

Posselt's Textile Journal

A Monthly Journal of the Textile Industries

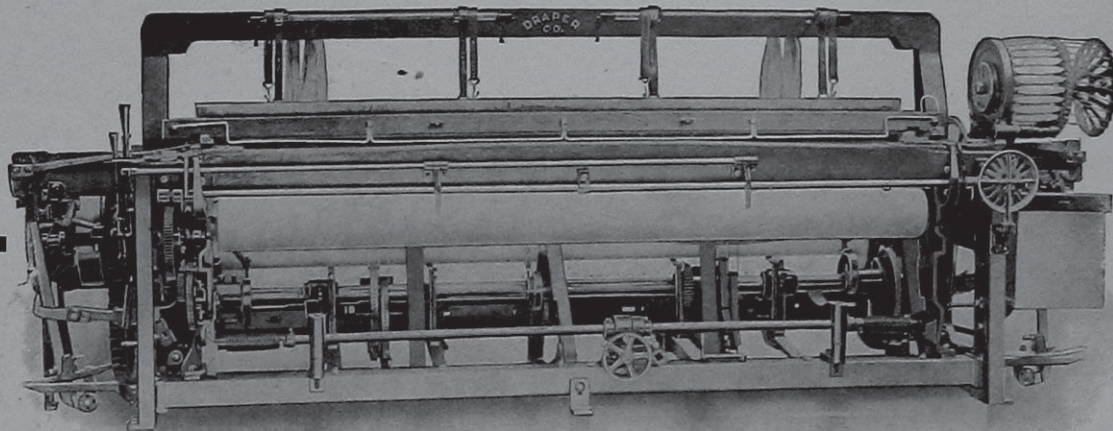
Table of Contents

Directory of Trade Marks Relating to the Textile Industry.....	i
Convention and Exhibition National Ass'n Hosiery and Underwear Mfrs...	149
Hosiery Dyeing	153
Overedging and Trimming	157
The Jacquard Machine	158
Granite Weaves Obtained by Means of Four Changes.....	159
Novelties from Abroad: Men's Wear	160
Review of the Markets	162
Cotton Spinning: The Ring Frame	164
Yarn Testing	166
Dyeing Cotton Chains: Chain Yarn Tension Device.....	166
Bleaching Cotton Goods	167
Dictionary of Technical Terms Relating to the Textile Industry.....	169
The New Duplex Carding System	170
Finishing of Woolen and Worsteds	172
Silk Finishing: Points on Special Fabrics	174
Finishing Carriage Cloths	175
Dictionary of Weaves: 8-harness	176
Buyers' Index.....	vi
Mill News	xviii
Cope Tube and Cone Machinery	xxv
Controlling the Air Currents in Stock Driers.....	xxv
Finishing Indigo Blue Cotton Piece-Goods	xxvi

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By E. A. POSSELT

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THE PRESENT SEASON DURING THE STOPPAGE OF
MACHINERY INCIDENT TO HIGH PRICED COTTON IS
AN IDEAL TIME TO REPLACE COMMON LOOMS
WITH NEW NORTHROP LOOMS AND THUS AVOID
THE USUAL DISTURBANCE AND REDUCTION OF
PRODUCT INCIDENT TO SUCH REPLACEMENT.

DRAPER COMPANY.

HOPEDALE, MASS.

J. D. CLOUDMAN, Southern Agent,
40 SOUTH FORSYTH STREET, ATLANTA, GEORGIA.

DIRECTORY OF TRADE MARKS RELATING TO THE TEXTILE INDUSTRY.

REGISTERED MAY, 1910. (Complete.)

1. Hosiery.—Thomas E. Brown, Philadelphia.
2. Ribbons.—The H. B. Clafin Company, New York.
- 3 and 28. Shirts.—Harris-Lipsitz Company, Dallas, Texas.
4. Caps and Outer Coats.—Morris J. Baruch, New York.
5. Worsted Piece Goods.—Tremont Worsted Co., Methuen, Mass.
6. Shirts, Drawers, and Union Suits.—Chas. E. Shedaker & Sons, Philadelphia.
7. Hosiery.—Neustadter Brothers, San Francisco, Cal.
8. Shirts, Trousers, Hosiery, etc.—Rouse, Hempstone & Co., Baltimore, Md.
9. Double-Woven Cotton Cloth Napped on Both Sides.—Tingue, Brown & Company, New York.
10. Cotton Piece Goods.—John H. Meyer Co., New York.
- 11 and 23. Rugs.—People's Outfitting Company, Detroit, Mich.
12. Coats provided with a Reversible Collar.—Cohen, Goldman & Co., New York.
13. Shirts, Drawers, Hosiery and Sweater-coats.—Nathan Stein & Co., Pittsburg, Pa.
14. Hosiery.—The A. H. and C. B. Alling Co., Derby, Conn.
15. Ladies', Misses', Men's and Children's Hosiery.—Harris-Lipsitz Company, Dallas, Texas.
16. Handkerchiefs.—Cochrane Manufacturing Co., Dedham, Mass.
17. Silk Piece Goods, Cotton Piece Goods and Silk and Cotton Mixed Piece Goods.—Rogers & Thompson, West New York, N. J.
18. Yarn and Thread of all Classes of Fibers.—John Lonke, New York.
19. Hosiery.—Regal Shoe Company, Boston, Mass.
20. Shirts.—The Quaker City Shirt Mfg. Co., Norristown, Pa.
21. Hosiery.—Aetna Hosiery Company, Worcester, Mass.
22. Men's Waistcoats.—Currick, Leiken & Bandler, New York.
24. Women's and Children's Blouses and Jumpers.—Morris & Co., Baltimore, Md.
25. Trousers, Shirts and Hosiery.—Davis Bros., San Francisco, Cal.
26. Shirts, Drawers, Chemise, Corset-Covers, Petticoats, Stockings and Union Suits.—C. Commichau & Co., Ltd., Silkeborg, Denmark.
27. Cotton Goods in all its varieties.—John V. Farwell Co., Chicago, Ill.
29. Woven and Printed Silks in Piece Goods.—M. C. Migel & Company, New York.
30. Woolen and Cotton Piece Goods.—Hamilton Woolen Company, Boston, Mass.
31. Haircloth in the Piece.—James Hymans, London, England.



REFORM IN THE SILK TRADE.

According to P. Heermann, while dry-weight and count are attributed with much importance in judging raw silk, its content in fibroin is neglected, although this is an item of great importance to the buyer. A bast-content of one per cent above the normal figure, when the price of the raw silk is 40 mk. per kg. (= \$4.32 per lbs.) makes a difference of at least 50 mks. (\$11.90) on a bale weighing 100kg. (220.4 lbs.). If this were the average excess, we should have 13 million mks. (\$3,090,000) going into the pockets of the silk growers and dealers only, at the expense of dyers and manufacturers. The dyer is compelled to deliver a specified extra weight over and above that of the silk entrusted to him; hence he must weigh more, if the silk contains too much bast, so that his direct customer gets the weight of goods he wants, but less silk than he has paid for to the raw silk dealer. The Lyons people are waking up to this fact, and conducting investigations into the amount of fibroin present at their conditioning establishments.

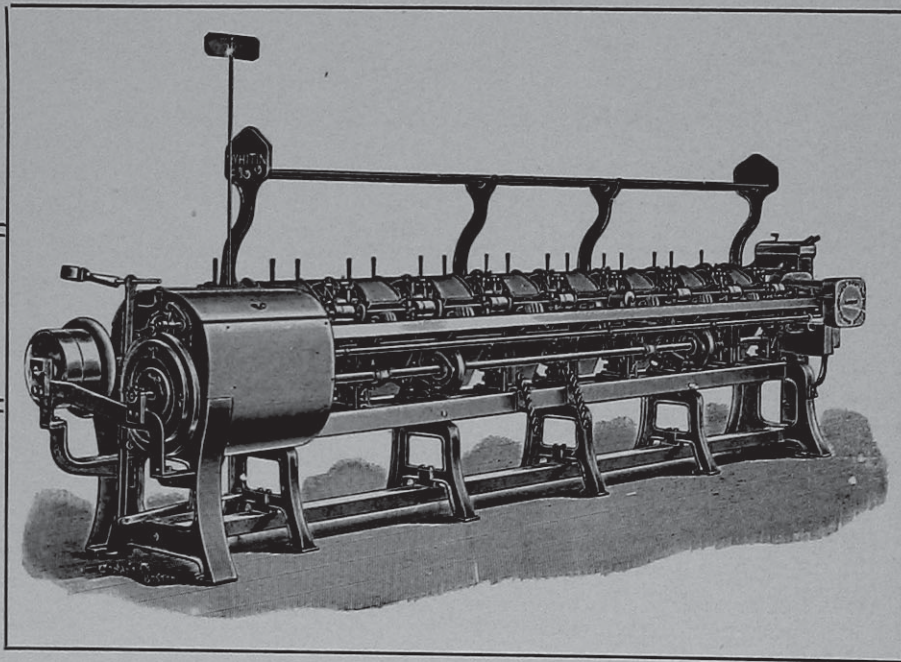
Edmond Baron is in charge of the Yokohama, Japan, office of VILLA, STEARNS COMPANY, Importers of raw silk, which was opened recently. Their object in opening this office has been made necessary in order to secure the same careful inspection and satisfactory deliveries that their agency in Italy has obtained in European Silks.

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WHITINSVILLE, MASS.

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COTTON MACHINERY



High-Speed

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CARDS, COMBERS, DRAWING FRAMES, ROVING
FRAMES, SPINNING FRAMES, SPOOLERS
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LOOMS

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The METALLIC DRAWING ROLL CO.

**33 Per Cent. More
Production Guar-
anteed, at Less Cost**

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SOLE MANUFACTURERS OF

Patent Metallic Rolls

For Fibrous Materials

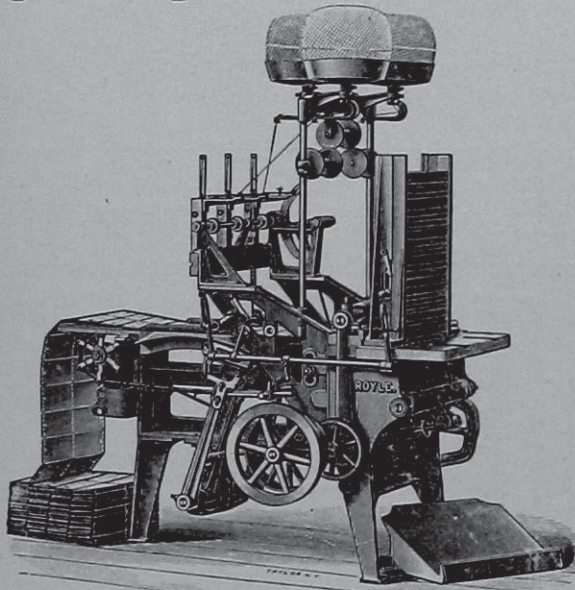
Applied to any make of machine,
new or old, and successfully on the
following Carding Room Machinery:

**Sliver Lap Machines;
Ribbon Lap Machines;
Comber Draw Box; Rail-
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Frames, with Electric or
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Easy-running Foot-Power Piano Card Cutters for use where power is not available.

Power Piano Card Cutters that cut one-third more cards per hour than any other.

Automatic Lacers that feed, punch, and lace cards in the one operation at the rate of about eighteen thousand cards a day.

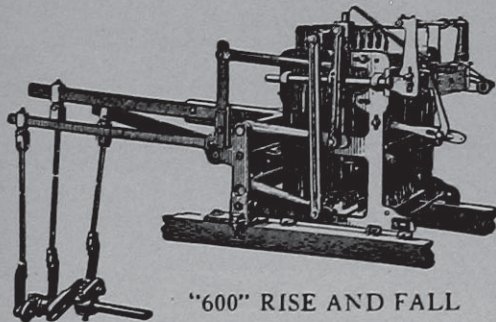
Hand Repeaters that can be operated by a boy.

Power Repeaters that cut an entire card with each stroke of the die.

WRITE FOR PARTICULARS

JOHN ROYLE & SONS,

PATERSON, N. J., U. S. A.



"600" RISE AND FALL

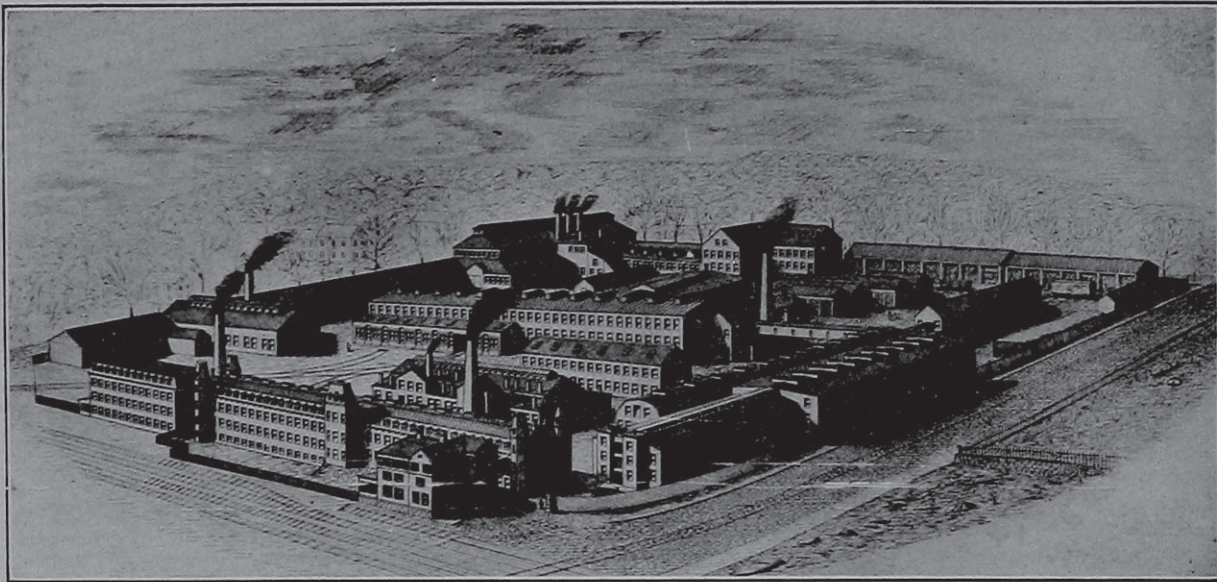
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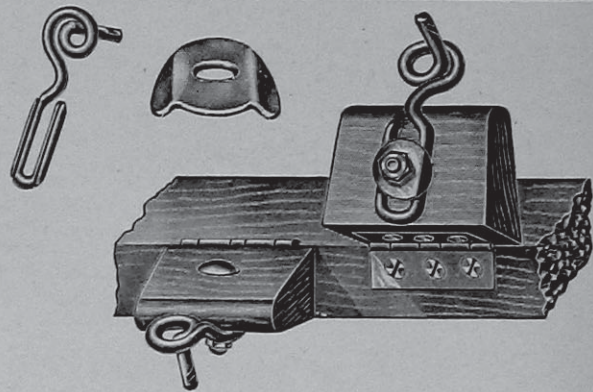
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FRAMES**

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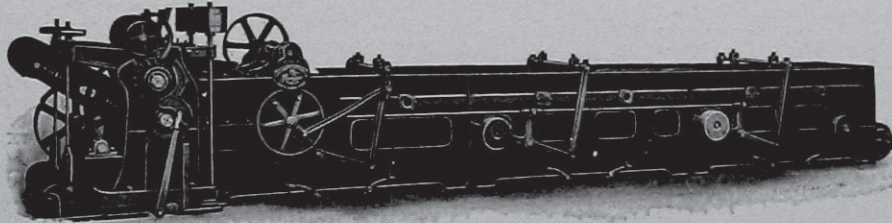
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Not "A Has Been." Not "A Going To Be"

but a present day success.
Parallel Rake—Large Settling Bowl.
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Patent Winders for Filling Yarns from the Skein to Shuttle Bobbins

- ¶ These machines exceed the production of any other make of this type of machines built and will under a guarantee defy its equal to appear.
- ¶ There are many conditions in winding, we meet all, and we know how.
- ¶ **Spooling from the skein**, on fine yarns requires a machine that to give production and quality of work is hard to get. Our latest improvement enables us to meet all requirements
- ¶ **In Warping**, our latest type, with drying cylinders for fine yarns has new improvements that gives them a speed, which means *production*.
- ¶ With our Pinless device our Warpers obviate pin or section stripes.
- ¶ Our Experience on Winding and Warping Questions at your services, any time for the asking.

Established
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JACOB K. ALTEMUS

TEXTILE
MACHINERY

2824 North Fourth Street, Philadelphia, Pa.

Posselt's Textile Journal

Vol. VI.

June, 1910.

No. 6.

THE CONVENTION AND EXHIBITION. National Association of Hosiery and Underwear Manufacturers.



As has been the custom of recent years, the convention and exhibition of the Association was held in Philadelphia.

This year the convention was held in Hotel Walton, the exhibition being held in Horticultural Hall.

The convention opened May 24th and was very well attended, a large number of the members having already registered the day be-



fore. Addresses of interest were made May 24th by President Simons of the Association, Mayor Reyburn of the City of Philadelphia, and Chas. H. Porter of the New Bedford Textile School, on May 25th by Fred T. Crichton of the Employers Indemnity Co. of West Virginia, and Dr. C. Fisher of New York. Reports were submitted by the Sec.-Treas. C. B. Carter and E. H. Brown the Asst. Secretary. The meetings were very well attended and from all appearances those who did attend profited very much by the sessions and the interesting discussions.

Business of the convention was concluded May 26th, and the following officers for the year 1910-11 were chosen: President, Garnett Andrews, Chattanooga, Tenn.; first vice president, Charles E. Leipe, Reading; second vice president, Edward Blood, Sr., Philadelphia; secretary-treasurer, C. B. Carter, Philadelphia; executive committee, Robert C. Blood, Philadelphia; J. D. Barger, Schuylkill Haven; J.

Ogden Wells, St. Joseph, Mo.; W. L. Carr, Durham, N. C.; Joseph Feldenheimer and W. Park Moore, both of Philadelphia.

The Convention was brought to a close by a banquet, on the evening of May 26th, at which many notable persons were present.

In conjunction with the convention, the exhibition was held from May 23rd to 27th inclusive.

The exhibition this year was very much larger than in previous years, and on account of the restricted admission, the curious were reduced to a minimum, and due to these conditions, those who came to the exhibition were interested in the exhibits. This naturally resulted in a number of immediate sales and all agree that the interested inquiries will eventually develop into satisfactory business.

Among the many exhibits which attracted attention was that of *The Roessler & Hasslacher Chemical Co., New York*. As is usually the case with this progressive concern, the exhibit was very attractive,

and "Peroxide Bleach" was everywhere evident. Samples of the work produced by the use of their Peroxide of Sodium were shown in all stages, from yarn to finished fabrics of various classes.

Another feature of their exhibit was the samples of goods which had been treated with the New Double Bleach, which is commanding the attention of every manufacturer of bleached goods.

Due to the illness of Robert Carter, the Peroxide Man, the exhibit was in charge of Dr. Ulrich Schoedler who is possibly the best versed man on this subject in the country and due to the genial disposition of the doctor in explaining the advantages of Peroxide of Sodium Bleach, it may be said that all who visited the booth were very much interested in receiving his advice along the various lines. He was assisted by Milton Kutz of the local office.

Another exhibit which attracted considerable attention was that of the *H. Brinton Co., Philadelphia*, builders of the well known Brinton Knitting Machines. They displayed their Automatic Necktie Machine, double feed, producing a tubular fabric $1\frac{3}{4}$ inches in size. The machines are capable of producing a number of different designs by means of various color combinations and pattern wheels. One great advantage is, that it knits the tie complete at one operation, the narrowing for the neckband being done automatically. Sharing equal attention with the necktie machine was the Two Speed Automatic Ribber. This machine is capable of increasing the production about one-third on straight work on half hose tops, and on long leg run downs for ladies and misses the production is increased about one-half as much again. The third machine was a $2\frac{1}{2}$ inch Single Feed Automatic Ribber, equipped with welt and slack course attachment for making half hose tops and ribbed legs for children. Mr. H. Brinton, the veteran builder of knitting machinery, was in attendance, together with Harry Horrocks, and Harry Klockner, both genial fellows well known to the trade.

The display of the *Charles Bond*

Co. was very attractive. Various lines of supplies were shown including pulleys, shafting, the famous "Veloos" Balata Belting, the Charles Bond Co. being the sole sales agency in this country for this line. Their exhibit was in charge of H. L. Martin and H. R. MacFern, neither of which need any introduction to the trade.

Henry L. Scott Co., Providence, R. I., were one of the seven wonders of the Exhibition. They were displaying a line of accurate testing machinery, which almost every manufacturer at the exhibition was interested in. Their new yarn inspectors, fabric testers and power yarn testers commanded attention, and it was everywhere apparent that this exhibit had opened many a manufacturer's eye to testing his yarns and fabrics; something which had in many cases been almost neglected. The different points of interest were explained by David C. Scott, and one thing can be said, if a man did not learn all he wanted to know regarding the advantages of testing and above all using this line of testing machinery, it was not Mr. Scott's fault.

The Kaumagraph Co., New York, were represented by Trowbridge Marston, who showed the advantages of the use of the Kaumagraph in trademarking fabrics. The use of the same was shown on various classes of goods, from silk to horse blankets, a very effective design being shown on fine velvet.

The Oswald Lever Co., Philadelphia, displayed one of their new type of winders for the hosiery and underwear trade, which attracted the attention of a majority of manufacturers. The advantage of these machines over the other winders in the field were fully explained by the Joyce brothers, whose ability in the building of this class of machinery is second to none.

The display of *The Rex Dyeing Co., Philadelphia*, one of the younger, yet most enthusiastic of the hosiery dyeing trade in this city, attracted considerable attention. Their main feature being the oxidized black process which will not tender the fibre as some other processes do. The display con-

sisted of hosiery dyed by this process together with a line of colored goods, the appearance and feel being that of fine silk due to the use of their special preparations. Their exhibit was the center of attraction for a great number of knit goods manufacturers, and they were ably represented by the Scholler boys, Adolph, Fred, Henry and Will, whose success in this line has been practically assured from the start due to their former connections and the quality of the work they are turning out.

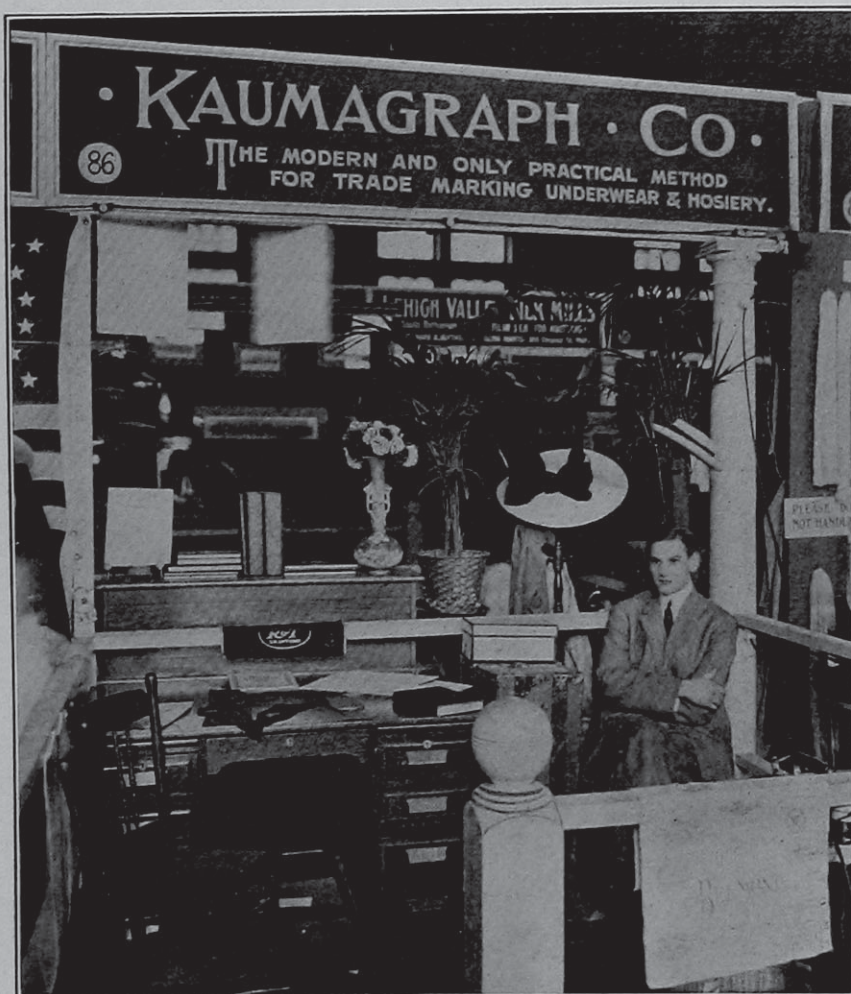
H. Alban Ludwig the prominent builders of full fashioned knitting machinery of Chemnitz were represented by Louis Hirsch, New York. Inasmuch as the machines are well known to the trade, none were shown, but the space was used as headquarters for the manufacturers interested in this line of goods.

The sensation of the exhibition, was the display of the *Wilcomb Machine Co., Norristown, Pa.* Their display was one of the most

attractive in the exhibition hall and consisted of two of their latest type of Spring Needle Web Knitting Machines. These machines are the very acme of simplicity and are capable of greater production than any other machine of this class on the market, whether it be on fine fabrics or on the cheaper grades of webs for underwear, jersey cloth, etc. As to simplicity it might be said that there are but three adjustments, one for sinkers; another for the needles and the third for the eveners. For eliminating the friction to a minimum all the rotary parts of the head are operated in an oil bath, the burr wheels being done away with.

Further evidence of the simplicity of construction is shown by the fact that should a needle be slightly bent, the construction of the machine is such that the needles require no trueing up and even stitches would be made; there being no tight or loose wales. Again, holes and run offs do not damage





the needles, sinkers or other parts of the machine. Another feature of the machine, which also has a bearing on simplicity of construction is the fact that if large holes, several inches across, or complete run offs occur, picking up or setting on of the work by hand is done away with, all that is necessary being to replace the feed yarn in the thread carrier, throw on the power and perfect knitting is obtained. In feeding the yarn, the various feeds can be thrown out of operation in about two seconds, or the feeds adjusted to either tight or loose work.

A feature characteristic of the machine is the automatic take-up, varying with the thickness of the web the pull on the fabric, from the needle cylinder. Each take-up is independently operated, having but one adjustment. The winding roll can be adjusted for tight or loose winding, according to the width and stretch desired to suit the conditions for cutting.

In conclusion it might be said that the machine is the top-notch of perfection, embodying the principle of the well known European Sinker and Spring Needle, which have stood a test of 400 years, together with the improved features of American Machines of great producing capacity.

The advantages of the machines were fully and interestingly demonstrated by Victor Mauck, President of the concern, H. S. Mauck, its Secretary and Treasurer, and George M. Altemus.

The Hemphill Mfg. Co., Pawtucket, R. I., were showing their "Banner" Knitting Machines. Mr. Hemphill, the inventor of the machines, together with John Lawson and Eugene Gunning were explaining the advantages.

The Sorosis Silk Co., Allentown, Pa., were showing their line of silk, suitable for the hosiery and underwear trade. They were represented by F. W. Korth.

The Southern Textile Machinery Co., Paducah, Ky., were showing their improved loopers. They were represented by E. O. Davis and R. A. Vine.

The Wholefoot Hosiery Stamp Co., Phila., were showing something new in their line, a stamp which does the work of three ordinary stamps, and in which the lettering is interchangeable and the stamp adjustable to various sizes, corresponding with the foot of the stocking.

The United States Truck Co., Philadelphia, demonstrated the fact that with one of their trucks a man could easily move 600 to 1000 lbs. Their exhibit was quite an attraction to most manufacturers and it took almost all the time of C. B. Morris and J. Percy Reise in showing the interested ones.

Harding & Fancourt, Inc., Phila., displayed their complete line of oils, soaps and softeners. Both of the boys were there, greeting their many friends.

Andreykovicz & Dunk, Philadelphia, had a very interesting display of their soaps, dye-stuffs and chemicals.

Other exhibitors were: the Berlin Aniline Works, Grosser Knitting Machine Co., Continental Latch Needle Co., Union Special Machine Co., Wilcox & Gibbs, all of New York; Ballard Electric Cutter, Beckert Needle & Supply Co., Standard Machine Co., Scott & Williams, Smith, Drum & Co., Karl Schlatter Dye Works, Western Electric Co., Manufacturer's Supplies Co., Nicetown Dye Works, Philadelphia Drying Machine Co., and Richard A. Blythe, Inc., all of Philadelphia; Jenckes Knitting Machine Co. and Jenckes Spinning Co., Pawtucket, R. I.; Universal Winding Co., and Harding, Tilton & Co., Boston, Mass.; Acme Knitting Machine & Needle Co., Franklin, N. H.; J. B. Ford Co., Wyandotte, Mich.; Lowell Machine Shop, Lowell, Mass.; Geo. D. Mayo Machine Co., Laconia, N. H.; Merrow Machine Co., Hartford, Conn.; Wildman Mfg. Co., Norristown, Pa., and Nonotuck Silk Co., Florence, Mass.

HOSIERY DYEING.

Hosiery dyeing forms one of the most important branches in connection with the successful production of hosiery of all grades.

One of the most important points to be taken into consideration is that the material should be thoroughly boiled out, previous to dyeing, thus insuring level results.

In boiling out, the best and by far, the cheapest results can be obtained in connection with the use of a steam jacket kettle, although ordinary boiling-out vats and regular laundry machines are oftentimes used,

After being removed from the hydro-extractor or other apparatus, they should be put into the dye-bath, while in the damp condition, in order to overcome the tendency of their partially drying. One thing at this point must, however, be taken into consideration; that is, any hosiery to be dyed the lighter shades, must be previously bleached.

This may be accomplished in several ways; the Peroxide of Sodium process or in the following manner. A bleaching solution is prepared by mixing the bleaching powder into a thick smooth paste, with the addition of water. More water is then added and the



but both require more steam and thus prove far more expensive in this respect than the steam jacket kettle.

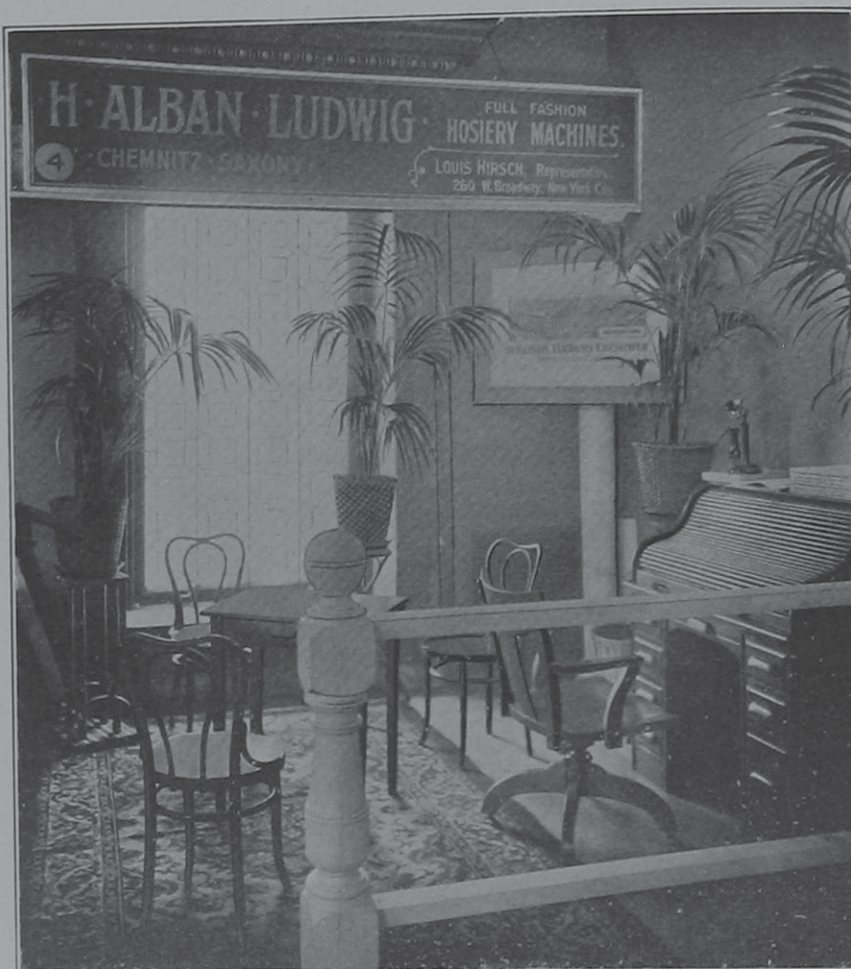
When dealing with this process, as a general rule, hosiery which does not contain more than the ordinary average amount of dirt, grease, etc., and which is to be dyed medium or dark shades, requires very little attention, simply a good boiling out in ordinary water. Hosiery that is intended to be dyed any of the lighter shades, naturally requires more attention and a longer boil, to remove the stains, grease, etc.; if they cannot be removed in this manner and the stock is not clear enough, add about one to one and a half per cent of the weight of calcined soda to the boil, which invariably produces clear goods.

After the hosiery is removed from the kettle or other container, it must naturally be freed from the water. To do this, they are thrown in the hydro-extractor or otherwise wrung out thoroughly.

whole allowed to stand until the solids have settled, and all soluble matter dissolved. When the solution is in this condition, the liquor is carefully drawn off.

In connection with the bleaching solution, it is, in a majority of cases, desirable to keep the yarn as soft as possible, and in order to accomplish this, soda is added to the bleaching powder, forming a hypochlorite of soda, and the same method followed as mentioned before.

In order that the reader may not go astray and to get the right proportions, it is considered advisable to use a solution of soda and bleaching powder until a clear liquid is produced, one which will not give a precipitate with either a solution of soda or bleaching powder. Another point is that the amount of bleaching powder used in connection with 100 pound lots of boiled-off hosiery, runs on an average of two and a half to four pounds to the batch and should measure about 165 gallons on this basis.



THEIR EXHIBIT AT THE HOSIERY AND KNIT GOODS SHOW

The process of bleaching requires but little explanation, the operation simply consisting of immersing the goods in the solution and thoroughly working them, and, if the facilities are ample, they are often left in the bath over night.

After the hosiery is removed from the bleach, they are allowed to drain and are then ready to be soured.

The souring process is accomplished by immersing and washing the hosiery in a fresh solution, composed of from nine to ten pounds of concentrated sulphuric acid, thoroughly mixed with 180 to 200 gallons of cold water. After being removed from the bath, they should be rinsed thoroughly and in order to give the best results obtainable are treated to the anti-chlor bath.

This is necessary in order to remove all traces of chlorine, which invariably adhere to the goods. As a general rule, this solution is composed of one pound of sodium thio-sulphate ("antichlor" or "Hypo") dissolved in 180 to 200 gallons of water. The hosiery is immersed or run through a dozen or more times, and then thoroughly washed and is ready for dyeing any shade even to the light and extra brights.

The most suitable apparatus for the process of dyeing this class of work is the ordinary dye vat supplied with a coil and means for introducing live steam into the liquor, a feature which makes it preferable

on account of the ease in which the right temperature can be obtained and held. In this method, the temperature of the bath is secured by the addition of the live steam, and the required temperature maintained by the coil. The latter prevents the dilution of the bath by condensed steam and at the same time permits of the gradual evaporation of the bath, with its consequent advantages, which are always taken into consideration when working with the deeper shades.

The operation of dyeing is carried on in several ways, in most instances, the laborious end of the work being done by automatic machines used in conjunction with the dye vat and the goods passed through the dye liquor in the endless chain system.

After leaving the bath, the goods thus treated are conveyed, by means of a conveyor, to the squeeze rollers which remove all the unnecessary liquor from them and are delivered in a damp condition.

With better grades of hosiery far more extensive treatment must be given in order to produce the desired result or finish. This necessitates the use of a

number of vats, as is the case with such colors as require diazotizing and developing, or as it is termed, an after-treatment.

In connection with the after-treatment, three vats are used:

The first for dyeing,

The second for diazotizing,

The third and last for developing.

Again there are cases where the dyes must be rendered fast by combining with diazotized paranitranilin and a subsequent treatment with metallic salts. In such cases, two vats for each process are required, as well as a rinsing bath.

The rudiments of the process of hosiery dyeing may be conceived from the foregoing and at this point it may be said that all dyes that can be used for dyeing yarns, can invariably be used for hosiery made from these yarns and the same methods pursued as far as possible; again in connection with the dyeing of mercerized stockings, the process is exactly the same as in dyeing mercerized yarn.

Some of the approved methods of obtaining the more important shades on cotton hosiery are:—

Method used in connection with Direct Shades.

The dye-liquor, in connection with light shades, requires a boil of from three-quarters to one hour,

however, for very light shades, the duration of the boil may be reduced to a half hour and the temperature to from 160 to 175° F.

Light shades: Add 2 per cent soda and 2 per cent soap.

Medium shades: 2 per cent soda, 2 per cent soap and 10 per cent Glaubers salts; and

Dark shades: 2 per cent soda and 20 to 30 per cent Glaubers salt.

DEVELOPING.

Dyeings intended to be diazotized and developed are first rinsed in cold water and then given the diazotizing bath from ten to fifteen minutes.

The diazotizing bath for 100 pounds is composed of 3 pounds of sodium nitrate previously dissolved in water to which is added 10 pounds of concentrated hydrochloric acid.

After diazotizing, the hosiery must be rinsed with plain water, or in a bath which is weakly acidified with hydrochloric or sulphuric acid, and then developed immediately.

The developing bath, as will be remembered, is cold and is composed of one of the following developers in solution.

The goods after being immersed in the bath and allowed to develop from 15 to 20 minutes (agitated during the time) are then removed, rinsed, and soaped if necessary.

DEVELOPERS.

Beta Naphthol: Dissolve, in 20 gallons of boiling water, 14½ pounds of beta naphthol and 12 pounds of soda lye 75 deg. Tw.

Naphthylamine Ether: Dissolve in 20 gallons of boiling water, 4 pounds and 10 ounces naphthylamine ether powder and 2 pounds 5 ounces concentrated hydrochloric acid.

Phenylene Diamine: Dissolve in 20 gallons of water, 9 pounds of 93 per cent phenylene diamine powder.

The developers are now in solution and ready to be poured into the respective vats for developing the 100 pound batch of hosiery.

The baths are charged with 1½ gallons of beta naphthol solution, 6½ gallons of naphthylamine ether solution and 1½ gallons of phenylene diamine solution.

One thing, however, that must be taken into consideration in connection with developing is, that if the process is carried out in very dilute baths containing a volume of water more than 20 times the weight of the goods, the amounts given must be increased accordingly.

The After Treatment.

METALLIC SALTS AND ACETIC ACID.

Hosiery requiring the after treatment is thoroughly rinsed after being dyed, and then given a bath in the second vat with the required metallic salts, and the whole kept at a boil from ¼ to ½ hour.

Metallic salts invariably used are Bichromate of Potash, Blue Vitriol, Fluoride of Chrome, or Chrome Alum.

When using Bichromate of Potash by itself, the solution is made of 3 per cent Bichromate of Potash and 3 per cent Acetic Acid, calculations based on weight of material in process.

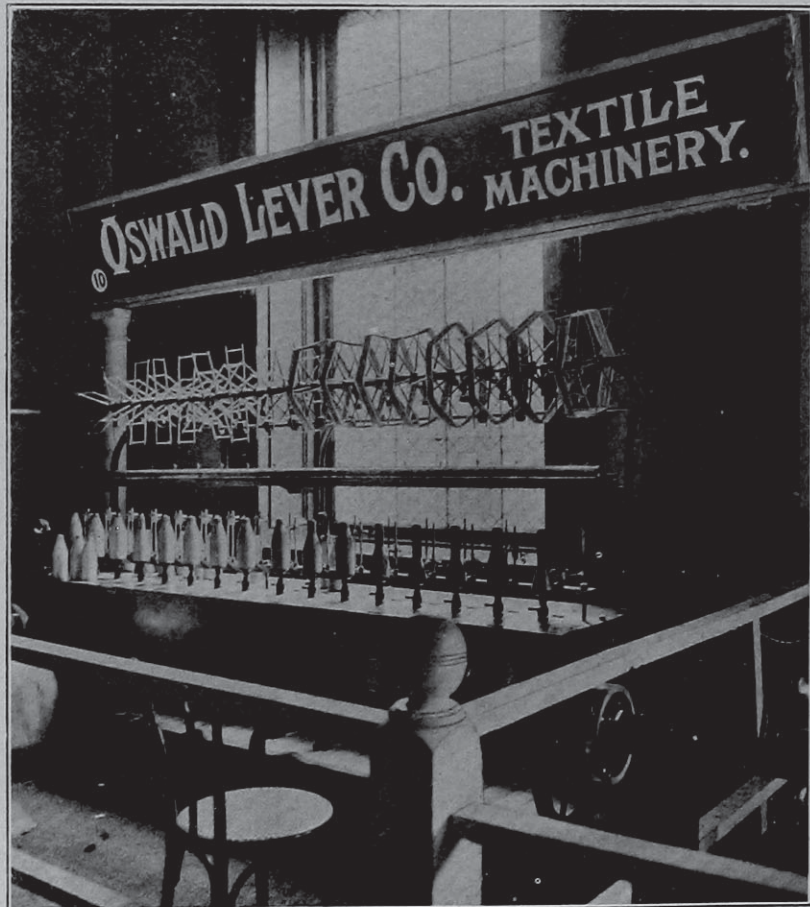
When using a combination of Bichromate and Copper Sulphate, the following usually composes the bath, 2 per cent Bichromate, 2 per cent Copper Sulphate and 3 per cent Acetic Acid.

The proportions given, are, as a rule, used in connection with medium to dark shades, and which are mostly in the majority. On lighter shades, less metallic salts are required, in proportion.

COUPLING.

Cotton hosiery that will require coupling, is thoroughly rinsed and turned for about ½ hour in a bath of diazotized paranitranilin, made up of the following, on the basis of 100 pounds of hosiery.

For dyeings that have been done with 1½ to 2 per cent of dyestuff, couple with 3½ gallons of diazotized



THEIR EXHIBIT AT THE HOSIERY AND KNIT GOODS SHOW

paranitranilin, 8 ounces of soda and $\frac{3}{4}$ ounces of acetate of soda.

For hosiery dyed with 3 per cent or more dyestuff, about $5\frac{1}{2}$ gallons of diazotized solution, 12 ounces of soda, and 5 ounces acetate of soda are used.

DIAZOTIZED SOLUTION.

In preparing the diazotized solution, which should be prepared fresh daily, take 2 pounds of paranitranilin over which pour $1\frac{1}{2}$ gallons of boiling water, to

first class fastness to light and washing, and in this respect is on a par and sometimes above any other direct dyeing black. An after treatment with bichromate of potash will increase, to a great degree, the fastness to washing.

Various shades of slates and blue greys may be obtained by combining or shading with diamine dark blue.

Again fine greys of excellent fastness to light, washing and acids are produced with the various lines



THEIR EXHIBIT AT THE HOSIERY AND KNIT GOODS SHOW.

which add $\frac{1}{2}$ gallon hydrochloric acid 32° Tw. Agitate until solution is complete, then add $3\frac{1}{2}$ gallons of cold water. This addition will precipitate the hydrochloride of paranitranilin in the form of a yellow paste. In order that the solution may have time to cool, before being used, it is generally prepared 4 or 5 hours in advance. When it has cooled completely, dissolve $1\frac{1}{2}$ pounds of nitrate of soda in $\frac{2}{3}$ of a gallon of cold water. This should be thoroughly dissolved, so that no sediment remains, add the whole to the first solution. After the solutions are thoroughly mixed, the whole is ready for use.

GREYS.

A grey of excellent fastness may be obtained by using a small percentage of diamine jet black. It has

of sulphur blacks, shaded to the required color with sulphur browns or sulphur bronze.

MODE AND OLIVE SHADES.

Suitable combinations of dyestuffs will produce these colors. Extra fast shades may be secured by coupling with diazotized paranitranilin, using primuline, diamine blue and diamine nitrazole brown. Again, good results are obtained by after treating with diamine fast yellow, diamineral blue, diamine catechin in connection with bichromate and sulphate of copper.

Mode shades, fast to acids, light and washing may be obtained by the use of sulphur colors, such as sulphur blue blacks, sulphur brown and bronze, used in combination to secure the required shade.

BROWNS.

Good shades extra fast to washing may be obtained by coupling with diazotized paranitranilin. This is considered one of the best methods. A most suitable color to use for this purpose is diamine nitrazol brown. Browns, fast to washing and light, may also be obtained by after treatment with metallic salts.

BABY BLUE.

This color is obtained by direct dyeing, using small percentages of benzo sky blue, aceteline sky blue or diamine sky blue.

BLUES.

Blue fast to washing are most satisfactorily secured by after treatment with metallic salts or diazotizing and developing. For the after treatment with sulphate of copper, diamine blue, diamine dark blue, alone or shaded with diamine brilliant blue, may be used with good results. When diazotizing, and developed shades are desired, it is best to use diamino-gene blue, dark blue and azo blue, diazotized and developed with beta naphthol and diamino-gene black, diamine azo blue diazotized and developed with naphthylamine ether. Sulphur blues are also used, with good results.

Overedging and Trimming.

Among the many details in finishing of the various lines of knit goods, the operation of overedging and trimming is one which commands the attention of the progressive Manufacturer.

It is upon this operation that the success and sale of the goods depends, the finished effect thus given carrying frequently more weight in the sale of the goods, than the quality of the web.

In view of these facts, it might be interesting for Manufacturers to know that the Singer No. 81-3 Machine is the best adapted for this line of work and that, by the use of this machine, manufacturers are increasing their production, adding to the finished appearance of their goods and thus increasing the sale of their line.

This machine, for trimming and overedging knit goods, can be used at the highest practicable speed for all seaming, hemming, putting on cuffs, sewing on borders, edging arm holes, necks, collarettes, and bottoms of garments, making a smooth, firm and slightly seam that is entirely finished when it leaves the machines.

The few vibrating parts of the machine are small and light, the motions regular and not abrupt, and in consequence of these features a very high speed may be sustained, resulting in a greater production of good work than is usually produced with any other machine for the same purpose now on the market.

Machine No. 81-3 is fitted, unless otherwise ordered, with trimmer, looper and spreader making the two thread overedge chain stitch, for trimming, seaming and covering at one operation, all varieties of knit garments; it can also be fitted, if so ordered, with two loopers and other parts for making a three thread stitch, forming either a single or a double purl that is especially desirable for making fine edges.

The trimming device can be quickly and easily

adjusted so that the bight on the goods can be regulated exactly as desired. The auxilliary feed, which with its presser foot acts upon the stitched goods and the seam, serves to bring the work out flat and without a wavy edge; the flattening effect of this feed can be adjusted for different work, by means of an adjusting screw at the back of the machine.

For blind stitching hems on knit garments, stockings, etc. on Machine 81-3, a welt guide can be furnished, the use of which requires a front feed dog, throat plate and presser foot, different from those in the machine as regularly fitted.

To make the two thread stitch, using a looper and a spreader, the take-up for the needle thread should be set to the left so as to draw all of the thread on the downward stroke, and the small take-up on the looper lever should be set to the right, so as to draw most of the thread on the downward stroke; the machine is threaded in the regular way and the tensions adjusted so as to draw the purl to the edge.

To make the single purl stitch, using two loopers and three threads, the needle thread is drawn tightly to the goods, making a firm seam when two pieces are stitched together, and a very narrow bight can be used without danger of the seam pulling out; in adjusting the machine for this stitch the needle thread is left out of its take-up, the thread leading directly from the tension bracket to the thread guide on the armhead and a tight tension is used; the small take-up on the looper lever at the left is set to the right so as to draw all the thread on the downward stroke and the tension on the left hand looper thread made very light, sufficient tension is used on the right hand looper thread to bring the purl to the edge.

To make the double purl stitch, using two loopers and three threads, the machine must be threaded in the regular way, the needle thread take-up set so as to draw most of the thread on the downward stroke and a medium or light tension used, the small take-up on the looper set as far as it will go to the shaft, or turned at right angles, bringing the hooked portion toward the operator, and a tight tension used on the left hand looper thread; the tension on the right hand looper thread must be strong enough to bring the purl to the edge.

The attention of manufacturers is called to the new IMPROVED WINDER that is being built by *E. B. Hindley, Paterson, N. J.*

This Winder was designed and built with the idea in mind of simplicity of construction, increased production and durability.

Every part of the machine is numbered, making it very easy to duplicate parts. All gears are covered and the swift arm is reinforced, the swifts being made of weather dried maple, hub and pine sticks.

To eliminate friction and reduce the wear on the hub of the swifts, a small strap is used in place of the customary metal ring.

The spindles are all steel, slotted on both sides with double springs, of best piano wire, the heads being of weather dried dogwood.

The spindle brackets have four positions, two in front and two in back; the former adapted especially for winding good silk and the latter for poor silk.

THE JACQUARD MACHINE.

(Continued from page 142).

The cylinder of a Jacquard machine is shown in its perspective view in Fig. 8. The same is carried in the batten of the machine, and by means of the batten motion is moved some distance away from the needle board of the machine, after which its working lantern comes in contact with a catch, which engages

as peg holes) and into which the protruding pegs (see *h* Fig. 8) of the cylinder extend, in order to permit the Jacquard cards to be brought into a close contact with the needle board.

Besides this single needle board thus explained, there is also a double needle board met with in Jac-

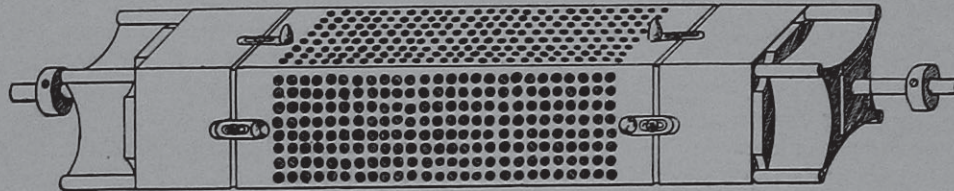


FIG. 8.

with the projections of the lantern, the batten moving sufficiently outward from the needle board, until the cylinder is turned, and the next card brought in working position on the cylinder.

The cylinder is steadied in its required position by two hammers, one on each side, secured to the batten, and pressing by means of a spring towards each lantern of the cylinder, said hammers being arranged to act onto the two lanterns of the cylinder, either from the top or the bottom, whichever build of a Jacquard



FIG. 9.

machine is dealt with. When the cylinder turns, by means of its lantern coming in contact with the catch, the head of the hammers compress their mate springs, which in turn expand again, as soon as the cylinder has completed its turn, and when the two springs then keep the cylinder in a steady position in its travel to and from the needle board, until the

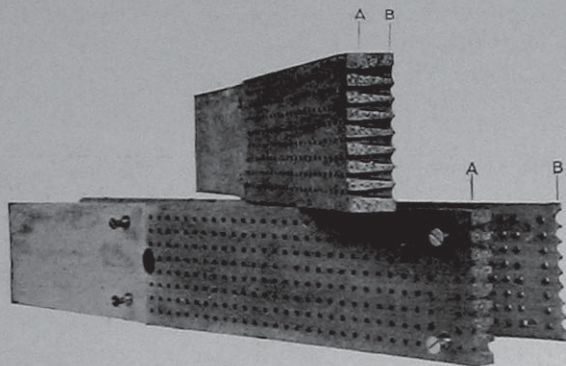


FIG. 10.

next Jacquard card is brought into action, and when the procedure thus explained is repeated.

Fig. 9 shows us, by *a*, *b*, *c* and *d*, a needle board of a Jacquard machine. The small black circles indicate the holes in the needle board, through which the heads of the needles protrude some distance outside of it. The two large black circles (one on each side) indicate two large holes in the needle board (known

as *halton* Jacquard machine. The same is one of the strong features of the *Halton* Jacquard machine, patented by them. Fig. 10 illustrates this board in detail. Every fixer knows what trouble and annoyance he is put to when it is necessary to take off an ordinary needle board for cleaning purposes. With the *Halton* patented double needle board, this trouble and annoyance is obviated. As the name indicates, the needle board is in two parts: the front part *A* in which the needles fit comparatively snug and where the dirt accumulates, and the back part *B* in which the holes are of a larger diameter and in which the dirt does not accumulate. When it is necessary to clean the board, the front section only is removed and the back section allowed to remain to support the needles, which without support would drop from their proper position. The convenience of this arrangement will be at once appreciated by any one who has attempted to remove and clean a needle board.

Fig. 11 illustrates in its perspective view, a *Knowles* open shed Jacquard machine, mounted on one of their single box looms, the left hand portion of lay, its shuttle box, picker stick, picking connections for both sticks, etc., being omitted, since they would obstruct more intricate parts of the loom, desired to be shown more in particular.

Letters of reference accompanying the illustration indicate thus:

- A* Jacquard Machine.
- B* Neck cords.
- C* Jacquard harness.
- D* Comberboard (also known as Compartboard).
- E* Rack for holding the set of Jacquard cards.
- F* Lay, holding reed, lay cap and shuttle boxes; being held in position by the lay swords, all constructed and operated in the usual way.
- G* Picker stick.
- H* Driving pulleys.
- I* Driving belt.
- J* Warp beam.
- K* Cloth take up roller.

The driving mechanism for the Jacquard machine, as well as the loom, is also shown, but will not be taken into consideration now, the affair being fully dealt with later on, when explaining the construction and operation of our two leading makes of Jacquard

machines in this country, *i. e.*, such as built by the Crompton & Knowles Loom Works at Providence, R. I., and those of Thomas Halton's Sons, the pioneer builders of Jacquard machines in Philadelphia.

With reference to the Jacquard machine shown in Fig. 11, the following parts are clearly seen:

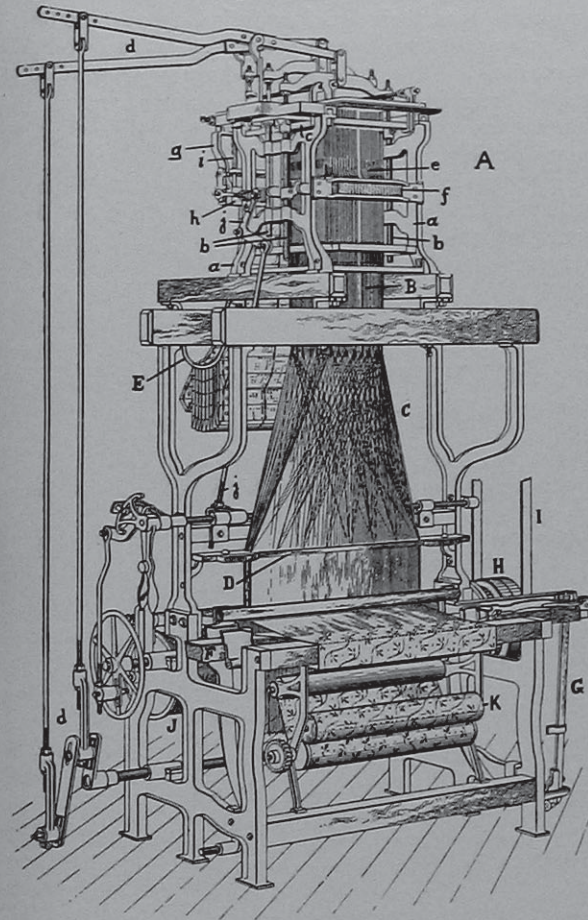


FIG. 11.

- a side frames of the machine.
- b plungers, as carrying the griffs c (two are used on account of the open shed Jacquard principles, hence four plungers used in the present make of a machine).
- d levers and crank mechanism for raising and lowering the two griffs.
- e hooks.
- f spring box.
- g batten for carrying.
- h the cylinder.
- i spring for hammer to hold cylinder in position.
- j lever and crank mechanism for operating the batten towards and from the needle board.

(To be continued.)

THE STEEL HEDDLE CO., PHILADELPHIA, are announcing the fact that they contemplate putting out a doupe heddle for close weaving (fine textures) on cotton and silk, which will be constructed on entirely new ideas.

A doupe heddle of this kind has been demanded by the trade for some time, for which reason the success of the heddle is practically assured; it appears that by its introduction the trade will be greatly benefited.

GRANITE WEAVES OBTAINED BY MEANS OF FOUR CHANGES.

(Continued from page 140.)

Using One Weave for Foundation.

The next question might be asked: Are we always compelled to use two uneven sided twills for foundation for the construction of new granite weaves? The answer will be *no*, for the reason that we can also use one weave only for the foundation. It may be an even sided twill, a rib weave, a basket, etc., in fact any specimen of any system of weaves we may choose.

Diagram Figs. 51 to and including 57 are given to explain the subject.

No matter what foundation is used, it will always be advisable to use an even sided effect, in order to get what we call a balanced granite weave, *i. e.*, a weave in which warp and filling effects balance each other, and which is an item of the greatest of importance for a perfect granite. If against this advice, we should take for our foundation a weave technically known as a warp effect, *i. e.*, a weave in which risers predominate sinkers, the result would be a warp effect granite and most certainly a poor, if not a spoiled weave; again, if we would take for our foundation a weave technically known as a filling effect, *i. e.*, a weave in which sinkers predominate risers, the result will be a filling effect granite, and in this instance again, most decidedly, a poor weave. However, there is a show left in either instance to the designer, *viz.*, he obtains a weave; he obtains a new idea for a weave; he can in either case go to work and what we might call, patch up such imperfect weaves, and make something good out of it. With warp effect granite results, he must, with good judgment, change certain risers to sinkers, and vice versa with filling effect granite results, he must equally be careful to change certain sinkers to risers. In this manner, as mentioned before, some poor new granite weaves obtained may be patched up; but it requires a good knowledge of cloth construction, on the part of the designer, to do this.

With reference to explaining the subject of how to construct a new granite from one even sided foundation weave, as mentioned before, diagram Figs. 51 to 57 are given.

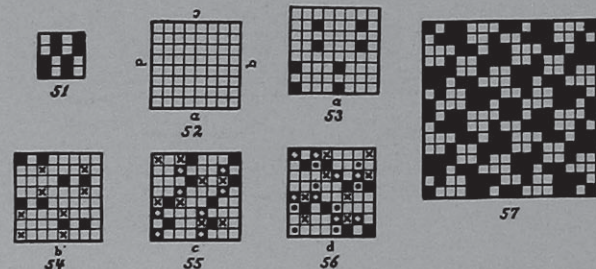


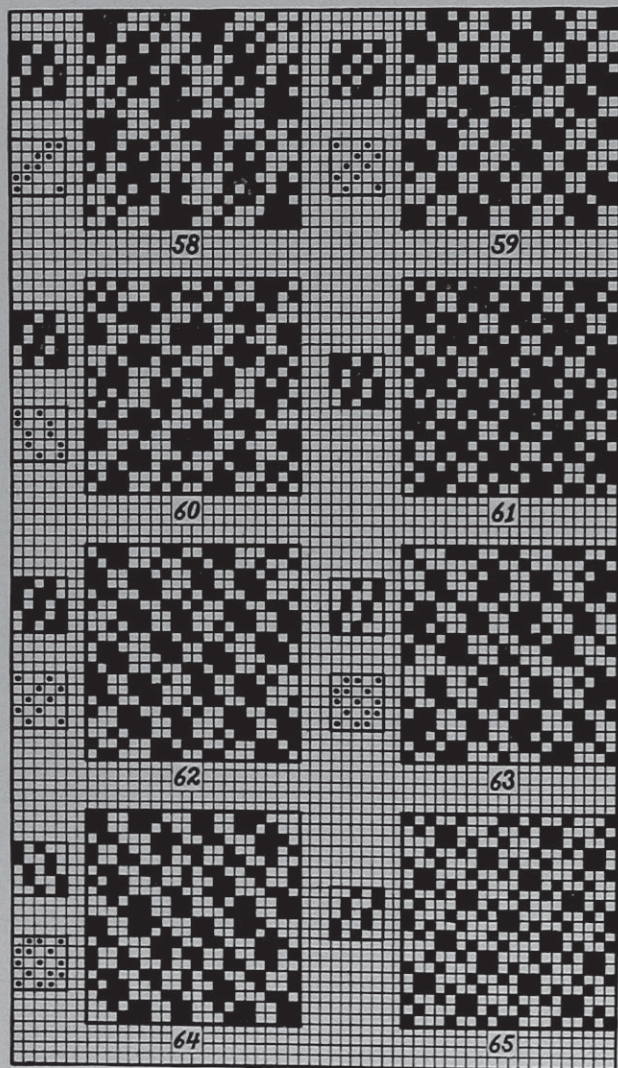
Fig. 51 shows us the 2 x 4 rib weave, two repeats width ways having been given.

Fig. 52 shows us the empty point paper plan, laid out for constructing the new granite from said rib weave. Diagram Fig. 51 calls for four squares each way, hence weave plan Fig. 52 calls for eight squares each way, since we only use every other row of squares (warp and filling ways) when planting the foundation weave. Fig. 52 has been marked with letters of ref-

erence *a*, *b*, *c* and *d* as in previous examples, indicating the turning of the weave plan 45° every time the foundation weave is inserted over again.

Fig. 53 illustrates the inserting of the foundation weave the first time, the same being shown by *full* type.

Turning this plan 45° to the left, brings it in the position shown in Fig. 54 and where we added again the foundation weave in the usual manner, this time being shown by means of *cross* type in the diagram.



Turning the plan again 45° to the left, see diagram Fig. 55, we then insert again our foundation weave; this time shown by means of *diamond* type. Turning the plan again 45° brings the plan in position shown in Fig. 56, after which we insert again our foundation weave, this time shown by means of *dot* type.

This completes the new granite weave, the same being shown in Fig. 57 in one color, in order to show up properly, repeating on eight warp threads and eight picks. Two repeats of the weave, each way, are given.

It will be readily understood that by means of changing the starting of the foundation weave, different new granite weaves will be the result.

We will now take up the

Combining two different weaves for obtaining a new granite weave.

To explain the subject, the accompanying plate of eight granite weaves is given, the same referring to weaves repeating on 10 warp threads and 10 picks. In either instance, we have shown at the left of the granite weaves, their two foundation weaves, the latter comprising the five harness corkscrew, warp and filling effect, the $\frac{2}{1} \frac{1}{1}$ and the $\frac{1}{2} \frac{1}{1}$ five-harness uneven sided twills. In either instance, we have shown one of the foundation weaves with *full* type and the other by means of *dot* type.

The procedure for obtaining the granite weave is identical to the one explained in the April and May issues of the JOURNAL, drafting one and then the other foundation weave.

(To be continued.)

NOVELTIES FROM ABROAD.

Worsted Trousering. (Silk stripe.)

Warp: 8892 ends.

Weave: See Fig. 1; repeat 76 by 8; 22-harness, fancy draw.

Reed: 16, drawing 7 dents @ 8 ends and 2 dents @ 10 ends, 66 inches wide in reed.

Dress: 52 ends 2/60's worsted, black & gray.

- 4 " " " , black.
- 2 " 2 fold 200/2 silk, white.
- 1 end 2/60's worsted, gray.
- 2 ends 2 fold 200/2 silk, white.
- 1 end 2/60's worsted, black.
- 2 ends " " , green.
- 2 " " " , black.
- 2 " 2 fold 200/2 silk, white.
- 1 end 2/60's worsted, gray.
- 2 ends 2 fold 200/2 silk, white.
- 5 ends 2/60's worsted, black.

76 ends in repeat of pattern.

Filling: 56 picks per inch, 2/60's worsted, black.

Finish: Worsted finish, 56 inches wide.

Worsted Trousering. (Silk stripe.)

Warp: 8448 ends.

Weave: See Fig. 2; repeat 176 ends by 16 picks; 26-harness, fancy draw.

Reed: 16, drawing 9 dents @ 8 ends, 1 dent @ 10 ends, 9 dents @ 8 ends, 1 dent @ 6 ends, 1 dent @ 10 ends, 1 dent @ 6 ends; 66 inches wide in reed.

- Dress: 1 end 2/60's worsted, black & dk. gray } x 36
- 1 " " " , black & lt. gray } x 36
- 10 ends 2 fold 2/160's cotton, black merc.
- 1 end 2/60's worsted, black & dk. gray } x 36
- 1 " " " , black & lt. gray } x 36
- 4 ends 2/60's worsted black.
- 2 " 2 fold 2/160's cotton, black merc.
- 2 ends 2 fold 200/2 silk, pearl } x 2
- 2 " 2/60's worsted, dk. gray } x 2
- 2 " 2 fold 200/2 silk, pearl
- 2 " 2 fold 2/160's cotton, black merc.
- 4 " 2/60's worsted, black.

176 ends in repeat of pattern.

Filling: 125 picks per inch, arranged thus:
 1 pick 2/60's worsted, dk. gray
 1 " " " , black.
 —
 2 picks in repeat of pattern.
Finish: Worsted finish, 56 inches wide.

Worsted Suiting. (Color effect.)

Warp: 3072 ends.
Weave: See **Fig. 3**; repeat 72 by 12; 12-harness fancy draw.

Reed: 16 @ 3 ends per dent; 48 ends per inch; 64 inches wide in reed.

Dress: 2 ends 2/40's worsted, black.
 1 end " " , white.

3 ends in repeat of pattern.

Filling: 48 picks per inch, arranged thus:
 2 picks 2/40's worsted, black.
 1 pick " " , white.

3 picks in repeat of pattern.

Finish: Worsted finish, 56 inches wide.

Worsted Suiting. (Granite.)

Warp: 5642 ends.
Weave: See **Fig. 4**; repeat 10 by 10; 10-harness straight draw.

Reed: 17 @ 5 ends per dent; 85 ends per inch; 66 inches wide in reed.

Dress: 2 ends 2/52's worsted, medium gray.
 2 " " " , black
 1 end " " " , medium gray } x 15
 1 " " " , black
 1 " " " , medium gray
 3 ends " " " , black
 1 end " " " , medium gray } x 16
 1 " " " , black

70 ends in repeat of pattern.

Filling: 52 picks per inch, arranged thus:
 1 pick 2/52's worsted, medium gray
 1 " " " , black.

3 picks in repeat of pattern.

Finish: Worsted finish, 56 inches wide.

Worsted Suiting. (Reversible.)

Warp: 5900 ends.
Weave: See **Fig. 5**; repeat 16 by 16; 16-harness straight draw.

Reed: 22 @ 4 ends per dent; 88 ends per inch; 67 inches wide in reed.

Dress: 1 end 2/60's worsted, black.
 1 " " " , light & dark gray.

2 ends in repeat of pattern.

Filling: 86 picks per inch, arranged thus:
 1 pick 2/60's worsted, black
 1 " " " , light & dark gray.

2 picks in repeat of pattern.

Finish: Worsted finish, 56 inches wide.

Worsted Trousering. (Hair line effect.)

Warp: 4200 ends.
Weave: See **Fig. 6**; repeat 56 by 4; 10-harness, fancy draw.

Reed: 16 @ 4 ends per dent; 64 ends per inch; 65½ inches wide in reed.

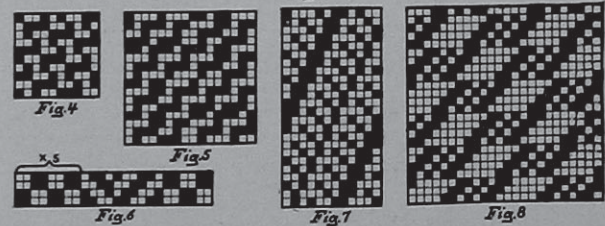
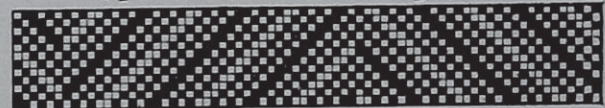
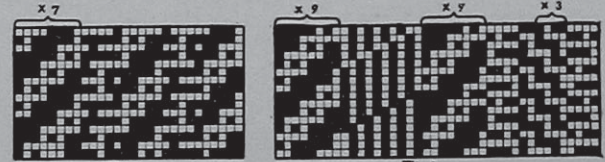
Dress: 2 ends 2/48's worsted, black } x 10
 2 " " " , lt. gray }
 2 " " " , black } x 2
 1 end 200/2 silk, pearl }
 1 " 2/48's worsted, black. }
 1 " 200/2 silk, pearl }
 2 ends 2/48's worsted, black } x 2
 2 " " " , lt. gray }

56 ends in repeat of pattern.

Filling: 60 picks per inch, arranged thus:
 2 picks 2/48's worsted, lt. gray.
 2 " " " , black.

4 picks in repeat of pattern.

Finish: Worsted finish, 56 inches wide.



Woolen Cloaking. (Diagonal effect.)

Warp: 2448 ends, 3½ run woolen yarn, black.
Weave: See **Fig. 7**; repeat 12 by 24; 12-harness, 7 straight draw.

Reed: 12 @ 3 ends per dent; 36 ends per inch; 68 inches wide in reed.

Filling: 40 picks per inch, 3¼ run woolen yarn, gray mix.

Finish: Woolen Melton finish; scour well, full slightly, clear on gig, dry, clip on shear, decatize and press; 56 inches finished width.

Woolen Cloaking. (Novelty.)

Warp: 2194 ends, 3 run woolen yarn, white.
Weave: See **Fig. 8**; repeat 12 by 12; 12-harness, straight draw.

Reed: 11 @ 3 ends per dent; 33 ends per inch; 66½ inches wide in reed.

Filling: 40 picks per inch, 3½ run woolen yarn, black.

Finish: Woolen Cheviot finish; scour well, dry, clip on shear, press and decatize, 56 inches finished width.

COTTON CHATS—May 1910, issued by the Draper Company has been received at this office, containing very interesting views of the Draper Company's Exhibit at the Boston Show, April 25th to 30th. Attention is also called to the new improvement in the construction of their ball of yarn produced on their ball warper.

The back of the folder contains a very interesting map showing the location of the Draper Company's plant and the most convenient way to reach Hopedale.