The discovery of electricity, the advance in physics and mathematics led up to the work of **Clark Maxwell, Rayleigh** and **Kelvin,** who exhaustively analyzed the wave theory, so that we are now able to understand, and explain from a far broader point of view, the causes of optical phenomena.

Brewster's explanation of binocular vision, and his discovery of the stereoscope; **Max Schultze's** researches on the minute structure of the eye, and the introduction of the ophthalmoscope, together with Young and Fresnel's work enabled **Helmholtz,** with his medical training and mathematical mind, to write his "Physiological Optics," which in its turn afforded **Donders** and **Landolt** the material for elaborating the theory of the refraction and accommodation of the eye, and the scientific adaptation of glasses to vision.

In 1808 **Malus,** a French engineer officer, discovered that light could be polarized by reflection, Sir David Brewster determining the relation between reflection and polarization. **Arago** found that the blue of the sky was due to polarized light. **Biot** discovered that two different kinds of quartz and a number of other substances now known as optically active, which cause the ray of polarized light to be turned to the right or the left, and Faraday, in 1846, found that most transparent substances when brought within the action of a magnet, acquire the power of similarly rotating the polarized ray. **Nicol,** by cementing two prisms of Iceland spar, succeeded in isolating one of the two polarized rays due to double refraction.

Polarizing apparatus constructed with Nicol's prisms and reflecting polarizers have greatly advanced our knowledge in mineralogy and a polarizing instrument attached to

(*Continued on page 469.*)

The Development of Optics During the Present Century.

(*Continued from page 467*)

a telescope has made us certain of the existence of ice and water on the planet Mars. Polarimeters for measuring the circular polarization are constantly used by chemists, and led Pasteur to one of his most brilliant discoveries.

Wollaston, in 1802, observed that the sun's spectrum produced by passing the light through a slit before it fell on the prism, was not a sample band of color, but was crossed by a number of dark lines. **Joseph Fraunhofer,** the son of a Bavarian glazier, carefully examined and determined the position of these lines which bear his name. In 1822, **Sir John Herschel** first suggested that by reducing substances to incandescent gases in the flame, and observing the effect of the light when passed through a prism, the bright bands seen could be used to determine the presence of minute quantities of the substance in question. **Kirchoff and Bunsen**, making further researches regarding these colored bands, and comparing them with Fraunhofer's lines in the solar spectrum, found them to correspond in position. They thus established the [illegible] lysis, which has revealed the existemmetropic eye, [illegible]ry bodies, and enabled astronomers to examine the constitution of the sun, stars, and comets.

At the end of the Eighteenth century **Scheele,** a Danish chemist, first noticed that light darkened chloride of silver. In 1800, Herschel found invisible heat rays at the red end of the spectrum now known as *infra-red rays* and a year later, **Ritter** found chemically active invisible rays beyond the violet end of the spectrum—these are known as *ultra-violet* rays. Following on the researches of these men the first photographs were produced. Ultimately, in 1839, **Daguerre** in France, and **Talbot** in England, by focusing the image by means of Porta's camera, and finding out how to fix the pictures obtained, laid the foundation of photography. This has opened up a new field of research to the astronomer, led to a number of beautiful discoveries, and is daily gaining in importance and usefulness.

The use of coal gas as an illuminant, the glass chimney of the oil lamp, the introduction of petroleum, the lime light, the electric arc, and electric incandescent lamp, have placed at our disposal artificial sources of illumination far exceeding anything which could have been anticipated, and naturally gave a great impetus to optical research.

The improvements in the manufacture of glass, notably by **Chance** in England, and **Schott** in Jena, together with the discovery of the use of fluor spar, have enabled us to obtain specimens of widely different properties, without which we could not make lenses free from optical defects, and we owe to the mathematician, **Gauss,** a method by which the complicated calculation involved in tracing a ray of light through successive lens systems, is reduced to a simple formula.

Henry Maudslay has given us the slide rest, and **Sir Joseph Whitworth** the planing machine and the surface plate, thus placing in the hands of opticians methods of precision of almost ideal perfection. We have instruments to-day which render it possible to divide circles and rule lines to the $\frac{1}{100000}$ths of an inch, and gauges which can measure less than the $\frac{1}{100000}$th part of an inch. Screws are now cut to uniform gauges, and the advance of metallurgy has placed aluminum and numerous alloys and solders at our disposal, which greatly facilitate the construction of instruments. The engineer has shown us how to produce light and strong structures, so that telescopes can be made of enormous length and size, yet so perfectly balanced that a child can turn them. Clockwork has been so perfected as to move these telescopes to follow the revolution of the earth, and instruments are constructed in which a clock motion automatically records the minutest variations.

I will now try to review, so far as time will permit, the development of the optical instruments now in use.

Spectacles were first made with frames of horn; the lenses cast, ground and polished. The grinding of lenses was for a long time a speciality of the Dutch, and it was only in the Seventeenth century that it became more general. For a long time spectacle lenses were made round, oval lenses being of later date; but at the beginning of this century they were practically the same as to-day. Metal frames seem to have been introduced about the Eighteenth century, gold, silver, and brass being used long before steel; the construction of the frame was heavy and clumsy; the side-pieces were very broad and had a hinge joint near the ear. It is only in this century that flexible and twisted wire side pieces have been introduced, and the advance in the handling of metal generally rendered it possible to make spectacle frames light and elegant. The discovery of binocular vision and the general advance in ophthalmic knowledge caused opticians to understand the importance of centering the lenses. Colored spectacles, chiefly blue and green, have long been used; neutral tints being of later date. It is curious that the Chinese should have used pebble lenses of brown-pink colors as spectacles for many centuries.

In 1801, Thomas Young noticed that vertical lines appeared more distinct than horizontal, and, on further investigation, found that this was due to his eyesight. In 1827, the Astronomer Royal, Sir George Airy, who suffered from the same defect, now known as *astigmatism*, set to work to correct it. He ground a piece of glass along one axis only, so as to form a kind of wide and exceedingly shallow trough, so that the curve of the glass made up for the want of curve of his cornea in one direction. These glasses, known as *cylinders*, were scientifically adapted for astigmatism by Donders in 1856.

Arctic explorers mention that the Eskimos used spectacles consisting of bone disks with horizontal or vertical slits to protect their eyes from the glare of the snow. Similar slits in vulcanite disks, known as *stenopaic disks*, are to day occasionally used to minimize the effect or astigmatism.

Horn pinces-nez, or folders, have long been in use, the spring being an adaptation of more recent date, while the straight bar pinces-nez have come into use within the last ten years.

The use of spectacles is now based on the physiology and pathology of the eye. The instruments to which we owe a great deal of our knowledge in that direction are the ophthalmoscope and the ophthalmometer.

The idea of obtaining a view of the interior of the eye by means of a perforated concave mirror to illuminate it, occurred to Charles Babbage, who made the first **ophthalmoscope** in 1847, but so little did he appreciate the importance of the invention that he did not publish anything about it. Four years later Helmholtz made an ophthalmoscope consisting of four superimposed plates of glass held obliquely so that some of the rays of a candle were reflected in the patient's eyes, and then passed back again into the eye of the observer. Two years later Liebreich substituted a perforated concave mirror for the glass plates, thus arriving at Babbage's original instrument. From these rough devices Loring, Landolt, Couper, Morton, and others, have made the improvements which have resulted in the perfected instruments of to-day. Fitzgerald, of Dublin, about 1880, first practiced a method known as retinoscopy, whereby the refraction and astigmatism of the eye of the patient could be determined by means of the ophthalmoscope only. This method is specially valuable in children and malingerers, because the result is arrived at independently of any statement on the part of the patient. Nevertheless, test-types scientifically graduated, which we owe to Snellen and Jaeger, together with astigmatic charts, have enabled us to form a standard for the acuity of sight; whilst a graduated series of lenses and cylinders have rendered it possible to determine the necessary corrections in vision.

The **ophthalmometer** was first devised by Helmholtz, in 1860 in order to determine the curvature of the cornea. This instrument consists of a double prism fitted in the axis of a telescope by which two images of an object are thrown on to the cornea, the curve in any meridian being calculated by the distance between these two images, to which it bears a constant relation. Subsequently Javal and Schiotz greatly improved the instrument by constructing it so as to dispense with calculations, enabling the surgeon at once to determine the amount and direction of the astigmatic error.*

In addition to the ophthalmoscope and the ophthalmometer a number of instruments are now constructed to assist the ophthalmic surgeon in diagnosis, such as the **perimeter** to determine the field of vision, Virchow's **spectrocolorimeter** and other devices for determining color blindness, and the **strabometer** of Landolt for measuring the strength of the ocular muscles.

The **stereoscope** was first made by Wheatstone, in 1838. Brewster had explained binocular vision and shown that the image seen with one eye differed slightly from that seen with the other, and that the superposed images thus conveyed to the brain give the impression of solidity. Wheatstone carefully drew what he saw with each eye, and by superposing the images by means of mirrors obtained a picture in relief. Brewster himself improved on this by placing these pictures side by side in a box, and viewing them through two prism-lenses. His stereoscope is the one used to-day, the pictures being frequently replaced by twin photographs. Helmholtz devised an improved stereoscope. By means of prisms he was enabled to place the pictures much further apart than the distance between the eyes, and as he could thus employ larger pictures he greatly increased the deception. His instrument, known as the **telestereoscope,** is very rarely met with. Zeiss has recently constructed a **relief hand telescope** on the same lines.

Refractometers, by which the refractive index of both solids and liquids can be determined, have gradually attained great perfection. They are based on the principle that when light strikes a transparent substance at an angle, it is partly reflected and partly transmitted, except at a certain angle known as the angle of total reflection, which bears a costant relation to the refractive index. Therefore, if a substance is examined between two prisms, the limit of total reflection and absence of transmitted light where a shadow-line appears can be observed, and from this the refractive index of the subtance introduced can be determined. At first this required considerable calculation, but the most recent instruments, more particularly Abbe's refractometers enable us to read off the result on a scale, not only as regards the refractive index for monochromatic light, but also the relation between that of two different portions of the spectrum, known as the dispersive power of the substance examined.

The **photometer,** an instrument for the purpose of determining the intensity of light by comparison with a standard candle, was first invented by Count Rumford, who projected the shadows of a stick cast by the two lights on to a screen, comparing their intensities. Numerous other devices have since been suggested. The most recent is the **prismatic photometer** of Lummer-Brodhun—a highly delicate instrument by which minute differences in intensity can be measured.

Vacuum tubes were invented by Crookes, in 1865. In the course of his far-reaching work on spectrum analysis he examined the spectra of gases by placing them in closed tubes into the end of which wires were fixed, which he connected with an intermittent current of high tension, thus rendering them incandescent by means of electricity. He noticed that various gases emitted different colored light, and that a change occurred when the gases in the tube were rarefied. Tubes thus constructed to emit different colors are known as **Crookes' luminant and radiant matter tubes.** Exhausting a glass bulb as far as possible and passing the electric spark through it he made the **vacuum tube** which bears his name. In 1894, Lenard noticed that the emanations from the negative pole or *cathode* of a Crookes vacuum tube passed through thin plates of metal and solid planks of wood, and Hertz discovered that these rays were sensibly deflected by a magnet. In 1895, Dr. Rontgen, of Wurzburg, working with a Crookes' tube, noticed that some photographic plates in his laboratory had been affected, and this led him to the discovery that certain rays emitted by the tube, now known as **X-rays** or **Rontgen rays,** were photographically active and that to them substances were transparent which are opaque to light. He thus photographed through thick books and wood; and further found that flesh is transparent to these rays, so that the bones of a living being can be photographed. Most metals, like the bones, proved opaque and could be seen through the body. One would almost imagine that Dickens in his description of Marley's ghost had foreseen this discovery when he says "his body was transparent, so that Scrooge observing him and looking through his waistcoat, could see the two buttons on his coat behind." Already the discovery has been applied by the surgeon to diagnose fractures, dislocations, and foreign bodies. Additional value has been given it by the discovery that these rays can be rendered visible by means of a screen of platino cyanide of barium.

To this I must limit my remarks to-day, but before closing I wish to refer to the great discovery of the age, known as the *correlation of forces;* the recognition that motion, heat, light, electricity and chemical action are merely different manifestations of one and the same energy, and are mutually convertible. **Crookes' radiometer** consisting of light metal vanes which revolve in a vacuum bulb moved by the sun's rays, is evidence of this, as also our electric light, and we know that light falling on a selenium plate produces an electric current.

This century has shown us how our thoughts can be flashed along a wire, and we have lately been shown that even the wires can be dispensed with. We have ceased to marvel when we hear the voice of a friend many miles away, and we can conceive that in the next century seeing at a distance may likewise cause no astonishment.* What other marvels the future may have in store as an outcome of the constant advance of knowledge, who dare say? —but I think I may venture to prophecy that optics will contribute quite as much as, if not more than her sister sciences.

*This is not quite correct. Helmholtz used two plane glass plates, which by rotating around the same axis but in opposite direction produced a doubling of the corneal image, whilst Javal and Schiotz first introduced a Wollaston quartz prism, the dedoublement of which is constant.—ED.

*This, according to the latest news, already seems to have been accomplished by a young Hungarian inventor.—ED.

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Chapter XI. commenced in the December, 1896, issue.

CHAPTER XI. (*Concluded.*)

HYPERMETROPIA.

When the crystalline lens is removed from an emmetropic eye, the glass that is needed to take its place and bring parallel rays to a focus on the retina is usually about + 10. D., sometimes a little stronger. On account of the absence of all accommodation, stronger glasses will, of course, be required to focus on the retina the divergent rays proceeding from near objects. In order to determine the proper glass for reading, we add to the first glass one whose focus represents the distance at which the patient wishes to read. For instance, if 10. D. was found to be the proper lens for distance, and ten inches was decided on as the desired point for reading; then the latter, which equals 4. D., is added to the former, and the result is a lens of + 14. D. for reading.

An artificial accommodation may be produced by a change in the distance of the spectacles from the eyes, thus adapting them for intermediate points, on the principle that as the spectacles are moved farther away down the nose their refractive power is increased and the reading point is brought nearer, while as they are pushed up close to the eyes their power is lessened and the reading point is moved away.

APHAKIAL VISION.

In addition to the hypermetropic refraction caused by the removal of the crystalline lens, a certain degree of astigmatism is also the result of the operation, most likely due to failure of the wound to heal properly. This astigmatism is generally "against the rule," and is apt to be more noticeable during the first month or two after the operation, or until the cicatrization has become complete, and then it gradually diminishes for several months. It usually does not amount to more than 3. D., but even a slight astigmatism should be sought out and corrected.

Even after the most successful operations for cataract vision very rarely equals $\frac{20}{20}$, for the reason that there is not perfect transparency in the line of vision, on account of slight opacities on the posterior capsule of the lens, which can often be detected by the ophthalmoscope. The amount of vision varies very considerably; an acuteness of $\frac{20}{200}$ (that is one-tenth of the normal standard) is considered sufficient to class the case among the successful operations, while a vision which will enable the patient to find his way around, is not to be despised.

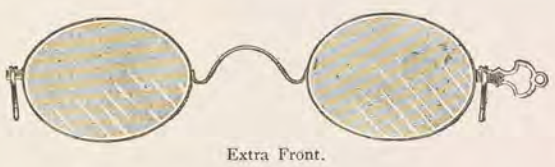
In adjusting glasses for patients after a cataract operation, it is customary to wait until all redness has disappeared from the eyes, which may be a month or two, and even then they should not be worn constantly at first. In the meantime smoked glasses of various degrees of tint are worn as protectives. The "cataract" glasses should be set in strong spectacle frames, because their great convexity makes them thick and heavy.

TWO PAIRS OF GLASSES.

When two pairs of glasses are required, for both distance and reading, either on account of the high degree of hypermetropia or on account of the approach of presbyopia, there are several ways of arranging the glasses to meet the requirements of the person's occupation.

In one case two separate and distinct pairs of glasses may be given, one pair for distance, and the other pair for reading, and the patient changes from one pair to the other, as occasion requires. This is the best way to place the glasses for the welfare of the eyes and is to be recommended to patients, although it involves so much more trouble and the possibility of not having the second pair of glasses when needed, that many persons object to it and prefer to arrange their glasses in some other way.

In such cases the person may wear his distance glasses constantly, put them on in the morning when he arises and take them off at night when he retires, and then when he wants to read or write or look at small objects close at hand, he places an additional pair of glasses over his distance glasses, the sum of the two pairs being equal in strength to the lens required for reading. This extra pair of glasses may be either in the form of eye-glasses, or a spectacle front that should correspond in dimensions with the frame that is worn for distance, and in place of the usual temples is provided with small hooks at each end that are readily fastened to the constant spectacles, with but little danger of dropping or displacement. This is a very convenient arrangement, as many hypermetropes can testify.



Extra Front.

BI-FOCAL GLASSES.

In other cases bi-focal glasses are preferred, the upper and larger portion being for distance, the lower and smaller portion for reading. The split bi-focals, in which the distance and reading portions were of the same size, are no longer used, they having given way largely to the cemented form, the reading strength being obtained by cementing a small convex shell on the lower portion of the distance glass.

The *advantages* of bi-focal glasses to those persons who need assistance for both distance and reading, are the convenience and satisfaction of having both pairs of lenses constantly before the eyes, and only a slight turn of the head and eyes required to bring either pair into use as desired. Many persons wear this form of bi-focals with the greatest comfort, and declare they could not get along without them.

The *disadvantages* of double-focus glasses are the annoyance caused by the line of separation between the two glasses and the difficulty in walking. This latter trouble is due to the fact that the patient must look through the reading glasses, and as these are adapted for vision at twelve to fifteen inches, the floor or pavement which is so much farther away is seen indistinctly, and hence there is danger of stumbling and especially in going up and down stairs. This difficulty can be overcome by tilting the head downwards so as to look through the upper lenses, and the eyes in time learn to adapt themselves to the new form of glasses, but in spite of this, many persons find themselves positively unable to wear bi-focal glasses. The ability to wear them with satisfaction is a matter that can be determined only by actual trial.

In fitting reading glasses for the correction of hypermetropic presbyopia it would be well for the optician to keep in mind or refer to the table given in the chapter on presbyopia, showing the approximate reading glasses required by emmetropic eyes, in order to use it as a check against giving too strong a glass, or as a verification of the glasses about to be prescribed.

For instance, if a patient fifty-five years of age, with a hypermetropia of 2. D. (as has been ascertained by measuring the refraction with the usual tests for this defect) chooses a + 5. D. for reading, a reference to the table will show that he is not out of the way, as the strength of this glass for reading is just equal to the sum of his hypermetorpia and the average presbyopia at his age: Hypermetropia 2. D. and presbyopia 3. D., equals 5. D.

THE VALUE OF WEAK CONVEX GLASSES.

Many opticians never give glasses weaker than .50 D., thinking that if the defect is any less than this it is too slight to require correction. But the writer, in his practice, has met with a large number of cases in which great benefit has been derived from .25 D. lenses, spherical and cylindrical convex, and even some times concave, and he often finds occasion to order these weak numbers, to the great relief of the patient, and hence we would advise the optician not to disregard these apparently valueless glasses.

Mrs. M. E. F., aged thirty-nine years: About three years before one of our leading occulists ordered + .50 D. glasses for reading, but she has never been able to use them because they made her eyes ache. Vision = $\frac{12}{10}$. All convex lenses rejected, which we regard as evidence that the eyes are emmetropic. Reads small print 9″ to 22″.

According to the rule given in the chapter on presbyopia for determining the reading glasses, we subtract 4.50 D. (as shown by the near point of 9 in.) from 5. D. (representing the normal near point of 8 in.), which leaves + .50 D. as the proper lens; but as she had tried these with so much discomfort, + .25 D. were ordered for reading, which gave her the greatest comfort and relief.

HYPERMETROPIA VS. PRESBYOPIA.

It is to be hoped that no reader of these pages will ever, in any way, confound hypermetropia and presbyopia. Of course, the symptoms are similar and both require convex lenses for their correction, but in every other respect they are essentially diverse: one is an error of refraction, the other an error of accommodation. Hypermetropia is due to a change in the shape of the eyeball, which impairs the refraction of the eye; while in presbyopia the ball is perfect in shape and the refraction normal, the accommodation alone being impaired. The diagnosis and treatment of hypermetropia and presbyopia have been fully described in this and the preceding chapters.

A CASE OF HYPERMETROPIA, SHOWING THE USELESSNESS OF A MYDRIATIC.

Adam B., aged twenty-two years: Student. Complains that after reading a minute or two the letters run together. After looking up and resting eyes, he is able to read again for a short time. Has a great deal of pain in eyes, but during vacation in summer they do not trouble him at all. But as soon as he returns to his studies in September, eyes again commence to annoy him. At the present time is unable to read more than a minute or two at a time, and eyes are constantly aching. V = $\frac{15}{15}$. Accepts + 3. D., with which vision equals $\frac{15}{12}$, showing a manifest hypermetropia of that amount.

Under homatropine V = $\frac{15}{200}$, which was raised to normal by + 3.50 D. lenses, evidencing a total hypermetropia of that amount, the difference between the manifest and total leaving but .50 D. of latent defect.

As this patient was young and had never worn glasses, it seemed advisable not to give too strong a glass to commence with, and hence a pair of + 2. D. were prescribed for constant wear. In a week he returned with the report that his eyes were free from ache or pain, and that he could read comfortably for two hours, which is in marked contrast with the moment or two's reading which was his limit before.

It is interesting to note that although a mydriatic was employed, it was of no real value in determining the glasses required; and the writer is free to say that he could have corrected the defect just as well without the use of the drug. And what is true in this case applies equally to other cases, in the great majority of which satisfactory glasses can be prescribed without the thought of a mydriatic.

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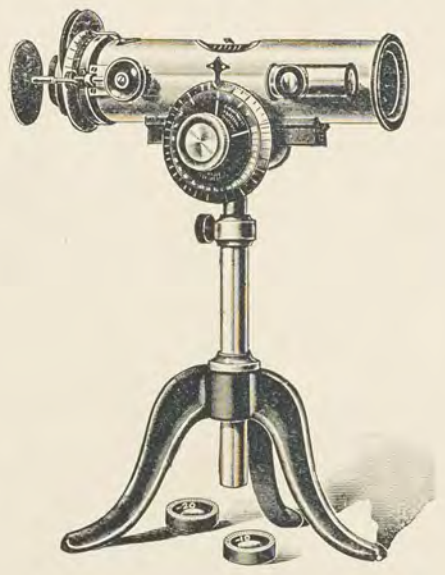

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Dedication of the Tolles Monument

The dedication of the Tolles monument, erected by the New England Association, to the memory of the Boston optician, Robert B. Tolles, was held at Mount Auburn Cemetery, Cambridge, May 17th, at 3.30 o'clock, the hour set by the committee in charge. A small company gathered about the grave, which is situated in one of the most commanding plots in this beautiful cemetery. The grave is located on a ledge half way up a good sized hill, which forms a splendid background for the monument. At the foot of the slope is a small lake that adds an additional charm to the locality.

President McKenzie, being out of the city on legal business, sent an appropriate letter, which was read by Secretary Donovan as the opening exercise. Edwin P. Wells then read the oration of the day. He explained that Mr. Bohne, the orator of the day, had hoped to be present, but was prevented by ill health. That he had instructed Mr. Wells to procure a laurel wreath to place on the grave, as a small token of loving remembrance of one whom he held in reverend esteem. Mr. Wells is an effective and experienced reader, and his splendid delivery of the eloquent oration made a marked impression on those assembled.

Dear Friends: Within these sacred precincts, where the rush of life ends and the weary pilgrim finds peace at last in the bosom of his mother earth, you, representative opticians of the United States, have assembled to-day.

But yours are not garments of mourning, and no tolling of the graveyard bell announced your coming. Yours is a mission of joy and gratitude, for you are gathered around the grave of him, who was, and is to the present day, the greatest master of our noble profession—and you are here to honor him.

I call our profession a noble one, but I should, perhaps, say "one of the noblest of all," for among those identified with the search after truth, with the wiping away of the stain of ignorance from our age, and with the progress of civilization, there is none that can claim a higher place than that of the optician.

Who was ever in the van of the efforts made to build up, and broaden, and perfect the sciences, if not the optician? Who can boast of more valuable discoveries than he?

What is the dredging of the depths of the sea for the purpose of wrenching secrets from nature—what is the scaling the heights of mountains—what would be the discovery of the poles—what is steam power—what even the circling of the globe by electricity—in comparison with the *journey to the stars*, which the genius and the skill of the optician made possible by the invention of the telescope?

And what are these inventions and achievements when compared to the microscope, the golden key unlocking priceless treasures, and revealing myriads of worlds, never dreamed of even fifty years ago? What was science prior to the advent of the microscope? Take the microscope away and what will science be to-morrow?

And the greatest master of the microscope, the man who reached the pinnacle of perfection, whose work was never equaled in any country of the world, was

Robert B. Tolles,

whose dust lies in this sacred spot.

If the gathering of new facts concerning our universe is a contribution to the sum of human knowledge, and, therefore, of human power and human happiness, then *he* must be called, indeed, a *benefactor* of the human race, whose genius invents, and whose skill and perseverance place within the reach of the investigator the means to ascertain such facts.

This places Tolles in the front rank of those whom the world should honor as the greatest men. But *world* and *gratitude* are not synonyms, and thus Tolles was suffered to moulder in an unknown grave.

Is it not sad to contemplate, that while the warrior, whose fame is born in the brutal roar of the cannon, and whose path to glory leads over thousands of mangled corpses and unspeakable sufferings inflicted by him, is honored by monuments—that the genius and toils of such a man who increased the common heritage and the welfare of humanity should be permitted to go unrewarded?

Death is always sad, even when it terminates a life which reached the highest limit allotted to man; death is *cruel*, when it destroys the bud and presses the parting kiss on youth and beauty—but what is it then when it strikes down a man like Tolles, a man so far in advance of his time as to be justly called the greatest master of his art, the foremost of the pathfinders, showing the way into unknown regions, the exploration of which is identical with the progress of the human race?

Let me state a simple fact: The stake which marks the limit of Tolles' achievements in the construction of microscopes, has not been advanced a single inch since Tolles' death; indeed, it has never been reached again in spite of the efforts of the opticians of the whole world.

The death of such a man, with the paralyzing of whose brain and hand the wheel of progress is almost reversed, is a *calamity* to mankind. Such a man marks an epoch in the history of his art and of the world. Such a man will

Robert B. Tolles.

never die, for dead are only those who are forgotten. Tolles will live in his undying fame, and his harvest will still grow, as long as the history of his achievements will stir a human heart and incite to emulation.

But, though the memory of Tolles will be perpetuated by the history of the progress of the world, and while nothing that *we* may do can add to his fame, it still became

The Tolles Monument.

the duty of mankind or, at least, that portion of it, competent to judge the life work of this great man, to show the appreciation of an enlightened age of Tolles' distinguished merit by some visible testimonial, by the erection of a mon-

W. Bohne, Orator of the Day.

ument over his grave. This monument will teach coming generations real merit, although it may fail of proper recognition at the time when words of cheer and encouragement would have greatly contributed to the smoothing of the path of a genius, and softening the acerbity of a life, too high in its aims and too proud to stoop to the petty strife for material gain—that real merit will ultimately prevail, and be rewarded with the crown of everlasting fame.

Thanks to you, gentlemen of the New England Association of Opticians, for your noble action in canceling this sacred debt of mankind, by originating and carrying out the task of erecting this beautiful monument, which is to day to be dedicated to the memory of our hero, Robert E. Tolles. Praise to your live and progressive association!

May your patriotic endeavor, to rally the opticians of the United States around his grave, bear also fruit to our beloved craft, by first impressing us with the possibility of concerted action, and then reminding us of the deplorable fact that, while we daily witness the crystallization of scattered forces in all branches of human activity into large bodies—into great, progressive, powerful and influential unions—the opticians of this country still lack a common center, a National Union of Opticians.

We are certainly in need of such an organization. Through it alone we will be able to keep pace with the general onward movement, fostered by the great unions of other professions and trades, and then it behooves us to guard our rights and the well-earned time-honored prerogatives of our trade. For, let it be said here in the shade of Tolles' monument, let it be said while invoking the memories of Fraunhope, Amici, Charles A. Spencer, and other great opticians, that there are still those who, from low motives of pecuniary gain, dare demand that the sphere of the optician's usefulness and expertness be reduced to a state of bondage, and be placed under the supervision of sometimes questionable authorities.

When in former years an optician rose to the rank of an astronomer he was greeted by astronomers as their equal, but when at present an optician perfects himself in the science of correcting visual errors, the ophthalmic surgeon decries him as overstepping his sphere. This narrow-minded opposition, surely does not serve the progress of science. It is a scheme born of ingratitude, and serving egotistic ends, and therefore will fail. As the church vainly fought against the astronomer, thus will the ophthalmic surgeon lose the battle against the progressive optician.

But it needs united action on the part of the opticians to defeat this unworthy attack. "United we stand, divided we fall," and for this reason there should be, there must be a *National Union of the Opticians of the United States*. Our patriotism, our pride in the profession, our best interests demand it, and if there be one amongst us not able to rise to the height of our situation, let the common danger, let the necessity of defence force him to join our ranks.

Your recent appeal for concerted action in the noble cause of honoring Tolles, has, for the first time, proven the possibility of uniting of scattered forces; let therefore this monument become the *corner-stone* of our future association.

I beseech you, friends, who have gathered here do not disperse to day without some definite action. Join your hands over Tolles' grave, and while reverently bowing to his genius, speak the words of manly resolutions: "Tolles' Day of Honor shall be the birthday of the National Union of the Opticians of the United States."

Very likely this is the last appeal of your devoted friend. My days are counted, but before I am called off from my work, I wish, with all my heart, to see the optical profession rise to the height that is within its reach.

And now may the immortal spirit of our Tolles, who has gone to receive his reward from Him whose glory he proclaimed by revealing to the mortal eye the ceaseless wonders of creation, design to accept this monument as a token of our gratitude and veneration. May he hear the message of our hearts, that we have tried to atone for that which his own time failed in doing. And may the writer of this feeble tribute, a fellow craftsman, dwelling in a distant city, be permitted to have his humble wreath deposited at the monument erected in honor of the greatest optician of the world.

At the appropriate time, Mr. Wells placed the laurel wreath, tied with a dark blue ribbon on the monument, and at the conclusion of the oration, a Mr. Butler, a friend of Tolles, added a floral piece from Mrs. Grant and Mrs. Lewis, Mr. Tolles' sisters. Mr. Butler, by the way, was one of those who selected the lot where Tolles is buried.

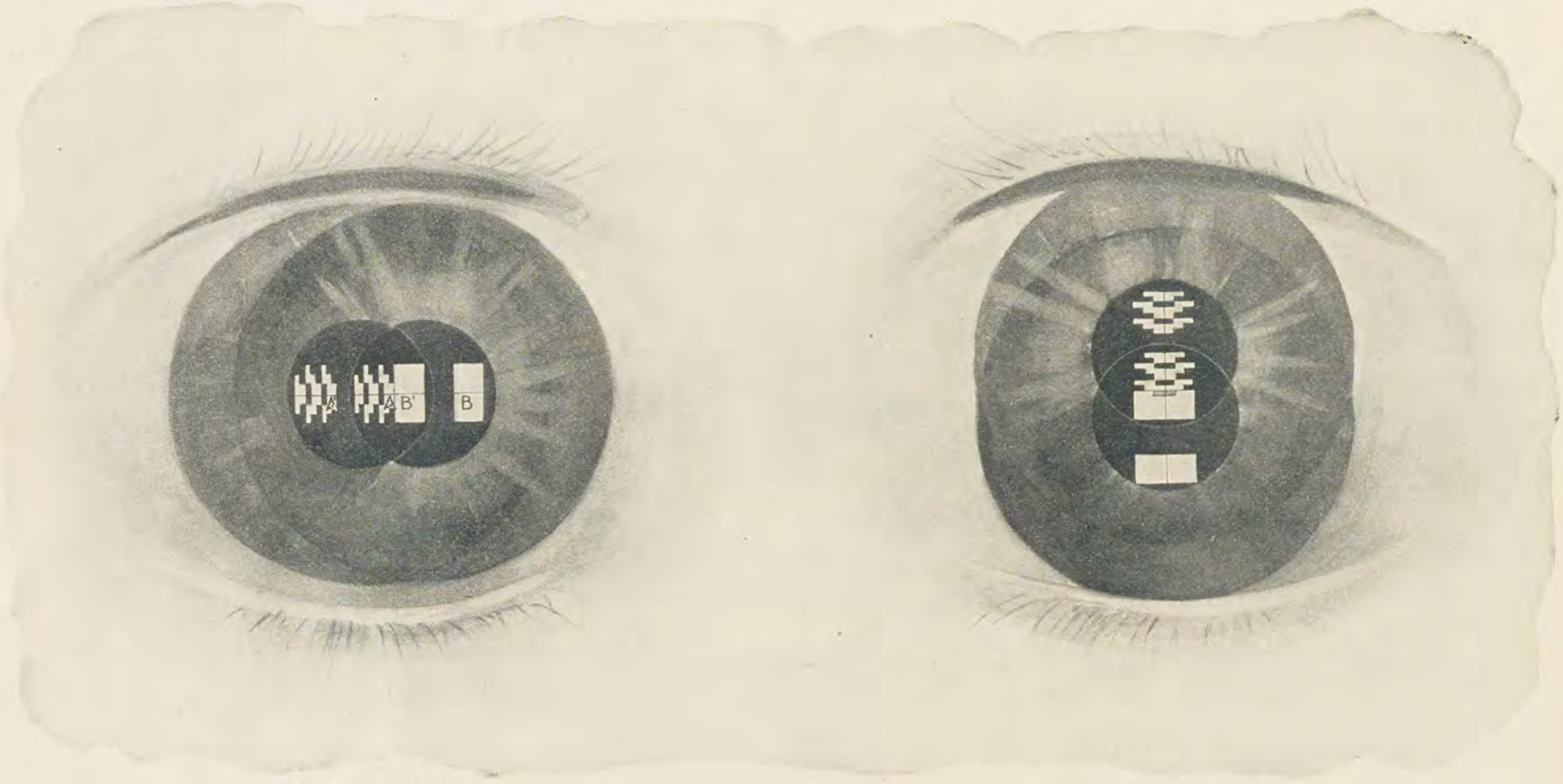
As will be seen by the accompanying cut of the monument, it is a fine, blue tinted granite block, appropriately inscribed, with an exact reproduction of a microscope, the instrument which Tolles perfected to such a high degree, and with which his name will be inseparably linked, chiseled in bas-relief on the face. Its cost was $375. The front of the stone is polished, the other sides and top are rough. After a number of pictures had been taken of the monument and those who attended the dedication, by members who had taken cameras, the party visited the tomb of the poet Longfellow, which is also marked by a low granite monument, of simple design.

(*Continued on page 476c.*)

ONE DIOPTER OF ASTIGMATISM

AS DETECTED BY

THE HARDY OPHTHALMOMETER



Horizontal Meridian.
Normal.

Vertical Meridian.
I. D. Astigmatism,
requiring + Cylinder.

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Optical Questions and Answers.

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. Questions will be answered in the order in which they are received. No attention will be paid to anonymous communications.

To enable us to answer questions satisfactorily and give proper advice in the management of cases submitted to us, it is essential that we be furnished with a complete history of each case and accurate information on the following points:

1. Age. (If not possible to give exact age, always approximate.)
2. Have glasses been previously worn? How long and what number?
3. Visual acuteness of each eye, and what improvement glasses afford.
4. Range of accommodation (without glasses and with them).
5. Evidence of astigmatism (as shown by radiating lines).
6. Test for muscular insufficiency.

"*A. M. G.*"—*Young lady, aged twenty years. Complains of severe pains in eyes, especially when out in the bright sunlight and when using eyes by bright artificial light, frequently causing sick headache. Was fitted with — lens two or three years ago, and about one year ago was given 1° prisms, both eyes, in place of the —. Her vision now is $\frac{20}{30}$ and a little better, both eyes, without glasses. R. E. with + .25 Cyl. ax. 60°, L. E. + .25 Sph. makes vision perhaps a trifle clearer. Near point, two and a half inches; far point, thirty inches. What might be the cause of the pains?*

The severe pains in the eyes when exposed to bright sunlight and when using eyes by artificial light, are due to an irritable condition of the eyes, which in turn is usually dependent upon some uncorrected optical defect. When accompanied by sick headache, as in this case, we would suspect hypermetropia or hypermetropic astigmatism. The fact that the acuteness of vision is $\frac{20}{30}$ does not contra-indicate it, but certainly does exclude myopia, and therefore the optician who prescribed concave glasses in this case was guilty of a grevious error, and imposed an uncalled for strain upon the accommodation. The glasses mentioned by our correspondent would be much more suitable.

"*F. J. A.*"—*Why do cylinders in some cases seem to bring the ground up close to the face; in other words, make the wearer feel as if he was lower than he really is?*

This is a condition that is caused not only by cylinders, but also by spherical lenses when first worn, and there may be two explanations for it. In the first place, the correcting lens forms an image on the retina that differs in size and shape from that formed in the uncorrected eye, and thus alters the apparent distance of the object, as our estimation of distance, to some extent, depends on the object.

In the second place, the placing of a lens before the eye affects the accommodation, a convex lens diminishing it and a concave lens increasing it, and in this way the relation that normally exists between the accommodation and convergence is disturbed. Now our estimation of the apparent distance of objects depends somewhat also on the amount of convergence necessary to fix it; the nearer the object the more convergence required, the farther the ob ject the less convergence. Hence it is easily seen that when the convergence is altered the apparent distance of the object is at the same time changed. Usually the accommodation and convergence adapt themselves to the new conditions imposed by the glasses, and the annoying symptoms pass away in a week or two.

"*F. J. A.*"—*Lady, forty-five years of age. L. E. presbyopic, but otherwise normal. R. E. takes — 3. Cyl. ax. 75°. Added + 2. for reading, both eyes. Gave her another test three days later, when she complainea of her good eye (left) being the bad one. The test revealed no material difference from the previous one, except in the axis of cylinder, which amounted to fifteen degrees. Says she never had glasses made for her before. She has worn them for a week, and claims that they cause pain, and that objects look unnatural. With the test, distant vision was good, and she seemea to be delighted. With the + 2. sphere added for reading, she said she was well satisfied. Why is it that the test should be so satisfactory, while the spectacles are so far the reverse? Have had a number of cases similar to this.*

We have repeatedly called attention in these pages to the difficulty of the eyes becoming accustomed to glasses that were prescribed late in life for a defect that should have been corrected in childhood, and this case illustrates the same thing. Then, again, cylindrical lenses should never be ordered on a single examination, as every refractionist knows the axis of the cylinder is apt to vary on different days. Therefore, at least three examinations should be made on as many different days, and more if there is a variation each time, as only in this way can the cylinder and its axis be properly determined upon.

Ordinarily + 1. D. lenses are sufficient to overcome the presbyopia that is present at forty-five years of age, and therefore, unless there is a distinct need for them, the + 2. D. lenses that were prescribed are too strong. But the main trouble in this case, and the reason why the glasses are not satisfactory, is because of the anisometropia, the difference in the refraction of the two eyes, which is intensified by the fact that the astigmatism in the right eye was never before corrected. It may be necessary to lessen this cylinder or drop it altogether, as the rule is to take care of the best eye, and not to make sufficient difference in the other glass to cause discomfort.

"*J. F. E. W.*"—*Can the incandescent electric light, with advantage, be used in skiascopy? If not, why? Read somewhere that it could not be used, but there was no reason given.*

The light should be steady and clear, and in order to secure the brilliant illumination of the light area, in contrast with the complete shadow around it, the source of light should be as bright as possible. The objection to the incandescent electric light is on account of its form. The Argand burner, used with oil or gas, furnishes the ideal light, as does also the Welsbach light. The brightest part of the flame is to be employed, to secure which the light is covered by an asbestos chimney with a small aperture placed over the part of the flame that is desired to be used.

"*A. M. G.*"—*Boy, aged twelve years. Had sickness when five years old; sight not been good since. Has worn the following glasses about one year, for reading: R. E. — 2.75; L. E. — 2.25. He had typhoid fever about six or eight months ago; since then his eyes have pained him more when trying to use them for reading. In testing, find sight = $\frac{20}{30}$ without glasses. Both eyes the same with glasses. R. E. — .25 Sph. ◯ — .25 Cyl. axis 90°; V. $\frac{20}{20}$. L. E. + .50 Sph. ◯ — .25 Cyl. axis 90°; V. $\frac{20}{30}$. This was the best I could do. Near point three and a-half inches. Far point seven inches without, and nine inches with glasses. Glasses don't change near point. No muscular insufficiency. Can you suggest anything to make his vision normal?*

This case is another illustration of some optician's lack of knowledge. In the light of the result of the examinations made by our correspondent, the concave glasses that were first prescribed were entirely unsuitable, and such being the case they imposed a great strain upon the eye, especially when used for reading, as evidenced by the increased pain caused by them. We have no knowledge of what the acuteness of vision was when these glasses were first ordered, but they have most likely injured the eyes. The substitution of the formulæ mentioned by our correspondent will certainly place the eyes in more favorable condition, and will probably cause an improvement in the amount of vision and in the range of accommodation.

"*R. L. G.*"—*Dr. Stevens, in his "Functional Nervous Diseases," says that it is a popular error to suppose that pebble is better for spectacle lenses than glass. You will find the above in the appendix of Dr. Stevens' book, named above. I have always understood that pebble was better than glass for lenses.*

Pebble is a product of nature, while glass is a product of art, and it would seem proper to suppose that the natural is superior to the artificial product. But this is a point on which eminent authorities differ; some claim that pebble is much better, while others whose opinions are of equal weight, say that the superiority of pebble lies only in the imagination. When doctors differ, who shall decide?

The claim for the superiority of pebble rests on two factors, its brilliancy and its hardness, and on account of the latter it is susceptible of a higher polish and is less easily scratched. The former feature renders it less fit for use in myopia and in eyes sensitive to light; but pebbles are particularly adapted for the correction of presbyopia and hypermetropia on account of their slightly increased index of refraction.

The writer, in his practice, has met with cases who praised the value of the pebbles they were wearing, and declared their eyes were such that the ordinary glass lenses would be intolerable; and in which glass lenses of the same number were substituted for the pebble without the patient's knowledge, and the difference was never detected, and the former gave the same satisfaction which the patient thought was possible only from the latter. This is a question to which there will probably always be two sides.

"*C. S. B.*"—*Young lady, aged abont twenty years. Fair health. Sustained severe concussion at back of brain two or three years ago, from which she suffers (supposedly) even yet, and is being treated for same. Hau diphtheria about six years ago. Always had poor sight. Two years ago was given + .75 by a local doctor and oculist, which were very satisfactory at first, but never gave normal vision. Has not worn them for a year, as they no longer are easy. D. V. $\frac{15}{60}$. R. E. $\frac{15}{60}$ + 1.00 = $\frac{15}{30}$ ◯ + .62 axis 105° = $\frac{15}{15}$. L. E. $\frac{15}{60}$ + .75 = $\frac{15}{30}$ ◯ + .62 axis 90° = $\frac{15}{15}$. These glasses make astigmatic lines alike, and distant vision easy and satisfactory, but improve reading scarcely any, and no increased strength will enable her to read print four mm. high over five inches from her eye. The distance glasses are as satisfactory as any. Ordinary newspaper print has to be brought within four inches to be at all legible, and this brings a tremendous strain on her internal muscles. I advised constant use of distance glasses, and told her to keep reading matter as far away from eyes as possible, hoping for a stimulation of reading power of eye when proper glasses were constantly used. I took it to be a tonic spasm. What do you call it?*

The fact that this convex sphero-cylindrical combination raises vision from $\frac{15}{60}$ to normal, indicates the proper correction of the refraction; and inasmuch as the difficulty remains for close vision, we infer that the trouble is with the accommodation. It cannot be a spasm of this muscle, but seems rather like a paralysis of it. It is not uncommon to find paralysis of the ciliary muscle after diphtheria, which condition might be perpetuated by the concussion of the brain. It was proper to advise a constant use of the distance glasses, in addition to which we would suggest a stronger pair for reading. If our view of the case is correct it would require + 3. D. or + 3.50 D. stronger for close use.

The reason why so much stronger glasses are required for close use is because of the absence of all accommodative power, which is then supplied by the glasses. The action of the accommodation is to increase the convexity of the crystalline lens and thus add to the positive refracting power of the eye; a convex lens placed in front of the eye has the same effect.

When glasses are prescribed to supply the place of the accommodation, a lens is given whose focal distance is equal to that at which the person desires to read. For instance, thirteen inches is looked upon as a proper reading distance, and a glass of + 3. D. is ordered whose refractive power corresponds to this focal distance.

"*F. E. D.*"—*A young man about twenty years; never wore glasses, who works at drawing, in a mill; says his work looks blurred, and with hues of rainbow with the glasses I gave him. He persists in wearing them all the time, though I tell him to take them off at work; says it is too much trouble, and that he came to me for glasses to work with, and not for street. He sees clearly with them at a distance. When he first came to me for treatment his right eye had two ulcers on it, and the left one was badly inflamed; also the eyelid. (This lad's bowels are constipated to the extreme.) His face is one complete mass of eruptions. With the retinoscope, I find his eyes not to be stigmatic, yet it pains him with or without glasses to work. I first had him quit work, wear smoked glasses, and use an eye-water. After the ulcers left, I fitted him to — .50 D. (both eyes) for glasses, and told him to take them off when at work, and use an eye shade. Is the retina of the eye diseased, and what had I best advise him?*

Our correspondent has failed to give us the acuteness of vision or the range of accommodation, and in the absence of information on these important points we are crippled in our desire to render intelligent assistance. The symptoms point to hypermetropia or astigmatism as the cause of the trouble, in spite of the statement that the retinoscope shows no astigmatism. There are other and better tests for astigmatism than this one, and therefore the absence of this defect can be accepted only when it is verified by other methods of examination. A careful measurement of the refraction and accommodation, perhaps repeated once or twice, will likely reveal some optical defect and indicate the glasses required to afford relief.

"*M. Bros.*"—*Can you advise me what to do with this case in optics? A boy nine years old; never wore glasses. Visual acuteness $\frac{20}{40}$, and sometimes he can read $\frac{20}{30}$ without glasses. Accommodation without glasses, near point, four and a-half inches; far point six and a-half or seven inches, and glasses don't help any. There is a slight degree of astigmatism, and signs of spasms. Muscles correction 1¾° prism base out, but the bar of light wavers some, I suppose on account of spasms. With glasses R. E. + .50 D., L. E. + 1. D., he can read $\frac{20}{30}$ well and sometimes $\frac{20}{20}$, but this is the best I can give him. I think by the use of atropine his far vision can be made normal, but reading makes his eyes ache, so he can't stand it. With the above glasses he holds the paper about five or six inches from the eye. This would indicate a myopia; put — lenses before the eye, and he will hold it nearer yet. With a — 3. D. lens before him, and he will hold the paper close to his nose. Increase the + lens, and it don't help any. He can't read two minutes without stopping to rest his eyes. Never has had sickness to effect eyes, as I can learn; eyes look perfectly healthy and good, but the muscle of accommodation seems entirely lifeless, or nearly so. Can you advise me what to do in such a case?*

This is a difficult case and calls for skill to manage it properly. Myopia can be excluded, inasmuch as the acuteness of vision is not very greatly impaired and convex lenses afford some improvement. While the symptoms are rather confusing, a careful consideration of the case leads us to look upon it as most likely one of hypermetropia. The normal amplitude of accommodation at this age is 14. D., while the near point in this boy represents but 9. D., which is a deficiency of 5. D. and a presumption of a hypermetropia of that amount. As the patient is young and the defect largely latent, we would not advise too strong a glass at first, perhaps only + .50 D. to + 1. D., and a gradual increase in strength as the hypermetropia becomes more manifest and the eyes adapt themselves to the glasses.

Every Number Worth a Dollar.

NEW CITY, N. Y., May 3, 1898.

THE KEYSTONE.

Please find enclosed order for one dollar for THE KEYSTONE another year. I would not like to miss a single copy for double that amount, as many times the information in one number has been worth more to me than the whole years' subscription. Yours truly. JOHN STAGG,

Jeweler and Optician.

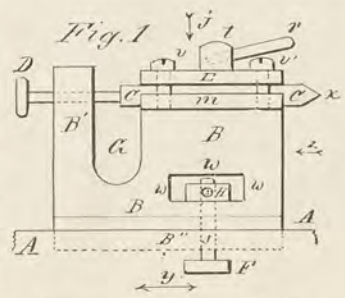
Lens-Grinding for Prescription Work.

XXIX.

Some Valuable Instructions Given About Mechanical Matters.

IN our last article we spoke of and described, in a general way, centers for holding work to be planed on a metal planer. We now propose to give the necessary details for constructing such centers. The height of these centers above the planer bed should be about 5″. As stated in former article, the cone centers which hold the work are constructed so that one is fixed and the other adjustable. By the term "fixed," in this instance, we do not mean immovable, but is not adjustable, except longitudinally in the direction of the line of movement of the planer bed. We show at Fig. 1 a side view of the head which carries the cone center which is not adjustable. It is shown in the cut as resting on the planer bed *A*. At the dotted line *B″* is shown a tongue, or flange, which extends down into the slot of the planer bed.

Fig. 1



Adjustable Cone Centers

This flange is fitted perfectly to the slot, in order that the head *B*, Fig. 1, can be removed from the planer bed and replaced without interference with the adjustment of the center of the cone point *x*, which terminates the spindle or bolt *C*. We show at Fig. 2 an end view of the head *B*, Fig. 1, as if seen in the direction of the arrow *z*. In the upper face of the head *B* is placed a triangular groove shown at *u u*, Fig. 2. This triangular slot is to receive the spindle *C*. Resting on the spindle *C* is the metal plate *E*, which merely serves the purpose of clasping the spindle *C* firmly in the slot *u* by means of the screws *v v t*.

Fig. 2

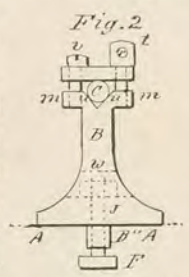
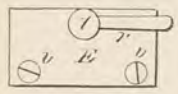


Fig. 3



We show at Fig. 3 the plate *E* separate, and as if seen in the direction of the arrow *j*, Fig. 1. The screws *v v* attach the plate *E* to the top of the head *B*, and the single screw *t* clamps the plate *E* down on the spindle *C*. The screw *t* has a hole in the head which admits a short pin, as shown at *r*, which serves as a lever for setting up on the screw *t*. A groove like the one shown at *u u*, Fig. 2, is more accurate than a bored out hole or sleeve, as is usual with lathes, because there is no side shake, as the plate *E* brings the spindle down into the channel alike at all times. It will be seen that the groove *u u* can be planed in after the head *B* is fitted to the bed of the planer. It will be noticed that there is a U-shaped opening in the head *B* at *G*, Fig. 1, and it will be further noticed that at the rear end of *B* the head rises into a stud shown at *B′*. This stud rises to nearly the same height as the top of the plate *E*.

A screw with a hand wheel passes through the stud *B′* and presses against the rear end of the spindle *C*. This screw is set up against the back end of the spindle *C* before the screw *t* clamps the plate *E* down on the spindle *C* with its full force. The angle at the bottom of the channel *u u* should be about 60°. For holding the head *B* in place on the planer bed the bolt *I* is provided. This bolt is shown separate at Fig. 4, and also partially in dotted outline in Fig. 1. This bolt has a solid, square head, which goes in the horizontal slot in the planer bed. We have referred to and described this slot in former articles, but show again a cut of it at Fig. 5. This slot is in the center of the planer bed, and is shaped in transverse section as shown at *n e*, Fig. 5. The nut *F*, Fig. 4, goes in the slot *m*, and the tongue *B″ B″* of the head *B* is fitted to slide in *n* without side shake.

Fig. 4

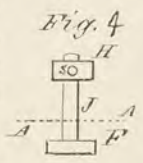
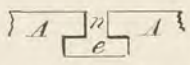


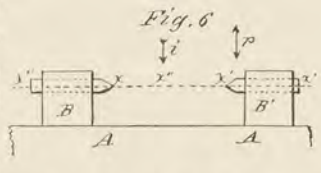
Fig. 5



How the Planer Heads are Held

In the head *B*, Fig. 1, is a transverse slot shown at *w*, said slot extending through *B* so that access can be had to the nut *H* from each side of said head. This nut should be about 1½″ in diameter, and turned by means of a lever pin, holes being provided as shown at *s*, Fig. 4. The bolt *J*, Fig. 4, should be about ½″ in diameter. The spindle *C* need not be more than ¾″ in diameter, as it never will protrude from the head *B* more than 1″. We show in Fig. 6 an imaginary planer bed, with the two supporting heads at *B B′*. The head shown at *B* represents the one we have just described and shown at *B B′*, Fig. 1. The second head shown at *B′* is the adjustable one.

Fig. 6



A Chapter on Adjusting a Planer Head

We will now explain why one of these heads must be made adjustable. In ordinary work planed up on a metal planer, if we place the job so it rests on the planer bed *A*, Fig. 6, and secure it in position with suitable clamps and plane off the upper surface, such surface will be parallel with the upper surface of the planer bed. This condition would not ensue with any certainty with a piece placed between the centers *x x′*, except these centers were adjusted so that an axial line passing through these centers (like the line *x″ x″*) was parallel to the lathe bed. We attain this end by making the center *x′*, Fig. 6, adjustable up and down in the directions indicated by the double-headed arrow *p*.

The most crucial test for such adjustment is to place a flat piece of metal between the centers *x x′* and first plane one side and then the other. Now, if on calipering, we find the pieces of equal thickness at each end, we can rest assured both cone centers are of the same height above the planer bed *A*. We have still another adjustment to make, which will be understood by inspecting Fig. 7, said cut being a view of Fig. 6 seen in the direction of the arrow *i*. The adjustment we now refer to is moving the center *x′* back and forth in the directions indicated by the double headed arrow *s*. All metal planers have a vertical feed as well as a horizontal feed. For better explanation, let us suppose there is a flat bar of metal between the centers *x x′* as indicated by the dotted lines *l*, Fig. 7. We show at Fig. 8 an end view of said bar seen in the direction of the arrow *h*. In explanation, let us suppose that the small circle *b* represents one of the countersinks in the end of the bar *N*. In working, we plane off, first, say the upper surface *o* of *N*. We then turn *N* over and plane the side *o′*. As stated above, we find the bar *N* of equal thickness from end to end. We next, with the proper tool and the vertical feed, plane off the edges *k k″*, by first planing one edge *k* and then turning the piece *N* over and planing the other edge *k′*. We mean by this that both edges of *N* are planed from the same side of the central line *x″* Next turn the bar *N* through a half revolution and plane the edge *k*. If now the bar *N* is of equal width at both ends, the centers *x x′* are perfectly adjusted. In our next we will tell how to make our adjustable center.

Fig. 7

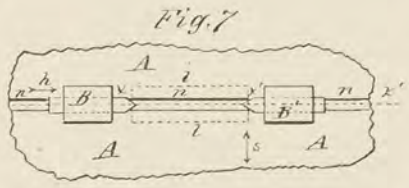
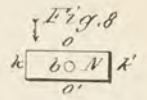


Fig. 8



An Optical Experience with a Moral.

"Is this hyar the place whur you fix people up all right as kyant see good?" inquired a shrewd looking, old farmer, as he leaned over my show case.

"Yes, sir;" I replied, cheerfully, as I scented the wherewith to renew my KEYSTONE subscription. I invited him to take a seat, and directed his attention to the distance card. "Of course you can read this letter," I suggested, pointing to the large "E."

"Nope," he replied; "but thet don't make no difference, as I jist want 'em fer filing saws, and I brought this here old saw along to be sure they would be all right."

I replied that it was very thoughtful on his part to come prepared, but told him that it was necessary for me to test his distant vision first.

"All right," said he, "fire away; but I'll tell you right naw, thet I ken see a squirrel's eye further then eny neighbor I ever hed."

He is certainly not myopic, I thought to myself, as I picked up my trial frame, "blinded" the left side, and placed a + 0.50 in the right. Handing him the frame, I told him to put them on and see if he could tell me what the large letter was now.

"Nope," he replied, "but it looks plainer."

Being thus encouraged I substituted a + 1. D. stronger, and was greatly surprised to see him shake his head and declare they "wan't haf so good as tother ones."

Just then it struck me that the old man was either a liar or else he had not tested his optics on those of a squirrel lately. I then picked out a — 50 and placed over the + 1.50 which he declared was "lots better."

I expected that he would now be able to name the letters down to the third or fourth line, but he declared he couldn't tell what a "blasted one of them wus." Right here I made the usual test for astigmatism, but failed to find any evidence of same, and not knowing what else to do I placed a stronger lens in the frame and handed him the "near" card. He laid this down without looking at it, and grabbing up his old hand-saw, he ran his eye over the teeth, and declared "them wus jist the thing;" said he "hadn't seen the teeth on a saw so plain for a long time." I allowed him to fully satisfy himself that they were all right for saw filing, and again placed the fine type in his hand.

"Yep," he said "thet makes them lots plainer."

"Can you read this paragraph," I said, pointing to No. 40.

"Nope," he replied, "I can't read any of them."

I began to feel a little nervous about this time, as there were several waiting to have their eyes tested, so I told the old man to step into the dark-room and allow me to make an ophthalmoscopic examination. He assented very readily, but I had no sooner closed the dark-room door and lighted my Argand, when the old gentleman laid his hand on my shoulder, and looking at me with a merry twinkle in his eye, he delivered himself as follows:

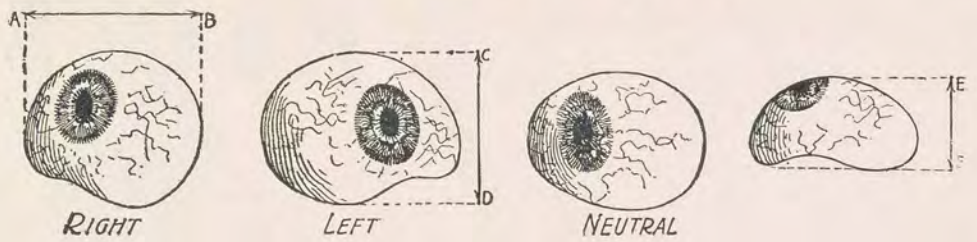
"Young man, you want to use a little *common* sense with your scientific nonsense. Now you are worrying because I can see to file saws with them glasses, and can't read with them. May be you never stopped to think that a man that never learnt his letters can't read with any glasses; but," he continued, "I wasn't durned fool enough to let all the folks know it."

He got the glasses without any further examination.

PER I METER.

Miller's "Heart Brand" TRADE ♥ MARK Artificial Eyes.

We have just received from Germany a very large stock of Miller's artificial eyes in the "HEART BRAND" TRADE ♥ MARK which are made in first quality only. Therefore, having the best, and one of the largest stocks in this country, we can match any color, size or shape. When samples can not be sent, answer following questions, and we will forward a selection package.



For right or left eye .....
Length of eye A to B .....
Width of eye C to D .....
Height of eye E to F .....

Diameter of iris .....
Diameter of pupil .....
Color of iris .....
White of eye, clear or yellowish .....

Order Blanks furnished on application.
Price per single eye, $2.50, and larger quantity according to number ordered.

JOHNSTON OPTICAL CO., Detroit, Mich.

TRADE G T MARK

OPTICIANS, Here is Something for You.

Don't sell eye drops that chemical changes are taking place in, which make such drops injurious. Beware of any that is a "cure all" and has a drugging effect on the eyes.

Goodhue's Eye Tablets will make a fresh antiseptic eye bath as occasion requires, and **are made to cure one disease,** the most common that affects the eyes, known as Catarrhal Conjunctivitis. These Tablets are wholly free from any injurious or objectionable substances.

They are put up in a form far superior to anything in this line ever offered for sale. We furnish advertising matter and cuts free.

Write for prices to-day if you wish to be the first in the field. They pay you a good profit, will be appreciated by your patients, and are much nicer to recommend than eye waters which are behind the time.

Retail price, 50 cents per bottle, containing ten tablets. Write us for special terms to the trade.

H. M. GOODHUE,
SOLE PROPRIETOR.

THE SHEPARD COMPANY, U. S. A. Agents,
PROVIDENCE, R. I.

TRADE G T MARK

TRADE G T MARK

The South Bend College of Optics

ESTABLISHED 1893
INCORPORATED 1896

(Talk No. 26.)

Do You Want to Fit Glasses?

There isn't a jeweler who cannot improve his business by learning to fit glasses. There isn't a jeweler who cannot, by a little earnest study and application, learn how to fit glasses. There isn't a college which offers so thorough and practical a course in the science of fitting the eye, as the South Bend College of Optics. The jeweler who cannot leave his work long enough to take the course personally, can study by mail. Hundreds of successful opticians testify that our correspondence course will teach any jeweler the science of optics. Special attention is given to each correspondence pupil, and his advancement is as rapid as his capacity permits. Ask for our 60 page book. It tells all about us.

Dr. H. A. THOMSON, President,
South Bend, Indiana.

Correspondence Course, $25.00.

War with Spain

had nothing to do with it, we simply bought

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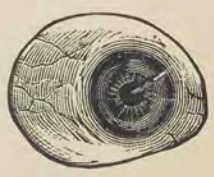
at OUR OWN PRICE.
Our bargain WE SHARE WITH YOU.

With PERISCOPIC LENSES,
per dozen, **$3.00** Net.
Frames only, " " **2.00** "
Temples, per dozen pairs, **1.00** "

Artificial Eyes $2.00 each. 15.00 per doz.
Selection packages sent to reliable dealers.



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℞ WORK our forte. PHILADELPHIA, PA.

Growing Popularity of

P. O. CO.'S Gold Filled Spectacles and Eye-Glasses.

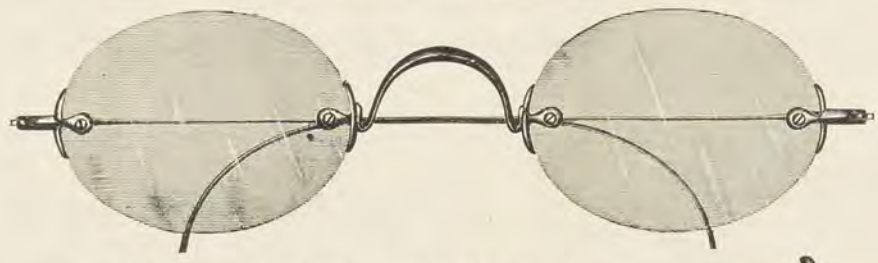
A striking feature of the optical goods market, in its latest development, is the increasing demand for gold filled spectacles and eye-glasses. These handsome goods have recently been making rapid strides in popular favor, and the trade are unanimous as to the satisfaction and profit of handling them. Gold is, of course, the elect of metals for any article worn on the person. But the price of the solid article has been a barrier to popular possession. The gold filled article, on the other hand, can be sold at a price which places it within reach of the majority of purchasers, while it is practically solid gold as far as appearance, beauty and wear are concerned. The seller of gold filled spectacles, therefore, can push sales with all the arguments that apply to solid gold goods, and the moderate price, in nine cases out of ten, clinches the deal.

Care should be taken to explain to the public that the gold filled goods are neither electroplated nor "washed." They are made of an external plate of solid gold of varying thickness, with a composition metal in the center to take the place of the gold that would be hidden away. This hidden gold serves no special purpose of ornament or wear, while adding greatly to the cost. The composition metal that takes its place makes the frames stronger, while not detracting from their solid gold appearance or capability to wear. In fact, these goods when made with all exposed parts covered with rolled gold, quality and thickness of gold taken into consideration, there should be no risk run by the dealer in handling them, particularly as some manufacturers attach a guarantee to each pair.

This extract from May KEYSTONE tells the story of gold filled spectacle and eye-glass frames. We are manufacturers who have faith enough in our goods to ***guarantee them*** for ***ten years***—representing their natural life—and attach to ***each*** frame we make our guarantee tag.

Besides our tag, every frame is stamped **P. O. CO.**

Our New Rimless Gold Filled Mounting.



The Strongest and Neatest Mounting made.

Made in one piece.
Extra finish, but no additional charge.
One quality only—extra heavy seamless gold filled stock.
Cannot be distinguished from solid gold.

No exposed points to wear off and tarnish.
This is the way we make all of our Spectacle and Eye-Glass Frames and Mountings, and is only one of the many good things we offer.

Makers of the latest ideas in a complete line of

Gold Filled Spectacle and Eye-Glass Frames and Frameless Mountings.

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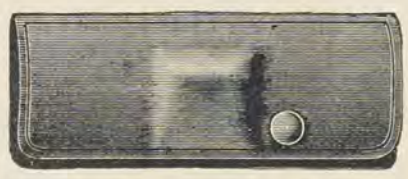

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Made of the same material, STEEL and ALUMINUM, as the Shell Case, which has gained such favor among the opticians and their patrons. It is COMPACT, HANDY and DURABLE, offering a perfect protection to the eye-glass.

Manufactured by

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81 NASSAU STREET, NEW YORK

Sold by Jobbing Trade.

Patent applied for.

Dedication of the Tolles Monument.

(*Continued from page 473.*)

Robert B. Tolles was born in Winsted, Conn., in 1823. His father, Elisha Tolles, a farmer, was of a mechanical turn of mind, and patented several inventions. The son undoubtedly inherited his mechanical talents from his father, and assisted him in his mechanical labors while he was yet in his teens. After becoming of age, young Tolles secured employment with Chas. A. Spencer, known as one of the greatest opticians this country has produced, and it is claimed that some of Mr. Spencer's achievements were partly due to the genius of young Tolles. Later, Tolles engaged in business for himself in the manufacture of microscopes, to which he had devoted a great deal of time and study. Then followed almost a quarter of a century of laborious and unceasing toil, devoted to the developing and perfecting of the microscope, which culminated in the production of an instrument that excelled any that had ever been produced, and which it is claimed has not been excelled since. Mr. Tolles labored under the disadvantage of poor health and limited means, both of which hampered him greatly in his work, but he persevered and applied himself with a diligence that unduly taxed his feeble health. Tolles was well known in scientific circles abroad, where his skill was finally recognized and admitted. He received the degree of A. B. from Colby University, of Maine. He died in Boston, November 17, 1883.

OVID, MICH., May 5th, 1898.

ED. KEYSTONE: For the benefit of "A. E. M." and others, I would say that in the case I described in March KEYSTONE, on receiving the answer I fitted the lady with cement bifocals and directed her to wear the glasses all the time. She has done so, and they are giving her good service. The tipping has disappeared and she says she cannot get along without the glasses and likes them very much.

Respectfully yours, M. O. L.

New Books on Optics.

"Optical Truths" is the apt title of an optical treatise, edited and published by Charles McCormick, M. D., president of the McCormick Optical College, Chicago. A commendable feature of the work is its conciseness, the optical truths being stated very clearly and in few words. It is comprehensive in the subjects treated, and its instructive value is much enhanced by numerous cuts and colored plates. The book is bound in cloth, and its price is $2.

"How to Use a Trial Case of Lenses" is the title of a work of one hundred pages, by W. McCaw, M. D., Geneva, N. Y., which may be had from the Geneva Optical Co., Geneva, N. Y. price $2.50. It conveys practical and plain instruction in the use of test lenses for the proper adjustment of glasses. The book is well printed on high-grade paper and is handsomely bound in morocco.

Officers of the Optical Jobbers' Association.

D. V. BROWN,
PRESIDENT.

EDWIN P. WELLS,
VICE-PRESIDENT.

F. H. SMITH,
SECRETARY AND TREASURER.

Annual Meeting of the Optical Jobbers' Association.

The annual meeting of the American Association of Wholesale Opticians was held at the Astor House, New York City, May 24th and 25th. The attendance was the largest of any of the meetings yet held, and the Association received a large addition to its membership. A preliminary meeting was held on the morning of the 24th, and the principal meeting in the afternoon, with President George Johnston, of the Johnston Optical Company, Chicago, in the chair. The following new members were elected: Jos. Friedlander & Bro., American Spectacle Co., John Scheidig & Co., Meyrowitz Manufacturing Co., B. Kahn & Sons, Stern & Co., and P. Apffel & Co., of New York City; and J. M. & A. C. Johnston Optical Co., and the Julius King Optical Co., of Chicago.

The election of officers for the ensuing year was then held, and resulted as follows: President, D. V. Brown, Philadelphia; vice-president, Edwin P. Wells, of the Globe Optical Co., Boston; secretary and treasurer, Fred. H. Smith, of the Geneva Optical Co., Chicago. Directors: C. L. Merry, of the C. L. Merry Optical Co., Kansas City; Walter G. King, of the Julius King Optical Co., New York and Chicago; J. E. Brown, of the Geneva Optical Co., Geneva, N. Y.; David S. Chambers, of Chambers, Inskeep & Co., Chicago.

On the evening of the 24th inst. the members enjoyed a banquet at the Astor House, with several optical manufacturers, who were in the city at the time as their guests. The meetings of the 26th inst. were those of committees and directors. As a whole, the meetings were important, both as to the friendly spirit in which the various topics under consideration were discussed, as in the general plans laid out for the guidance of important trade interests during the coming year. These annual meetings of the jobbing trade have, in the few years they have been held, done a good work in bringing the members together in trade association, and promises, under the wise policies laid out, to become an important factor in safeguarding trade interests in the future.

The following firms were represented by one or more members at the meeting:

Spencer Optical Manufacturing Co.; Julius King Optical Co.; Levy, Dreyfus & Co., and Sussfeld, Lorsch & Co., New York; the Geneva Optical Co., Geneva, N. Y.; F. A. Hardy & Co., and Chambers, Inskeep & Co., Chicago; D. V. Brown, and McIntire, Magee & Brown, of Philadelphia; Johnston Optical Co., and L. Black & Co., Detroit; Globe Optical Co., Boston; E. Kirstein's Son's Co., Rochester, N. Y.; C. L. Merry Optical Co., Kansas City, Mo.; and Grant Whittlesey Optical Co., of Cleveland, Ohio.

Among the visitors noted in the hotel corridor during the Jobbers' meeting, was Geo. Pearce, representing the Bay State Optical Co.; W. A. Wilkinson, of W. A. Wilkinson & Co.; H. L. Houghton, the Boston jobber, and H. L. De Zeng, of Buffalo, who was explaining to the delegates the good points of his well-known refractometer.

476 *d*

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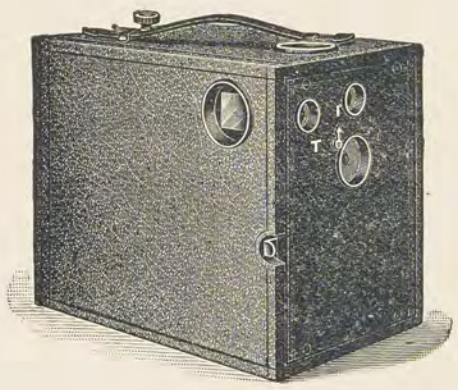
Can make twelve pictures in as many seconds.



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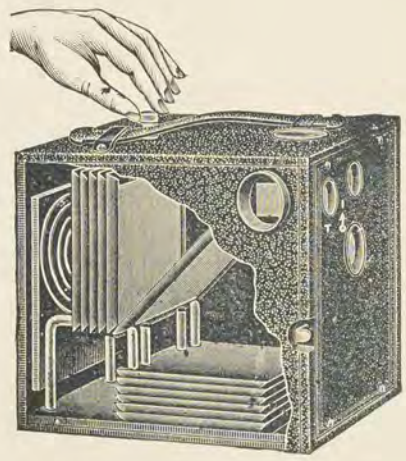

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For prices, discounts, etc., write for our Camera Catalogue.

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JEWELERS AND OPTICIANS.

DeLand, Fla., Apr. 13, 1898.

T. M. HEARD OPTICAL CO.,
Cleveland, Ohio.

Dear Sirs: In connection with our order to-day, we take the opportunity to express our appreciation of your Improved Eye-Glass Mounting. We regard it as the most clever thing in optics to-day, as it is so clean, so simple, and so effective. In fact, it always pleases our customers, and has already doubled our optical business. Sincerely yours,

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The above cut represents a lithographed stand; the nose of which extends outward in imitation of a natural nose, and is adapted to hold any form of eye-glass or spectacle. They are made of cardboard, and can be had for **50 cts.** a dozen. The best thing ever devised to show up eye-glasses in the show window or case.

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Manufacturing Opticians,
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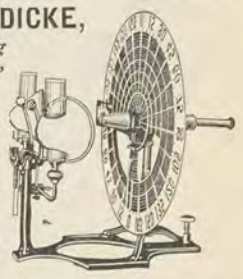

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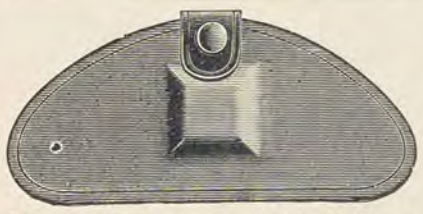

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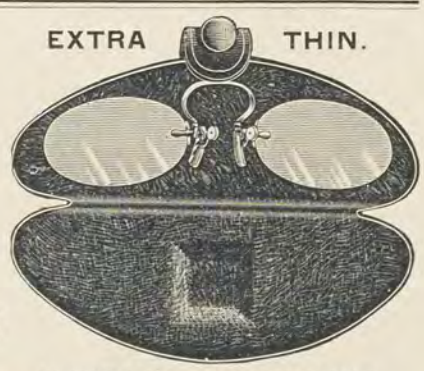

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Pat. April 14, 1891. June 11, 1896.

The Lamb The Only Authorized and Lawfully Manufactured **Eye-Shield.**

It is light, flexible and waterproof; made to fit closely to the face and around the eyes; a soft felt rim renders it impossible for dust or any other substance to enter between it and the skin; small perforations in this felt rim admit sufficient air for the eyes to retain their normal moisture. The EYE-SHIELDS are formed of the clearest mica and are perfectly transparent. They are furnished in either clear, blue, green or smoke. Sample pair, in neat case (straight or folding), postpaid, 50 cents. Trade prices and catalogue sent *free* on application. Address

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Sole Patentee and Manufacturer
For sale by Leading Jewelers and Dealers in Optical Goods.

When writing to advertisers, kindly mention The Keystone.

Doings of the Optical Societies

Annual Meeting and Banquet of the New England Association of Opticians.

The annual meeting of the Association was held at the Hotel Thorndike, Boston, Mass., May 17th, at 5.30 o'clock. In the absence of President McKenzie and First Vice-president Eastman, V. P. Hardy, Second Vice-president, presided.

The committee on examinations reported that the three applicants for membership had passed a satisfactory written examination, with averages over 70, and were eligible for membership. On motion, the applicants were elected to membership. Committee on evening school reported that the outlook was favorable, and recommended that a charter be obtained if sufficient stock could be sold to properly establish such a school, and believed it would soon be self-supporting. The committee was instructed to secure subscriptions to the stock and obtain a charter and start the school. The report of the treasurer was read, and showed the finances to be in a prosperous condition, with a neat balance on hand. The election of new officers followed and resulted as follows: President, W. E. Hicks, Lowell, Mass.; first vice-president, Briggs S. Palmer, Boston; second vice-president, E. M. Parks, Boston; treasurer, Edwin P. Wells, Boston, who was unanimously re-elected, as was also the secretary, W. R. Donovan, Boston. Executive committee, A. G. Barber, B. V. Howe, Geo. L. Lloyd, J. W. Sanborn, W. C. Berry. Adjournment followed, and those present proceeded to the banquet room. The tables were arranged in the form of a double L, with the newly-elected officers and guests of the evening at the table at the head of the room.

After justice had been done to the excellent menu, President Hicks arose and thanked the Association for the honor conferred in his election. A letter received from Dr. Ephraim Cutter, of New York, the present owner of Tolles' one seventy-fifth objective microscope, the finest instrument ever constructed, stated that owing to the illness of his wife he would be unable to be present, but expressed his gratification at the erection of the monument to Tolles' memory. Dr. Geo. B. Harriman, of Boston, was then called upon. The doctor began by citing the history of the celebrated one-seventy-fifth instrument and how he had ordered it about 1867. The first two lenses were completed in six months or so, but, later, one of them was broken. The instrument was finally completed in some five years' time after the order had been given. Such was its wonderful magnifying power that the one-four-thousandth part of a fly's eye was enlarged to appear as big as the top of a tumbler, magnifying about nine hundred million times. The doctor told of the skepticism of the scientific men abroad, regarding the claims made for the new instrument, and how an investigating committee was sent over from London to examine it, and after doing so they returned and reported that they found the claims made for the wonderful instrument had not been exaggerated, and bestowed great praise on its maker. Tolles, the speaker stated, stood preeminently the greatest optician of the world, and the New England Association honored itself in honoring such a genius. The speaker related many experiments made by the great Tolles instrument, and how much science had been benefited by it, and of the pleasure it gave him to be present to pay a tribute to the memory of such a great man.

After a short but lively talk by Jas. H. Brown, one of the newly-elected members, Wm. J. Benn, of THE KEYSTONE, was called upon and said, in part:

Gentlemen: In erecting that fine monument which we have seen dedicated to-day, you have, I think, builded better than you knew; for that monument is more than a just tribute and token of loving remembrance to a worthy craftsman, who did much for science and the advancement of his calling; it marks an epoch in the history of optics in this country. The significance of that granite shaft is that it has been erected by an organization of opticians banded together as craftsmen for the advancement of a science which they have mastered and to which they have exclusively devoted their life's work. This, and similar organizations, mark the significant advancement of the present decade. Without such an organization, it is safe to say, such a monument would never have been erected, and the genius of one of the world's greatest opticians left unrecognized; but this is only one of the many benefits that will follow from such organization. It means the establishment, and public and, I believe, in a short time, legal recognition of the optician's calling, such as it has not had in the past. It means the elevation of the calling, to rank with that of the dentist and the doctor. It means a higher and more thorough education, with chartered colleges of standing in the scientific world. It means a code of ethics that will do much to smooth many of the rough places that now exist. It is to be noted with pleasure that your organization is not only the pioneer Association, but the pioneer in many of the features that make for value in such societies. You were, I believe, the first to provide instructive lectures at your meetings, a feature that has been adopted by almost all the other optical associations; and just at this time you are taking the initiative in establishing a college that will give a thorough course in the science of optics, no doubt the most important work yet undertaken by the optical associations of this country. This is a monument that calls for your best efforts, and involves a great responsibility; for you will be building not alone for this State and section, but a model on which, we hope, numerous others will be patterned at an early date. Make it the success it deserves, and you are capable of it, and it will prove a greater monument to your Association than that granite shaft which you have erected is to the memory of the distinguished Tolles.

Frederick Boger, of the *Optical Journal*, was the next speaker. He referred to the part Mr. Bohne had taken in the Tolles monument, and as having originated the idea, and persistently worked for its completion. He referred, in a complimentary way, to the work the New England Association had done, and of the still greater work not yet understood in establishing the evening school, which he felt confident would be copied.

Edwin P. Wells followed with a history of the Tolles monument, and of the special pleasure he had on its dedication, as he had three years ago made the motion that the Association undertake the work. He explained that Mr. Bohne had previously communicated with him on the subject and urged that the New England Association should properly lead the movement. He referred to the great achievements of Tolles, and to the fact that his instrument had never been equaled, and stood alone in its class.

WM. E. HICKS, President.

A. G. Barber, the next speaker, spoke of the work of the Association, and pointed out how it could be increased by the addition of new members, and pledged himself to greater efforts to this end, and hoped each member would do likewise. This sentiment met with a hearty response, and the other members who followed him all joined in the resolution to add to the membership during the coming year.

B. V. Howe was introduced as the great story teller, and related some good ones. Briggs S. Palmer spoke on the pleasure he felt at the Association undertaking the evening school, a subject which, he stated, was very dear to his heart; he felt assured it would be the greatest work yet undertaken by the Association, and had no doubt of success. Short talks were also made by Messrs. Margot, Welsch, Drisco, Hills, Bessey, Barron, Tucker, Worthy, Massee, Berry, Thomas, Parks, and Secretary Donovan.

Between the speeches the company were entertained with vocal and instrumental music by a well-known quartet.

The Saratoga Meeting.

NEW YORK CITY, May 20, 1898.

ED. KEYSTONE: The following may be of interest to your readers: The Saratoga meeting of the Optical Society of the State of New York, to be held on June 21st and 22d, bids fair to prove an especially interesting one. More scientific papers have been promised than at any previous session, besides, the membership throughout the State are more than ordinarily alive to the dangers they have just passed, several movements being on foot for the strengthening of the optician's position for the future

W. B. Guy, the resident member at Saratoga, gives the following list of magnificent drives which can be indulged in during leisure hours: Saratoga Lake, distance four miles; Geyser and Vichy Springs, two miles; Woodlawn, one and a half miles; Mt. Vista, three and a half miles; Mt. McGregor, ten miles; Excelsior Spring Park, one and a half miles; Cedar Bluff, five miles; White Sulphur Springs, nine miles; Bemis Heights, ten miles; Schuylerville, eleven miles; sail on lake to White Sulphur Springs, five miles; Congress Spring Park, in the city.

The New York City delegation can go by either the Albany night boats, arriving at Saratoga, via train, about ten o'clock in the morning; or, all the way by train, leaving Grand Central station at eight o'clock, A. M., arriving in Saratoga at two o'clock P. M. The fare for the round trip by a train or boat is between $7 and $8. "The Hotel Worden" has been selected for headquarters. The opening session of the Society begins at 2 o'clock P. M., in the Court of Appeals Room, at the town hall.

Many delegates will take their wives with them. The New York City, Rochester and Syracuse local societies will be especially well represented. A general invitation to all opticians to be present at the scientific session is cordially extended. Respectfully,

A. JAY CROSS,
Pres. New York State Optical Society.

Optical Society of New York City.

The May meeting of the Optical Society of the City of New York was noted for the number of new candidates admitted to membership. The names of these appeared in our report of the April meeting. Applications for membership were received from the following: A. Koenen, New York City; George Sacks, New York City; E. E. Lindeman, New York City; and S. Merin, Brooklyn.

Professor William S. Day, of Columbia University, read a paper on the "Mathematics Incident to the Refraction of Concave Mirrors," and Charles Barnard delivered an illustrated address on the "Elementary Colors of White Light." The meeting was highly interesting.

Pennsylvania Optical Society.

PHILADELPHIA, May 13, 1898.

ED. KEYSTONE: The regular monthly meeting of the executive committee of the Optical Society of the State of Pennsylvania, was held at 128 South Eleventh Street, Philadelphia, on Tuesday, May 10th.

Robert W. Burns, of 1608 Federal Street, Philadelphia, and Chas. S. Rueffer, of Wilkesbarre, were elected members of the Association.

The president reported that a professor from one of our leading medical colleges had consented in the autumn to deliver a course of lectures to members of the Association, on the Ophthalmic Appearance of the Fundus of the Eye in different Diseases. This is to enable the optician to decide when an eye is diseased, and requires other assistance than the correction of its errors of refraction, so he can refer such a case to an oculist for medical treatment.

It was decided that on the day of our annual meeting, which comes in September, there shall be three sessions. In the morning and afternoon we shall procure the services of some expert, who shall give demonstrations in the use of the shadow test, which lectures shall be free to our members. In the evening there will be the annual banquet of the Association.

A special meeting and conference of the Optical Society was called for Tuesday, June 21st, at which the following questions will be discussed in their various phases. "What are the best methods for furthering the interests of opticians in general, and of benefiting our own organization." It is hoped that as many of the members as possible will be present, and that all will join in the discussion. Yours,

C. A. LONGSTRETH, Secretary.

"Your persistence in bombardment of my fort has reduced it. Enclosed find renewal of my subscription to The Keystone for another year."—C. W. White, jeweler, Titusville, Pa.

To the Opticians of Iowa.

The following circular is addressed, through THE KEYSTONE, by the undersigned, to the opticians of Iowa:

Gentlemen: There are in various parts of the United States organizations composed of opticians, whose aims are to protect the legitimate trade, to fortify themselves against adverse legislation, to shield the public from the dishonesty and ignorance of irresponsible vendors of worthless spectacles, and to assist each other by an interchange of ideas and experiences. Such an organization is needed in Iowa right now. The expense of maintaining it will be nominal, the benefits accruing will be many. The benefits of united action in the matter of legislation were fully demonstrated in Iowa only a few months ago, as most of you know.

A meeting for the organization of an Iowa State Optical Society will be held Tuesday and Wednesday, June 21st and 22d, 1898, at the club room of Hotel Savery, Des Moines, Iowa. An entertaining and instructive programme is being prepared, and papers on subjects of vital interest to the fraternity will be read by Ezra Nuckalls, of Eldora; M. C. Conner, of Burlington; Miss Proctor, of Grinnell, Harry P. Holmes, of Des Moines, and others. A lecture will be given by one of Iowa's prominent oculists. A steamboat excursion on the Des Moines River, will be the closing event.

The success of the enterprise depends wholly upon the attendance. It is needless to remind you that it is your duty to attend. With an organization we can secure laws to help us; without it we are positively in danger. You will enjoy the meeting; you will profit by it. Have your local newspaper make a note of your trip and its object; you could have no better advertisement.

Write a postal to Mr. Holmes, at Des Moines, saying you will be on hand. Efforts will be made to secure special rates on all railroads.

Signed:

EZRA NUCKALLS, Eldorado.
H. P. PROCTOR, Grinnell.
C. A. COLE, Winterset.
D. A. CURTIS, Knoxville.
HARRY P. HOLMES, Des Moines.

Miscellaneous Optical Items.

The Spencer Optical Manufacturing Co., of New York, recently filled a large Government order for Audemair marine glasses for the naval signal reserve, stationed along the coast. They also sold many of these glasses to war correspondents, a significant compliment to the exceptional merit of the Audemair.

The spectacle and eye-glass case factory of E. Kirstein's Sons Co., Rochester, N. Y., is an excellent illustration of the rapid development of the optical industry at large. This factory was added to the Kirstein business only a year ago, and its products are to-day quite extensively known. Much improved machinery, which has lessened the cost of production and conduced to more popular prices, has been added in the interval. The new offset case, "Kirstein's Ideal," is rivaling the "Excelsior" in popularity.

An eye tablet may have a strange sound, especially as it is to do the work of the eye waters that the trade is familiar with. The new form, however, has many advantages, and in fact, is allowed to be the proper method of putting up the preparation, as it thereby retains its strength better than in liquid form. The tablets are dissolved in water, when used, thus giving a fresh eye bath as occasion requires. The tablets are made by H. M. Goodhue, ophthalmic optician, with the Shepard Company, Providenc

H. L. Houghton, wholesale dealer in optical goods and cases, is now nicely fitted up in his new quarters in the Jewelers' Building Boston. The new quarters are a great improvement over the old location, at 90 South Street, and being in the center of the jewelry and optical districts, it means a great convenience to the patrons of the firm, and will no doubt add many new ones. Mr. Houghton has located his factory for the manufacture of trial cases and spectacle and eye-glass cases in Quincy where he has excellent factory facilities.

The Southbridge Optical Co., of Southbridge, Mass. has elected new officers. This was made necessary by the death of the former President, B. U. Bugbee. The new officials are: President, L. W. Bugbee; treasurer, B. L. Bugbee; directors, L. W. Bugbee, A. H. Wheeler, and C. S. McKinstry. The president and treasurer of the concern are sons of the former President, and are bright young business men, who have been associated with the company for a long time, and have mastered all the details of the business, and have been active in its management for several years past, so that they are well qualified to continue the successes that have marked the past few years in the company's affairs.

Omaha Letter.

The exposition now about ready to open at Omaha will be the most extensive affair of the kind ever held on this continent, with the single exception of the World's Columbian Exposition, and will be worth traveling miles to see. Everything is rapidly getting into shape for the opening day, June 1st. Everybody and everything in Omaha is now talking exposition. Even war news does not dampen the enthusiasm. As the growing beauties of the great show are developed day by day, local pride becomes greater. It is a foregone conclusion that a great deal of money will be left with Omaha merchants during the months from June 1st to November 1st, and everybody is making preparations to that end. Already the impetus is felt through the large advance guard of strangers who are here looking after various interests, and who are spending a good deal of money. Thirty-six of the States of the Union will be represented, and no less than twelve of them will be housed in buildings of their own. Only a few days now remain before the gates will be thrown open to the world, and the resources of the vast Trans-Mississippi region will be better known and advertised than ever before.

Omaha jobbers and retailers in the jewelry line report a good condition of things, and they express little or no apprehension for the future. One wholesale firm states there has not been quite the amount of business of the preceding month, owing to the fact that the farmers have been busy with their work which has made trade dull in the smaller towns. This has cut down mail orders somewhat, but with this exception, business has been quite satisfactory. Crop prospects are of the best, which fact has a powerful influence in shaping the course of business in this vicinity. Take it all in all the jewelry people here-abouts have little to discourage them at present.

No matter how soon or how long the war with Spain continues, the Trans-Mississippi and International Exposition will be open June 1st and continue until November 1st. At present writing everything is about in readiness for the opening. Taking advantage of the changed conditions incident to war, the railroads of the West are making a strong bid for summer-tourist business, which, in time of peace, would go to Europe or the ocean resorts. The matter has been taken up by the Eastern trunk lines, and an effort will be made to turn the travel westward to the mountains and Pacific Coast. The plan is to route the business via Omaha, stop-over privileges being arranging for the tourists, so that they may spend some time visiting the exposition. The State of Missouri will be fittingly represented at Omaha.

Nearly all the jewelry stores in Omaha have increased their stocks, rearranged their places of business, and, in a general way, have made elaborate preparations for the increase of trade which they expect the Trans-Mississippi Exposition to contribute. The general opinion among the trade is that a substantial business will be done through the summer and fall. Money already seems plentiful in Omaha, and Nebraska in general, and jewelers are getting their share of business.

The exposition has given the trade much satisfaction by deciding to make medals the premiums in a number of import lines, doing away thereby with all cash prizes. This is true of the live stock exhibit. These medals will be elaborate affairs, wrought in gold, silver and the metals of lesser value, according to their rank. This work will be done largely by local houses. The decorations will be elaborate works of art, and will give employment to a large number of smiths. The jewelry trade worked to this end, but had scarcely dared hope for this much encouragement. This will give employment to a number of expert jewelry workers from the East, who will be imported by the local manufacturing houses.

The original idea was a Trans-Mississippi Exposition pure and simple, but it has now grown from the swaddling clothes of a local show to the adult apparel of the sized international exposition. The manufacturers of New England have taken large space and will make a great showing of the products of the looms and spindles for which they are so famous. Far-off Asia is represented by China, Japan and Corea; Africa, Mexico, the Central and South American States, and the progressive countries of Europe will have exhibits. Our famous King, Ak-Sar-Ben the Fourth, will welcome all the nations who enter through the magnificent arch of States on June 1, 1898, and none will regret the visit.

At the Trans-Mississippi and International Exposition there will be a brilliant electric display, in which all the latest discoveries and developments in electricity will be exhibited, the equal of which has certainly never been known before, from the fact that many important discoveries in electricity have taken place since any of the more important expositions have been held.

Thomas A. Edison is preparing at his laboratory in Orange, N. J., an exhibit illustrating practical appliances for reclaiming the iron in low-grade ores as applied to the treatment of gold and silver ores of the same grade.

The system of vacuum tube lighting will be demonstrated for use in collieries. The syncronograph, a rapid telegraphic invention of Prof. Albert Cushing Crehore, and with which it is claimed that the operator can transmit the contents of an entire newspaper within an hour's time, will be on exhibition. All the recently-discovered appliances for army use, military telephoning, etc., will be exhibited. Nicola Tesla is preparing an exhibit. Diagrams and designs showing how the Roentgen rays are formed, photographs taken on the battle-field during the Graceo-Turkish war, and other exhibitions of absorbing interest will be shown.

Telegraphing at sea without wire will be demonstrated, an electrical letter carrier and the third rail system of railway locomotion will be exemplified in special separate exhibits, prepared especially for the Omaha Exposition. Electricity, as applied to agriculture, will be demonstrated.

We take pleasure in voicing the following sentiments from the Omaha *Bee*: Americans who are afraid to make the journey to Europe this year, because of the determination of Spain to permit privateering, ought to remember that a great many places of interest in the United States may be reached without a sea voyage. The Alps are interesting, but the scenery is not grander than that of the Rocky Mountains or Sierras, and there is the Mammoth Cave, Niagara Falls, Colorado Canyons, Yellowstone Park, and, above all, the Trans-Mississippi Exposition at Omaha.

The Illinois building at the exposition is a credit to the great State which built it. Illinois is always in the van under all circumstances.

T. H. Winn, the well-known Nebraska watchmaker, is now with T. L. Coombs & Co., retail, 118 South Fifteenth Street.

The Department Store Problem.

MAY 26, 1898.

ED. KEYSTONE: I think I can tell some of your readers how to solve the department store problem from personal experience. I am a watchmaker, and I worked at the trade over twenty years. The longer I worked at the business the worse it got, until I could not make a living at it. I looked around to see what was the matter. I saw men with half my capital and ability making more profit selling every-day staple goods than I was selling jewelry. I saw that they were all selling jewelry, too—dry goods merchants, grocers, hardware merchants, milliners, druggists—all selling jewelry; and I, in a small town, trying to live selling only jewelry. Instead of depending on or waiting for legislation (something impossible) to right the wrong (if wrong it is), I gradually picked up the best paying staple articles of all these lines, and sold them myself. In the last four years I have not only made a good living, but have made more money than in all my life before, and am doing the best general merchandise business in the town. Any man who has energy, capital and brains enough to run a jewelry store, can run a department store. If he can't in a big town, let him get out into a smaller town. It does not take a million to start. Start with what money you have, and back it up with your pluck and energy, if you have any—if you haven't, don't start. I had less than a hundred dollars when I started, less than four years ago, and have over $8,000 worth of stock now; my bills always discounted, and I sell always for cash. There is nothing in setting down and asking the law-making element of the country to stop some other man from getting ahead of you on a business proposition. Read the signs of the times, and get in and hustle. WASHINGTON.

5000 GENUINE TRUMP WATERBURY WATCHES

WE ARE OVERSTOCKED. THEY MUST BE SOLD AT ONCE.

$1.25 EACH, NET CASH.

This lot will sell fast. Send in your orders at once.
Cheapest and best American-made Nickel Watch.

$1.25 EACH, NET CASH.

Trump Waterbury.
The best watch in the market for the money.
18 size, nickel, guaranteed.
No. 21. Scroll design on back, $1.25

In Lots of One Dozen, $14.10 Cash with order.

Trump Waterbury.
The best watch in the market for the money.
18 size, nickel, guaranteed.
No. 11. Plain polished case, $1.25

In Lots of One Dozen, $14.10 Cash with order.

Trump Waterbury.
The best watch in the market for the money.
18 size, nickel, guaranteed.
No. 19. Engine-turned and shield design on back, $1.25

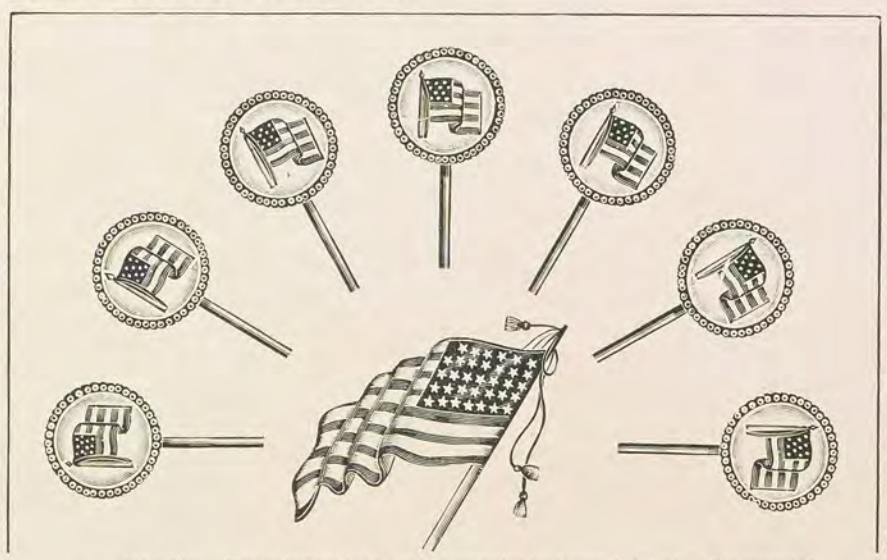
No doubt you have a large number of patriotic citizens in your town, ESPECIALLY LADIES, who are anxious to show their patriotism by wearing a souvenir. Send in your orders while the excitement is at its height.
PUT A SAMPLE LINE IN YOUR SHOW WINDOW.

THEY ARE BIG SELLERS.

PRICES ARE NET CASH.

No. 52 A. Sterling silver, oxidized bowl, 80c. each.
No. 53 A. Sterling silver, gilt bowl, 80c. each.

No. 70 A. Stick Pin. Plated mountings. $1.42 doz.



Stick Pins. Roman beaded border, white enameled background, American flag enameled in colors—red, white and blue. Will sell on sight. Put up on a neat card.
No. 64 A. Dozen on card, size of cut, 83c. doz.

No. 66 A.
Hard enameled.
Red, white and blue.
63c. doz. $7.00 gro.
No. 67 A.
Second quality.
23c. doz. $2.50 gro.

Silver-Plated. Gilt Bowl.
No. 54 A. U. S. Flagship Olympia and Rear-Admiral Dewey, 70c. doz., $8.00 gross.
No. 55 A. The U. S. Battleship Maine and Captain Sigsbee, 70c. doz., $8.00 gross.

THE MOST POPULAR MAN IN THE WORLD!

DEWEY!——Our Naval Hero——DEWEY!

Life-size Portrait of the famous Rear-Admiral. Size, 2⅓ feet long and 1¼ feet wide.
The most popular window attraction in America to-day. SEND FOR SAMPLE.

SINGLE COPY, 20c.; DOZEN COPIES, $2.35. *NO EXTRA CHARGE FOR MAILING.*

No. 62 A.
Rolled-plate mounting. Photograph of Battleship Maine. Back shows American flag.
21c. each.
$2.35 doz.

Rear-Admiral Geo. Dewey.
Size of Portrait, 2⅓ feet long and 1¼ feet wide.
SUITABLE FOR FRAMING.

No. 63 A.
Rolled-plate mounting. Silk ribbon in center of heavy beveled glass.
47c. each.
$5.38 doz.

No. 56 A.
Link button, enameled in colors,
25c. pr. $2.75 doz.

No. 59 A.
Navy dumb-bell button, rolled-plate,
29c. pr. $3.00 doz.

No. 57 A.
Roman beaded edge, enameled flag,
25c. pr. $2.75 doz.

No. 58 A.
Army dumb-bell button, rolled-plate,
29c. pr. $3.00 doz.

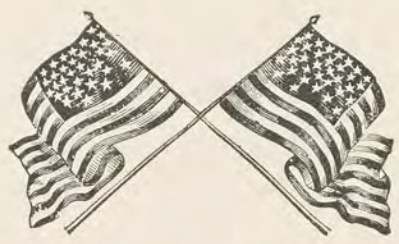
No. 74 A.
A big seller.
Lapel pin, enameled in colors,
50c. doz. $5.50 gro.

No. 50 A.
Beauty.
Lapel button, enameled in colors,
46c. doz. $5.00 gro.

No. 51 A.
Very neat.
Lapel button, enameled in colors,
38c. doz. $4.00 gro.

PRICES ARE NET CASH

Send orders at once to
Restless and Sleepless **B. F. Norris, Alister & Co.,** 101, 103, 105, 107 State St., CHICAGO, ILL.



Pittsburg and Vicinity.

Interest in this locality centers mainly on war and in rumors of war. Considering the present situation, business has been very good, and June, with its attendant weddings and commencements, is expected to liven up trade considerably. Orders from surrounding towns are slow, but, locally, returns are better than anticipated a month ago. This city receives a direct benefit from the war, insomuch that the mills are kept busy making armor plates, projectiles, boiler flues, etc., and thus a great deal of money is brought into town and kept in circulation.

Dealers have reaped a harvest in patriotic emblems, which are selling like "hot cakes." Heeren Bros. & Co. initiated the sales by putting on the market their Liberty and "Remember the Maine" emblems, which sold so fast that it was found to be practically impossible to fill orders. Sixty thousand in ten days is their record. Now, Al. Andrews has been dispatched on the road with these badges and some enameled flags, and he expects to go as far South as St. Louis. Klein, Kraus & Co. had a great run on their flags, and E. P. Roberts & Sons introduced a sterling silver and enameled flag, which, for neatness and daintiness, has no rivals.

Window displays, on a patriotic basis, are objects of rivalry. W. E. Stieren & Co., opticians, on Smithfield Street and Sixth Avenue, exhibited a number of war implements which, attracted a great deal of attention. Among the collection were observed shrapnel, bludgeons, machetes, spear bayonets, battle-axes and divers other formidable-looking weapons of different ages and nations.

C. C. Corcoran was right in line with war relics, and an old Spanish helmet and some ancient fortress keys, said to be from Morro Castle, attracted an appreciative crowd. The remainder of the jewelers were content to raise enthusiasm by using bunting and handsome flags, with patriotic emblems of all kinds, sizes and designs.

Sheafer & Lloyd's display of several six and one-pound shells, relics of the battleship *Maine*, owned by Lewis S. Clarke, created great comment.

The local offices of the Pittsburg and Western Railroad Company issued an order requiring their employees to purchase new and better watches. Fifteen-jewel watches hitherto have been used and have passed inspection, but all watches hereafter must be seventeen jewel, of the best make.

A limited partnership has been formed by Wm. J. Johnson and Nathaniel H. White, under the laws of Pennsylvania. The partnership is to be conducted by William J. Johnson. The general nature of the business to be transacted is buying and selling jewelry and such articles as are usually dealt in by dealers in such wares, and goods, excepting watches and chains. The general and special partners are William J. Johnson, of Pittsburg, general partner, and Nathaniel White, New York, special partner. N. H. White contributed the sum of $13,500 to the common stock as capital. This partnership began Feb. 1, 1898, and will terminate Jan. 31, 1899.

The death of Jeweler Max Wolff, Canton, Ohio, occurred on May 3d, and the remains were brought to this city for interment. Mr. Wolff was a brother of Robert Wolff, of Biggard & Wolff, this city. Local jewelers, friends of the deceased and his brother, were the pallbearers. Among them were William Roseman, traveler for Grafner Bros.; Ben. Biggard, of Biggard & Wolff; William Biggard, with I. Ollendorf; and Mr. Callowmen. THE KEYSTONE extends heartfelt sympathy to his family and friends.

George B. Barrett & Co. report an exceedingly prosperous month, and that the indications point to a fairly-busy June trade. Their travelers are having exceptionally good luck in their districts.

C. S. Hauser, a one-time Smithfield Street jeweler, and recently with W. J. Johnson & Co., has opened a new store on Butler Street near Penn Avenue.

W. J. Johnson expects to spend a month in the East on a business trip.

Klein, Kraus & Co. have added a chlorination tank to their manufacturing department for the purpose of catching the gold which is in solution in the baths used in electroplating.

John O. Slemmons, with Geo. B. Barrett & Co., spent two weeks in Philadelphia among friends. Mr. Slemmons is much benefited by his vacation.

Fred. Stieren, of the Stieren Optical Company, has returned to his work after a month's sick spell.

B. E. Arons and family will leave, June 1st, to spend the summer months at his beautiful country place, Arondale-on-Lake Erie. Mr. Arons spends Saturdays and Sundays with his family.

William Harrison, with Geo. B. Barrett & Co., and family, have taken up their summer residence at Emsworth, one of Pittsburg's handsomest suburbs.

Charles Spandan and Morris Baer, of this city, were New York visitors lately.

THE KEYSTONE extends congratulations to George V. Brady, Washington, Pa., who has been seriously ill for over a month, but is now able to make his usual visits to the Pittsburg trade.

Joseph A. Link, Chestnut Street, Allegheny, has decided to quit active business, and will shortly retire.

Buckbinder & Schenepp have leased the entire storeroom at 442 Penn Avenue, owing to increased business necessitating enlarged facilities.

T. N. Smith, Mt. Morris, Pa., paid a visit to Pittsburg recently, buying stock for his new store at Morgantown, W. Va., discontinuing his Mt. Morris store.

The matrimonial engagement of Miss Alice Bonn, daughter of M. Bonn, to Emanuel Kaufman, son of Mr. and Mrs. Simon Kaufman, was prettily solemnized at the Bonn residence.

J. R. Andrews, Homestead, Pa., disposed of his stock and fixtures to H. A. Bennett, prior to his leaving for California.

Gus Spies, who is holding an auction sale of his store and effects at Charleroi, Pa., will continue in business at Irwin, Pa.

The new jewelry store of I. DeRoy & Son, 222 Fifth Avenue, is very handsome, and attracts the attention of every one passing along Fifth Avenue. Mr. I. DeRoy, the head of the new house, has been in the jewelry business for the past thirty-eight years. Abe I. DeRoy, the junior member, has been educated in the same line of business from infancy. Everything is new in the store, and the stock is voluminous and comprehensive.

Goodwin King, of the Mermod-Jaccard Company, of St. Louis, paid a recent visit to the trade in this city.

Sam. F. Sipe expects to attend the wedding of his brother, J. C. Sipe, at Indianapolis, on June 15th. The annual trip abroad taken by Mr. Sipe will depend this year on the war.

Charles S. Moore, with Sam. Sipe, is spending his vacation of ten days among friends in Indianapolis.

Henry Cohen, formerly with Fred. Kaufman, New York, is now with Kingsbacher Bros., Wood Street.

D. S. Rosen expects to open up at Scottdale, Pa. Mr. Rosen was a former McKeesport, Pa., jeweler, but later of Bellwood, Pa.

C. Proelbocks opened up a new store at 407 Fourth Avenue, this city.

F. H. Hayes, Washington, Pa., paid several visits to Pittsburg during the past month.

H. B. Cubbison, New Castle, Pa., visited this city, last month, to buy stock, and at the same time make arrangements for 1000 exchange medals for the New Castle Knights Templar during the conclave.

Thos. Berisford's jewelry store, Piedmont, W. Va., was robbed last month of some money and a lot of jewelry.

Among other out-of-town jewelers who visited Pittsburg during May, on business bent, were: W. W. Whitsett, Fayette City, Pa.; H. R. Brown, New Brighton, Pa.; Adam Fisher, Greensburg, Pa.; E. H. Kennerdell, Tarentum, Pa.; Walter Kennerdell, Verona, Pa.; J. C. Hanna, New Castle, Pa.; William Hunt, Uniontown, Pa.; H. S. Johnston, Apollo, Pa.; George M. Bailey, Uniontown, Pa.; P. J. Manson, Jeannette, Pa.; G. A. Boss, Charles Loughman, McKees' Rocks, Pa.; Harvey Wallace, Smith's Ferry, Pa.; Jacob Wolf, Suterville, Pa., F. H. Marshall, Derry Station, Pa.; Robert Wolf, Smithton, Pa.; R. L. Kirkpatrick, Butler, Pa.; J. C. Rhodes, Homestead, Pa.; A. B. Kurtz, J. F. Murphy, Dawson, Pa.; Thomas Maher, Claysville, Pa.; Geo. W. Smith, Lancaster, Pa.; F. M. Langnecker, New Brighton, Pa.; L. Schmidt, A. Schmidt, Braddock, Pa.; S. H. Schmidt, Turtle Creek, Pa.; A. Merz, Sewickley, Pa.

Columbus, Ohio, and Vicinity.

Ohio has sent to the South and East nearly eight thousand soldiers, some of them, in fact, most of them, being from the best families in the State. They are fair representatives of the young manhood of Ohio, and many went with the ambition to make a record for themselves and for their native State. The boys come from all the professions and trades, jewelers included.

The effects of the war excitement on business here has been very disastrous, except in a few lines where the goods used by the troops were bought from local merchants. Bicycle stores and jewelry establishments have had little general trade. Jewelry stores, however, fared better than the wheel stores, for they sold thousands of flag pins and buttons, and hatpins, made of the regulation Government soldiers' buttons, or from National Guard buttons. These have become quite a fad here, and they can be seen almost everywhere. Girdles made of buttons from soldiers' uniforms are also seen occasionally. They make very handsome ornaments, and will likely continue to be worn until the war is over. Outside of these things the trade has been extremely dull.

Prices of farm products are rising, and it seems as if an era of prosperity was about to drop down upon the people of the rural districts. This will prove a blessing to the wholesale trade as well as to the dealers living in the small towns. There is now a big demand for wheat, corn, and horses, and it seems likely that there will be no decrease for some time to come. The surplus of cash in the country will find its way to the cities and thus, in an indirect way, all classes will be benefited by it.

An interesting meeting of the Commercial Travelers of Ohio was held at Dayton on the 27th and 28th of May. Preparations have been under way for some time for the annual meeting, and it proved a success in every particular. A highly instructive programme was presented, and the banquets were superb. Many places of interest about the city were visited, and plans for the coming season's outings were discussed. The wives, mothers and sisters of the members attended and enlivened the various meetings by their presence.

Albert M. Rickly, well known here in social and business circles, is dead. When a mere lad he entered the employ of L. Lesquereux & Sons and learned the jewelry trade. He remained with them for more than thirty years, and afterward began business for himself. He was a man of modest demeanor, retiring disposition, and was loved by all for his sterling integrity.

The explosion in the store of W. H. Harter, at Steubenville, on the morning of April 19th, is thought to have been due to gas. Insurance men and others have examined the premises and this conclusion was reached.

The Blauvelt Company has taken a room on the Viaduct and the members of the firm are well satisfied with the business so far.

Earl P. Sivercoal has closed out the assigned stock of J. C. Johnson, in this city.

Jay Culendar has opened a repair shop at Milton.

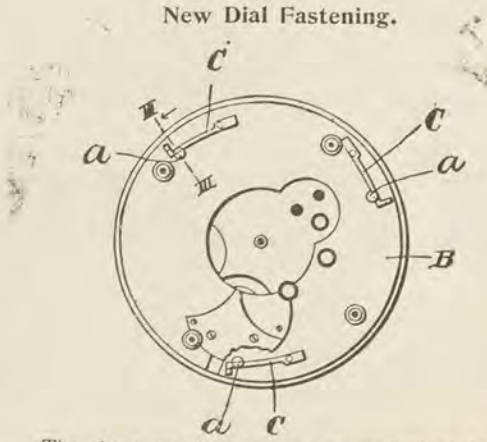
John Brenner has closed out his branch store at Niles. He will now devote his entire attention to his business at Youngstown.

Harry J. Smith, a jeweler of Stewart, is dead.

Geo. H. Bonnet gave away twelve gross of flag pins at his Zanesville store for advertising purposes.

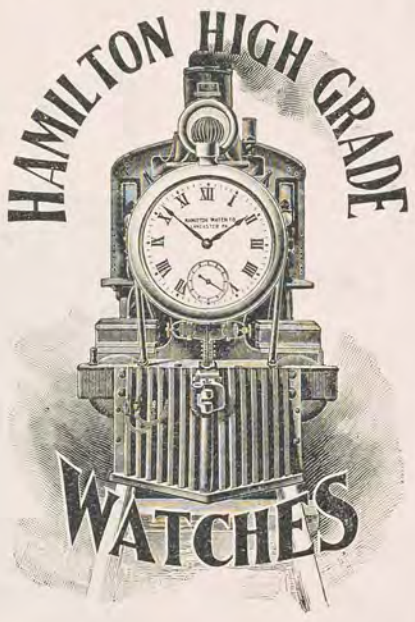
It is said William Parish and H. I. Scribner will open a new store in Columbus in the near future.

New Dial Fastening.



The above cut illustrates a new method of fastening dial feet for watches, patented by J. F. Lindvall, of Moline, Ill. The cut needs but slight description to make the invention understood. The springs *C* fall into notches in the dial feet *a*. We regard the invention very favorably.

Speaking of Railroad Watches



The following statistics are taken from the report of Mr. H. S. Montgomery, General Watch Inspector of the A., T. & S. F. Ry. Co., and will doubtless be of more or less interest to the trade. The total number of watches in use on the system is 1,315. During the year, 688 or fifty-two and three-tenths per cent. were condemned. The following table shows the kind and number of watches in use, the number condemned, and the percentage which failed to pass the examination:

	IN USE	CONDEMNED	PER CENT.
Hamilton	**25**	**6**	**24**
Elgin	369	207	$56\frac{1}{10}$
Waltham	613	172	28
Hampden	141	111	$78\frac{7}{10}$
Howard	51	20	$39\frac{2}{10}$
Columbus	31	41	$132\frac{2}{10}$
Rockford	20	46	230
Illinois	18	16	$88\frac{8}{10}$
Ball	13	4	$30\frac{7}{10}$
Swiss	9	12	$133\frac{1}{3}$
Gruen	6	...	...
Peoria	5	28	560
United States	4	3	75
Paillard	3	5	166
Seth Thomas	1	3	300
Tissot (Swiss)	1	1	...
Aurora	3	13	433

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THE TRUE BLUE

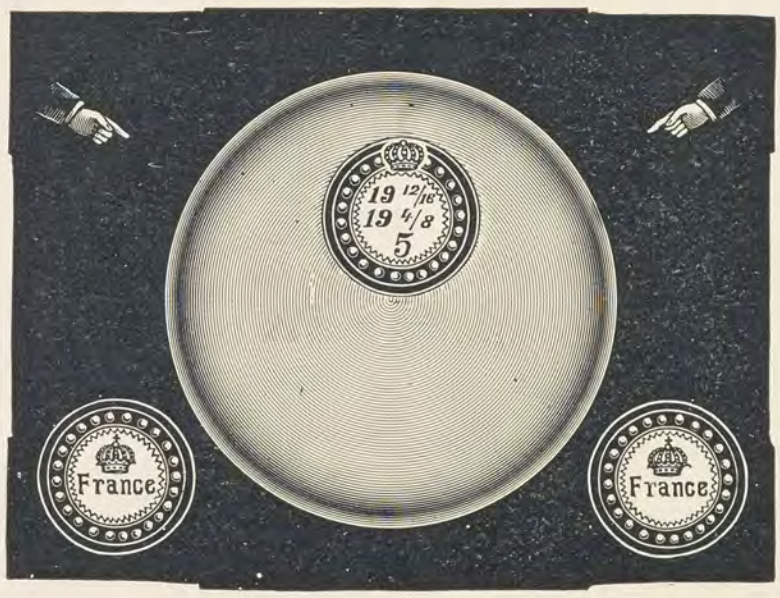
BEADED LABEL

WATCH GLASSES

THE GENUINE ARE LABELED

FRANCE

BEWARE OF IMITATIONS.



ASK YOUR JOBBER FOR THEM.

BEADED LABEL

WATCH GLASSES

THE GENUINE ARE LABELED

FRANCE

BEWARE OF IMITATIONS.

SUSSFELD, LORSCH & CO.,

16 RUE D'ENGHIEN, PARIS.

LORSCH BUILDING,
37 & 39 MAIDEN LANE,
NEW YORK.

To Secure a CONTENTED CUSTOMER

Sell him a **Krementz One-Piece Collar Button,** for dress shirts, as represented by cut.

KREMENTZ ONE-PIECE DRESS SHIRT Collar Button

PATENTED

PATENT SUSTAINED BY THE U.S. SUPREME COURT.

Made in 3 sizes, known as **7L, 8L AND 9L**

Guarantee: If from **ANY CAUSE** one should get damaged, either in the hands of the **DEALER** or **WEARER,** a new button will be **GIVEN IN EXCHANGE.**

The Standard American Collar Button.

Extra Long Post. Extra Width of Back.

SOLVES ALL COLLAR BUTTON PROBLEMS.

1—One piece.
2—Never break.
3—Head right shape.
4—Post right length.
5—Easiest to button.
6—Stays buttoned.
7—Easiest to unbutton.
8—**No lever or twist to bother.**
9—No repairs; customer gets new for old one without charge in case of accident of any kind.

18 K., 14 K., 10 K. GOLD, STERLING SILVER AND OWN MAKE 14 K. ROLLED-PLATE.

KREMENTZ & CO.,

49 CHESTNUT ST.,
NEWARK, N. J.

Workshop Notes.

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

"*Gold Chain.*"—(*1*) *How to polish the links of gold watch chains after hard-soldering?*—The first essential is to remove the fire-coat and restore the color. The fine link neck-chains are the most difficult to manage, because one cannot easily employ any anti-oxidizer, as it is apt to get on to the parts where the solder is to flow, and prevents the solder running into the joints. The best anti-oxidizer for chain-mending which has come to our notice is a mixture of borax and fine charcoal dust, made by rubbing a lump of this substance on a nutmeg grater. For restoring the color, if it was originally a Roman color, the best way is to gild with a fine gold solution, employing but a small anode and having the solution pretty hot, say from 130° to 140° F. Twist the chain at the discolored point so as to open the links, and also double it back at the same place, in order that the gilding solution has a good chance to act. Give a slight deposit of gold, then take out and scratch-brush and return to gilding bath. Repeat this three or four times if an extra nice job is desired. If the chain has been worn and has the look of ordinary jeweler's gold, put enough strong sulphuric acid in a genuine porcelain teacup to cover the part of the chain which has been discolored by heating. Have a little iron dish of dry sand which can readily be heated over a lamp. We show at Figs. 1 and 2 a very cheap and convenient device for this purpose. It consists of an iron ring about 4½″ outer diameter, with an inner diameter of 3″. Such ring is best made of cast iron, and should be about ⅜″ thick. It will be noticed that the inner surface of the ring is formed into teeth, to allow the hot air from a kerosene lamp to envelop the iron cup *C*, which is only one of those cheap seamless little iron cups or dishes which can be bought anywhere for three or four cents. Fig. 2 is a top view of the device with the dishes *C D* removed. The legs *B* are simply three pieces of iron rod about ¼″ diameter and of such heighth as to allow the lamp to set to the best advantage to heat the iron cup *C*. This cup is partly filled with sand, and the teacup *D* partially buried into it so as to heat the teacup equally. A jeweler should have at least two sizes of such tripods, one of the dimensions stated and another with the ring *A*, Fig. 2, 6″ in diameter. The legs *B′ B′ B′*, Fig. 1, are screwed into the holes *B B B*, Fig. 2. Such tripods are just the thing for heating gilding solutions. The proper quantity of strong sulphuric acid is placed in the cup *D* and heated, and then a few crystals of saltpeter are added. This solution has the property of dissolving the silver from the surface of the chain and removing that sickly green cast which is so annoying on gold articles after hard-soldering. This mixture cannot well be kept, as it rapidly absorbs water from the atmosphere and becomes useless. But sulphuric acid can be bought so cheaply (four or five cents per pound) that it is no great waste to throw it away.

Fig. 1

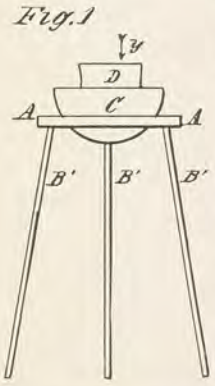


Fig. 2

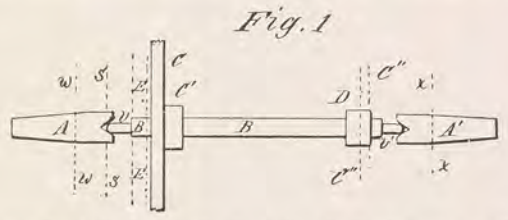
(*2*) *How to restore the color of Mexican filigree jewelry after repairing?*—Heat the article to a low red heat—that is, so the color can be seen in rather a dark place, like under the workbench; after cooling, place in a pickle composed of water one hundred parts, sulphuric acid five parts, and allow it to stand two or three hours, then rinse in water and dry in sawdust, when the silver will be snow-white.

(*3*) *Where can I procure a dial for an English chain lever watch, also case for same?*—Such dials can usually be found in the stock of tool and material houses who have been in existence for a good many years. At any rate, you can have a new dial made by the O'Hara Waltham Dial Co., Waltham, Mass. Any jobber can obtain or have a case made for you.

(*4*) *I have an English lever watch for repairs, made by John Moncas, Liverpool, which was repaired by a Cincinnati jeweler on May 28, 1842. The watch is in very fair condition. Can you tell me when it was made?*—John Moncas was in business from about 1830 to 1835.

"*Polished Brass.*"—*I thoughtlessly set two bottles of acid in my clock case and the fumes blackened the entire clock. Please inform me how to restore the clock and relacquer the pendulum.*—Regulators (and we presume your clock to be one) seldom have lacquered movements, but simply polished. On the other hand, the pendulum ball is lacquered. To restore the movement, it should be taken apart. The plates, if badly stained, should be dipped in a solution of cyanide of potassium, made by dissolving an ounce of this salt in a quart of water. Get a large flat earthen dish in which to place the solution, so the plates can be immersed flatwise. Rinse in pure water, wipe dry, and polish with a paste of rotten-stone and olive oil. Regulator plates seldom have a high polish; in fact, no better polish can be made than with rotten-stone and oil. It is not necessary to wash the plates after rotten-stoning, as we do not wish a high polish. Thorough wiping with dry, clean cotton or linen rags will give as good a finish to the plates as can be desired. The pivot-holes should, last of all, be carefully pegged out, handling the plates with a large clean cotton rag. The wheels are more difficult to manage on account of the steel pinions. In dealing with the wheels and pinions it is well to take them apart as much as possible. Such wheels as are riveted on the pinions should be left alone, but the main wheel and center wheel (if it has the friction spring inside the plates) should be taken apart. If the cleaning is done immediately after the oxidizing of the metal parts from the acid fumes, the wheels should be dipped in the cyanide solution above referred to, then well rinsed in pure water and dried in hot sawdust. After drying, they should be dusted with a soft brush, and the steel pinion oiled with clock oil and allowed to stand over night, in order to let the oil soak into all the crevices where the wheel is riveted on. In the morning brush the wheel thoroughly with a rotary brush in a lathe, using rotten-stone and oil. We have now to deal with the pinions. Usually such acid fumes produce a light red rust over the entire surface. Such rust is not deep, and can generally be polished away very quickly. For clock work, every workman should have hollow cone centers to go into the taper chuck and tailstock. Some workmen use a wire chuck, allowing the arbor of the pinion to protrude, but this is not good practice; there should be a support for each pivot. The idea will be seen by inspecting Fig. 1, where *A A′*

Fig. 1



shows the hollow cone chucks in longitudinal section. The hollow cone center *A* goes into the taper chuck up to the line *w*, and the hollow cone center *A′* goes into the tailstock up to the line *x*. We show also the wheel *C*, arbor *B*, pinion *D* and pivots *v v′*. For driving the wheel and arbor *C B* we have recourse to carriers or dogs, shaped as shown at Figs. 2 and 3. These dogs are made of hard brass wire about ¼″ in diameter, squared to about ⅛″ on the sides. The filing need not entirely bring the sides to an angle. Two screws, shown at *y y*, draw the pieces *E E′* together, clasping any piece in the notch *u*. The carrier pin *z′* is made of spring tempered steel, and should be about ⅛″ in diameter at the larger end, and it is better for being slightly taper. The holes *z z*, Fig. 2 are drilled at different distances from the center *u*. Such dogs will clamp quite a range in sizes, say from ⅛″ to ⅜″ or even larger. If we have two of these dogs we can place one on the hollow cone center *A*, say between the dotted lines *w s*, and another on the arbor as shown at the dotted lines *E*, Fig. 1. The cut at Fig. 3 is a view of Fig. 2 seen in the direction of the arrow *t*. In the cut shown at Fig. 1 the wheel *C* is not set on the pinion, but on the hub *C′*. The dotted lines *C″* show a wheel as if set on the pinion. It will be seen that by means of *A A′* we can place a wheel and pinion in our lathe and have support at each end, and also have it run dead true if it is true under any circumstances. Then by means of the carriers we can give it a rotary motion and polish the arbor by means of a boxwood slip and such polishing materials as the circumstances demand. For instance, if the rust has penetrated to any depth we can employ oilstone dust and oil; on the other hand, if only a slight red rust, Vienna lime and alcohol will effect a polish very quickly. Perhaps it would be well here to say a few words about Vienna lime. This substance is by far the most rapid polishing material for steel known in the arts. There is only one valid objection, which is, it will not keep any length of time, from the fact that it air-slacks. By air-slacking is meant that it absorbs moisture and carbonic acid gas from the atmosphere, and falls into a powder which is comparatively worthless for polishing. But by knowing one fact and taking advantage of it, Vienna lime can be kept any length of time. The method of preserving is to take a wide-mouthed bottle with a glass stopper, and fill it with lumps of lime nearly full, then fill entirely with benzine, which protects the lime from the action of the air. When any lime is wanted for polishing, remove a lump and shave off with a knife enough to do the job. Allow the benzine to evaporate, then wet up the lime with alcohol and use with a boxwood slip about 5″ long and ½″ wide. The job is revolved rapidly, and the slip moved back and forth as if using a pivot file. For polishing the outer ends of the pivots a center is employed, shaped as shown at Fig. 4. Such a center is made from a piece of steel wire which will fit, say, a No. 50 Whitcomb chuck, the part *F* being turned to fit the tailstock spindle. The hole in the L-shaped piece *F F′* being conical, allows the arbor *B* to bear on its shoulder, and we can get at the pivot to polish the end which protrudes through the clock plate and was attacked by the acid vapor. For polishing out the leaves we can use a piece of large pegwood (boxwood is better) cut wedge shape to fit the spaces between the leaves as

Fig. 2

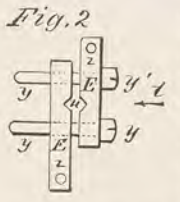


Fig. 3

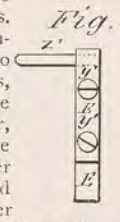
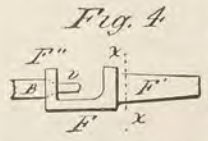


Fig. 4



shown at *G*, Fig. 5. At Fig. 6 we show a side view of Fig. 5, seen in the direction of the arrow *r*. The end of the piece *G* is worked back and forth in the space between the pinion leaves, in the directions indicated by the double-headed arrow *o*. If only a red rust is on the pinion leaves, Vienna lime will perfectly restore the polish. If any black rust pits are formed, the same kind of a wooden tool should be employed, except that oilstone dust and oil should be used before the Vienna lime is made use of. Have a stick like *G* for each of the substances, and also observe care to carefully clean off the oil and oilstone dust with bread-crumb made into a putty-like mass, before using the Vienna lime. For restoring a brass pendulum ball it is important to have a lathe which will swing the size of the ball, because the polishing should be done as the ball revolves. By taking this course all the lines or imperfections left on the ball harmonize with its circular form. The lacquering can also be best done as the ball revolves. In absence of a lathe, the ball should be polished by going round and round.

Fig 5

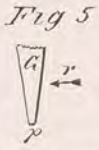
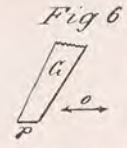


Fig 6



"*Amateur.*"—(*1*) *How can I make photoportraits on watches?*—See our reply to "Hypo," page 873, November, 1897, KEYSTONE.

(*2*) *Can such work be done by an amateur photographer?*—Not very well, as it requires an enameling furnace and a knowledge of the art of enameling.

(*3*) *Where can I get instructions if you cannot give them?*—Herman Miller, 2634 Oxford Street, Philadelphia, practices the art. You might obtain instructions from him.

"*Pivots.*"—(*1*) *A good device for grinding the pivots to the balances of nickel clocks.*—This problem is not easy to solve. In a broad way, we can say the situation demands two requisites: (*a*) a special chuck for holding the balance staff dead true; (*b*) a grinding device driven by a countershaft which will carry an emery wheel and can be attached to the slide-rest. We have this matter in the hands of our expert, who promises to give us something good in the near future.

(*2*) *The best way to bring the bridge to place in hard-soldering gold spectacles. I show in the accompanying drawing what I mean (see Fig. 7). In the cut G represents the frame, m the break, and n the bridge to be soldered over the break to strengthen the frame.*—The better way seems to be to apply the brace or bridge on the inside of the frame. This policy makes the job less unsightly. To carry out this plan have some steel disks made in semblance to the lenses employed. Such steel disk is a little thicker than the frame, but the edge is thinned down so that we can use it for a stake for beating out the end *a a* of the break. In illustration, let us suppose that in the open space *H*, Fig. 7, we have a steel disk which loosely fits the frame *G*. We place this disk in our bench vise so the jaws stand at the line *l*. Then set up on the vise, and the disk is fast; but the frame *G* is loose, because the disk is thicker than the frame. The edge of the disk *H* is so shaped and rounded that by hammer-stretching the ends *a a* the bridge *n* will go inside of the joint. In this case it is not necessary that the brace *n* should be of gold, as German silver or aluminum bronze will answer every purpose. Of course, it is to be understood that the inside of the brace *n* is channeled out to fit the edge of the lens. For holding the parts in place while the operation of soldering is performed we make some imitation lenses of mica, which are the same shape as the glass lens, except a little smaller. We show such a mica lens at Fig. 8. Near the outer edge we drill a number of small holes, as shown at *b*. These holes serve to lace binding wire through to draw the frame and brace *n* firm against the mica disk. In the present instance it is to be understood that the brace *n* is inside the frame *G*; but this system of binding will answer just as well if the brace or bridge *n* is placed outside. Sheets of mica for making the disk *I*, Fig. 8, can be had of any electrical supply house. For this purpose they should be about ₁⁄₃₂″ thick. It is well to have the holes *b* extend all around the disk *I*, in order that they may be utilized for a break at any point.

Fig 7

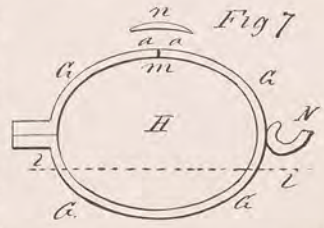
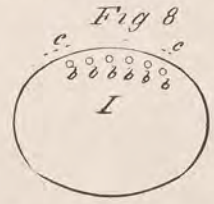


Fig 8



(*3*) *How to get exact time by telegraph?*—Most of the Union Telegraph Company's lines transmit time signal at exact noon, and all that is required is to be at a telegraph office when the signal is given, when comparison is noticed with some close-running timepiece.

(*4*) *What would be the probable cost of constructing a precision clock as per your description in your articles "Clocks," now running in your columns, provided a workman had ordinary tools, including lathe with wheel-cutting attachments?*—Probably from $20 to $25.

"*Enclosed find any old dollar. I still wish to keep my place in The Keystone. And am willing to pay the small fare for such grand journeys of information. Long may she go, is my best wish.*"—*Lee Danser, Camden, Ohio.*

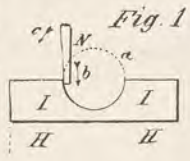
Arts Allied to the Jewelry Trade.

XCVII.

How to Line Up a Lathe.

IN fitting bearings for a lathe spindle, we must proceed on a different plan from the one pursued in preparing the seat for the rods forming the ways for our lathe bed. In those we only required a flat surface, along which the rod extends in a line of contact. In the present instance we must shape a concave surface to fit the spindle and also hold it so its axis is perfectly parallel with the ways. How to do this we shall now proceed to describe. The first thing to do is to attach the lower half of the gun-metal boxings to the standards, as described in our last preceding article. We then file out the bearing, to receive the lathe spindle, with the proper half-round file. This will be understood by inspecting Fig. 1, where we show the lower half of one of the gun-metal bearings. The filing is simple enough, as it only requires us to clean out the gun-metal bearing to take in one-half of the spindle, as indicated at the dotted circle *a*.

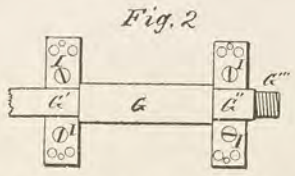
Fig. 1



Valuable Practical Instructions in Filing and Scraping

By taking the precaution of securing both the gun-metal bearings *I I* in place, we are enabled to fit our wearing surfaces with the greatest exactness. To better understand the situation we refer to Fig. 2, which is a view from above of the two bearings for our lathe spindle, with the lathe spindle shown in full outline. To carry out the detail of fitting up, we file both the gun-metal bearings *I I*, Fig. 2, to fit the spindle, which is to run in them as near as possible, observing care to maintain the axis of the spindle in line with the ways. When we get the bearing *I*, as shown in Fig. 1, so they take in nearly one-half of the spindle; that is, the recess in the gun-metal bearing to receive the part of the lathe spindle shown at *G'* lacks only about $\frac{1}{64}''$ of being $\frac{3}{8}''$ deep, and the one for the end of the lathe spindle shown at *G''* lacks $\frac{1}{64}''$ of being $\frac{1}{2}''$ deep, we can resort to the operation of scraping the hollow cylindrical surfaces of the bearings.

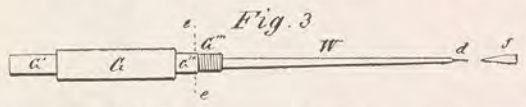
Fig. 2



This is an operation requiring a considerable manual dexterity. We show the method of conducting the operation at Fig. 1, where *N* represents the scraper as seen edge-wise, and the arrow *b* the direction in which it is pushed. As the scraper is pushed forward, the handle is moved in an arc in the direction indicated by the arrow *c*. To know exactly where to scrape we smear the lathe spindle at *G' G''* with a thin coating of lard oil and red lead, mixed to the consistency of thick paint, leaving only a very thin coating on the contact surfaces of the lathe arbor. This red lead will leave a black smear on the gun-metal surfaces to be scraped away. If the workman thoroughly understands the idea, and gets a little practice in using the scraper, he will soon get the skill to scrape a bearing to almost an absolutely perfect surface and which a little actual running of the lathe will secure an accuracy that is not attainable by boring out.

To attain almost perfect alignment, we place a wooden rod in the hole in the end *G'''* in which the taper center goes, which will reach nearly the entire length of the ways, as shown at Fig. 3,

Fig. 3



where *G' G G''* represents the lathe spindle, and *W* the wooden rod, in the end of which we place the small pointed wire *d*, which, by bending, is brought to turn true with the lathe arbor; that is, suppose we should place the fixed point *f* opposite to the point *d*, and revolve the lathe arbor in its bearings, the two points would remain opposite to each other during an entire revolution of the lathe spindle. To further improve our temporary testing device we make the affair shown at Figs. 4 and 5. The piece *M* is made of a piece of board about $\frac{1}{4}''$ thick, $5\frac{1}{2}''$ high and $6''$ wide, as shown in the cut at Fig. 4. The cut shown at Fig. 5 is a side view of Fig. 4, seen in the direction of the arrow *f*. We show a second view of Fig. 4, as if seen from above or in the direction of the arrow *h* at Fig. 4.

Fig. 4

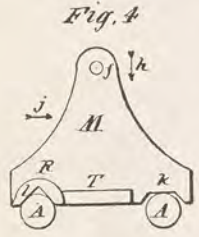
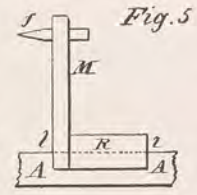


Fig. 5



A Most Crucial Test for Lining Up Lathes

We must get up another piece to complete our device for testing the alignment of our lathe. This last device is simply a wooden representation of the lathe spindle, and is shown at Fig. 7. This piece is turned up of hard wood, and is 4″ long, the part *V* is 1″ in diameter, and the part *V'* $\frac{3}{4}''$, and when resting in the boxings *I I* is a perfect representation of the lathe spindle. We insert in the end of *V*, as shown at *g*, a pointed wire, the same as the one inserted in the end of *W*, and by bending bring it to run true, as in former instances.

Fig. 6

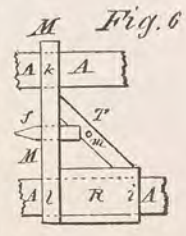
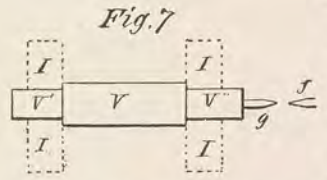


Fig. 7



We will now resume the construction of the device shown at Figs. 4, 5 and 6. The part *R* is also made of wood and is securely attached to the piece *M*. In the bottom of *R* is an angular groove which rests on one of the ways *A*. At *k*, Fig. 4, is shown an angular notch which rests on the way opposite to the one on which the piece *R* rests.

It will be evident on inspecting Fig. 6, which is a plan view, that the device we are constructing has three points of rest on the ways *A A*, that is, in the notch in the board *M* at *l*, and the tail of the piece *R* at *i*, Fig. 5, and also in the notch *k* in *M*, as shown in Fig. 4. These points are also indicated at *k*, *l* and *i*, Fig. 6. To give rigidity to our device, we add the brace *T* as shown in Fig. 6. From the inner edge of the brace *T* we suspend a small weight to hold our device steady on the ways *A A*. Before we commence our test operations we are to suppose the head block, ways *B*, ways *A A* and headstock are all rigidly in place. We are also to conceive the bearing *I I* for the lathe spindle finished to near a state of perfection.

We place device shown at Figs. 4, 5 and 6 on the ways in the near vicinity of the headstock. The piece *V V'* is next placed in the gun-metal bearings, and bring our testing device, carrying the point *f* in close proximity, and by bending the wire carrying the point, cause the two points to coincide. Of course, it is understood that the point *g* had been trued to correspond to the axis of the piece *V V'*. We next move the device carrying the testing point *f* to the far outer end of the ways *A A*, and placing the lathe spindle *G* and rod *W* in the bearings *I I*, determine if the axis of our spindle is parallel with the ways *A A*. For a rough adjustment, we can scrape or file the bearings *I I* to cause the point *d*, Fig. 3, to agree with the point *f* after it was moved away. As a rule, even workmen who are conceded to be skillful persons by their brethren in the trade, have but a rude idea of what "lining up" means.

A Lost-Diamond Story.

The *Kansas City Journal* says: "A flour merchant at Edgar let the story get out that while he was stooping over his flourbin a $150 diamond ring had slipped off his finger into the flour. He appeared to be greatly exercised over the loss, got a notice in the local paper, but finally announced with a sigh that he would have to give it up; that the ring was in the flour somewhere; that he supposed it would turn up in a sack of flour, but he had no idea what one. Well you ought to have seen the boom that guileless man had in the flour trade. For the next week he had to hire extra help to fill sacks out of that bin. One man who never bought a sack from him before came in and laid in a winter's supply. And the smooth merchant whistled softly as he filled the sacks and winked the other eye."

Repairing Large Holes in Single Tube Tires.

Is there any sure way, says a correspondent of *The Cycling Gazette*, of repairing large holes in single tube tires, by vulcanizing, so that they will not bulge out at that place when the air pressure is in the tire?

In the repair of single tube tires the greatest amount of ingenuity at the command of a workman is often required. And it is in the repair of single tube tires that a wide field is open to those who care to excel and endeavor to perfect themselves in work usually thrown aside as impossible. Every day single tube tires are discarded that are still good tires, with the exception of some one bad hole which the average repairman would not attempt to fix.

In repairing any hole or cut in a single tube tire first trim the edges of the hole carefully and then cut away the rubber tread down to the canvas all around the hole and out from it each way about half an inch. Now take a small wire with a rag wrapped around one end which is loaded with gasoline, and clean the interior surface of the tire around the hole as much as possible in this manner. Cut a piece of patching rubber about three-quarters of an inch larger all around than the hole in the tire. Clean one side with gasoline and fold it up, clean side in, into a sort of a cone, with the center of the piece as the apex. Push this through the hole, point downward, using a pair of plug nippers if necessary. When it is freed on the inside of the tire it will open out flat, clean side up. Be careful to hold the tire during this operation so that the patch will not drop around to the other side of the tire. Now with a small stick coat the inside of the tire around the hole with rubber solution, and when this has had time enough to become "tacky," press the tread down and pick up the rubber patch. The inner tube of the single tube is now patched. Take a needle and some strong linen tread, and darn the hole from the outside. Take the stitches far enough back from the edge of the hole to insure against pullling out, and be sure not to let the needle pierce the patch just put on. Do the darning as closely as possible, and see that it does not project above the level of the tread. When the darning is finished it will be strong enough to stand the air pressure, and as the patch on the inside is airtight, the rubber tread at this point will not have to stand the pressure or hold the air in. After the darning a coat of the uncured rubber solution is applied and the hollow filled with the pure gum as usual. Then vulcanize. If the original hole be a small one, it will be advisible to enlarge it to at least one-quarter inch in diameter.

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Novelties in GOLD, SILVER and PLATE.

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WE DUPLICATE ANY FINISH on Builders' Hardware.

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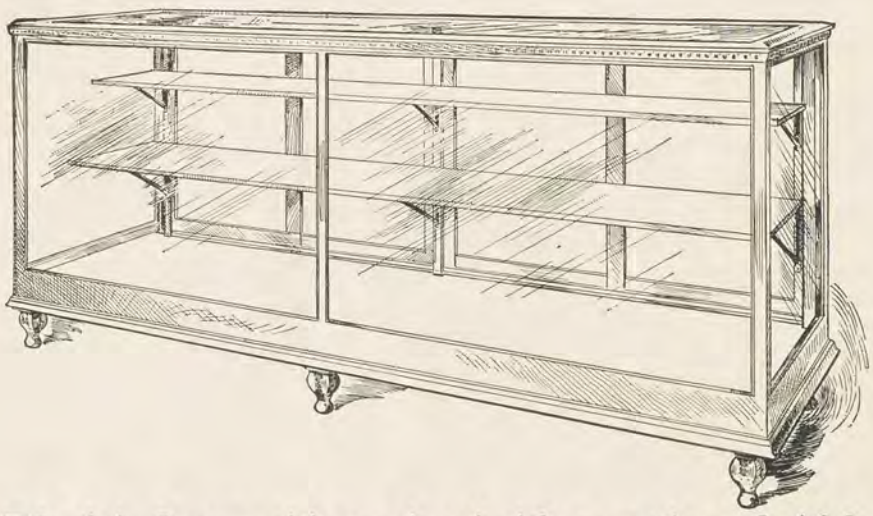

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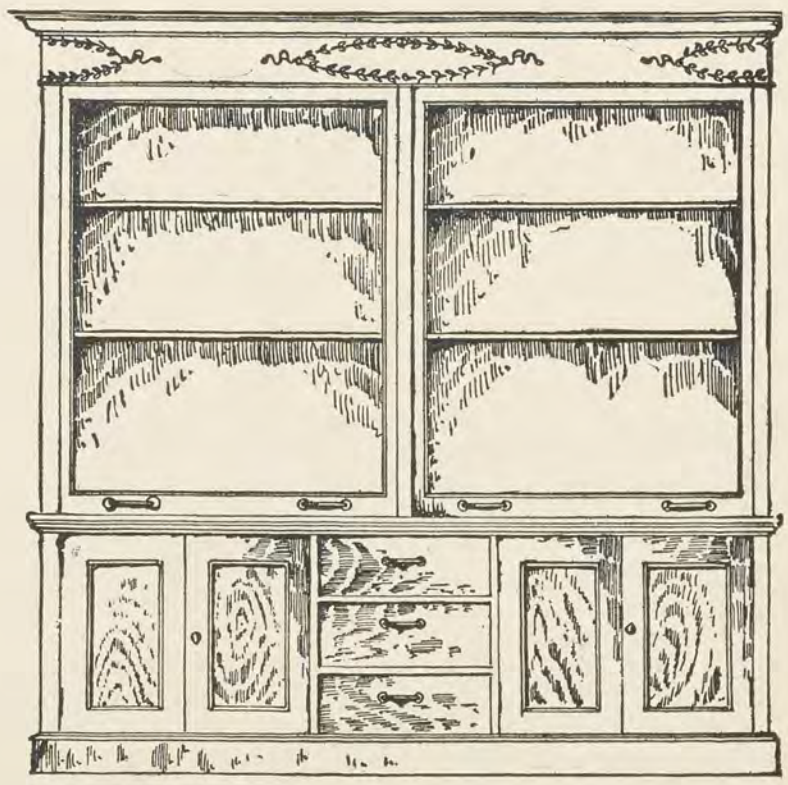
Jewelers with a keen eye in every case relating to their business, saw at once the beauty, utility and cheapness of our **"IDEAL" CASE.**

It is made of quarter-sawed oak, or other wood desired, highly polished, beveled plate-glass top, double strength glass front, ends and doors, has two highly polished shelves of same wood as case, supported by Tom's adjustable brackets, metal legs six inches high, and doors run on steel tracks.

Dimensions:—Length as ordered, 28 inches wide, 43 inches high. upper shelf 12 inches wide, lower shelf 16 inches.

The construction of this case is first-class. It has a nicely molded top ornamented with egg and dart.

A BEAUTIFUL CASE.



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Net price, **$46.00.** Worth $64.00.

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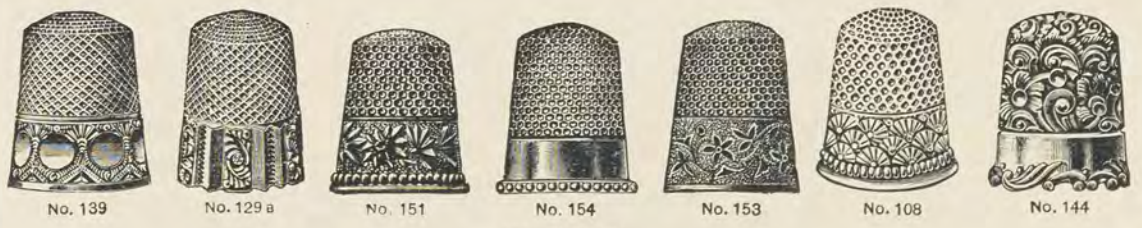

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Sound Advice from Sundry Sources.

The Advantage to Retailers of a Bankruptcy Law.

The indifference of the average retail merchant to bankruptcy legislation has always been to me a matter of great surprise. It is only another illustration of the fact that men take very little interest in affairs in which they are vitally interested, except when such affairs are brought home to them by a direct demand upon their pockets. As a fact, no class of citizens is so vitally interested in the passage of an equitable and just bankruptcy law as are the merchants in the smaller towns. Although this class of citizens, by reason of its great number, has within it the power to bring enough influence to bear upon Congress to cause it to pass the law, yet no class, as a class, has displayed so little interest in the measure.

Every merchant, particularly those doing business in the smaller towns; every credit man, every jobber and every manufacturer knows that one of the greatest evils with which the retailer of to-day has to contend is the rascally dealer who leaves his conscience behind him when he goes to business. A man of this sort starts in with the idea that he is going to make money out of his venture by hook or crook, and proposes to feather his nest by illegitimate as well as by legitimate means. He commences by underselling his neighbor at prices against which no legitimate competition could exist. He does this knowingly, and under the existing laws of most States he has more than ample opportunity to reap a rich harvest, regardless of the price at which he sells.

AS TO GIVING PREFERENCES

Finally the inevitable crash comes, and with it the foreordained preferences to members of his family. With these preferences he can easily manipulate the destiny of the stock that remains, and he can also obtain settlement, if he so elects. Accordingly, in a very short time, he is again launched upon his career of dishonest competition with the man who is trying to earn a living and pay his debts in full. Under a Federal law, which would put such rascals to the rack, the possibility of competition of this character would be entirely wiped out.

Another reason why the retailer is interested in the passage of an equitable and just bankruptcy law is that no man, however strong financially to-day, is secure against the unforeseen, which may occur to-morrow. Under an equitable Federal bankruptcy law the honest retailer, overtaken by misfortune, will have a speedy and honorable method of returning to business and continuing his efforts in the community.

It is a well-known fact that in assignment cases it usually happens that there are one or more rapacious creditors, who, under existing laws, succeed, when they so desire, in keeping a man out of business, no matter how honest the debtor may have been. In any event they are able to put upon him the stigma of forcing him to do business in the name of somebody else. This of itself handicaps his credit, and indirectly forces him to pay more for his goods than he should. These are only a few of the many reasons that could be cited why the retailer ought to favor the passage of a just bankruptcy bill.

THE TORREY BANKRUPTCY BILL

The Torrey bill, which is now being urged for passage in Congress, is a bill that has received the approval of the broadest-minded men of the country, who have given the matter of bankruptcy the attention which it deserves. It is just and equitable to the last degree. Those who are entitled to the benefits of its provisions will secure them, while those who are unworthy and dishonest will be checked. Its provisions have been very aptly summed up in a trite phrase: It is a "square deal" all round. The retailer, therefore, can do himself no greater service than to promptly write to the Congressman for his district and to the Senators for his State, urging the early passage of the Torrey bill. —Henry A. Gleick.

★

Are Assignments Necessary?

It has been the experience of a vast number of manufacturers and jobbers who are selling their goods largely on credit, that when a customer, who is strictly honest, desiring to pay his debts in full, becomes discouraged from the stress of hard times, or from being pressed for payment on accounts a little overdue, and acting from a desire to serve all alike, makes a general assignment without preferences, he takes a step which in many cases is entirely unnecessary. It is one that results only in a sacrifice of the debtor's business, and the payment of a very small percentage of his debts. While an assignment under the circumstances named is strictly legal and not subject to severe criticism, from a moral point of view, yet it has come to be regarded among large givers of credit as generally injudicious. It certainly is not the plan that is the best for paying debts.

HOW ASSIGNMENTS CAN BE AVOIDED

Upon the assumption that the debtor is honest, and has no desire to give preferences, but wishes his estate to be used in paying, pro rata, assignment proceedings should be avoided in every possible case. The great objections to an assignment are that thereby the debtor delivers his business over to be managed by an outsider, who cannot obtain the good results that the owner can secure. The assignee is obliged to close up the business by forced sales, that rarely bring more than a small percentage of its value. As a final result, the owner loses his business and sees his assets greatly reduced, with only a very small amount of his debts actually paid.

This question then naturally arises: Are assignments really necessary, and if they are not necessary, how can they be avoided?

As the world has grown older, there has been an improvement in business practice and in business ideas, as well as in many other directions. There has come to prevail a kindlier feeling for the honest debtor upon the part of the creditor than prevailed in earlier days. At present harsh plans of collecting and pre-emptory demands for the settlement of obligations are not the methods most in favor with the jobbers and manufacturers. Instead, there is manifested in active business practice much more of the spirit of the Golden Rule.

In cases of business embarrassment the first step upon the part of the debtor should be a conference with all his creditors, at which a complete and honest statement of his condition is submitted. Business men engaged in large transactions are, in a great majority of cases, fair minded men. Where a debtor presents a truthful statement of his embarrassment, it is their inclination, in nine cases out of ten, to at once make some satisfactory arrangement with him, either in the form of an extension or a compromise. Thereby the debtor's business is saved to him, and a much larger proportion of his indebtedness is paid than would follow from a general assignment.

A customer saved is worth much more to a creditor than a failer or ruined customer, even though in the latter case the same amount of debt has been liquidated. Every credit man, therefore, will put forth every effort to save an honest debtor, even though the first result may be a loss to his house. If these conclusions are correct, then it is an excellent counsel to give an embarrassed business man to promptly consult with his creditors, taking this step before making a general assignment or giving a chattel mortgage. —D. C. Delamater.

Keep Everlastingly at It

PERSISTENCY is characteristic of all men who have accomplished anything great. They may lack in some particular, may have many weaknesses and eccentricities, but the quality of persistence is never absent in a successful man. No matter what opposition he meets or what discouragements overtake him, he is always persistent. Drudgery can not disgust him, labor can not weary him. He will persist, no matter what comes or goes; it is a part of his nature; he could almost as easily stop breathing. It is not so much brilliancy of intellect or fertility of resource as persistency of effort, constancy of purpose, that gives success.

★

Excessive Leniency to Debtors.

Many have learned by dire experience that some severity must be employed toward debtors; for when merchants are too kind they often hurt both themselves and those who owe them, by excessive mildness and mercy in refraining from pressing their claims. It is better for both creditor and debtor to have the contract closed according to agreement. Unnecessary delays where the debtor is able to meet his obligation places the creditor in an unfortunate position, for he lacks cash with which to pay his bills, and he in his turn may be forced into an unfortunate debtorship. His difficulties begin to accumulate from the time he begins to be lax in requesting payment of debts and he becomes involved in a labyrinth of misfortunes which have primarily arisen from the employment of unbusiness like methods. This much to be deplored form of business laxness causes more trouble, perhaps, than any other. Such leniency on the part of creditors frequently arises from the fear that debtors will be offended if payment is urged; thus the latter are allowed to take advantage of a mistaken kindness, which they often unhesitatingly do, and spend money which is not rightfully theirs. Probably the best phrase which could be used to describe the condition which this finally develops, is demoralization of both creditor and debtor. Each becomes more lax in managing his affairs until a complete business dissolution occurs. It would be far better to urge payment from a debtor, even if he grew offended; when he paid his bill his name could be removed from the books without causing much sorrow. The good will of such a person is not worth having, particularly when it is obtained or retained at such heavy cost.

AS LITTLE CREDIT AS POSSIBLE

The constant care of the dealer should be to see how little credit he can get along with and not how much of it he can secure. Competition among manufacturers, jobbers and those generally who have goods to sell is so keen, and the anxiety to sell goods so great, that it is always easy for the average dealer to secure more credit than is good for him. This is particularly true where the dealer has had just a large enough degree of success to make his business appear prosperous to himself and to other people.

To the Trade

THE TRUMP WATCH

(18 Size)

so favorably known to the trade will be superseded by a new 14 size watch at the same price. The latter will be ready for delivery July 1st.

Our new catalogues and price-lists will be ready at that date, and will show an entire change in our line of casings and arrangement of styles.

The July number of this journal will show many of our new patterns.

THE WATERBURY WATCH CO.

WATERBURY, CONN.

NEW YORK OFFICE,
37 & 39 Maiden Lane.

CHICAGO OFFICE,
Silversmiths' Building.

SAN FRANCISCO OFFICE,
Call Building.

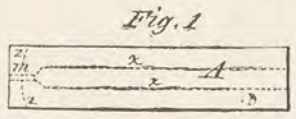
American Lathes and Their Attachments.

XCII.

About Boring a Hole Straight.

BORING a hole axially and straight into the end of a metal cylinder is a practical mechanical problem which, until recently, has not been achieved with anything like a flattering success. The Pratt & Whitney Company's machinery, as exhibited at the Columbian Exposition, at Chicago, for boring rifle barrels, left but little to desire in such matters. As far as boring out the blank *A*, Fig. 1, is concerned, a slight inaccuracy will make but little difference, from the fact that the process we have adopted makes such errors self-correcting in a great degree. The main points to achieve, in this instance, are to have the axis of the hollow cylinder, represented by the dotted lines *x x*, perfectly agree with the outer cylinder, represented by the full lines, and then to drill the hole *m* to also agree axially.

Fig. 1



Maintain Accuracy from the Outset

It is of vital importance that the shell of a wire chuck should be of equal thickness throughout. This will be understood by inspecting Figs. 2 and 3. At Fig. 2 we show a side view of a finished wire chuck, and at Fig. 3 we show a vertical section of same on the line *w*, and seen in the direction of the arrow *y*. Now it requires no argument to show us that each of the three segments *t t t*, Fig. 3, must be of precisely the same width and thickness in order to close in alike by the action of the drawing in spindle, and it follows as a self-evident sequence that if they do not close in alike, they cannot hold work true.

Fig. 2

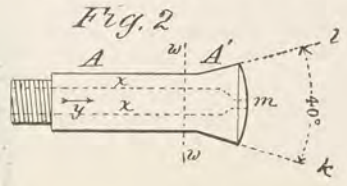
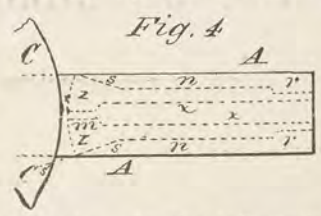


Fig. 3

Perhaps it would not be amiss to describe the process by which wire chucks were made not so many years ago. A lathe large enough to take a wire chuck of such size as would receive ½" drill rod was employed. We show a portion of such a chuck at *C*, Fig. 4, with the drill rod at *A*. Enough drill rod was allowed to protrude from the chuck to form such a wire chuck as the workman proposed to make. In the tail stock spindle was placed a drill of the proper size to bore out the shell to the dotted line *x*. The next operation was to turn off the outside of the chuck to the lines *n n* and *s s*; the latter representing the cone of the chuck. The slide rest employed was much the same style as now in common use with American lathes, that is, with two slides and two traverse screws.

Fig. 4



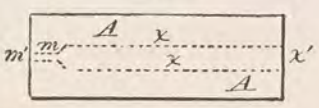
The lower slide was set to cut at right angles to the axis of the lathe, and the second and upper slide made to swivel to any angle. Lathes of this kind, employed for making wire chucks, usually had two pin stops to the swivel, which at once and without adjustment set the upper slide to cut parallel to the axis of the lathe, or to correspond to the dotted line *u*, Fig. 4; while the other stop set the slide to cut to the angle *s s*. The part *r* was turned to the proper size and a screw turned upon it. The finishing, to accurately fit, was mostly done by draw filing, testing the size as the work progressed by a templet representing a lathe spindle. We have seen repeated instances where the thickness of the shells like *t t t*, Fig. 3, varied fully one half, that is, one side was twice as thick as the opposite.

Chucks made in this way were finally placed in a lathe which was a duplicate of the one in which they were ultimately to run, and then they were centered and drilled from the outside. As the art of lathe construction advanced, chucks were hardened at the outer end and the hole lapped out with a diamond lap. But it is only more recently that the importance of having the three wings, arms, branches, or whatever we may term them, of equal spring force, has received proper care. Such equality did not make so much difference, provided the piece to be held was always of the same size. But such conditions were impossible, and wire chucks must be made to adapt them selves to a slight range of sizes.

The Perfect Wire Chuck

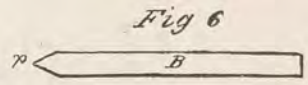
Of course it makes not the slightest difference how the hole at *x*, Fig. 1, is drilled, provided it is round and leaves a shell of equal thickness on all sides; but the uncertainty of such results by any of the appliances available in the ordinary workshop prompts the adopting of a system which does not admit of any appreciable uncertainty. In explanation, let us suppose that we drill out the blank *A*, Fig. 5, to the desired size, as indicated by the dotted lines *x x*. To insure perfect equality of the shell we continue the boring of the small hole from the *inside*. To aid in obtaining the best results we turn up a plug which exactly fits the hole in the blank *A*, and provide at one end a conical point, such point being perfectly central.

Fig. 5



We show at *B*, Fig. 6, such a plug or bolt. The cutting angle of a drill is usually about 90°, and if we turn the point *p* to an angle of 60° we will, in every instance, secure perfect centrality for the small drill which drills hole *m*, by placing the plug *B* into the hole *x* and striking *B* with a small hammer, so as to perfectly center the hole *x* for drilling the small hole *m*, Fig. 5. If we insert cone centers in the small hole *m* and larger hole *x*, and turn up our chuck on these centers, we can rest assured that our chuck will have equal thickness of walls on all sides, and give the highest possible assurance of superior accuracy.

Fig 6



The Retailer's Importance.

The retail merchant is the pioneer of civilized trade, the promoter of incipient, social, educational, municipal and intellectual development, the patron or leader of local manufacturing activities, and the supporter of lay and Christian teachings and charities.

As his field widens and civilization expands, his burden grows heavier and his profiits become relatively less, and no class has less influence in political and legislative matters, or suffers more from demagogical and strategical legislation.

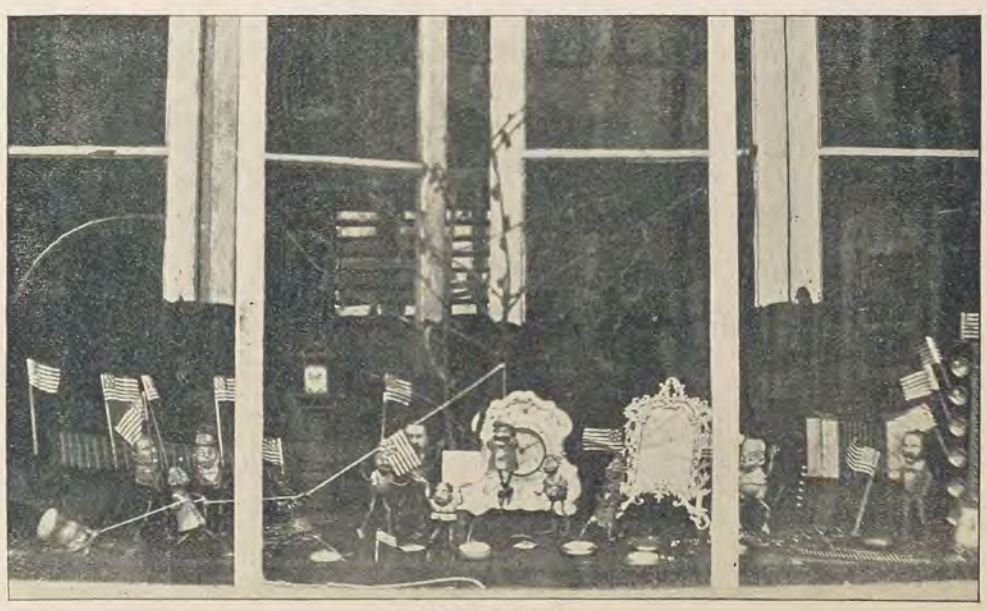
Strangely enough, he is considered less worthy of protection and legal safeguards than the manufacturer, and must share with the jobber, but to a much greater degree, the bitter trials of industrial strikes, commercial panics, and all local depression resulting from the decrees of providence, or, as the law term hath it, "the act of God."

The retailers, in short, are the basis and culmination of the distributing trade; the twigs, as it were, of that tree of trade whose leaves are for the temporal refreshing of the nations, and the tree which is too closely pruned will die. It is time that the claims of the retailer to legal protection, financial accommodation, just consideration by the law-making and tax-raising power, and generous patronage by their fellow-citizens, were more seriously considered and acted upon.

That nine out of every ten retailers are to be counted among the most liberal and public-spirited citizens of their city or town is indubitable, and no class of men, except a doctor or a minister, combine good deeds and conscientious labors to so great an extent, while none are so indispensable to municipal growth and local prosperity. —Ex.

A War Window-Dressing.

The war furnishes the window-dresser with the opportunity of a life-time, and it is being used to advantage all over the country. A display that attracted much attention and created a great deal of amusement is shown in our illustration. It represents a number of brownies hanging General Weyler, of bloody memory, the little fellows pulling the fatal rope with evident satisfaction. The display was designed and used by C. O. Moyer, Selin's Grove, Pa., who is very ingenious in devising attractive window dressings. The details of the hanging were well worked out, and the General was despatched amid the waving of flags by the little folk and general rejoicing on the part of the spectators.



A PATRIOTIC WINDOW.

Unsolicited Endorsements

are of greater value and of far more **INFLUENCE** than any other kind.

The mind comprehends that which is *meritorious* and recognizes that *quality* which commands attention and admiration.

THE EFFORTS made to advance the students that attend

Hutchinson's School for Watchmakers, Engravers and Opticians

to that degree of thoroughness have been recognized by the trade throughout the United States, and our graduates continue to add REPUTATION to that high standard which this School has maintained for the past ten years.

Get our Catalogues. **ATTEND OUR SCHOOL.**

Address J. L. HUTCHINSON, Supt.

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MANUFACTURERS OF ***BICYCLE STAMPINGS,***

CYCLE BOLTS AND NUTS.

CLARKS' 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 Jeweling 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.

These Two Cuts Represent the Front and Back of Our

Souvenir Spoon

which is especially adapted to any section in any State where underground mining is carried on. As shown here, the cable, running down the back of the handle, forms the word "Montana." For the trade in other States we have the same spoon with the back of the handle plain below the tools. The detail on the front of the spoon is interesting and suggestive. You will notice the miner at the windlass; the hillside, with its growth of pine, behind him, and the sky above; the ladder commencing at the platform and reappearing below; the bucket being hoisted, and the "pardners" working in the shaft.

This spoon is considered by all experts to show exceptionally fine die work, original in conception and perfect in detail, and to better illustrate the mining industry than any other spoon that has been produced in this country. It is the exact size of the cut; is sterling silver, and very heavy. It retails for $2.50.

THE PRICE to the trade will be, in lots of one dozen or more, $15.00 per dozen.

For any number less than one dozen, $16.50 per dozen.

A single spoon, $1.50

Prices are net 30 days, and subject to no discount.

IN ORDERING, please state whether the spoon with the "Montana" or plain back is wanted.

When parties ordering are unknown to us they should send references.

Hight & Fairfield,

Butte, Montana.

To the Jobbing Trade Only

THE BEST IS THE CHEAPEST.

Buy the **Genuine Gold Tipped Waltham Resilient Mainsprings.** Every Spring is guaranteed. The tips and braces are made of a composition metal that will not rust and which is more tenacious than soft steel.

Sole Agents, **HENRY ZIMMERN & CO.,**

Importers of Watchmakers' and Jewelers' Supplies. 47 Maiden Lane, NEW YORK.

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1 Dozen

..GENUINE..

American

GOLD-TIPPED

Resilient Mainsprings.

Every Spring Warranted.

For *Style*

Workshop Notes.

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

"*Kurus.*"—(1) *Please give me a formula for a photographic lens for ordinary instantaneous work.*—A good photographic lens requires to be corrected both for chromatic and spherical aberration, and no one who is not high up in optics can hope to succeed in making a wide apperture lens which will give any satisfaction. The flint and crown glass employed must be selected to compensate for chromatic errors. The reason fine photograpic lenses cost so much money is, simply because they require great care and skill to construct them. While there is a certain satisfaction in taking instantaneous pictures, one never gets as artistic results as when a time exposure of three or four seconds is employed.

(2) *How to blacken brass and steel in optical instruments?*—Dissolve fifteen grains of shellac in an ounce of alcohol, then add enough lampblack to make a very thin paint, and paint over the inside of tubes, etc. This color dries a dull dead black.

(3) *Can you give me instructions for making a press for embossing stationery?*—You will find a press of this kind described on page 256*d*, March, 1892, KEYSTONE.

"*Stove Hook.*"—(1) *How can I cheaply tin or plate a wire bracket about 12" long, also sheet metal 4" diameter? Would the Russian white-metal process answer for this purpose, and would the articles have to be buffed before or after plating?*—You can buy wire already tinned and make your bracket of that, or you can tin the bracket after it is made. It is not necessary that an iron or brass article should be polished in order that the surface can be coated with tin; all that is required is that the surface to be tinned is free of oxide. Ordinary sheet tin is made by perfectly removing the scale or oxide by either sulphuric or muriatic acid and then dipping in an iron vessel filled with melted tin, covered with lard to keep the tin from oxidizing. Although the process reads very simple, still one who had no practical experience would succeed but very indifferently in making sheet tin. Probably your better way would be to tin your wire before you made your bracket, using melted metallic tin free from lead for a bath through which you draw the wire. The wire could probably best be prepared for receiving the tin by smoothing with emery paper, and finally wet with chloride of zinc just as it is passed into the bath of melted tin covered with lard. The so-called Russian white-metal, which is chiefly composed of tin, can also be employed if the wire is free of dirt and oxide. You will find this process described on page 120, February, 1898, (Dip Plating), KEYSTONE. The same remarks we made as relating to the wire will also apply to the sheet metal disks.

(2) *Can I bronze on wire or sheet tin, and how could I do it at a low cost?*—For bronzing articles of the class we think you are desiring to make we think the better plan would be to use the so-called "liquid bronze," which is simply bronze powder mixed with some transparent hard varnish or lacquer. The best varnish for this purpose is some of the collodion lacquers. You can procure these lacquers of the Egyptian Lacquer Co., New York City, and we presume you can obtain the liquid bronze of them, also. This mixture is applied like paint with a soft camel's-hair brush.

(3) *I have a lathe which swings 10", and is 42" in length, and one of the sides of the bed is gradually warping and springing inwards. Is there any way I can bring it back to its normal condition?*—We think if you look the lathe carefully over you will find some undue stress on the bed from some source, and if you remove this stress you will remedy the trouble. We have often known castings to spring from having the outside hard scale planed off, but after the metal had been subjected to a second planing we never experienced a change such as you speak of. It would also be well to look to how the lathe stands, the floor may be settling away to one side.

"*Experimental Plater.*"—[This correspondent writes us quite a lengthy letter, which we condense as follows. We cannot very well divide the advice asked into separate questions, but give a summary of the entire letter and combine the replies in one answer. We have seldom met with a querist who required to be told so much in regard to what he should not do.]—ED.

I have been attempting to plate with a small Smee battery which I am satisfied is in good working order. I made my own gold solution by dissolving ten-karat gold in aqua regia (one part of nitric acid to two parts of hydrochloric acid). To twenty grains of the chloride I added one ounce of cyanide of potassium. I placed the plating solution in a glass vessel and used a piece of ten-karat gold for an anode, attaching it to the zinc side of the battery. I attached a piece of silver to a wire leading to the other pole of the battery. I was careful to place a piece of gold wire on the end of the wire having the anode attached, to keep all foreign matter out of the solution. The silver would not take on a plate at all, but would dissolve. I tried the bath at different temperatures and with different strengths of current. I cleaned the articles. I tried to plate very carefully. If you can help me in any way I shall appreciate it.—In the first place, a Smee battery does not afford enough electro-motive force to decompose a composite solution, that is, a solution containing both gold and copper. To decompose a copper cyanide solution you will need at least five volts, or an electro-motive force equal to about three Bunsen cells. You can deposit a simple coating of pure gold by a single Smee cell, but not an alloy of gold and copper, as is the case of ten-karat alloy. Further, you cannot successfully make a double salt of chloride of gold and copper by dissolving ten-karat alloy in aqua regia. To make chloride of gold you dissolve pure ($\frac{999}{1000}$) gold in nitro-muriatic acid (this combination is also called acqua regia). Chloride of copper is formed by dissolving copper in hydrochloric acid. In connecting up your anode you should have attached the anode to the copper or platinized silver pole of the battery, and the article to be plated to the zinc pole—in fact, you had your battery connected so it sent the current through the solution in the wrong direction, which accounts for your silver plate dissolving in the cyanide solution. If you desire to do ten-karat or fourteen-karat gold plating with a battery, you will need a battery of much more power than a Smee.

"*Gold Rings.*"—(1) *How is the best way to make oval wire gold and silver rings without rolls?*—You can draw oval wire through a draw-plate with oval holes of the shape of wire desired. The difficulties attending making a wire plate with oval holes have been in a degree removed by using draw-plates made of two pieces of steel, the oval holes being made half in each piece. We show such a composite draw-plate at Fig. 1. The two pieces of steel are shaped as shown at *A B*. The piece *A* is made of such size and thickness as the size of wire drawn demands. It is to be understood that the pieces *A B* are of the same thickness. To prevent longitudinal motion as relates to each other, the piece *A* is recessed and the piece *B* set in as shown. To further maintain the proper relations of *A B* to each other, the steady pins *z z* are employed. The holes through which the ring wire is drawn are shown at *x* in graduated sizes. For holding this composite plate for drawing wire, a cast-iron shoe is provided, shaped as shown at Fig. 2, with an end view at Fig. 3 as if seen in the direction of the arrow *y*. It will be seen that there is a long slot in the shoe at *w*, Fig. 2, which permits the wire passing through the openings *x* to also pass through the shoe. The opening or recess shown in Figs. 2 and 3, would be the better for being planed with a metal-planer; still, a good workman can finish such a shoe with a file and metal scraper. We show at Fig. 4 a front elevation of the combined device, that is, the steel draw-plates *A B*, the cast-iron shoe *D*, and a long slim taper wedge *C*, which clamps the parts *A B* together. We show at Fig. 5 an end view of Fig. 4, seen in the direction of the arrow *y*. It will be seen that the parts *D' D''* of the shoe *D* are undercut, as shown at *v v*, Fig. 3. The piece *C* acts as a gib with the addition of being a wedge. It will also be seen that the tendency of the parts *A B C* is to hug the shoe *D*. When drawing wire, the force of the operation also serves to press the parts toward the shoe. For a description of a wire-drawing bench see "Wire Straightener," page 552, July, 1897, KEYSTONE. For producing the holes *x* in a regular ratio, take a piece of large steel wire and first flatten, then taper and finally shape to an oval of the form desired for your ring wire. We show a side view of such a taper model at *F*, Fig. 6, with a transverse section at diagram *F'*. The model is supposed to enter the several holes *x*, Fig. 1, up to the dotted lines *u*, Fig. 6.

Fig. 1

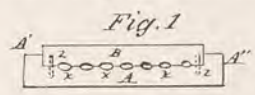


Fig. 2

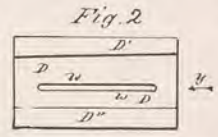


Fig. 3

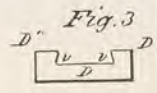


Fig. 4

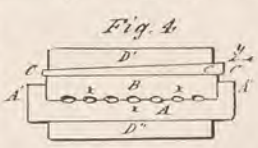


Fig. 5

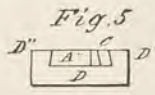
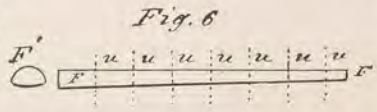


Fig. 6



(2) *Where can I procure cuttlebone for casting purposes, and what will it cost?*—Cuttlebone can be had at any drug store. It is sold for canary birds to sharpen their beaks upon. It is not expensive, the size of the piece controlling the price.

(3) *Where can telephone parts and supplies be bought?*—Patrick, Carter & Wilkins, 125 South Second Street, Philadelphia, Pa.

(4) *How to replace a reed in a music box comb where one is broken out?*—See our reply to "Music Box," page 151, February, 1897, KEYSTONE.

(5) *Please give as much instructions in regard to melting the metal and making rings as space will allow.*—In making silver rings but little need be said, except to keep the metal in process of melting covered with powdered charcoal, and pour the melted metal into the ingot mold at as low a temperature as it is perfectly fluid. Heat the ingot mould as hot as the hand can bear before pouring. The ingot mould should also be oiled with lard oil. The same advice applies to gold. For eighteen-karat rings it is seldom safe to employ scrap gold, on account of the tendency of this alloy to crack. For all alloys of fourteen karat and below, carefully refined scrap will answer.

"*Burglar Alarm.*"—*I have a telephone wire running from my store to my residence, a distance of about six blocks, and use the earth for a return circuit. Now can I use this line as it is for a burglar alarm, or must I have a complete metallic circuit?*—The single line will do the work. You should employ some closed circuit battery like the Daniels or the crow's-foot; of the latter you would require about six cells coupled up in series, that is, the zinc of one battery connected to the copper of the next, and so on. If now you place your telephone wire in circuit and connect the terminals with the earth—gas pipes or water service is the best earth connections—you will have an electric current passing through the wire of your telephone; and if you place an electro-magnet anywhere in the line you will find a strong magnetic influence, which disappears on breaking the circuit at any point. The magnet should be wound with fine wire, say No. 25, and if such magnet will sustain an armature which weighs one pennyweight, and drops it promptly on breaking the circuit, it is, for your purpose, as good as if the armature weighed a hundred pounds. The dropping of the armature is employed to set off a mechanical alarm, which is wound up and acts by a weight. Such alarms are much more certain to act than bells rung by electricity. In the daytime the battery is cut out and the telephone used. You can arrange to have several breaks in the line, as for instance the opening of certain doors or windows, but it is well to have as few connections for breaks as possible, and these placed and arranged to be opened by thieves if they enter your place. Do not attempt an open circuit arrangement where an electric current is sent through the line to ring an alarm bell, as such protection is a snare and a delusion, and will be likely to fail when most needed. With a closed circuit, if from any cause the circuit is broken, the alarm is given you are tolerably safe. It is true the alarm may go off without any burglars attacking your place, but the probabilities are much against any such occurrence, and a false alarm is much to be preferred to no alarm when thieves are looting your store.

"*Fire-Coat.*"—*I cannot make your recipe for removing fire coat work. My dynamo is one eighth horse-power and does silver and gold-plating all right, but in attempting to remove fire-coat it will turn the gold dark if you leave it in long enough. What is the trouble?*—The operation of removing fire-coat by electrical action seems to be very much misunderstood. Let us first try and understand what the expression "fire-coat" means. This condition may be described as an oxidized state of the metals forming the alloy, and is usually applied to alloys of gold and silver. Pure gold will not oxidize by heating, hence fire-coat will not form on it. Pure silver will absorb a large amount of oxygen, but gives off the most of it on cooling. Silver alloyed as sterling or coin does not absorb much oxygen, but still absorbs enough to form a dark surface, and, if superficially polished, has a leaden look. It is chiefly with gold alloys that we are now to consider the effect of fire-coat. Let us, in illustration, take an alloy of fourteen karat gold rolled out to a flat sheet. On heating this sheet red hot in the open air, and then cooling it, the surface is covered with a dark blue-brown coating. This coating is fire-coat, and consists mostly of oxide of copper. Now, if we boil this gold sheet in dilute sulphuric acid, the acid dissolves the oxide of copper, leaving the silver employed in the alloy still united with the gold and we have that sickly greenish, brassy look we so often see come out of the pickle-pot on repair jobs. The condition of the surface of the fourteen karat sheet is: we have only an alloy of silver and gold, which is green. If now we put the sheet of fourteen karat alloy in hot, undiluted sulphuric acid, to which a few crystals of saltpeter have been added, we have placed it in a solvent which acts powerfully on silver, but has little or no effect on copper, and the silver is now dissolved from the surface, and the alloyed sheet, if polished, will have a red gold appearance—will, in fact, be more inclined to copper red than the surface of the alloy when first cast in the ingot mold. The lesson to be learned from this analysis of the situation is, that no one acid solution used as a pickle will restore the color of alloyed gold to its natural hue. We mean by natural hue or color the color the alloy has at first after smoothing and polishing. Neither does any acid or coloring process leave the surface of gold highly polished, and in a similar manner the removal of fire-coat by electrical action does not leave the surface highly polished. We should naturally infer this from the facts we cited in relation to acid treatment to remove oxidizing, which is only another name for fire-coat. The philosophy of removing fire-coat by electricity is: we place the oxidized gold in a strong solution of cyanide of potassium, said solution being a solvent of almost all metals except platinum when stimulated by electrical action. Acting under this idea, we place the article covered with the oxidized alloy in a solution of cyanide (made by dissolving two ounces of this salt in a quart of water), letting the article play the part of anode. Under the influence of the electric current the cyanide solution dissolves *all* the constituents of the alloy alike, that is, it dissolves the gold, silver and copper with equal facility, leaving the surface comparatively smooth and of exactly the color of the alloy. To do good stripping, as the removing of fire-coat is called, requires at least eight volts electro-motive force. The surface of the job, as above stated, will not be bright, and may also be dark, but if the solution is right, and the current right, the work will buff up very quickly to the proper color. A good anti-oxidizer should be used to prevent the oxygen from penetrating to any depth, as such action makes the process of polishing more laborious.

"I cannot do without The Keystone. Enclosed fina one dollar for another year."—H. Engle, Jamesport, Mo.

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RING MAKERS IN
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Maiden Lane
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"We Are The People"

FOR

WAR NOVELTIES

American and Cuban Flags

AMERICAN FLAGS, inscription, "We Are The People."
SHIELDS, inscription, "In God We Trust."
SHIELDS, inscription, "Remember The Maine."

EAGLES,
GUNS,
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SHIELDS for Admiral Dewey's Photo.
BUTTONS with Admiral Dewey's Photo. cut on same.
SHIELDS for Scarf-Pins.

We have the Badge-Loop and Scarf-Pin Stems that are used on these goods.

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Manufacturers of
JEWELERS' FINDINGS,

158 Pine Street,
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No. 215/ *Yo.* Cigar Set.

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EVERY ARTICLE OF THIS POPULAR WARE IN FUTURE TO BE STAMPED WITH TRADE-MARK.

The line doubled this year.
A most agreeable surprise in store for our customers.
Our salesmen to call on trade soon.
1898 Catalogue issued in a few weeks. If desiring one, kindly so advise us, as we shall have only a limited number.

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Novelties for Wedding and Holiday Trade.

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Show Cases

For displaying small **Silverware, Belts,** etc.
JEWELERS' FIXTURES of every description.
Write for catalogue.

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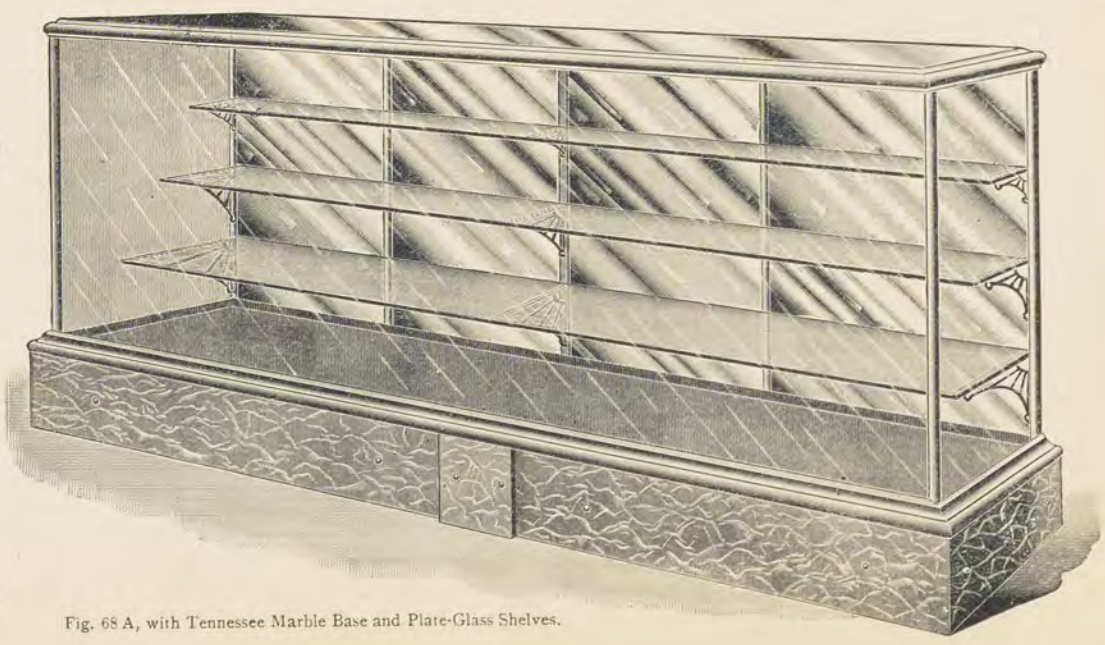

Fig. 68 A, with Tennessee Marble Base and Plate-Glass Shelves.

BIRD'S EYE VIEW OF THE GROUNDS ON OPENING DAY.

Opening of the Trans-Mississippi and International Exposition.

THE Trans-Mississippi and International Exposition was opened on schedule time on June 1st, a fact much to the credit of the management, considering the magnitude of the undertaking and the time available for its completion. The opening ceremonies were impressive, and the visiting thousands gazed in wonder at the magnificent city of palaces in its beautiful scenic setting. The management of the Exposition has performed its duty nobly, and it is now a national duty to make the big show a financial success A substantial help to this end will be, no doubt, the visits of thousands of wealthy people who usually summer in Europe, but whom the war will this year detain on this side of the Atlantic.

Beyond the Mississippi

The Exposition itself is grandly representative of the great Trans-Mississippi country, whose population has multiplied threefold during the past twenty-five years, and to-day approximates 20,000,000. The area of the Trans-Mississippi region is more than 2,500,000 square miles, and embraces the great granary of America, nearly all the cotton and sugar producing lands, vast forests of merchantable timber, and practically all the precious mineral produced in the United States.

The wealth-producing power and the extent of productive industries of the far West are amply illustrated for the first time at the Trans-Mississippi Exposition. Nearly, if not quite all the States, have sent exhibits, materials for which were collected by the various commissions appointed by the Governors of the several States and Territories, while the United States Government exhibit is comprehensive and complete.

A Most Suitable Location

Omaha was happily chosen as the location when the undertaking was first projected. The Trans-Mississippi Commercial Congress, composed of delegates from every state and territory west of the Mississippi river, by unanimous vote designated Omaha as the Exposition City. Situated at the geographical center of the United States—the gateway to the western half of the continent—the Nebraska metropolis enjoys natural advantages possessed by few cities of its class, and this unquestioned pre-eminence is an augury of the success of the Exposition.

The grounds are pre-eminently suitable. Situated upon a broad plateau, well within the city limits on the north side, they are easily accessible from all points of the compass. Kountze Tract, 670 feet wide, was selected for the focus of the group of main buildings. This ground is nearly half a mile long, and in the center a canal extends the greater share of the distance. This basin is 150 feet wide at the east end, while at the west end it runs into a trefoil or three-lobed lake fully four hundred feet across. On the east, lying at right angles to Kountze Tract, is an area of sixty acres stretching along the bluffs and overlooking the river and country beyond. The remainder of the Exposition grounds lie north of Kountze Tract, and includes in all about eighty acres. On these grounds the live stock and irrigation exhibits, the sugar beet fields, the great display of agricultural implements, alfalfa fields, the amphitheatre and athletic fields are located.

A Big, Prosperous City

Omaha is one of the most important commercial distributing centers in the West, and has a population of about 140,000. It is well supplied with railroads. Fourteen railways converge there; eighty passenger trains arrive and depart daily; five railways maintain headquarters in the city. There are 215 miles of telegraph wire; 1,000 of single telephone wire, 20,000 feet of cables and ninety-three miles of pole lines; underground system of 48,000 feet of cables, 33,313 of trench, equal to 1,724 miles of single wire. There are ninety-five miles of electric car lines, reaching all points of interest. Omaha is the third largest live stock market in America. Receipts for the year 1897 were: Cattle, 825,689; hogs, 1,594,038; sheep, 612,803; horses and mules, 6,632; total number of cars, 60,083, and the value of the annual product of South Omaha packing houses is $75,000,000. There is ample hotel accommodation at moderate rates.

Never was there given to our people such an opportunity to judge of the great resources and industries of the country beyond the Mississippi. The collective mining exhibit excels any former exposition of the products of American mines. All agricultural products are shown in a way to set forth their value and the proportionate part they take in the products of the West. The various branches, dairying, horticulture, poultry, stock growing, etc., are cared for in separate buildings specially erected and adapted to them. The beet sugar industry is displayed in a most graphic manner. No other exposition has given so much space proportionately to the horticultural exhibit, and especially to the fruit growing industry. The magnitude of this industry, as well as the beauty and attractiveness of the display, is a revelation. Nearly eighty acres of land at the north end of the vast enclosure has been set apart for a racing course, live stock stalls, a ten-acre irrigating exhibit in operation, agricultural exhibits, etc.

The Omaha railroads reach to the Pacific Coast on the west, St. Paul, Minneapolis, Duluth and Manitoba, on the north, and invade the Black Hills region to the north-west. Four great systems afford transportation to the Atlantic sea-board, while others afford a direct outlet to St. Louis, and the Gulf of Mexico to the southwest.

ESTABLISHED IN 1858.

FORTY YEARS' experience in manufacturing **ALL KINDS OF JOBBING MATERIALS** is a good record to offer, and, with unparalleled facilities, places our firm, unquestionably, at the head of this line of business.

We make a fine line of **ALL KINDS OF BOWS.** The following sizes and descriptions in Antique.

240
Solid Gold.
Solid Silver.
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Solid Gold.
Solid Silver.
Seamless Filled.
Silverine.

245
Solid Gold.
Solid Silver.
Seamless Filled.
Silverine.

250
Solid Gold.
Solid Silver.
Seamless Filled.
Silverine.

255
Solid Gold.
Solid Silver.
Seamless Filled.
Silverine.

260
Solid Gold.
Solid Silver.
Seamless Filled.
Silverine.

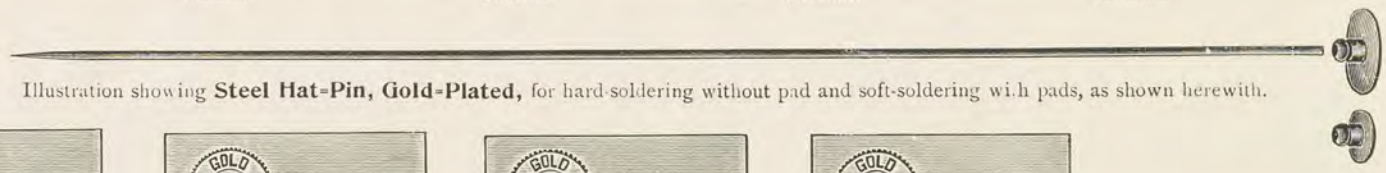
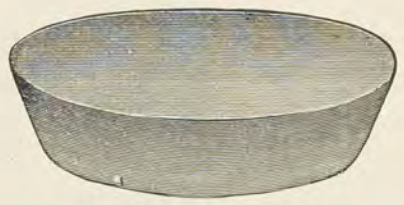


Illustration showing **Steel Hat-Pin, Gold-Plated,** for hard-soldering without pad and soft-soldering with pads, as shown herewith.

We make **ALL KINDS OF SOLDERS,** too—have made them since 1858. If you want a good article in that line, order the **F 1858 Solder,** from low karat to 22 karat fine, and you will pay no more for it than you would for a worthless article. Retail jewelers can get all the above articles shown of the jobbers; the jobbers and manufacturers, from us.

Geo. H. Fuller & Son, Factory, PAWTUCKET, RHODE ISLAND.
CHICAGO OFFICE, 103 State St., Columbus Memorial Building.



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Used in place of tripoli. Manufacturers are specially requested to try it.

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RINGS,
PENDANTS and SCARF PINS.

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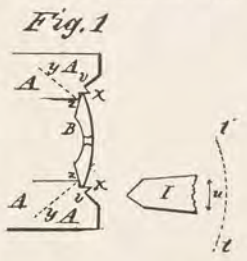
Watchmakers' Tools, and How to Use Them.

CVIII.

Practical Points in Setting Jewels.

THERE is considerable manual dexterity required to properly burnish in a jewel, and there is also a good deal of experience required to turn the jewel seat, which must be of the proper depth and width to receive the jewel. We show at *A*, Fig. 1, a magnified view of the end of the piece of wire we are setting the jewel in, and at *z* the step or sink on which the jewel is to rest. This step does not want to be of such width, that is, radial extent, that when subsequently turning out the reflector or beveled surface represented by the lines *y y*, such turning will loosen the stone, from the fact that the jewel rests on the extreme inner angle of the step *z*. Again, in turning the channel at *v* to form the lip *x*, which is burnished over the outer edge of the jewel, we must do it so as to have a reference to attending conditions, among which are the quality and hardness of the brass, of which the wire *A* is made.

Fig. 1



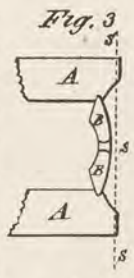
Important Details to be Considered

Suppose, in illustration, we have turned the sink a little too wide, or, in other words, the jewel is a trifle too small for the sink. To make up for this condition we must cut the channel *v* a little wider and deeper, because under such circumstances the seat *z* should by right be carried further in, that is, the sink deepened. There is also a great "knack" in the manner in which the tool *I* is held; such knack chiefly lies in swinging it around through the arc *t*; thus if we turn the outer end of the tool toward the letter *t'* the flange to be burnished over the jewel becomes thick at the base, and will consequently close down near the outer edge of the jewel, and is well adapted for a jewel which entirely fills the sink. If, on the other hand, the jewel is rather small for the sink, we swing the handle of the tool toward *t* and thus produce a thin flange, as shown at *x*, Fig. 2, which on being burnished down will extend farther over the stone, as indicated by the dotted outline shown at *x'*.

Fig. 2

We have now our jewel securely set, and the next operation is to face off the end of the wire to the line *s*, Fig. 3. The face of the brass wire *A* should be dead flat, leaving the convex face of the jewel *B* two or three $\frac{1}{1000}''$ below the brass surface represented by the line *s*. There are two objects in having the jewel surface sunk below the general surface of the brass: (*a*) to prevent the surface of the end stone from striking the hole-jewel; (*b*) to furnish an oil space between the hole and cap jewel to hold oil by capillary attraction. The next operation is to turn the wire to near the proper size of the jewel setting, but at present we leave the setting of the jewel too large for the seat in the cock.

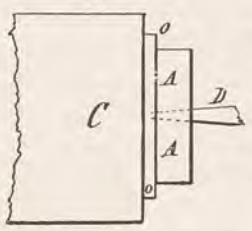
Fig. 3



The only careful measurement we are to make now is the thickness of the flange *o*, Fig. 4, which controls the end-shake of the staff. If we are so disposed we can measure with the micrometer calipers the size of the neck *r*, as represented by the lines *r' r''*. We next cut off the setting at the line *l*. Our next operation is to true-up the brass setting to coincide with the center of the hole-jewel. To do this we provide a cement chuck turned dead flat on the end as shown at Fig. 5, where *C* represents a portion of the cement chuck, and *A* the cut off jewel and setting. We heat the cement chuck, and rub on the end a little good lathe cement, and then press the jewel setting into the soft cement with the pointed pegwood *D*, and while the parts *C A* are heated, perfectly center by the hole in the jewel.

Fig. 4

Fig. 5



Lathe Cement for Setting Jewels

The gist of the operation now in hand is only to turn the outer edge of the flange *o* to the proper size to fit the sink in the cock or potence. The size is measured by comparison with the old setting, measuring with the micrometer calipers. A workman should have a little memorandum book, in which he has noted down the sizes of all American material. We are aware that it is a very delicate operation to turn off the edge of the flange *o* and not break the jewel setting from the cement, but it can be done successfully nineteen times out of twenty, if the proper precautions are used. The precautions are (*a*) good lathe cement; (*b*) to only leave a little metal to remove for truing-up; (*c*) a very sharp cutting graver, and working slowly. For turning out the inside of the setting it can best be held in one of the little steps in the end of a wire chuck.

Such bright turning is done with a highly polished graver. The secret of doing nice, bright cutting with a graver in turning is, to combine in one, a perfectly sharp and a perfectly polished graver. To prepare such a graver do the chief sharpening by whetting on a Turkey oil stone, then finish on an Arkansas stone. The polish is obtained on a piece of boxwood, cut across the grain as for engravers use, with diamontine and alcohol. A mirror polished graver will produce a mirror polished cut, until the edge of the graver crumbles and becomes rough. Slow, careful turning with a polished graver, will not make nice, bright work, because the edge of the polished graver gradually brakes away, producing an imperfect surface. To get best results with a polished graver the work must be done quickly. First, shape perfectly with a smooth-edge graver, as it comes from an Arkansas stone, then a skillful touch with the polished graver, and the job is done. If it were possible to make one cut extend through a little more than one entire revolution o the lathe, and the chip so cut a perfect one, and as thin as it could be made, the operation would be the ideal one in bright turning.

We show at Fig. 6 a longitudinal section of a balance hole-jewel and setting made and finished on the best lines. The depth of the setting between the lines *s n* is greatly a matter of option, as jewel setting of this kind for American watches vary a little, but experience will soon set one right. The outside diameter of the cup of the setting, that is, the diameter of the setting between the lines *k k'*, Fig. 6, is also a matter of option, the main point to look to being to have it small enough, but not so small as to leave an unsightly crevice between the jewel setting and the recess in the cock or potence. Jewel settings of this kind are frequently gilded, in which case the inner surface *y* of the cup is not bright cut. To gild such settings, place the jewels, after they are set, in a small wire basket, connecting said basket to the zinc pole of a battery, and dip in a Roman gold solution, and while the current is passing shake the basket. We would call the reader's attention to the fact that we sometimes show the turning tool, like *I*, Fig. 1, either to the right or left of the axis of the lathe. Of course, it is to be understood that such change necessitates running the lathe in opposite directions. This is often an advantage, especially in an imperfect light, and that all coming in one direction. The diameter of the setting between the lines *m m*, Fig. 6, is the important measurement, as this fits the sink in the cock or potence.

Fig. 6

The regular monthly meeting of the executive committee of the Jewelers' League, of New York, was held on May 6th. There were present President Hayes, Vice-presidents Greason and Beacham, Chairman Van Deventer, Messrs. Lissaur, Karsch, Street and L. Stevens, Jr., Secretary. Minutes of the previous meeting were read and approved. Four requests for change of beneficiary were received and upon motion granted, and the following applicants were admitted to membership: Victor B. Strelitz, Chicago, Ill., recommended by S. Kaiser and M. Sechheimer; Joseph P. Meurer, New York City, recommended by J. F. Saunders and F. T. Oertel; Edward Egenberger, New York City, recommended by E. F. Stern and R. Schaefer. The next meeting will be held June 3rd.

A Good Canadian Idea.

An idea, and one which could be imitated to advantage by country merchants, is that practised by Albert Luloff, general merchant, of Eganville, Canada. Posts are planted at a distance of one mile apart along the rural highways. Each bears the number of miles from that point to "A. Luloff's General Store, the Spot for Bargains." They are neatly painted in black and white, and are a great convenience to the traveling public, as by them they can easily ascertain the number of miles they have yet to travel before arriving at the village. As an advertisement they also prove effective, as they may be followed up to his store, where his sign reads: "This is A. Luloff's General Store, the Spot for Bargains."

"Enclosed find renewal of my subscription. I don't repeat the old, old song, 'couldn't do without The Keystone.' I could, and my family still get a living, possibly, but I am not. It is the best trade journal published. I appreciate it."—C. M. Bankston, Winona, Miss.

Workshop Notes.

Subscribers wishing inquiries answered in this department must send name and address—not for publication, but as an evidence of good faith. No attention will be paid to anonymous communications. Questions will be answered in the order in which they are received.

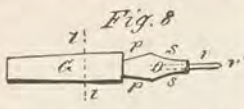
"Vibrate."—Please explain what is meant by long and short vibrations of a balance.—The terms long and short vibrations should be written, long and short arcs of vibration. Long experience has determined that a marine chronometer balance should have an arc of vibration of 1¼ revolutions to perform its best. This means that in each vibration of the balance it turns through 450°, or 225° each way from the point of rest or where the balance would stand with no power on the train. Such arcs of vibration would be termed "long vibrations." Short vibrations would be those less than normal, that is, say, one-half a revolution, or 90° each way from the point of rest.

"Watch Glasses No. 2."—[A valued correspondent, after reading our reply to "Watch Glasses," February, 1898, KEYSTONE, sends us the following as his mode of practice. —ED.]

I use a brass chuck 1" in diameter concaved deep enough on the face so that any watch glass placed against it will only rest against it at the edges of the chuck. To use this chuck I take it in a pair of cutting pliers and hold it over a lamp, and when hot enough fill the concave with sealing wax. I then lay the glass on the chuck, and press it down until it rests on the edge of the chuck. I next put the chuck in the lathe, and true it up by pressing with one pegwood against the center and holding another against the edge; when true, let it cool. I run the lathe at a moderate speed. I next take a thick watch glass, or almost any kind of glass, and hold it loosely and flatwise against the edge of the glass on the chuck. A very few minutes serves to reduce a glass 1/16" or 2/16". The chuck and glass can be removed at any time from the lathe and tried in the bezel, and, if found still too large, can be replaced in the lathe, and the grinding continued until a fit is obtained?—The above valuable method of reducing watch glasses depends on the property glass has of cutting or grinding another piece of the same substance. We would suggest, in addition, that a piece of fine glass paper was employed to smooth the edge, which will necessarily be a little rough. If a polish is desired, it can quickly be produced by holding a piece of cotton-flannel folded once or twice on itself. The cotton-flannel should be wet and dusted with rotten-stone, or better, putty powder.

"Advertiser."—I would like to know if there is any device for centering staffs for pivoting, to be used in connection with a Rivett lathe.—Skillful pivoters use nothing but a very sharp graver for centering for drilling for pivoting. We have seen a device employed for centering which depends for its accuracy on the lining-up of the lathe; if this is perfect, the centering is perfect. The affair we refer to is a triangular pointed tool placed in a taper center which goes into the tailstock spindle. To make such a centering tool, we place a piece of brass wire of sufficient size in a wire chuck, and turn a center which will fit the taper chuck.

Fig. 8



We show such a center at Fig. 8, the part *G* going into the taper chuck up to the dotted line *t*, the portion of the center *G* to the right of the line *t* extending out of the taper chuck. The outer end is shaped as shown at *p s*. In the extreme end we drill a hole as indicated by the dotted lines *o*. In this hole is inserted a drill with a triangular point. This triangular point is made on the end of a bit of steel wire such as we employ for pivot-drills (see our answer to "Drilling for Pivots" in another column). To perfectly center the triangular point *r'* we drill the hole *o* a trifle larger than the wire of which the drill *r* is made. We next tin with soft solder the end of *r* where it goes into the hole *o*; then with a small alcohol lamp we heat the end *s* until the solder melts. As the lathe revolves and the solder is fluid we can, by holding the end of our finger on the extreme point of *r'*, true the drill *r* as perfectly as with a cement chuck. It takes a little practice to do this, but it can be done so the point *r'* will run absolutely true. For centering a staff, the center *G* is placed in the tailstock spindle and the point *r'* pressed against the staff as it revolves, either in a cement or a wire chuck. The cement chuck is to be preferred, as it is the only absolutely true chuck in existence. The triangular point *r'* produces a slight pit, which serves as a center for starting the drill. The drill for drilling the staff can be set in a brass center like *G*, Fig. 8, and placed in the tailstock. The end of the staff to be drilled should be filed with a pivot-file square across the end before the centering point is applied.

"Assay."—How can I test, approximately, small amounts of quartz for gold and silver? I can pulverize the quartz in a mortar, but I cannot separate the gold and silver from the powdered quartz. Is there any book that gives the above information?—It requires nice judgment to select what would be an average pound of gold-bearing quartz from a ton of "mineral." The better plan seems to be to select three pounds; one pound of which our judgment tells us is as near an average as we can get. Then select a pound a little above and another pound a little below the average, and assay the three pounds separately. Mineralogists make two kinds of assays, one they term "qualative" and the other "quantative" assays. The first is merely to establish the existence of certain metals or substances, leaving the amout or quantity of the substances a matter of judgment. What you desire to know is not that gold or silver is contained in the mineral before you, but you desire to know the quantity contained per pound or ton. The quartz to be tested should be roasted, that is, heated red hot and thrown into cold water to render it more friable. Mineralogists have hand rock crushers which will chew up specimens of rock with astonishing facility, but a heavy iron mortar can be employed. Mature judgment will enable one to pick out and throw away a good proportion of the rock after it has been broken into comparatively good size pieces. But the novice in such matters had better err on the side of being over-cautious, and break up lumps which seems on the outside to contain no gold. As the process of pulverizing progresses, much of the finer particles can be washed away on the same principle as gold washing is conducted. Our work now is to remove as much as possible the quartz which is only mechanically combined with the precious metals. Our present operations have two objects in view. The first is to remove as much of the quartz as we can by mechanical means. The second is to lay bare the particles of metal so that some solvent can be introduced which will dissolve the silver and gold and leave the remaining quartz intact. We have such solvent in mercury (quicksilver), which will dissolve both gold and silver, forming an amalgam of these metals from which heat will drive off the mercury, leaving the gold and silver behind. All the mercury will be driven off at a pale red heat. Absolutely pure mercury should only be employed, as any trace of lead or tin will remain with the gold and silver after the mercury is driven off by heating to a pale red heat. In small operations the mercury will be lost, but where the process is conducted on a large scale the mercury vapor is condensed and used over and over. The metals remaining after the mercury is driven off represent the amount of these substances in a sample pound of quartz. On placing the resulting spongy metal in a crucible and heating to a white heat with carbonate of potash as a flux, the resulting button is the precious metals contained in the quartz. To separate these requires another operation. For determinative purposes, that is, to approximate the value of a ton of quarts, the alloyed button is practically a test close enough to satisfy the prospector. The facts are, a man of good, sound judgment, after a little experience, can, by simply roasting and pulverizing quartz, and washing away the pulverized rock, arrive at a very close estimate without the use of mercury. Usually, the gold obtained from such sources will vary from 20½ to 21½ karats fine. The facts of the case are: no shorthand and specific instruction can be given for quantitive assay any more than we could give in one paragraph specific instructions for cleaning and repairing a watch, which needed, in addition to cleaning, a new staff and two or three new jewels and a new hairspring. A good book for you is "Prospectors' Field Book and Guide." Can be had at this office; price, $1.50.

"Drilling for Pivots."—In pivoting a staff I often find that my drill does not cut on account of a ball forming in the hole. Please tell me what causes this and how to go ahead with the job, or rather how to get the ball out so the drill will cut.—We think you are mistaken in regard to a ball forming in the hole. As far as our experience goes, in drilling hard staffs the cutting angle of the drill rounds off and the inside of the hole becomes burnished and glazed over, and no drill will cut until the glaze is removed. We have seen workmen, in their zeal to conquer a hard staff, have recourse to nitric acid applied with a pointed pegwood to the hole to eat away the glaze, after which a sharp drill would cut until it glazed again. The secret of rapid and successful pivoting lies in softening the staff to that degree that it can readily be drilled. There is a certain low spring temper at which steel can be drilled or filed to better advantage than when either softer or harder. American staffs are tempered to stand the greatest amount of stress without either bending or breaking, and are too hard to drill. In softening or annealing a staff to enable us to drill it for pivoting, we should preserve the temper in the unbroken pivot. This can easily be accomplished by clasping the pivot with a small pin-slide. Comparatively large masses of metal in the vicinity of the annealing device absorb and carry away too much of the heat to allow the proper annealing of the staff. Take a small pin-slide and shape the outer end as shown at *H*, Fig. 4; that is, the jaws are tapered off as shown. These jaws hold the pivot which is not intended to have the temper drawn. For drawing the temper, make a clamp of flattened copper wire. The wire should be about 1/16" thick by ⅛" wide after flattening. This wire is doubled back on itself as shown at *J*, Fig. 4. We show at Fig. 5 two separate views of this clamp, one as if *J*, Fig. 4, was seen in the direction of the arrow *r*; the other (diagram *J'*) as an end view of *J*, Fig. 5, seen in the direction of the arrow *o*. The jaws at *s* are shaped to clasp the staff either above or below the balance. These jaws only hold by the slight spring of the wire. The loop *J* is applied as shown, while the outer end is heated by the blowpipe to a full red heat. We stated above that the jaws *J* were held in place by the spring of the wire, and to put them on the staff close them together by pinching the end *P* with the pliers, then force them on the staff. The jaws *J* are about ½" long

Fig. 4

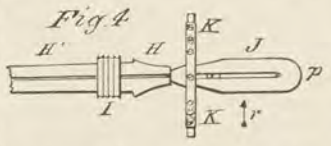
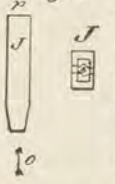


Fig. 5



as shown in Figs. 4 and 5. It is well to have two sets of these jaws, one set adapted for the lower and one for the upper part of the staff, where the hairspring collet goes. If the balance arms are blued, touch the blue with a flattened match splint wet with hydrochloric acid, rinse with water, and throw into alcohol mixed with a few drops of ammonia. If any stain remains, rub with a piece of pegwood whittled wedge-shaped and a little sharp cutting diamontine. If the staff is sufficiently reduced in temper it can be drilled with perfect ease with a drill cutting in one direction. To make pivot-drills, procure some good sewing needles—about No. 4 or 5 is the proper size—and reduce the temper to a reddish-blue. To understand what we mean, take a bit of steel mainspring and polish it with fine emery paper. It is not necessary to have a mirror polish to get fine colors on steel by heat. Heat this piece of steel slowly over your alcohol lamp, and notice carefully the successive shades of color produced. It is well to master with the memory these successive shades of color. They are, (1) pale straw; (2) full straw; (3) brown straw; (4) onion color, that is, a pale purple and straw color combined; (5) full purple; (6) full Prussian blue; (7) greenish-blue; (8) a reddish-blue, a peculiar shade, and not to be mistaken for No. 5 when once known. Reduce the needles to No. 7 tint, they are ready for making drills. The needles should be cut to pieces about 5/8" in length by nicking with a file, cutting fully half way through before breaking. Breaking a piece of steel always injures its texture in the vicinity of the break. We show at Fig. 6 a portion of a needle with the file nick at *k*. The bit of steel for a drill should be placed in a wire chuck and cut back with a file to the line *k*. We show at Fig. 7 a part of a wire chuck at *M*, with the bit of needle for a drill protruding at *L*. We next turn a drill to the shape shown at *L'*, Fig. 8, the angle at *n* being as near 90° as our eye can judge. The general form of this drill is well shown in the cut. The next operation is the flattening, which is done with new, sharp pivot-file, as shown at the dotted lines *o*. The flattened part of the drill at the point should be only about one-fourth the entire diameter of the drill at the point. This flattening can be done in the lathe as one does winding squares, that is, the division bolt is pushed into the lathe pulley at one of the even quarter spaces. Then the tool rest is set the same height as the drill and the filing done on the line *l*, Fig. 9. In this cut *N* represents the T-rest and *L' n* the drill. Suppose, in illustration, we are making a drill 1/1000" in diameter, and we are working with micrometer calipers. We flatten the end so it measures 1/1000". We then turn the lathe spindle half way around and file the opposite side so the point measures 1/1000". We have now a drill which measures in thickness one-fourth the entire diameter of the drill as we turned it. A workman can, in a short time, get so that he can hold a drill after it is turned and removed from the lathe in a pin-slide, and by his eye alone with a pivot-file produce an almost perfect pivot-drill. In this case a bell-metal filing block with shallow notches in it, placed in the bench vise, is the proper thing for resting the drill point on for flattening. The pointing is best done with an Arkansas slip, holding the drill nearly upright in a pin-slide and shaping the point to cut only when the lathe is turning toward you. A drill with a rounded point, as shown at Fig. 10, will answer better for drilling a very hard staff than one shaped to cut only in one direction; but with the precaution given above of annealing the staff enough to allow it to be readily drilled, a drill such as we are describing will drill for half a dozen pivots while one is attempting to drill a hard staff. The reason we only reduced our needles for drills to a spring temper is, we can both turn and file steel at this temper to better advantage. Now comes the tempering of our drills. To do this we procure some sheet platinum about 1/1000" or 3/1000" thick, and cut a strip about ¼" wide and roll up a tube of the metal, letting the width of the platinum strip form the length of the tube. We roll the tube so that the walls are made up of about three thicknesses, of the platinum foil. We place one of these tubes over the end of a drill so the extreme tip of the drill is, say, 1/16" inside the end of the tube. The next operation is to heat the tube and drill red-hot and plunge them into a lump of tallow if in the summer, and into a lump of lard if in the winter. The platinum tube, which fits but loosely, slides back and the drill is hardened. The platinum tube performs two functions in the operation: first, it prevents over heating the drill; second, it keeps the air to a great extent from forming a scale on the heated steel. Such bits of needle 5/8" long can have a drill made on each end. For drilling for pivots the sizes of the drills will range from 5/1000" to 12/1000"; about 18/1000" will serve four times out of five. If a drill breaks off in the hole, a lump of beeswax pressed against the end of the staff will in many instances pull out the broken stump. If the broken end is obstinate, the only remedy is to apply the jaws *J*, Fig. 4, and anneal the staff again.

Fig. 6

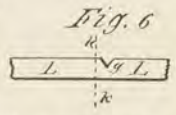


Fig. 7

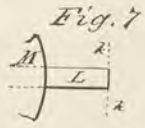


Fig. 8

Fig. 9

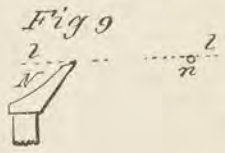


Fig. 10

"I am very sorry I forgot to send for The Keystone before. I would not be without it if it cost twice as much. You will find enclosed one dollar for one year's subscription."—Emil Danielsen, jeweler, Sing Sing, New York.

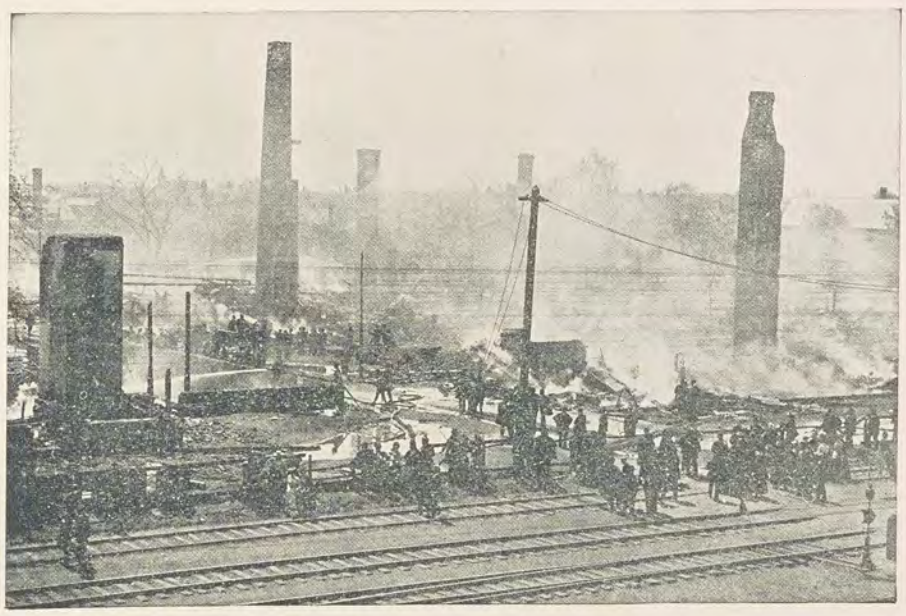
STILL ON DECK!

Old Reliable W. & S. B. ★ CHAINS

Immediately after the big fire, which destroyed our factory, we made arrangements for new quarters, which are now ready with greater facilities than ever before.

Our new machinery comes to us faster than we can place it.

Our books were not destroyed and our Order Department is therefore not crippled.



Where we were—
Attleboro

Where we are—
Providence

Within a few days our entire factory force will again be at work. When all ready, our factory will be capable of ***turning out more goods than ever before.***

Our friends and customers who, considering the misfortune that befell us, will kindly bear with us, will find us in perfect shape by

JUNE 15TH.

W. & S. BLACKINTON

FACTORY, { Manufacturers' Building, 101 Sabin Street, } **Providence, R. I.**

NEW YORK OFFICE, 14 Maiden Lane.

Items of Interest.

The South Dakota Merchants' Convention will be held in Huron, S. Dak., on June 8th and 9th. A large attendance is expected.

Lieut. Robt. A. Brunner, of Company L, Second Regt. N. G. of N. J., the son of F. Brunner, the leading jeweler of Rutherford, N. J., has gone to the front to fight for his country. Lieut. Brunner is a graduate optician and watchmaker, and while he is away his brother Fred., also a graduate optician, will have charge of the optical department.

An announcement from Switzerland states that the Omega watch has been awarded fifteen out of a total of fifty-seven diplomas awarded at the Neuchatel Observatory for the year 1897. The agents in the United States for these watches are Edmond E. Robert, 3 Maiden Lane, New York, and Cross & Beguelin, 17 Maiden Lane, New York.

Lewis Sands and Mrs. Sands, Cleveland, Ohio, were welcome callers at THE KEYSTONE office while on their recent trip East. The national capitol was among the cities visited.

A. M. Hill, of New Orleans, La., finished, last month, the big auction sale of his $300,000 stock. This sale, which was one of the largest of its kind ever held, was most successfully conducted by the new and powerful combination of auctioneering talent, Herman G. Briggs and Louis H. Dodd, who have thus placed another great triumph to their credit.

The handsome souvenir mining spoon designed by Hight & Fairfield, Butte, Montana, and illustrated elsewhere in this issue, is not made in coffee size, as some inferred from the reduced cut shown last month in our new goods department. The spoon has proved very popular, and may possibly be made in coffee size later.

W. W. Oliver, 1490–1492 Niagara Street, Buffalo, N. Y., has issued a handsome, illustrated catalogue and price-list of fine machinery, tools and specialties for manufacturing jewelers, watchmakers, and machinists generally. The illustrations are well executed, and the tools are minutely described. The book is an instructive study in the development of fine machinery, and will prove a valuable addition to the works of reference of every skilled mechanic. A perusal of it will give many serviceable pointers on equipment.

To those jewelers who have expressed a wish for full information as to the American navy, we commend the special navy supplement of the *Scientific American*, which can be had from Munn & Co., 361 Broadway, New York, for 25 cents. It has illustrations and descriptions of the entire navy.

On April 27th the E. Howard Watch and Clock Co., Boston, Mass., assigned to F. E. Snow, of Gaston & Snow, lawyers. A reliable statement of the condition of the company has not yet been given out, but the latest statement placed the nominal assets $497,857.79, while the unsecured liabilities are placed at $378,603.76. There is a report that the company will be reorganized and the business continued.

Leonard Krower, New Orleans, La., has issued to the trade a medal catalogue showing appropriately designed badges and medals for athletic events of all kinds, military drills, rowing contests, etc. It makes a useful work of reference in this season of sports. Mr. Krower recently added electric power and improved machinery to his plant.

The trade and many friends of C. O. E. Hartung, formerly traveler for Sussfeld, Lorsch & Co., New York City, will be pleased to learn that he has branched out into a new enterprise, having organized the Elm City Chemical Laboratory at New Haven, Conn., for the purpose of manufacturing jewelers' chemicals, etc. He will, from time to time, introduce new and practical goods for the jobbing trade.

E. V. Boynton, a brother of W. N. Boynton of Manchester, Iowa, died at Jerseyville, Illinois, last month. The deceased owned a large jewelry store at Stuart, Iowa, and had been actively engaged at his trade until his health necessitated his removal to southern Illinois, where he made his home with his brother, John E. Boynton, at Jerseyville. Mr. Boynton is survived by four brothers, S. B. and A. P. Boynton, of Chicago, John E. Boyton, of Jerseyville, Illinois, and W. N. Boynton, of Manchester, Iowa. All five of the Boynton brothers have been engaged in the jewelry business, in the respective cities in which they live.

The Nebraska Retail Jewelers' Association will meet June 28th, 29th and 30th, in Omaha, Neb., during the Trans-Mississippi Exposition. The rooms of the Commercial Club were kindly offered for the convention. A hearty invitation is extended to all jewelers in the United States. Among the exhibits at the Exposition are many that have special interest for the trade.

Rosenzweig Bros., New York, who recently moved from 20 John Street to handsomer and more spacious quarters at 52 Maiden Lane, purchased the entire stock of watchmakers' and jewelers' supplies of the old established firm of Farjeon & Co., 61 Nassau Street, who had been in business for a full half century. Messrs. Rosenzweig have also added to their business a complete tool, material and repair department.

The firm of Roder Bros., New Orleans, La., has been dissolved. Harry Roder is continuing, under his own name, the same line of business as the old firm.

W. K. Grady has opened up at Lee's Summit, Mo., with a stock of jewelry and dry goods.

The D. F. Briggs Co., Attleboro, Mass., have sent the following notice to the trade: "We beg to inform you that we escaped the recent fire in our town and were not damaged at all, and though we sympathize with our brother jewelers and are willing to help them in every way possible, we will say that our factory is running and ready to fill orders promptly. We expect our new line will be ready about June 1st."

G. A. Schlechter, Reading, Pa., is turning out war emblems in great variety in the form of flags, hat-pins, etc. A specially popular design is a combination American flag and Union Jack, indicative of the growing friendship between the United States and Great Britain. Sales show that the idea of an Anglo-American alliance is favorably entertained by many.

ED. THE KEYSTONE. May 28, 1898.

Dear Sir: Since the disastrous fire which visited our factory at Attleboro, Mass., on the evening of May 18th, we are daily in receipt of letters from our customers and friends, tendering their sympathy in this terrible calamity, and kindly offering to retain for us their orders until we are in readiness at our new factory, occupying the sixth floor of the Manufacturers' Building, Aborn Street, Providence, R. I., which will be about June 15th.

We thank each and every one of our many friends from whom we have received these kind expressions and continuance of their trade; and as these kindly letters are so many, we regret that we cannot answer each letter, the reason being that we are so busy in getting our machinery to rights. So we use this medium to convey to our many friends our sincere thanks, and it will be our ambition in the future, as in the past, to encourage and further their kind expressions toward us, which is so gratifying to receive in this crisis.

Trusting you will give this space in the forthcoming issue of THE KEYSTONE, we are,

Very sincerely, W. & S. BLACKINTON.

A very patriotic memorandum book is now being supplied to the trade by Eaton & Glover, New York City, the manufacturers of the well-known engraving machine. The book has an aluminum cover, on the front of which is a colored American flag, and under it the inscription, "Dewey Remember the Maine?" the flag and the inscription engraved on the firm's machine. This little book should be very popular, and dealers who are interested can obtain full particulars by writing the firm.

Edward Taylor, formerly connected with the Pairpoint Manufacturing Co., New Bedford, Mass., is now with the Holmes & Edwards Silver Co., Bridgeport, Conn. Mr Taylor started with the Pairpoint Co. in their Chicago store, and subsequently opened the San Francisco office and managed the business there until coming to New Bedford five years ago. Mr. Taylor is an accomplished business man, energetic and resourceful.

Waterbury Watch Co. Changes Its Name.

At a meeting of the stockholders of the Waterbury Watch Co., held on May 16th, it was voted unanimously to change the corporate name of the company to the New England Watch Co. While the reputation of the Waterbury Watch Co. is world-wide, it is associated in the minds of most people with a watch of the cheapest type, embodying the discarded long-wind, which has for several years been numbered among the things of the past. Of late years the company has made great advancement in the quality and variety of its product. Many of the styles of watches made by the company to-day are, in fine workmanship and perfection of style and design, the equal of any. At the same time it produces large quantities of watches of lower grades at popular prices. All names and trade-marks pertaining to the line formerly and still extensively manufactured by the company will be retained and used as far as desirable.

New Offices of C. F. Monroe Company.

The offices of the C. F. Monroe Co., Meriden, Conn., have been enlarged and remodeled at an expense of $3000, and now equal in completeness and luxuriousness of furnishing any offices in the State. They were designed by President C. F. Monroe, and as one enters them through the door of the main office, with its hand-decorated panels, the effect is strikingly beautiful and in perfect harmony with the handsome opal and decorated glassware manufactured by the company. The main office is surrounded by a massive counter of hand-carved ash, and the counter is surmounted by brass grill work of beautiful design. The walls are covered with heavy cartridge paper with a handsome gold border. The office furniture is of the richest and latest pattern. A complete system of electric bells and telephone system has been put in, so that instant communication can be had with any part of the factory. Back of the main office, and connected with it by an archway, is a double private office, luxuriously furnished. The entire suite makes a palatial business home, and is a credit to the enterprise of the company and unmistakable evidence of its prosperity.

A Large Watch Model.

A piece of work of rare beauty, and which indicates talent of a high order is shown in our illustration. It was made by W. G. Doane, of Carson City, Nevada, while a student at the Philadelphia College of Horology, Philadelphia, Pa., and reflects credit alike on the pupil and the school. It represents a 16 size Elgin movement on a large scale. The base or main plate is six inches in diameter. It is made to keep time, having a silver dial with raised gold old English letters to represent the figures. The letters are the letters of Mr. Doane's name. The wheels and pinions, in fact all parts, were made from rough material by Mr. Doane and finished in a very creditable manner. The model rests in a glass case with a mirror base which reflects the works, showing their complicity and beauty without interference with the model. We congratulate Mr. Doane, and feel confident of his success as a horologist. He contemplates returning to his home in Carson City, where he will start in business for himself. We wish him all the success his industry and skill deserve.

The Jewelers' Security Alliance.

The fifteenth annual meeting of the Jewelers' Security Alliance held at their office, 170 Broadway, New York City, on May 3d, was called to order by the president, Jos. B. Bowden, at 9 P. M. The minutes of the last annual meeting were read and approved. The reports of the treasurer and of the auditing committee were read, and on motion received and ordered placed on file.

The report of the executive committee was read by the chairman, H. H. Butts, as follows, and was also received and ordered placed on file.

Mr. President and Members of The Jewelers' Security Alliance.

Gentlemen: In presenting this, our fifteenth annual report, we desire to state that the Alliance is in excellent financial condition, and able to meet all demands that are liable to be made upon it.

It would have been gratifying if we could have reported an increase in membership, but, although we have added fifty new names to our roll, death, failure and retirement from business have removed so many, that there has been no net gain in numbers during the year.

Considering the state of trade in our line, and the general business conditions, the committee feel that we have done well to hold our own during the past three years, and confidently expect that there will be many accessions as soon as business improves—there being many jewelers ready to join when able to do so.

Our certificate has again proved its efficiency as a protection against burglary, none of the members having had a safe "cracked" during the year, the last instance of the kind having occurred December 19, 1896, nearly eighteen months ago.

Jewelers who are not members indirectly participate in this benefit, and if they fully considered their own interests we know they would become members.

Consider what the effect would be if every jeweler in your vicinity had our certificate prominently displayed in his store.

Would you not feel infinitely more secure not only from an attack on your safe, but from window-smashers and thieves of all kinds, since it would be unprofitable for the "profession" to come there at all?

The committee believe that safe burglars would give up attacking jewelers' safes if we had a large majority of jewelers among our members, and earnestly request your hearty co-operation in their effort to bring about this desired result.

We desire also to express our grateful appreciation to the trade papers for many courtesies during the year.

The president, Jos. B. Bowden, then delivered his annual address as follows:

Gentlemen: It is particularly gratifying to report that our Alliance has met with great success during the past year. We have not a single burglary of our members to report, and our secretary informs me that during that time there have been 193 jewelry stores broken into, and 33 jewelers' safes burglarized in the United States. As about one-third of the jewelers who have stocks of sufficient size to tempt burglars are on our membership roll, it seems a complete answer as to the value of a membership in this Alliance.

We have established the fact beyond dispute that we can, to a large degree, prevent burglaries, as well as capture thieves and recover goods after a burglary has been committed.

I find but one cause for regret, and that is all jewelers are not benefited by it, and we feel it is the duty of each member to impress upon non-members the advantages gained by membership.

We have adopted a plate to be placed on the outer door of the stores of our members, and feel confident it will act as a warning to thieves, conveying to them the idea, "Hands off! Protected by Jewelers' Security Alliance."

Remember that since the organization of the Alliance your officers and executive committee have served without compensation.

I thank you for the confidence you have placed in me, and have endeavored to do my duty.

The meeting then proceeded to the election of officers, the following being unanimously chosen:

President—Jos. B. Bowden.
Vice-presidents—First, David Untermeyer; Second, Henry Hayes; Third, Leopold Stern.
Treasurer—Bernard Karsch.
Members of Executive Committee—Henry Abbott, F. Kroeber, Chas. F. Wood.

Messrs. E. S. Smith and C. C. Champenois were appointed auditing committee for the unsuing year.

A special meeting of the executive committee was held at the close of the annual meeting, at which H. H. Butts was re-elected chairman, and Messrs. A. K. Sloan, Henry Hayes and Bernard Karsch were appointed investment committee.

The following new members have been admitted:

Sylvan Brothers,	Columbia, S. C.
J. Brunners's Sons,	176 Broadway, New York.
W. F. Parker & Son,	Fair Haven, Vt.
George W. Boettinger,	Baltimore, Md.
Harry A. Dillon,	Gloversville, N. Y.

A Wonderful Clock.

Built to Commemorate American Progress in Mechanical Arts, and Signalize the Crowning Achievement of American Industry.

During the past month the thousands of visitors to the store of Joseph H. Bowland Co., Brooklyn, N. Y., marveled at the wonderful clock there exhibited. This unique timepiece was made several years ago by the Waterbury Watch Co., and is known as the century clock. It is in many respects the most remarkable clock ever exhibited. It was built to commemorate American progress in the mechanic arts and sciences during the century; being at the same time a magnificent monument to the brave men who, by their sagacity and valor, maintained the independence of the Nation and cemented the States in indissoluble union.

THE CENTURY CLOCK.

Only the highest class of workmen were employed in its construction—architects, designers, wood carvers, artists and mechanical experts—each in his specialty.

There are larger clocks in existence, and clocks showing many astronomical changes, but in automatic figures, exquisite wood-carving and artistic proportions, it is unrivaled by any of the world's famous automatic clocks. The base of the clock is in the form of a Maltese cross, with one arm missing; covering a space equal to six feet square. The clock is sixteen feet high. The frame is made of black walnut, highly polished, and has many handsomely-carved figures and panels in cherry and mahogany, all of purely American design.

Popular interest will be especially excited by the groups of automatic figures which, moving in a remarkably life-like manner, typify the leading events in American industrial progress:

Scene 1. This represents an old New England saw mill, being an actual scene from a primitive Maine town.

Scene 2. This scene shows two figures picking cotton in the old style, while at the side Whitney is explaining the cotton gin to a planter, and two figures are operating it under his instruction.

Scene 3. Here are shown the old-time methods of spinning, weaving, breaking and hatcheling of flax.

Scene 4. This scene depicts the primitive methods of watchmaking in old-fashioned times; and as it prevails to a large extent in the making of the cheap class of Swiss watches to-day. Every Swiss hamlet has its counterpart of this scene. Certain proprietors supply the peasants with blanks, which are worked into wheels by hand at their homes.

Scene 5. The mining scene is true to life, the movements of the figures being natural in every particular.

Scene 6. The telegraph and telephone inventions are here shown as in use in the business office of the Waterbury Watch Company.

Scene 7. The figure of Elias Howe will be recognized working on his model of the first sewing machine. In the background a tailor plies his needle in the old-fashioned way. In a tastefully-furnished room at the left a young lady is running a modern sewing machine.

Scene 8. In this scene a model arc electric lighting plant is in operation.

Scene 9. A group of twenty-five figures forms the large scene in the front of the clock, and it is one of the most remarkable automatic groups ever produced. It represents the train room of the Waterbury Company's model factory, with all the shafting and machinery in operation. The figures are six inches high, carved in solid wood and and delicately colored.

Equally remarkable in another way is the series of panels around the lower part of the clock, showing in high relief figures of carved cherry, the following events in American history. The Declaration of Independence, the Surrender of Lord Cornwallis, General Scott in Mexico, assault on the Castle of Chepultepec, the firing of the first gun at Fort Sumter, Battle of Gettysburg, Lincoln freeing the slaves, Lee's surrender and the Waterbury Watch factory. In front of the clock are three panels, the center one representing the new brotherhood of North and South. On one side of this is a carving of Washington, and on the other side one of Grant.

At the top of the clock is a reproduction of the Dome of Independence Hall at Philadelphia, and the famous Liberty Bell in miniature is within. The pinacle is formed by a handsomely carved figure of Liberty. Other carved figures are as follows:

At the left of dial, type of a soldier of the Revolution; at the right, type of a soldier of the Civil War. The left wing is surmounted by a figure of War, and at the right a figure of Peace.

The clock was on exhibition at the World's Columbian Exposition, and was awarded a special diploma. New features have since been added, including the electrically operated chimes, the music changing every quarter hour. The clock is self-winding, one coil of the spring being taken up every hour.

Lifetime Subscriber.

THE KEYSTONE. PIKEVILLE, KY., May 10, 1898.

Please do not think of such a thing as taking my name off your subscription list while I live, and I will direct my son to continue to supply the one dollar for it for years to come. For it is without doubt the very best periodical of its kind. During my thirty-seven years practice at the bench I have frequently found it absolutely necessary to use oil on the club-tooth escape-wheel, or the pallets, to give best satisfaction. But I never put oil on the fork or roller.

Very truly yours,

J. H. RUTROFF.

The Smallest Bicycle Ever Constructed.

Of the many mechanical curios that have recently been brought to our notice, one of the prettiest and most perfect is a diminutive bicycle, constructed by Joseph Figarotta, head of the finishing department of the Keystone Watch Case Factory, Philadelphia, Pa. Though this tiny bicycle is so small in its dimensions that it could get conveniently lost in the angle of a vest pocket, it is mechanically perfect in all its parts, and so frictionless that it moves almost at the threat of touch. No part or appurtenance of the completely equipped wheel is lacking. A dainty lantern, with microscopic colored lens, rests on its accustomed bracket, and even a prettily designed name plate is plainly visible. Every part of the machine is strictly up-to-date—saddle, handle-bar, pedals, etc. The wheels are furnished with the regulation pneumatic tires, and one could almost imagine a New Jersey mosquito handling the pump. The bicycle rests on a little stand, in a pretty glass case, also designed and made by Mr. Figarotta. On the silver base of the case are engraved the dimensions of the machine, which are as follows: Height of frame, ⅞ inch; wheel base, 1½ inches; diameter of wheels, 1 inch; sprocket, 20 and 8 teeth; width of chain, .02 inch; length of crank, ⅜ inch with ⅜ thread. On a brass border around the base of the glass case is engraved the name of the maker, who previously distinguished himself by duplicating in extreme miniature such voluminous and complicated machinery as locomotives, engines, etc.

Photographs on Watch Dials and Caps.

Single or group pictures.

A Beautiful Gold Embossed Sample Card and Price-List sent free to jewelers on application.

Price same as ever, **$1.**

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

Klondike or any other Old Gold.

The highest price paid in cash for all kinds of gold, silver and platinum, sweeps, filings, brushings, polishings, gilders rags, gilders solutions, or anything containing gold and silver.

Estimates made if desired, and if not satisfactory, goods returned at our expense.

T. B. HAGSTOZ CO., Limited,
Smelters, Refiners and Assayers,
709 Sansom St., Philadelphia, Pa.

SIGN CLOCKS

No. 8.

which keep accurate time,

Not Dummies,

are what we manufacture. Our clocks are in use for over two years, and have earned their reputation as handsome, useful and durable signs.

Three cells of battery, governed by a simple attachment on your regulator, operate them. Improvements recently made enable us to guarantee them in every particular. The dials are ground glass and are illuminated at night by electric lights within. Prices of clocks for bracket or post range from

$40.00 up.

Posts of wood or iron from

$15.00 up.

Columbia, S.C., Apr. 30, '98.
The Joliet Elec. Mfg. Co.,
Joliet, Ill.

Gentlemen: Permit me to say that the No. 4 Clock that we purchased from you last fall is giving perfect satisfaction, and we consider same the best and cheapest advertisement we ever invested in.

Yours respectfully,
SYLVAN BROS.

Mineral Point, Wis., Apr. 29.
Joliet Elec. Mfg. Co.
Joliet, Ill.

Dear Sirs:—We received your clock sign some days ago, and would say it is the finest sign on our street and works like a charm from a small clock.

Yours,
H. S. Hurlbut & Co.

Write for Catalogue.

Joliet Electrical Mfg. Co.
JOLIET, ILL.
Chicago Office—Room 509, 126 State St.

CLOCK HAIRSPRINGS

THE CLOCK REPAIRER'S ASSORTMENT CABINETS contain 50 or 100 finished hairsprings complete, all sizes and makes, carefully arranged, full directions. Cabinet of 50, $1.00; 100, $1.75, by mail. Same springs, any size or make, 30 cts. per doz., 20 cts. per half doz. Steam Gauge Hairsprings of every description. Phosphor Bronze Hairsprings for Electrical Instruments, etc.

Ask your Jobber for these Cabinets.

F. N. MANROSS, Forestville, Conn.

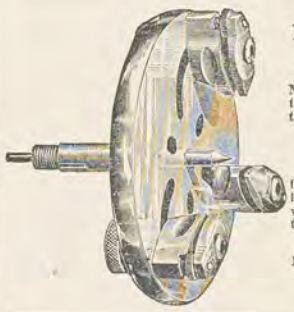
Every wide-awake Jeweler in

The United States

is selling patriotic novelties. Our Roman finish gives them a richness that makes them

Sure Winners.

J. J. Donnelly, 73 Nassau St. — **Gold and Silver Plater,** New York City.



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.

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.

Removal Notice.

We desire to announce that we have removed to our new and handsomely fitted store on the second floor of the **New England Building, 129-131 Euclid Ave.,** where we hope to welcome our old friends and the trade in general.

Closing out Pitkin's Pegwood, 10c. per box.
" " Witch Kloth, No. 1, 60c. per doz.
" " " No 2, $1.00 per doz.

The Bowler & Burdick Co.,
CLEVELAND, OHIO,
Importers and Jobbers of Diamonds, Watches, Jewelry and Materials.

NOT What You Pay
But What You Get for What You Pay

The **Best** Office Desks at reasonable prices.

The U.S. Desk & File Co.
Indianapolis, Ind.

LETTER FILE

$1.50 per dozen
Cash with order
Size 11x12¼x3

U. S. Pat. Oct. 20, 1896. Canada Pat. 1897

Wells' Perfect Self Conforming and Ventilating Ring Adjuster is the result of many years' experience. It does not wear or injure the ring, cannot spring up or lose out, yet it may be removed instantly; it can be fitted in three minutes. If your ring goes over the joint hard, this Adjuster can be taken off or replaced very easily while the ring is on the finger. Ask your jobber for it, or I will send on receipt of price, **1 dozen, assorted sizes, solid 10 K. gold, $3.75 net. 1 dozen, metal, assorted sizes, 85c. net.** (5c. extra if registered.) Retail price, fitted, metal, 25c. each; gold, 50c. to $1.00 each, according to size required. Address,

CHESTER H. WELLS, Jeweler, Meshoppen, Pa.

Our Catalogue of thoroughbred Poultry will be sent free. It is concise, handsome and instructive, explaining the difference between thoroughbreds and mongrels.

Keystone Poultry Farm
Valdosta, Ga.

No. 6612
$2.75 doz. Sterling Silver.

New Spoons

Admiral Dewey
Admiral Sampson
Gen. Lee
Capt. Sigsbee

SIMMONS & PAYE
"The Souvenir House"
127 Eddy St. PROVIDENCE, R. I.

TO INCREASE YOUR REPAIR TRADE.

Buy the roughed-out and outlined parts for one of my **Paragon Lever Escapement Models,** and finish it up and place it in your show window. They convey an idea of high mechanical skill. Write for descriptive circular. To insure answer, enclose two-cent stamp. Address

M. MACKELLAR,
P. O. Box 2674, Philadelphia, Pa.

THE BEST is THE CHEAPEST after all.

THE only secure and simple arrangement for Interchangeable Stone Initial and Emblem Rings. Made in all desirable styles.

Globe Lever
BUTTON BACK.
Post can be attached to any button.
"It has no peer"

CATALOGUE SENT ON APPLICATION.

J. BULOVA,
57 MAIDEN LANE, NEW YORK.

Try the ELECTRIC SHELLS for Ring Polishing and Finishing.

LEATHER or CHAMOIS,
40c. per set of 6 shells and wooden mandrel.
FELT,
50c. per set of 10 shells and wooden mandrel.
CANTON FLANNEL,
30c. per set of 10 shells and wooden mandrel.
CARBORUNDRUM CLOTH,
35c., assorted grits, 10 shells and wooden mandrel.
EMERY CLOTH,
30c., assorted grits, 10 shells and wooden mandrel.
CROCUS CLOTH,
30c., assorted grits, 10 shells and wooden mandrel.
EMERY PAPER,
15c., any grit, 10 shells and wooden mandrel.

The New Bedford Watch and Clock Oil, best ever produced, at $2.00 per dozen.

Hobbs Bros., Trade Watchmakers, Material, Tools, etc.,
MOONEY BUILDING, BUFFALO, N. Y.

The Souvenir Spoon Engraver.

Chas. A. Stahl, Jr.
Providence, R. I.
Best and cheapest. Send for price-list.

Ⓝ GOLD SOLDER.

BEST ON EARTH.

Made in Low Karat, 6, 8, 10, 12, 14, 16, 18 Karats.

Easy-flowing and good color.

☞ *SOLD BY ALL JOBBERS.* ☜

JEWELERS', PLATERS', WATCH CASE MAKERS' AND SPECIAL

BRUSHES

MANUFACTURED BY
EDWARD E. GNICHTEL,
15 TO 19 GREEN ST.,
NEWARK, N. J.

When writing to advertisers, kindly mention The Keystone.

TURQUOISE

When you need a Turquoise of any size or grade, send to us for it. We keep a full stock, including small stones for jobbing.

We can save you money, and will always send on approval.

Chas. S. Crossman & Co.
3 Maiden Lane, New York.

THE BERLIN

WATCH DEMAGNETIZER

Is the Cheapest and Best. **Price, $6.50.**

ELECTRIC ALARM

for early rising. **$1.00.**

Can be used with any Alarm Clock.

J. JONES & SON,
64 Cortlandt Street, NEW YORK CITY.

MONEY AND TIME SAVED
by sending your

WATCH WORK

to

OLOF PEARSON,

EXPERT WATCHMAKER FOR THE TRADE.

Fine Watch Repairing. My charge for Demagnetizing Watches is 50 cents. Give me a trial on this kind of work. All kinds of Wheels Cut to Order.

Mail Orders promptly attended to.
Room 1313 Columbus Memorial Building, CHICAGO.
GOOD WORK AND LOW PRICES.

Watch Repairing for The Trade

LOW PRICES AND PROMPT ATTENTION.

ALL WORK GUARANTEED.
PRICE-LIST UPON REQUEST.

C. Culman,
Globe-Democrat Building,
ST. LOUIS.

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**

Changing Old English and Swiss Cases to take American S. W. Movements my specialty.

OLD CASES MADE NEW.

Silversmiths' Building, 131-137 Wabash Ave., CHICAGO.

There's Money in

We are furnishing to the trade two books, either of which will teach you the entire art of repairing a bicycle.

"The Bicycle; Its Care and Repair," by C. VON CULIN. Price, 25 Cents. This book has eighty pages, illustrated, which tell how to care for and repair a bicycle, stating tools needed, best appliances, methods, etc.

"Bicycle Repairing," by S. D. V. BURR. Price, $1.00. This book has 166 pages, 150 illustrations, and gives in detail the entire science of practical bicycle repairing.

THE KEYSTONE, 19th & Brown Sts., Philadelphia, Pa.

Advertising Cuts

Designed and Engraved.

Consult us before issuing
Illustrated Catalogues and Circulars.

Special experience in
Illustrating for the Jewelry Trade.

Beck Engraving Co.

147-151 North Tenth St.,
Philadelphia.

Superior Halftones.

AMERICAN
CUCKOO
CLOCK CO.
PHILADELPHIA, PA.
OUR CATALOGUE FOR THE ASKING.

Spain Gives In

and so do all other nations, that **WE make the finest Photo. Buttons. Scarf Pins. Sleeve Buttons and all other Photo. Novelties.**

We send you FREE Photo. Display Card and 250 Maine Photographs with your advertisement on reverse side. **Also a FREE sample Photo. Button.**

Commissions 50 per cent. We prepay return postage.

Photo Jewelry at Lowest Prices.

P. S.—Send good photograph for sample button.

Parisian Novelty Co.,
77-79 Clark St., Chicago.

HEADQUARTERS FOR ELECTRIC AND PORTABLE
WATCHMAN'S CLOCKS
E. O. HAUSBURG, 41 MAIDEN LANE, N. Y.

Spot Cash for Diamonds.

Do you need money, or are you overstocked with diamonds? Should your customer offer to sell diamonds which you do not care to buy, send them to me by express C. O. D. with privilege of examination, with your lowest cash price, and the money or the goods will be returned to you by next express. Some of the largest as well as the small stores have sold me diamonds in order to realize money to tide them over business troubles, and were successful thereafter. Do not hesitate, as this will give you ready cash, and the express company is responsible for the return of the diamonds or the money. Strictest confidence guaranteed.

GERHARDT,
Box 502. Cincinnati, Ohio.

SIGNS

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,
717 W. Madison St., Chicago, Ill.

The Best Window Attraction in the World

A little oil once a month and one minute's attention each day, is all that is required. Will last a lifetime, and never lose its attraction. Any watchmaker can make it from his own material without additional cost. Full printed instructions sent to any address on receipt of **$1.00.** Instructions copyrighted, 1897. Write for circular. Address

A. BUCKENHAM, Watchmaker and Jeweler,
Box 29, Bothwell, Ontario, Canada.

The Bangle Engraver,
CHAS. A. STAHL, Jr.,
Providence, R. I.

Best and cheapest.
Send for price-list and prints.

273

COME take a short course this summer in *WATCH WORK, ENGRAVING, JEWELRY WORK or OPTICS.* You will be surprised to see how much we can teach you in a month or two. Anyhow, send for our new catalogue.

Philadelphia College of Horology,
F. W. SCHULER, Principal. **1213 Filbert Street, Philadelphia.**
See ad. on page 431, this issue.

SIGNS FOR ALL TRADES AND PROFESSIONS **GLASS & METAL**
J. W. RUSSELL & CO., M'N'F'RS.
294 PEARL ST. NEW YORK. CATALOGUE

50 PER CENT. COMMISSION
Big attraction for your window, and money in your pocket.
Photo. Button Easel Card sent free to jewelers. Shall we send you one?
Photograph Novelty Co.
125 State St., Chicago.
Originators of Photo. Buttons.

Chicago Gold Pen Repairer.

GOLD PENS.

Send me your work. *Repairs of all kinds.*
S. N. JENKINS, 103 State St., Chicago, Ill.

EXPERT
Watch Case Repairing
and
Watch Case Manufacturing.

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

Old English and Swiss Cases changed to fit American Stem-Wind Movements.

Special Cases made to order in Gold and Silver for English, Swiss and American Movements.
OLD CASES MADE NEW.

F. H. JACOBSON & CO.,
86 State Street, Chicago.
Send for Our New Price-List.

Small Advertisements

No advertisement inserted for less than 25 cents.

Under heading "Situations Wanted," ONE CENT per word for first twenty-five words. Additional words and advertisements, THREE CENTS per word.

Under all headings except "Situations Wanted," THREE CENTS per word.

Name, address, initials and abbreviations count as words.

If answers are to be forwarded, postage stamps must be enclosed.

To insure insertion money must accompany all orders for advertisements, and copy must reach us not later than the 25th of each month for insertion in the following month's issue.

The real name and address of every advertiser must accompany the copy of the advertisement.

Advertisers who are not subscribers must send 15 cents if they desire a copy of the paper in which their advertisement appears.

Address,

THE KEYSTONE,
19th & Brown Streets, Philadelphia, Pa.

SITUATIONS WANTED.

Under this heading, ONE CENT per word, for first twenty-five words. Additional words and advertisements, THREE CENTS per word. No advertisement inserted for less than 25 cents.

POSITION as watch and clock repairer near Philadelphia. Ref. to character. Location preferred to wages. Address, "H 97," care Keystone office.

AT liberty August 1st. First-class salesman and bookkeeper; will work at bench to finish trade when not otherwise engaged. Gilt edge refs. Might arrange to leave earlier. Address, "H 101," care Keystone office.

BY first-class watchmaker and jeweler of over 15 years' exp. Have American lathe and good set of tools and A1 refs. Ad., "P 44," care Keystone.

PERMANENT position by first-class watchmaker, jewelry repairer, salesman and fair engraver; 26 years old. Tools. Willing to work. Address, "G 46," care Keystone office.

AS watchmaker, optician, jeweler and engraver. Young man, no bad habits; good refs. Address, 312 Barker Avenue, Peoria, Ill.

BY young man as watch, clock and jewelry repairer; also do plain engraving. Address, Pete Schilt, Olney, Ill.

BY first-class watchmaker, jeweler and engraver; A1 ref. from present employer. Address, "H," Lock Box 168, Jonesboro, Ark.

BY A1 optician and refractionist in optical store or to manage optical business in first-class jewelry store. "F 46," care Keystone office.

BY engraver, jeweler and graduate optician; can do some watch and clock repairing. Own tools and trial-case. Thos. W. Bull, Union Springs, N. Y.

BY watchmaker and jeweler, 25 years' exp. Own tools. German and English. Competent to take charge of store or repairing. Address, Box 192, Ohio, Ill.

BY young man, 24, with 9 years' exp. in watch, clock and jewelry repairing and waiting on trade; also graduate optician. Address, "Jeweler," Box 127, Neenah, Wis.

YOUNG man, single, 2½ years' exp., desires good place to finish trade. Will work another year for $100, board and room. Can give refs. Own some tools; willing to work; go anywhere. Box 133, Linden, Ind.

FIRST-class watchmaker and good engraver on letters and monograms, can do jewelry repairing, have fair knowledge of optics, can take entire charge, strictly sober, A1 refs., moderate wages, wishes steady position only in a healthy place in the mountains—California or Colorado pref. "L 57," care Keystone office.

IF you want a strictly reliable, all-around man competent to do all kinds of repairing on fine watches, clocks and jewelry, plain engraver, exp. refracting optician, salesman; manager if necessary. 24 K. refs. Ad., "S," 35 Federal St., New London, Conn.

(Continued on page 498)

SITUATIONS WANTED.

(*Continued from page 497.*)

WANT situation. Am 37 years old, had 20 years' exp. at the bench. Am good salesman. Write me, and I will tell you what I can do. City or country. Joe James, Versailles, Ohio.

YOUNG man, 7 years' exp., mostly in city, as watchmaker and salesman. Sober, industrious, own tools and lathe. Best refs. Not a graduate of any horological institute. Box 253, Winterset, Iowa.

FIRST-class watchmaker and optician. Best refs., good salesman and stockkeeper. Age 28. Ad., "W," Box 159, Hope, Ark.

FIRST-class watchmaker and graduate optician, 28 years old, unmarried, $15 per week. East pref. H. N. Skinner, Oph. D., Jefferson City, Mo.

WATCHMAKER and plain engraver desires position. Have tools, goods refs., wages moderate. Address, Box 33, Waltham, Mass.

BY expert watchmaker, graduate engraver and fine manufacturing jeweler and repairer. Understand optics, am a good salesman. Ad., "Jeweler," 402 Pine Street, Calumet, Mich.

WATCHMAKER, good plain engraver, jewelry repairer, A1 refractionist, good habits. Pennsylvania preferred; will go any place. Address, "D 50," care Keystone office.

POSITION on the road with good jewelry, optical or silverware house. Want to begin about July 1st. Correspondence solicited. Address, "L 60," care Keystone office.

A THOROUGH, competent watchmaker and optician desires responsible position in large town or city—West or South. Address, P. Ruggles, 6237 Greenwood Avenue, Chicago, Ill.

A THOROUGHLY competent watchmaker, expert jewelry repairer and good salesman desires permanent position. Has had 14 years' exp. in above lines, and can give first-class refs. Owns full set of tools. Will work for moderate salary if position is permanent. Ad., "R 63," care Keystone.

YOUNG man, 21; has spent nine months in watchmaking school. Can do first-class work on watches and clocks; also hard-soldering, etc. Own bench and tools. A1 ref. C. D. Seaman, De Lancey, N. Y.

BY young man. Can do watch, clock and jewelry repairing; also engraving. Have had charge of business. Have tools and bench. "J 19," care Keystone office.

FIRST-class watchmaker, engraver and salesman, 14 years' exp. American, single. Ad., "H 104," care Keystone office.

WATCHMAKER, clock and jewelry repairer; single man, 12 years' exp. Have tools and lathe. Fair wages. Speak German and English. Ad., "Watchmaker," 519 North St., Sidney, Ohio.

BY first-class watchmaker, engraver and graduate optician of 4 years' practical exp. Own tools, A1 refs. Box 29, Edgington, Ill.

BY young man as first-class watchmaker, clock and jewelry repairer, good salesman; 7 years' exp., A1 ref.; capable. Ad., Robert Eisele, Sterling, Ill.

BY young man, age 23, as watchmaker, jeweler, fancy engraver, doctor of refraction; 8 years' exp. Speaks English and German. Full set of tools. Ad., "G. A. T.," Huelsburg, Dodge Co., Wis.

DO you need eyesight specialist or expert watchmaker? Advertiser wishes employment in either of the above capacities. Have complete trial-set, ophthalmoscope and finest watchmakers' tools. As eyesight specialist has had extensive experience in all cases of refraction and heterophoria. As watchmaker can do all fine work rapidly, accurately and conscientiously, using the latest methods. Retail employment desired. Wages, $25 per week. Send refs. "T 46," care Keystone office.

WATCH, clock and jewelry repairer wants situation. A1 refs., 7 years' exp., all tools. Ad., S. L. Diehl, 111 N. Eighth St., Allentown, Pa.

BY young man, age 19, good habits, can do hard-soldering, clock and jewelry repairing and plain watchwork. $8 per week. A. W. Ellis, Jr., Bowling Green, Ky.

YOUNG lady, graduate optician, would like position with good optical house, or take charge of optical department. Ad., "S 108," care Keystone

A YOUNG man, age 21, desires to learn the jewelry and engraving business—have some exp.; also salesman. Good ref. Address, Charles Lederer, Jr., Watervliet, Mich.

BY young man as assistant watchmaker, previous exp. on watch, clock, jewelry repairing and salesman. Set of tools. "Jeweler," care 139 Union Street, Westfield, Mass.

BY a good watch, clock and jewelry repairer, fair engraver. Own tools and can give first-class ref. Address, C. A. Morris, Jameson, Mo.

BY married man, age 27, 8 years in jewelry trade. Do all kinds watch, clock and jewelry repairing. Do not engrave. Good reason for desiring change. Address, "P 52," care Keystone office.

COMPETENT watchmaker, jeweler and engraver, with 25 years' exp., October 1st. Northern States pref. Address, "Chronometer," 711 Campbell Avenue, Roanoke, Va.

BY young man, 22, to finish trade, 2 years' exp. Do ordinary watch, clock and hard-soldering work. Have tools. Will do right with first-class jeweler and engraver—optician pref. Refs. furnished. "N 18," care Keystone office.

PERMANENT position by first-class watchmaker, jeweler and optician. Have tools, bench and trial-case. Over 6 years' exp. Address, Box 775, Independence, Kan.

BY young man of 25; 6 years' exp. Engraver, watchmaker, jeweler; some knowledge of optics. West pref. Address, J. R. Humphrey, 221 Broadway, Pueblo, Colo.

YOUNG eye specialist, graduate optician, exp., good salesman, wants position as optician or on the road. Fine refs. Dr. L. R. McCready, Grand Rapids, Mich.

AT liberty July 15th. One of the most expert workmen in the trade. A1 watchmaker, fine engraver, expert jobber and stone-setter, up-to-date salesman; man of good habits, with gilt-edge ref. Understands refining; making of plain rings and medals a specialty. Complete outfit tools. California or New Mexico pref. Reliable parties only need write. "F 48," care Keystone office.

SITUATIONS WANTED.

BY August 1st. Good workman, clean stockkeeper, good salesman. Not afraid of work. Chas. Burgess, Bloomfield, Iowa.

WATCHMAKER, clock and jewelry repairer, own set of tools, exp. salesman, best of ref., desires position. Address, "W 69," care Keystone.

FIRST-class optician, with complete outfit, to take charge optical department in city (central States). Thoroughly qualified to handle most difficult cases. First-class refs. "L 61," care Keystone office.

BY young man exp. in making, repairing and alterations of spectacle and eye-glass frames; also jewelry repairing. W. K. Freeland, 700 Edmondson Avenue, Baltimore, Md.

BY young man, age 21, 4 years' exp., have own tools. Can furnish ref. Watchmaker and jeweler. Fred. Mayer, Jr., 149 Eleventh Street, Oshkosh, Wis.

BY first-class watchmaker, expert optician, good salesman and engraver. Best refs.; 12 years' exp.; own tools. C. Jones, 508 Milwaukee Street, Milwaukee, Wis.

FIRST-class watchmaker, engraver and diamond-setter; exp. in repairing fine chronometers, repeaters, etc. Best refs. of character and ability. 16 years' exp. "E. B.," 912 Madison, La Porte, Ind.

BY good, all-around watchmaker, long exp. Single man, excellent habits. Pleasant position rather than wages considered. Understands jewelry business thoroughly. Box 89, Troy, Mo.

BY young man, practical watchmaker and jeweler. Large exp. on railroad work. Unquestionable refs. Can do plain engraving, some knowledge of optics. O. N. Allen, Birmingham, Ala.

BY watchmaker and engraver far ahead of average workman. Considered strictly first-class. 12 years' exp., single, tools and refs. Box 492, McCook, Nebraska.

BY strictly high-grade watch repairer, satisfactory all-around engraver; 14 years' exp. Graduate optician, 8 years' practical and successful exp. Tools, refs., single; West pref. No cheap job wanted. R. H. Taylor, General Delivery, Colorado Springs, Colo.

JEWELER, clock and watch workman, salesman; coloring, alloying, stone-setting, 16 years' exp. Responsible business man. Age 30. Refs. Ad., "Mutual," 2924 Ridge Ave., Philadelphia.

I HAVE in my employ a first-class watchmaker and jeweler, any one desiring same, address, with full particulars, Box 334, Madison, Ohio.

YOUNG man, American, single, good address, 7 years' exp. watch, clock, jewelry repairing, including French, English clocks and hard-soldering, salesman, handy at window-dressing. Own tools; Wages moderate. Ref.; present employer retiring. "B 139," care Keystone office.

BY young man of 4 years' exp., as assistant or to finish trade. Speak Scandinavian, some German. Good salesman, good ref. Address, C. Andersen, Grand Forks, N. Dak.

BY young man as traveling salesman with optical or material house. Watchmaker and graduate optician; 4 years' exp. A1 refs. "R," Edgington, Illinois.

AS watchmaker, jobber, clock repairer and salesman. Age 23, 6 years' exp. Good refs. M. E. Crawshaw, Mahanoy City, Pa.

SCIENTIFIC and thorough optician, also jewelry salesman, at present with wholesale and retail optical house. Prefer jewelry store. Refs. furnished. "L 62," care Keystone office.

BY first-class watchmaker and graduate optician. A1 refs. Ad., "Optician," Barre, Mass.

EXPERT refractionist, using ophthalmometer, ophthalmoscope, retinoscope, color tests, trial-lenses, etc., will be open for engagement. Long exp. in fine class trade, both optical and jewelry. Position as manager optical department, first-class establishment, or will correspond with first-class concern in regard to traveling. A1 refs. "M 78," care Keystone office.

TEMPORARY positions wanted by a practical watchmaker and engraver, 11 years' exp. Good ref. and have all tools. Address, Box 575, New Britain, Conn.

30 YEARS' exp. as watchmaker and plain engraver. Good ref. "S 111," care Keystone.

BY watch and clockmaker, first-class workman. Good on English and Swiss watches, 14 years' exp. Sober, industrious, single; best refs. L. Kanderer, 111 Clermont Ave., Brooklyn, N. Y.

BY young man, good at watch, clock and jewelry repairing. Speak German and English. A. J. Schniepp, Bridgeport, Pa.

BY first-class watchmaker, jeweler, engraver and salesman; understands business. A1 refs., good habits and single. 8 years' exp. at bench. Ashley M. Harger, Waterloo, Wis.

BY young man, watchmaker and salesman. Have tools. Address, "Watchmaker," 125 S. Main, Wichita, Kan.

16 YEARS' exp. as expert optician. Thorough on refraction, fitting of frames and all kinds of spectacle repairing, gold and silver; hard-soldering, repairing all kinds of complicated watches; do plain engraving. Salary, $18 per week. New Jersey or New York pref. Have test-case and trial-frame, etc. Ref. exchanged. "F 49," care Keystone office.

FIRST-class watchmaker, plain engraver, clocks and jewelry repairer; own tools. Speak English and German. Single, no bad habits; age 25. Competent to take charge of watch repairing. 4 years with former employer, Geo. W. Kleimer, Tremont Hotel, Duluth, Minn.

FIRST-class watchmaker, optician, jeweler and salesman. Owns lathe and tools; 14 years' exp.; all-around man. New England pref. "W. M.," P. O. Box 564, Springfield, Mass.

WATCHMAKER and engraver, years of practical exp., position with some large firm. Best of refs. Address, W. Miller, 5145 Prairie Avenue, Chicago, Ill.

HELP WANTED.

UNDER THIS HEADING THREE CENTS PER WORD.

A GOOD watchmaker, jeweler; must be a good engraver. Send sample; good ref. Rudisill Bros., Altoona, Pa.

A YOUNG man in a Philadelphia watch, clock and jewelry store. Must be a good workman. Steady place, nice position. Salary, $10 per week. Address, "A 34," care Keystone office.

A FIRST-class refractionist, who speaks German and has general business ability, to push and manage an optical establishment in Philadelphia. Address, giving age, exp., refs. and salary expected. "G 57," care Keystone office.

A FIRST-class, all-around optician and grinder. Must be able to do the best of all kinds of work. Steady work for the right man. Address, "G 53," care Keystone office.

FIRST-class engraver and jewelry repairer. Herman S. Hewett & Co., Brockton, Mass.

GOOD watchmaker, jeweler, engraver, optician; middle age; best ref. required. The right man will have charge of nice store to his management. Any amount of capital from $500 to $1000 would be pref. Lock Box 5, Talmage, Neb.

WATCHMAKER, engraver, diamond-setter. Must be thoroughly familiar with chronographs, timers, etc., expert at all kinds of engraving, and do diamond-setting and jewelry jobbing in a workmanlike manner. No attention will be paid to applicants not sending photo., samples of engraving, and refs. Wages, $25 per week; permanent position. Location in the Rockies. "G 54," care Keystone.

FIRST-class jewelry salesman to call on department and large clothing stores, to travel in Ohio, Indiana and the West. Inexperienced men need not apply. Reference. Address, H. Seligman & Co., Cincinnati, Ohio.

A GOOD, all-around young man as watchmaker, jeweler, salesman. Wages low; easy position. Must have best of refs. C. B. Cole, Hightstown, N. J.

EXPERT watchmaker; must be good engraver and jewelry repairer. Salary, $20; permanent position. Send sample of engraving. Address, "G 55," care Keystone office.

GOOD watchmaker, jeweler, engraver and salesman. Send sample of engraving and photo. Age not less than 28. State salary and refs. in first letter. Address, Chas. Price, Jacksonville, Ill.

FIRST-class watchmaker, jeweler, engraver and salesman to go South. Salary, $18 a week. Address, "L 59," care Keystone office.

A FIRST-class all-around man to take charge of store on commission. An M. E. pref. Gilt-edge refs. Central States. Ad., "L 58," care Keystone.

AT once, a first-class watchmaker and engraver. Must be strictly first-class and best of refs. State salary wanted. R. H. Trask, Ottawa, Ill.

GOOD watchmaker, jeweler, engraver and salesman. A man who wants a permanent position only. Want a man to stay 3 to 5 years, at least. Must not be afraid to work; must have best of refs. Send photo.; state lowest salary to start on. Address, Box 870, Kalamazoo, Mich.

WANTED.

UNDER THIS HEADING THREE CENTS PER WORD.

EVERY kind of gold and silverware, jewelry, watches, platinum. Market value paid. Sent by express or registered mail. Price not satisfactory, I will return all articles. J. L. Clark, refiner and sweepsmelter of gold and silver (established 1870), 724 Filbert Street, Philadelphia.

JEWELRY stock wanted for spot cash. Quick action. Strictly confidential. Address L. Spiro, 96 E. Van Buren Street, Chicago, Ill.

GOOD trial-case and Javal ophthalmometer. Send description and lowest cash price. "S 109," care Keystone office.

JEWELRY store without stock, or a good location for a watchmaker. Eastern States preferred. "H 102," care Keystone office.

A GOOD man with $1000 in money to take equal interest with me in the best paying jewelry and fire insurance business in the State. Work too hard for one man. If you have a $1500 stock of jewelry you want to move, write me. Box 136, Llano, Texas.

PARTNER with $5000 to $10,000 to take an active interest in an established and rapidly growing optical business, wholesale and retail. A rare chance. Address, "E 17," care Keystone office.

A JOLIET sign clock; must be cheap and in good order. Address, "B 136," care Keystone office.

PARTNER, young, industrious, unmarried, with $1000 cash, by watchmaker and optician with $1000. To start in live town. Jeweler and engraver pref. Address, "S 106," care Keystone office.

COMPLETE, medium-priced line of jewelry to sell the ladies' and gents' furnishing trade in southwestern New York, Pennsylvania and Ohio. Ad., Box 2000, Richfield Springs, N. Y.

8-SIZE case for Waltham movement. Abner C. Thomas, Sistersville, W. Va.

TRIAL-case. Send full description, lowest cash price. Box 293, Ada, Ohio.

TO buy good stock of jewelry. Must be cheap for cash. Central States pref. Address, "Jeweler," 1918 Monroe Street, Toledo, Ohio.

WANT to buy a good stock of jewelry well located. Address, "H 400," care Keystone office.

SMALL power steam, gasoline or electric motor. Box 220, Rio, Wis.

SMALL stock for cash; city, county seat or country town. Box 135, Versailles, Ohio.

FAY'S improved optometer, also Geneva lens-measure. Ad., "B 137," care Keystone office.

HARDY or Javal ophthalmometer, or De Zeng refractometer. Must be cheap and in good order. Address, "B 135," care Keystone office.

TO buy a jewelry store in Illinois. Must be good value and very cheap. Would prefer from $4000 to $6000 stock. Address, "G 56," care Keystone.

CASH.—Will pay cash for jewelry store within 60 to 75 miles from Plain Dealing, La., in town from 12,000 to 15,000 inhabitants, in Arkansas or Louisiana. Address, "L. F.," Plain Dealing, La.

FOR SALE.

UNDER THIS HEADING THREE CENTS PER WORD.

HOROLOGICAL school scholarship for sale, cheap. "G 70," care Keystone office.

DE ZENG refractometer, brand new, 1898 model; $65. C. E. Elliott, Williamson, N. Y.

IN Maryland. Town of 4500 inhabitants. Plenty fish, oysters, crabs and fruit. Stock, tools, materials and fixtures, $1600. Fixtures new and handsome. Repair work $1000 last year. Good reasons for selling. Investigate. "B 119," care Keystone office.

FIRST-class jeweler's safe, cheap. Box 132, Watertown, S. Dak.

GENEVA lathe, 10-chuck combination; good order. First $10 takes it. B. H. Cheydleur, Norwich, New York.

BEST location in a city of 40,000 pop. Am watch inspector for large division of railroad. Stock and fixtures invoice about $3500. Must be sold on account of death of an interested one. Any one with the cash can get large discounts. "L 46," care Keystone office.

ONLY manufacturing jewelry establishment in Colorado west of Denver, cheap. Business worth from $1800 to $2000 a year. Reasons for selling easily explained. P. O. Box 699, Telluride, Col.

OLDEST jewelry store in Oshkosh, 20 years on best corner in city. Owner will retire. Stock and fixtures $25,000. Can easily be reduced one-half. The business is a gold mine. This is a rare chance for parties with $10,000 to $15,000 cash. Address, Wm. J. Kelly, Oshkosh, Wis.

$1500 WILL buy a well-paying optical business in manufacturing city, healthy location, good trade—10 years established; fine fixtures. A great bargain. Address, "H 94," care Keystone.

OLD-established business in county seat in prosperous Kansas. Jewelry and stationery $3000, part cash and balance easy terms. Want to retire. Fine schools, college, gas and water works, 3 railroads, division, good water, good health. "W 64," care Keystone office.

JEWELRY store; good location, low rent, first-class stock. Good Indiana town of 10,000. Address, "A 33," care Keystone office

THE oldest and best-known jewelry establishment in one of the most solid Southern cities of 40,000. A money-making business, as books will show. Best reasons for selling. Parties having about $20,000, cash, can buy at once, or stock may be reduced to suit purchaser. Address, "B 138," care Keystone office.

HALL burglar-proof safe and chronometer cheap for cash. J. L. Ackerman, Monon, Ind.

REGINA music-box with penny-in-the-slot attachment. Will sell cheap. N. C. Herr, Bluffton, O.

$1000 WILL buy jewelry store in town of 2000 inhabitants; established 15 years, located next bank, center of town. No other jeweler within 10 miles. Clean stock, good fixtures. Bench-work $75 to $100 monthly. Will sell cash only. Sickness, reason for selling. Address, "S 107," care Keystone office.

IN western New York, elegantly fitted up store. Stock and fixtures about $12,000. At a great bargain, or will reduce stock to suit. Good reasons for selling. Address, "R 60," care Keystone office.

FRESH, up-to-date stock of jewelry in town of 1500. One other watchmaker. Invoice about $1000. Will sell part time on good security. "R 61," care Keystone office.

ONE black walnut case grandfather's wood clock; time, strike. Perfect order. "R 62," care Keystone office.

JEWELRY and optical business. W. S. Charles, Grayville, Ill.

STOCK and fixtures of good, paying jewelry store in Chattanooga, Tenn. Splendid chance for watchmaker, engraver and optician. Will reduce stock to suit. Poor health, reason for selling. "M 77," care Keystone office.

TWO 9-foot and one 5-foot rosewood and plate-glass jewelers' counter cases with oak tables, and set of 68 rosewood velvet-lined trays. Address, Theo. B. Myers, Oak Park, Ill.

THE stock and store fixtures of the late R. S. Poursine—stock almost entirely new. Splendid opportunity. Address, E. J. Poursine, administrator, Yazoo City, Miss.

SWISS repeater in good order; $15. I. W. Townsend, 29 Monroe Avenue, Detroit, Mich.

JEWELRY store in one of the best manufacturing cities in New York State. Pop. 70,000. Smallest year's business was $6000. Nice stock, fine fixtures, shop well equipped. Price, $3500. Ad., "P 54," care Keystone office.

SMALL sum will buy finest jewelry business in Wyoming, established 22 years. Licensed watch inspector for W. P. Ry. Co. Write Frances R. Brown, manager, Cheyenne, Wyo.

CHEAP.—Complete set of watchmaker's tools, 1 Universal Swiss lathe, and 1 Johnson chronometer. Ad., Mrs. C. C. Brown, Lockport, N. Y.

GOOD chance, young man, small capital. Stock or fixtures. Town 4000; no opposition. Eastern Massachusetts. $200 or $800. "P 53," care Keystone.

AT sacrifice, jewelry store; investigate. P. M. C. Co., Indianapolis, Ind.

EXCELLENT paying jewelry business. Investigate. Samuel Kitzmiller, Waynesboro, Pa.

WATCH crystals and cabinet, glasses invoice $33, for $20. Arthur Waugh, Winterset, Iowa.

$600.—THE best jewelry business in the West. Send stamped envelope for description. Do not answer unless you mean business. William J. Illiffe, Red Lodge, Mont.

OLD established jewelry store in central Kansas. Only stock of importance in the county. Failing sight compels sale. Ad., "M 76," care Keystone.

WANT to enlist. $1000 buys fixtures and good will. Repairs average $75 per month. S. E. Donahue, Georgetown, Colo.

FINE little store in New England city. Big run of work, good optical trade. A1 location, nice room, fixtures all fine and modern. Light running expenses. About $1500 required. Have 2 stores—can't attend to both. Interior and exterior views to show. Don't write unless you mean business. "H 95," care Keystone office.

FOR SALE.

WATCHMAKER'S lathe, No. 2 hard, Moseley, with 30 chucks. Good as new. $35 cash. Charles Webber, 103 West Fifth St., Cincinnati, O.

THE biggest bargain on earth. A nice little jewelry store and the finest equipped workshop in New York State. Particulars and memorandum if you mean business. "F 47," care Keystone office.

MOSELEY lathe with 6 chucks, almost new, cheap. Apply, "H 103," care Keystone office.

GOOD jewelry store fixtures in good condition; also good set of tools and materials at an extremely low price. A. W. Anthoine, 166 Lisbon St., Lewiston, Me.

A PAYING jewelry business in an agricultural town in Illinois, pop. 1500. The only jewelry store in town. Reason for selling, the proprietor has 2 stores, this one being a branch. A fine opening for practical man. Cash propositions only will be entertained. Address, "S 110," care Keystone office.

CHEAP.—A jewelry store in Jersey, established 24 years, at ⅔ of invoice. With or without stock. Inquire G. Wilkens, 241 First Ave., New York City.

A WELL-established jewelry business of 20 years at a bargain. Good benchwork. Pop. 12,000. Death, cause of sale. Address, S. E. Trufant, Weymouth, Mass.

JEWELRY stock and fixtures invoice $2500. Railroad town of 4000. Doing a good business—the leading store in the county. Good run of benchwork. Can reduce stock. Other business requires my attention. David Bedell, El Dorado, Kan.

ONLY jewelry store in town of 1000 inhabitants. Store is doing good business. Stock and fixtures invoice about $1300. Will sell on time. G. B. Jenison, Buda, Ill.

JEWELRY, silverware and optical store, fine fixtures, in town of 6000. Railroad division, with car and machine shops. Only regular jewelry store in town. Benchwork about $100 per month. Stock and fixtures invoice about $4000; can reduce to suit. Address, "D 49," care Keystone office.

HOPKINS lathe, chucks, foot-wheel, watch repairing tools and material. W. F. Robie, Cuba, New York.

WELL-established jewelry and optical business; county seat, pop. 2500. Only 2 stores in town. It will pay you to investigate. Address, H. E. Cole, Mt. Carroll, Ill.

GENEVA test-case (new), optical books, Loring ophthalmoscope, Brown's bridge measure. Fine correspondence optical course, complete. Box 74, Wilmerding, Pa.

LOOK here! Here is one of the best towns in Indiana, pop. 2000, right in the gas and oil district. Will close out; if at once, will reduce to $300. Write soon. Box 812, Geneva, Ind.

ONE of the best paying jewelry, silverware and bric-a-brac stores in Philadelphia is for sale, the whole thing, stock, fixtures and lease; fine store and in the best location; ill health the sole reason for selling; established 1855. Geo. Eakins & Son, 930 Chestnut Street, Philadelphia, Pa.

FOR SALE OR EXCHANGE.

UNDER THIS HEADING THREE CENTS PER WORD.

FINGER-rings, jewelry, silver novelties in exchange for cash or old gold. Averbeck & Averbeck, manufacturers, New York.

ELEGANT stock of jewelry, silverware and fixtures for sale or exchange in good town. Will trade for musical instruments, sewing machines or furniture, or sell for secured notes. Address, "A 35," care Keystone office.

WHAT have you to exchange for an old-established jewelry and book store in a live town in central New York? Have been at the bench over 30 years, and my health is failing. Nothing outside of New York State or encumbered property wanted. Ad., "W 68," care Keystone office.

EDISON double-spring motor phonograph with complete outfit and hearing tubes for 15 persons, cost $110; will trade for jewelry or sell cheap for cash. E. Lowinsohn, Birmingham, Ala.

MARINE chronometer, best make, perfect order, cheap for cash, or exchange watches, jewelry, optical goods. Box 86, Laurens, S. C.

TO exchange pure-bred black Minorca fowls for prisoptometer, ophthalmometer or optical goods. Lock Box 53, St. Johnsville, N. Y.

VACANT lot, Tillamook, Ore., for diamond, or what have you? S. E. Donahue, Georgetown, Colo.

SPECIAL NOTICES.

UNDER THIS HEADING THREE CENTS PER WORD.

$10 REWARD for the return of 18 size Boss filled hunting case, No. 6038015, Crescent Street movement, No. 2528455. A. J. Laurence, Paxton, Ill.

REWARD for information concerning lost watch—No. 106 Hampden, 16 size, 17 jewels, adjusted, No. 803257, in E. T. Fahys 15-year case, hunting, No. 4532197. Address, P. O. Box 100, Hartford, Vt.

WM. I. Rosenfeld, 19 Maiden Lane, New York, is offering some unusual bargains in discontinued movements and cases. Write for particulars.

LEARN to Play on the Piano and Organ, 22-page instruction book and chart, giving all the major, minor and diminished chords in all keys, complete, mailed on receipt of 25 cents. O. A. Wilbor, 522 Broadway, St. Paul, Minn.

ENGRAVING monograms, script and all styles of work in the highest style of the art. Ezra F. Bowman, manager, Lancaster, Pa.

SPECIAL diamond mountings. We furnish estimates and designs; charges reasonable. First-class work. Quick returns. Try us. Averbeck & Averbeck, manufacturers, New York.

IF you want to sell your jewelry store, communicate with us. We buy for spot cash. Strictly confidential and on very short notice. Joe Brown Co., 96 E. Van Buren St., Chicago, Ill.

BUSINESS NOTICES.

UNDER THIS HEADING THREE CENTS PER WORD.

THE St. Louis Watchmaking School has the best facilities for teaching watchmaking, engraving, repairing, jewelry and optics. Terms reasonable. Write for circular.

THE best work for the least money at the Peoria Horological School, Peoria, Ill. No student work. See advertisement on page 326.

STUDENTS wishing to attend the St. Louis Watchmaking School should make application at once, as the number of students has been limited to only 25.

EVERYONE to know that Parsons' Horological Institute, Peoria, Ill., is the oldest and best in this country.

WHERE to receive the highest cash price for every kind of gold and silver. Refiner of sweeps, filings, brushings, polishings, everything containing gold and silver. Fine gold, silver, copper for sale. J. L. Clark (established 1870), 724 Filbert St., Phila., Pa. Send by mail or express; prompt attention given.

EVERYONE to know that Parsons' Horological Institute, Peoria, Ill., has all the latest improved, the largest assortment of tools and the best equipped school in this country.

IN order to teach students more thoroughly, the management of the St. Louis Watchmaking School has decided to reduce the number of students to only 25.

WHY not send me your watch cases that need repairing? Can replace any part of a case. G. F. Wadsworth, Silversmiths' Bldg., Chicago, Ill.

WANTED—all interested to send to the Peoria Horological School for circular. 1426 Main St., Peoria, Ill. Try our trade work. See adv. on page 326.

THE Elgin Horological School is still making competent workmen for the trade. Watch and jewelry repairing, engraving, etc., taught in a thoroughly practical manner. Terms to suit the hard times. Send for circulars to the Elgin Horological School, Elgin, Ill.

EVERYONE to know that Parsons' Horological Institute, Peoria, Ill., has all the latest improved, the largest assortment of tools and the best equipped school in this country.

THE Elgin Watch Repairing School has some special inducements to offer to those who wish to learn the watchmakers' trade in a thoroughly practical manner in the least possible time, and at very low terms. Ad., for information, the Elgin Horological School, Elgin, Ill.

EVERYONE to send watchwork to Parsons' Horological Institute, Peoria, Ill. The first, the oldest and the best school in this country.

HOWARD watches at greatly reduced prices. Send for particulars. Wm. I. Rosenfeld, 19 Maiden Lane, New York.

GOLD and silver plating, satin finish, engraving, engine turning, everything in the line of watch case repairing. G. F. Wadsworth, Silversmiths' Building, Chicago, Ill.

THOS. O. HAYDOCK, watchmaker, 829 Market Street, Philadelphia. Difficult and broken work a specialty. Pivots, 25 cents.

EVERYONE to send to Parsons' Horological Institute for catalogue of terms, etc. Peoria, Ill.

SEND for terms and prices at the Peoria Horological School. We guarantee perfect satisfaction, or money refunded.

SEND your work to Olof Pearson, expert watchmaker for the trade; fine watch repairing, demagnetizing, etc. Mail orders promptly attended to. Room 1313, Columbus Memorial Building, Chicago.

AVERBECK & Averbeck, manufacturers, New York, are headquarters for solid gold finger rings and silver novelties. Write for catalogue.

HAVE you an old English watch case you want changed into American stem-wind? If so, send it to me, and I will guarantee satisfaction. G. F. Wadsworth, Silversmiths' Building, Chicago, Ill.

WE pay highest cash price for every kind of old gold and silver. Refiners of sweeps, filings, brushings, polishings, and everything containing gold and silver. Prompt and accurate assays on ores. Fine gold, silver and copper for sale. We guarantee satisfaction to all of our customers. Thomas J. Dee & Co., 67 and 69 Washington Street, Chicago.

WHEN you need a turquoise of any size for jobbing or other purposes, let us send you some on approval as we can save you money. Chas. S. Crossman & Co., 3 Maiden Lane, New York.

JOE BROWN CO., 96 E. Van Buren St., Chicago, Ill. Jewelry stocks and stores bought and sold for spot cash. This means that we can sell anything in the jewelry line, or jewelers' fixtures, at an extremely low price. Our specialty consists of buying and selling second-hand watches, movements and cases, of which we, at almost any time, have la complete stock on hand. Our second-hand movements are in first-class condition, and are guaranteed, the most of them, just as good as new. We quote below these prices on our American movements: 18 size stem-wind, 7 jewels, from $2.00 to $2.35; 18 size stem-wind, 11 jewels, from $2.50 to $3.00; 18 size stem-wind, 15 jewels, from $3.75 to $4.50; 18 size stem-wind, 15 jewels, adjusted, from $4.50 to $5.50; 18 size stem-wind, 17 jewels, adjusted, from $5.50 to $14.00; 18 size, key-wind, 7 jewels, @ $1.25; 18 size key-wind, 11 jewels, @ $1.50; 18 size key-wind, 15 jewels, @ $1.65; 18 size key-wind, 15 jewels, adjusted, @ $1.85. Send for price-list on cases and all other goods. All goods sent C. O. D. only. We pay return charges. If any of the goods should not suit, you may return them, and we will send you ckeck for same by return mail. References: First National Bank, Bank of Commerce, Chicago. When ordering less than $5.00 worth, please send money in advance. Old gold and silver taken in exchange, or we will buy same for cash. Joe Brown Co., 96 E. Van Buren Street, Chicago, Ill.

The Omaha Watch Repairing, Engraving and Optical Institute has nearly every bench occupied by students. Our trade work is increasing, and we have more applications for good workmen than we can supply. This shows our ability is appreciated. Our optical graduates are making a success, while many graduates from other schools cannot fit a simple case of astigmatism correctly. We give more knowledge for the money than the best of them, and in the shortest possible time. Dr. Tarbox & Gordon.

Display advers., $2.50 per inch per column. Smallest adver. inserted, one inch.

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AND GENERAL SUPPLIES FOR THE RETAIL DEALER.

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22——COMPLETE DEPARTMENTS——22

Everything that Appertains to the Trade.

OUR NET CASH PRICES ARE EXTRAORDINARILY LOW.

Whenever in the city call on us, or send for our Catalogue or Bargain Bulletins. Address "DEPARTMENT K."

S. F. MYERS CO. Manufacturers, Importers and Wholesale Jewelers, { 48 & 50 Maiden Lane, / 33 & 35 Liberty Street, (MYERS BUILDINGS,) NEW YORK.

OLYMPIC,
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NIANTIC,
CRETAN
} **Bicycles**

1898 List Prices: $34, $37.50, $50 and $65.

OLYMPICS are sold on ten days' trial.

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S. A. HASELTINE,

758 Lincoln St., SPRINGFIELD, MISSOURI.

Satisfaction guaranteed. Terms reasonable. All correspondence confidential. In writing, give size of stock, object of sale, etc.

Read references in KEYSTONES for past years, what my employers say of my character and work from year to year. And from Duluth, Minn., where I just closed a second sale (see letter below), to Fort Worth, Texas, where I have held two sales for Morehous & McBride; from Billings, Mont., for Forester & Frizelle, to Harrisburg, Pa., for Geo. A. Hutman.

Second Letter. Duluth, Minn., April 9, 1898.
S. A. Haseltine has just closed his **second sale** for me. I can repeat what I said of his **high character,** also qualities as an auctioneer, three years ago.
R. KROJONKER, Pres. Duluth Jewelry Co.

First Letter. Duluth, Minn, April 4, 1895.
S. A. Haseltine is a first-class auctioneer. He **draws and holds good audiences and gets good prices.** He has sold goods that have been in stock for years and considered quite unsalable. He had the confidence of the audience from the start to the finish.
R. KROJONKER, Pres. Duluth Jewelry Co.

Address, **S. A. Haseltine, Springfield, Mo.**

THE KEYSTONE:

"You will doubtless be interested to know that as a result of my ad. I received more than fifty answers, and sold my store. I can recommend THE KEYSTONE as a good advertising medium, and if it will not sell any stock, it's the fault of the advertiser, and not of THE KEYSTONE."

W. J. KEATING,
Sioux Falls, S. Dak.

CHICAGO WATCH REPAIR CO

WORK DONE BY EXPERT SWISS WATCHMAKERS WHO MAKE SPECIALTIES IN COMPLICATED WATCHES.

SEND FOR PRICE LIST. 67 WABASH AVE, CHICAGO

The Jewelers' Auctioneer

ESTABLISHED 1880.

Fifth Floor

J. H. HAVILL, Silversmiths' Building, CHICAGO.

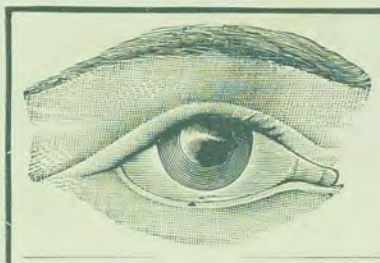
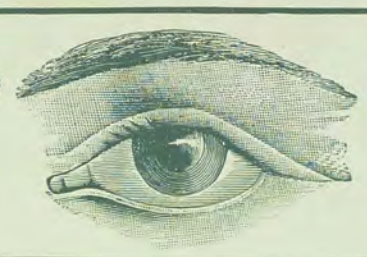
Send for particulars. *All correspondence strictly confidential.* *Reasonable charges.*

REFERENCE OF A FEW SALES MADE:

Rosenkrans & Thatcher Co., Milwaukee, Wis.
Jebb Bros., Jacksonville, Ill.
Hart Jewelry Co., Kansas City, Mo.
Strelitz & Sons, Chicago, Ill.
Chas. Bachman, Ottumwa, Iowa.
M. S. Darling, Trenton, Mo.
R. H. Kuhn & Co., Quincy, Ill.
Stevens, Love & Cochran, Lincoln, Neb.
M. C. Nettleton, Albuquerque, N. Mex.
A. L. Howard, Beloit, Wis.
Jos. Barborka, Iowa City, Iowa.
E. G. Longeraft, Berlin, Wis.
Jean Tack, Newark, N. J.
L. W. Otto, Crawfordsville, Ind.
Robbins Bros. & Co., Fostoria, Ohio.
Geo. F. Sheets, Belle Plaine, Iowa.
Bennett & Guyselman, Urbana, Ohio.
Benj. Allen & Co., Chicago.
Fred. A. Clough & Co. Mt. Vernon, Ohio.
J. B. Mayo & Co., Palmer House, Chicago.
Geo. M. Rigden, Streator, Ill.
Edholm & Akin, Deadwood, S. D.
John Lukenbach, Green Bay, Wis.
Walter H. Grunert, Oconto, Wis.
Beard Jewelry Co., Farmington, Ill.
H. Oppenheimer & Co., Kansas City, Mo.
C. H. Allen & Co., Clinton, Iowa.
C. F. Kesselmire, Salem, Ohio.
John Bleich, Paducah, Ky.
C. B. Scott's Sons, Martin, Tenn.
Hayden W. Wheeler & Co., 2 Maiden Lane, New York.
Henry Hayes, 11 John Street, New York.
C. C. Wolf, Rochester, Ind.
J. H. Boyer, Frankfort, Ind.
Grimes & Venable, Lexington, Mo.
Spencer & Co., Richmond, Ind.
Julius A. Weiss, Montgomery, Ala.
W. W. Scott, East Saginaw, Mich.
G. J. Corey, Mgr. Pairpoint Mfg. Co., Chicago.
W. J. Keating, Watertown, S. D.
Chas. F. Lefman, La Porte, Ind.
C. S. Hayes, Norfolk, Neb.
J. H. Leyson, Butte, Mont.
R. H. Bedford & Son, Ionia, Mich.
Geo. W. Hickox & Hixson, El Paso, Texas.
Frank Heller, Marion, Ind.
Sams & Wadell, Clinton, Mo.
Ralph B. Clark, Anderson, Ind.
H. B. Conyers, Chillicothe, Ill.
H. Koller, Calumet, Mich.
J. T. Baker, Rockford, Ill.
Gus. A. Esslinger, Lexington, Ill.
M. Sheehan & Son, Lafayette, Ind.
W. J. Rowe, Marion, Ind.
I. Jacobs, Winterset, Iowa.
Wells & Morgan, Lansing, Mich.
Rosenstihl Bros., 2 sales, Birmingham, Ala.
Pitkin & Brooks, Chicago, Ill.
Holmes & Edwards, Chicago, Ill.

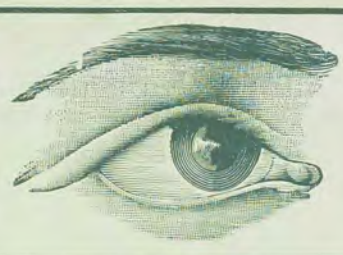
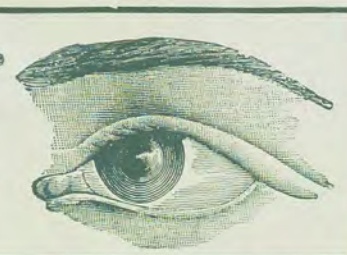
Special reference also given of any wholesale jewelry or silverware house of Chicago.

I will guarantee any jeweler 100 cents on the dollar on the entire sale over and above expenses.

We are Manufacturers and Importers of

Optical Goods

Ask for Dr. Agnew's

"GENUINE" German Eye-Water

The best remedy known for weak and inflamed eyelids.
Recommends itself.

WE MAKE

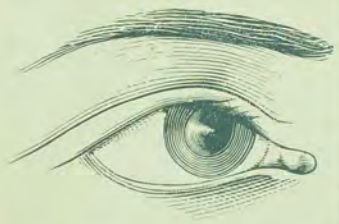
Interchangeable Lenses

from pure white stock.

Accurately Ground,
Carefully Polished,
Centered and Focused.

Free from imperfections.

Would be pleased to have close buyers communicate with us.



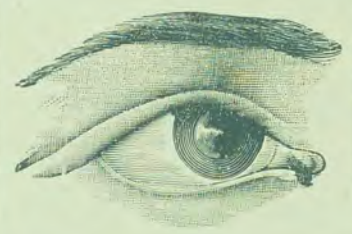
Improved Gold Filled Spectacles and Eye-Glasses.

Made in 3 Grades:

10 K. Solid Gold
Electro
Gold Filled
} End Pieces.

Made in Frameless,
also with Cable Coil Temples.

HONEST QUALITY.
HONEST PRICES.



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Solid Gold Spectacles and Eye-Glasses

THE SWELL END.
The kind that do not break.

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De Zengs' Refractometer

Acknowledged the best instrument for refraction work

Don't buy a Trial Case until you see the

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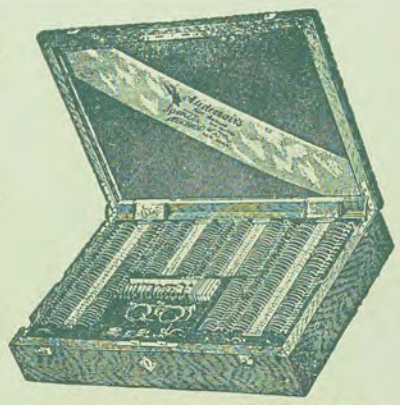
Lens Quality,
Dioptric and Inch System,
Celluloid Indexes,
Aluminum Alloy Rims
that will not Rust or Tarnish,
} are some of the Features



AUDEMAIR TRIAL CASE. PERFECTION.

THE AUDEMAIR PATENT

SUPERIOR
Focusing Handle
OPERA-GLASSES.

BIG SUCCESS.
From $7.50 to $18.00

IMPORT ORDERS

Samples now ready. We control the entire output of two large factories in Paris, and would be pleased to figure on your order.

WE ARE PREPARED TO MEET THE GREAT DEMAND FOR FIELD GLASSES.

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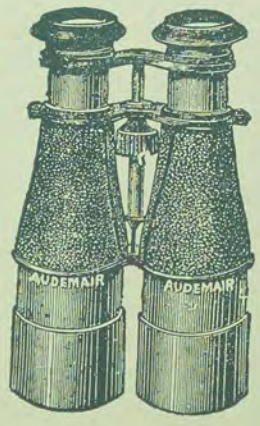
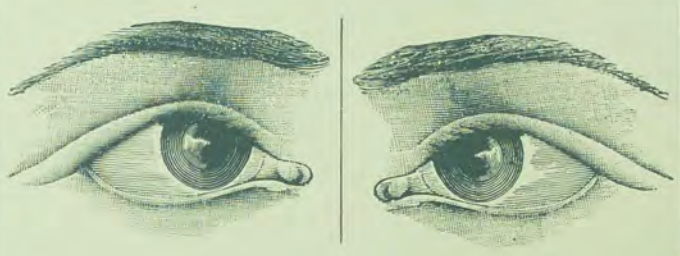
U.S. Army and Navy GLASSES.

Most Powerful Long-Distance Glass Known.
Full Achromatic Lenses.

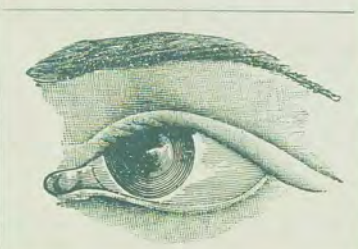
A full line of Telescopes and Spy Glasses.





Spectacle and Eye-Glass Case Department.

We make every grade and style.
Special styles to order.
Send on your samples and let us figure on them.



Our Three Winners

Eye-Glass, Riding Bow and Straight Temple,

are the light-weight cases made of tempered steel and leather-covered.

DURABILITY.
NEATNESS.

Rx Department.

OUR PRIDE.

Work returned in 24 hours.

Competent staff. Complete stock of lenses and frames.

Quality and workmanship combined with low prices.

Spencer Optical Manufacturing Company, 15 Maiden Lane, New York.

The Nation's Choice In War and Peace

THE JAS. BOSS CASE is as emblematic of our country's industrial history as the flag is of its national progress. Almost half a century ago Jas. Boss, the inventor of the case, introduced it on its merits as a candidate for the world's favor, and to-day its fame is co-extensive with civilization. It preceded "Old Glory" even to the islands of the distant Orient, and like the flag under which it flourishes, it is recognized the world over as the materialization of honesty, reliability and worth. "Peace hath her victories no less than war," saith the proverb, and the Boss Case was one of the greatest. It is to-day the well-cared-for companion of the soldier in the field, the sailor on the deep, the farmer at the plough and the mechanic at the bench—the man of meager means and the man of millions. Fully 20,000 jewelers at home and abroad handle it with profit and satisfaction, and the number increases yearly.

Keystone Watch Case Company

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