

HICKORY SHIRTING:—A heavy, coarse twilled cotton shirting with narrow blue stripes or checks, commonly worn by laborers.

HIGHLAND SHEEP:—This breed of sheep is found in the extreme north of Scotland, in the Orkney and Shetland Islands, and in the Hebrides. It produces a long stapled, coarse wool, chiefly used for carpets, rugs, Scotch blankets, etc.

HODDEN GRAY:—A coarse woolen cloth of natural color; formerly worn by peasants in Northern England and Scotland.

HOG OR HOGGET:—A sheep before its first shearing.

HOGGERET:—A sheep of the second year.

HOG WOOL OR TEG WOOL:—The first fleece from a sheep which has not been shorn as a lamb.

HOLE STITCH:—In the making of pillow lace, a stitch forming a small round opening in the thick part of the pattern.

HOLLAND:—Unbleached linen, glazed or unglazed, used for window shades; as, brown holland.

HOLLAND SHEEP:—A cross of the Durham sheep of England with the long-legged Guinea sheep.

HOMESPUN:—A coarse and loosely woven woolen material made in imitation of actual home made cloth.

HONEYCOMB:—A variety of fabric that has a honeycombed surface, hence its name, the cloth being used largely for bedspreads, honeycomb quilts, etc. The honeycomb effect is produced by interlacing warp and filling in the weaving, so as to form small squares, by floating threads, with plain woven center portions, said centers, on account of the tight interlacing, being made lower than the sides of the squares, thus forming the characteristic honeycomb effect.

HONITON LACE:—A lace made at Honiton, Devonshire, England, known for the beauty of its figures and sprigs.

HOPSACK, CELTIC, OR MAT WEAVE:—See Basket Weave.

The plain weave on an enlarged scale; 2, 3 or more warp threads and a corresponding number of picks interlacing alike with each other after the plain weave motive.

HOSE:—A term applied to stockings, for women or children, which are knit the full length of the leg. *Half hose* are men's stockings, so called from their being only half the length of the leg. *Three-quarters hose* is the name given to a style of children's stockings made three-quarters' length. *Opera hose* is a style of women's stockings made of extra length, so as to come well above the knee. Hose are made on a plain stitch knitting machine; the ribbed tops, if such are used, being first made on a rib machine, then transferred onto a plain stitch knitting machine and the hose completed by it.

HOSIERY:—In this are included stockings for women and children, men's half hose or socks, infants' socks, etc., also golf hose and other special styles and types of garments worn on the leg and foot.

Woolen hosiery includes socks, stockings, gloves, drawers, undershirts, jackets, opera hoods, shawls, scarfs, comforters, and other knit goods, both all wool and mixed.

HOSIERY SEAMING MACHINE OR LOOPER:—A machine for sewing together knitted goods.

HOT FINISHING:—The process of forming an artificial gloss upon the surface of goods by the use of hot rollers.

(To be continued.)

The Exhausting of Dyebaths.

In the use of certain coloring matters there is little doubt that a better yield of color and better exhaus-

tion of the dyebath results from substituting common salt as the assistant for Glauber salts.

A question recently arose bearing directly on this subject as to the quantity of common salt to be used, with this object in view, to replace an amount of Glauber's salt equivalent to 20 per cent of the weight of the material. Considering dyeing with the direct and sulphide dyes it may reasonably be reckoned, and quite generally, that a certain amount of common salt is equal in its action to a similar amount of Glauber's salt when the latter is the calcined product. 20 per cent of common salt would therefore be needed to substitute 20 per cent of Glauber's salt.

But as the most common form of the last named is the crystallised product, 20 per cent of it would be equalled in effect in the dyebath by a much less proportion of common salt, actually about 8.8 per cent.

There are circumstances, however, in which a distinct preference for one of these assistants over the other should be shown, and this especially arises in the instances where copper or copper-lined dye vessels are in use, and these are by no means scarce. Under these conditions the choice should fall upon Glauber salts, because the presence of common salt, under prolonged boiling, effects the solution of small quantities of copper, with a consequent saddening of the color on the material under treatment.

As a matter of fact, the copper which may thus enter into solution exercises on the color much the same effect as a course of after-treatment with a copper salt. The conditions are of course quite altered when it is not a question of applying the direct and sulphide dyes from an alkaline or neutral bath, but, say, the dyeing of wool from an acid bath with sulphuric acid and Glauber salts. In this case the Glauber salts play a dual part, in that it forms with the sulphuric acid an acid sulphate, and thus lessens the otherwise energetic action of the mineral acid, and prevents the over rapid absorption of coloring matter by the fibre, and at the same time tends by that action to the production of level dyeings.

The second function of the Glauber salt rests in salting-out, as it were, exhausting the dyebath gradually, in much the same way as in the dyeing of cottons. Although in its latter capacity it plays just the same part as is played by common salt in the treatment of cotton, common salt may not satisfactorily be used to replace it, simply because in entering into combination with the sulphuric acid not only is an acid sulphate formed in the dyebath, but also free hydrochloric acid, the presence of which is obviously not always beneficial to the attainment of the most level of dyeings.

It is possible that these are instances in which the substitution of common salt for Glauber salts in wool dyeing may prove to be of some service, but the change should be approached tentatively and with caution.

Returning to the use of these assistants in the dyeing of cotton, it may be well to remember that the coarser varieties of common salt that are met with industrially often contain small quantities of calcium sulphate. The presence of this body may well force

a preference for the comparatively fine crystallised Glauber's salt in many instances, particularly in machine-dyeing, and even when aiming at very bright shades in ordinary yarn or piece dyeing. (The Textile Recorder.)

A VAT BLACK.

The Society of Chemical Industry, Basle, Switzerland, have produced a black which belongs to the newly-introduced *cibanone* class of vat dyes, and although it has not yet made its appearance on the markets, it is of interest.

Whilst the *ciba* dyes are clearly defined derivatives of indigo and of thioindigo, the *cibanones* are derived from anthraquinone.

Cibanone black on cottons is said to be exceptionally fast to chlorine, and in this respect will excel not only logwood and sulphide blacks, but also aniline black, and on this account should find ready employment on many classes of goods if only the cost of production be not excessive.

How Competition Has Made the Consulting Expert Necessary.

By Frederick J. Maywald, F.C.S.

To your question "How" I will myself reply by making a few inquiries of you, and, through you, of the manufacturer.

Are your products uniform in quality, color, appearance, finish? Do your materials vary in quality? If so, the finished products will not be even. Do you test your raw materials? If not, why not?

Are there by-products of your manufacture for which you have no use? Uses have been found for many such waste products; perhaps yours may be made a source of profit.

Perhaps you wish to improve your product, or produce an article similar to or an improvement on an article produced by a competitor. The expert works out many such problems in a month.

When you buy a ton of coal, how much combustible matter and how much ash are you actually getting? Is the coal offered you at \$3.50 per ton really cheaper than that offered you at \$4? Is the coal delivered you on contract up to the sample submitted with the bid? Have you ever thought of the possible waste and profit-leak through the coal pile? I recently examined a sample of coal which contained 64 per cent. of ash!

How about your lubricating oils? Are they good? Is the white lead you are buying really white lead, or is it a mixture of chalk and barytes? I have found more than one sample of "white lead" to consist of those ingredients. Is the pigment ground in linseed oil, or is it really ground in corn or cottonseed oil?

When you buy a ton of rubber how much real rubber are you getting? When you put 100 pounds of rubber in your mixture, are you positive that you have added 100 pounds of true rubber, and not 10 or 20 pounds of water?

(Perhaps that is the reason that last lot of insulated wire was rejected, as being "shy" on rubber. You

were honest enough, and added 100 pounds of what you supposed was pure rubber. But was it?)

Take the non-chemical industries. They have not enough chemical work to keep an experienced chemist busy, and hence cannot afford to pay him the salary he commands. Neither can they afford to maintain chemical laboratories, without which the chemist is of no more use than a carpenter without tools.

But the non-chemical industries cannot make money or even hold their own, if their chemical problems are not solved and if the chemical parts of their processes are not understood and properly carried out. For the chemical part of a non-chemical process is like a link in a chain or a cog on a wheel.

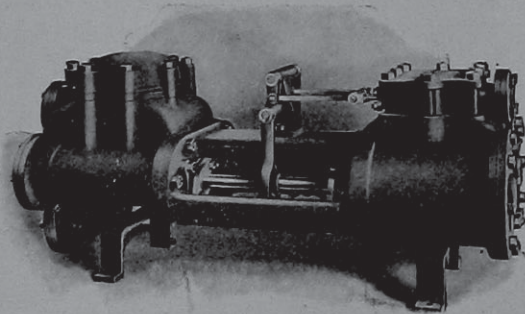
The consulting expert must not interfere in any way with managers, superintendents, engineers, heads of departments or any one else. His field of work is his own. He antagonizes no one, he competes with no one, he arouses no jealousies. He assists and benefits all.

Finally, remember that in manufacturing, the best, whether it be raw material, processes, products, plants, muscle or brains, is the cheapest and most profitable; and the greater the competition the more emphatic does this statement become.

Have I suggested how?

A Pump Proposition for the Silk Dyeing Industry.

The waste of bi-chloride of tin solution used in the silk dyeing industry has brought widely to the minds of the larger manufacturers the necessity of some method of saving this valuable by-product. Many silk dyers today are throwing away this costly tin solution, and the idea of saving it has only been advanced within recent years. Owing to the exceedingly acid and corrosive nature of the liquid, the handling of it by means of a pump has proven a difficult proposition.

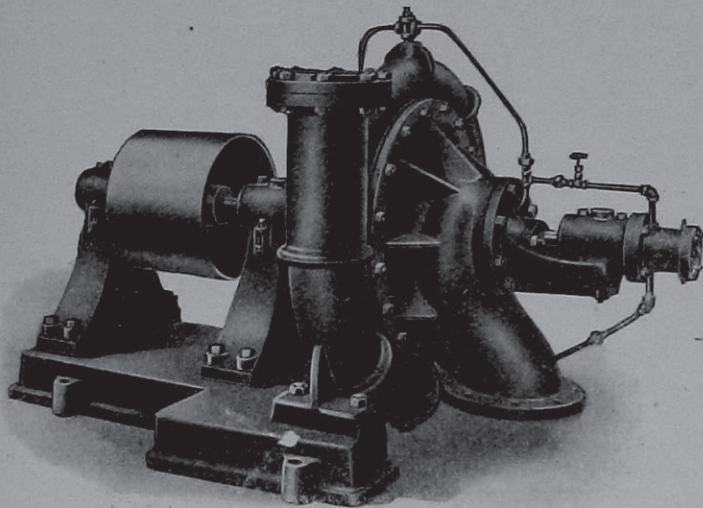


DUPLEX PISTON PATTERN STEAM PUMP.

The Henry R. Worthington Company has lately introduced a form of steam or power pump for this purpose, which has been installed in some of the larger silk dyeing establishments, and is operating in a highly successful manner. This pump takes the bi-chloride of tin solution from the sump into which it drains after being used in the dyeing process, and raises the liquid into a tank some fifty or sixty feet above the ground, thus allowing the liquid to flow by gravity through a series of filter presses. Sometimes the pump takes the liquid direct from the sump and

discharges it through the filter press. After the liquid has been filtered, the residue is found to contain about 75 per cent. of pure tin. This residue is then placed in a furnace and dried, and is then known as *block tin*. This tin is again made up in solution with muriatic acid to be utilized over again in the dyeing process. The pumps for handling this liquid are made of a special composition metal which does not in any way contaminate the tin solution, or permit the latter to corrode the metal used in the construction of the pump.

Where steam pressure is available a *duplex piston pattern steam pump* is used, whereas, where power from a line shaft is more convenient than steam, the



VOLUTE BELT DRIVEN PUMP.

volute belt driven pump is to be preferred. The design of this pump differs from the ordinary centrifugal pump from the fact that a very much higher efficiency can be obtained with a corresponding lower consumption of power necessary to operate the pump. This fact together with the non-corrosive qualities of the metal used in the construction of the pump makes it specially desirable for this class of work.

If our readers are interested in pumps for this service we would suggest their applying to the designers and manufacturers, *Henry R. Worthington*, 115 Broadway, New York.

Dextrin.*

By L. G. Larmuth.

Dextrin can be manufactured for the textile industry from:

- 1st. Farina or potato starch.
- 2nd. Maize or Indian corn starch.
- 3rd. Tapioca.
- 4th. Sago, and
- 5th. Wheat starch. The latter is seldom used, owing to the

price of raw material.

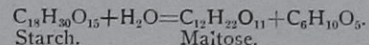
In 1811 Vauquelin pointed out that starch could be converted, by heat, into a body resembling gum arabic. In the same year Kirchoff showed that by boiling starch in dilute sulphuric acid a crystalline sugar was formed. Shortly afterwards Vogel found that a gum-like compound was also produced.

In 1814, Kirchoff showed that a similar change was brought about by the action of malt on starch.

In 1833 Payer and Persoz isolated the active principle of malt and named it diastase. About the same time Brot and Persoz, who had examined the gum-like body, gave it the name *dextrin*, because of its power of turning the plane of polarised light to the right.

In 1860, Musculus proved that the action of dilute acids on starch produced dextrin and sugar simultaneously.

In 1872 C. O'Sullivan showed that malt extract, acting on starch paste for from 5 to 10 minutes at 63° C., gave a similar result:—



The following is a translation from the French of Joseph Dépierre's book on finishing, published in France in 1887, and is his version of the discovery of dextrin. He has just described how the Irish destroyed starch works by fire, considering them dangerous to their principal food supply—potatoes:—

"On September 5, 1821, a fire of this kind broke out at Chapelizoo, near Dublin, in Ireland. The fire was only partial, the reserve store of starch not being burnt, but it was flooded so much that it flowed away, a veritable stream of starch, which poured into the Liffey and was lost. A workman at a neighboring calico printer's, who had helped to extinguish the fire, was surprised the next morning by being unable to put on his clothes—wet the night before—which had become completely stiff, they having the aspect of cloth which had been steeped in gum. He returned to the spot of the disaster and examined the débris, and noticed some lumps of farina—brown, white, and others yellow. He tried to dissolve these in water, and to his astonishment succeeded. Four other workmen present collaborated with him, bought some farina, roasted it in a saucepan, then tried to dissolve the product in water. The trial succeeded, dextrin and roasted starch being discovered. He sold the process in Manchester, then emigrated to New Orleans. Somewhat later the principal inventor of the process died. The secret was then told to a friend, who returned to England, where he produced and sold some considerable quantities. Fearing the secret would become known, he divided the process into several stages, carried out with no connection between them. This mode of working awakened the attention of the public, and one day the manufacturer was surprised by the authorities, who claimed that he was manufacturing a protected product. He was clever enough, however, to elude suspicion. One day, pressed for a delivery claimed by a country calico printer, he wished, although ill, to prove his good faith, and commenced roasting in the presence of his customer. The latter immediately grasped the process, and two years after it was manufactured by ten other firms."

Pure dextrin is an amorphous powder, with hardly any taste or smell, and is nearly white. It can be prepared by gradually adding and dissolving starch in sulphuric acid, immediately neutralising the acid and precipitating the pure dextrin with alcohol, or by subjecting starch to diastatic action at 65° C., then boiling and precipitating with alcohol. In both cases the product must be redissolved and precipitated several times to get it pure. In this state it should not reduce Fehling's solution.

Formerly dextrin was made by boiling starch with acids, neutralising, evaporating, drying, and then grinding the resultant mass to powder. Payner recommended the following process:—1000 lb. starch to be moistened with 30 gals. of water, containing 2 lb. of nitric acid sp. gr. 1.38; the mixture to be well kneaded, made up into balls, dried in hot air chambers, powdered, spread on brass trays to a depth of from 1½ to 2 inches, and submitted to a temperature of from 110° to 120° C. in hot air ovens. This may, or may not, have been a good method; it was certainly a costly one, and would not recommend itself to modern dextrin makers. Next, trays were used, either singly or in nests of from 10 to 12, or in series one above the other in heated chambers. The method was to sprinkle starch with a solution of acids, H₂SO₄, HNO₃, HCl, or acetic acid, thoroughly mix, dry in the air, and then pass to the calciners.

In the single tin system, each tin holds about 1 cwt. wet starch in a layer 5 ft. long, 2 ft. wide, and from 4 to 5 inches deep. The tins are placed one above the other on carriages, with runners, as the contents have to be continually stirred up, especially during the first hour. The process from beginning to end, after first placing the material in the calciner, takes from six to eight hours. The time depends on the shade required. The oven itself is heated direct by coal, a series of

(Continued on page xii.)

*Paper read before the Society of Dyers and Colorists.

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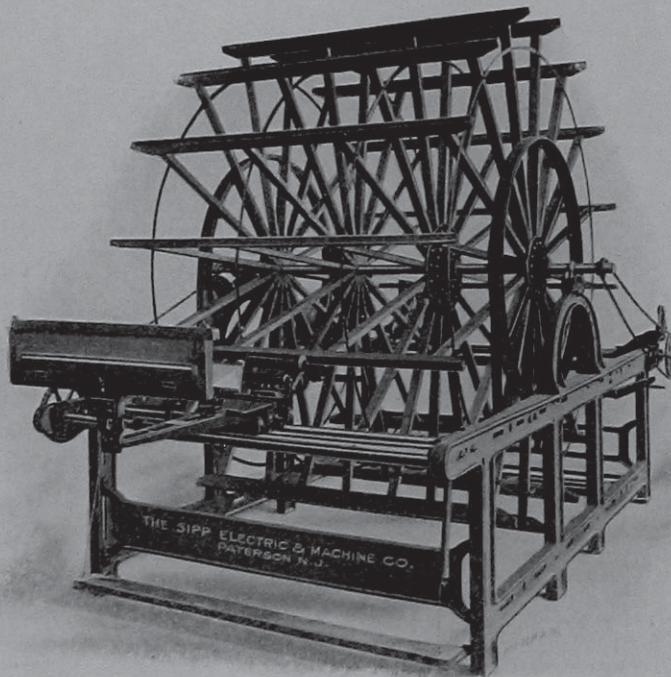
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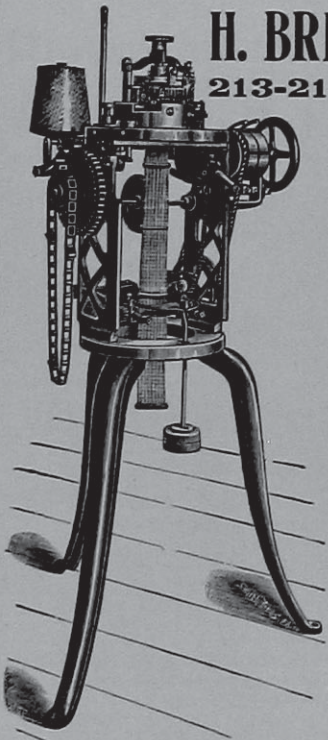
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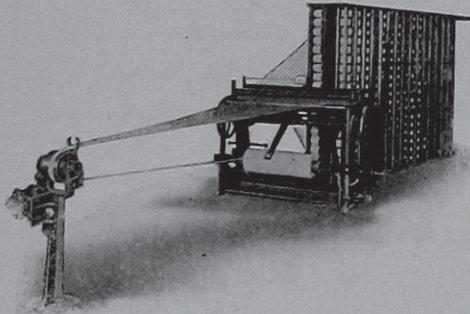
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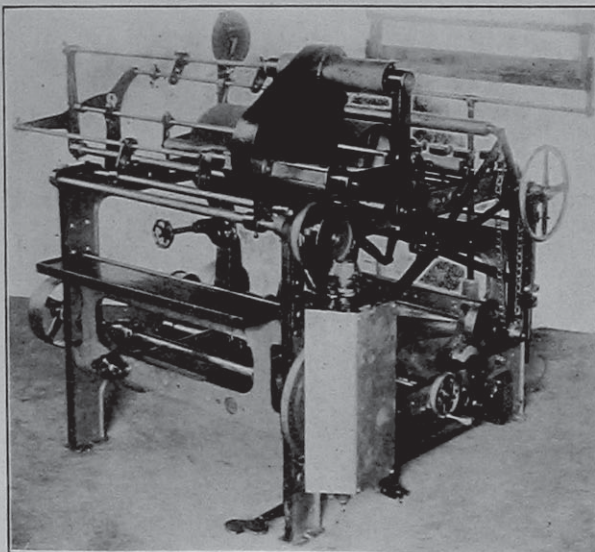
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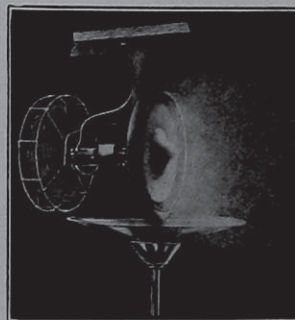
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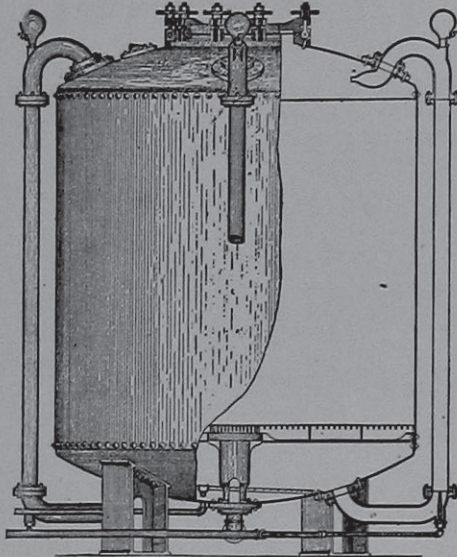
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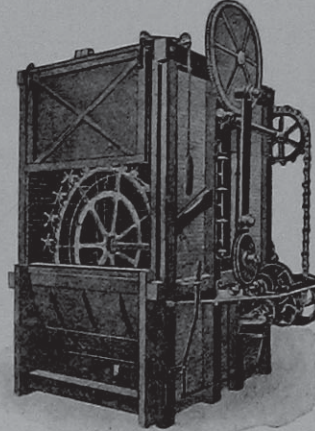
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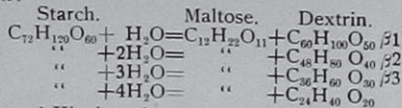
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flues transmitting the heat, so that the interior or calcining chamber is entirely cut off from the furnace and flues; special slide doors are provided, allowing the tins to be withdrawn separately. The heat of the interior is about 110° to 150° C., and is indicated by an external pyrometer.

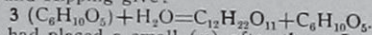
Dextrin can also be made without the use of acids, by heating starch in the same way at from 210° to 280° C., but in this case it dissolves with a dark color. This system of calcining is now out of date, having been supplanted by revolving cylinders, owing to their easier working and greater output per day. Several systems have been devised: Cylinders of from 16 to 18 ft. long, 1 ft. 3 inches diameter, worked in combination in what are known as nests of ten; cylinders, 12 ft. long and 5 ft. in diameter, separately worked, and much heavier; upright revolvers with stirrers; and several other kinds of machines. The heating of the cylinders, etc., is carried out in the same way as in the tins system.

Dextrin can also be made by steeping starch and adding malt extract or diastase at a moderate temperature—65° C.

J. G. McIntosh gives the following formula for the conversion by using an albuminoid diastase, quoting from Sullivan's book:



Perkin and Kipping give:



If they had placed a small (*n*) after these, I could understand it, but as it stands it is misleading. There is a differ-

ence between dextrin and soluble starch. With commercial dextrin, the iodine reaction is different—as are the properties. It may be, and probably is, a higher dextrin, but it is more nearly allied to starch, and the two should be taken as different substances.

It will be seen from the formula of McIntosh that he distinguishes four varieties of dextrin. The idea that there are different dextrans is correct, and, indeed, there must be a great number of different substances included under the name dextrin, varying in amounts of H₂O or CH₂O, just as the hydrocarbons of the methane series vary in amounts of CH₂, and possibly at some future date they will be isolated; but this will be for food purposes, and will not affect the textile market.

Experiments by Musculus and Grüber lead to the supposition that starch is first converted into a soluble form containing five or six times the molecule C₁₂H₂₀O₁₀, and this upon hydrolysis becomes maltose and erythro-dextrin; the latter, a body which is colored red by iodine. By further hydrolysis achro-dextrin is formed, which does not color iodine. These changes continue until all is converted. These points are proved by the gradual decrease in the specific rotatory power, and the increase in the copper-reducing power. Similar observations were made by Brown and Heron. It can thus be plainly seen that speaking commercially of dextrin, many substances are included about which the user never troubles himself. His dextrin may contain a mixture of amylo, malto, erythro, achro, and pyrodextrin in any proportion, together with unconverted starch, soluble starch, and glucose. The resultant sugar formed in the manufacture of dextrin by the acid process is always glucose, whilst that formed by diastase is maltose. One of the chief proofs that soluble starch is

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more nearly allied to ordinary starch than is dextrin is that the former is converted by diastase into sugar, whilst the latter is not attacked. One part of diastase is capable of converting 2000 parts of starch at 65° C. into dextrin and maltose.

According to P. Heermann, good dextrin should not be hygroscopic, nor contain more than from 6 to 8 per cent. moisture; it should be soluble in an equal volume of water and be about 1.5 sp. gr.; should give a clear and as neutral a solution as possible; it should not be colored blue by iodine (starch), nor precipitated by tannic acid and baryta water (soluble starch), or by lead acetate (gum arabic, vegetable mucilage), and should not become turbid with lime water (oxalic acid); and should not reduce Fehling's solution (sugar). For a pure dextrin this standard may be all right, but probably such a dextrin does not exist to-day on the market for use in the textile industry. The essential points to be taken into consideration are the purpose for which it is required, the nature of the material on which it is to be used, and the effect desired. The penetrating power is superior to that of starch, weight for weight, and some fine results may be obtained by a competent finisher, results which cannot be obtained with starch—the material having a finer feel, without being hard. Besides, there is little chance of the goods being damaged through decomposition, etc. This may easily be seen by boiling a small quantity of starch and dextrin separately, leaving them to stand several days in glasses under exactly the same conditions. Upon examination,

mildew growth of varying color will probably be found on the starch, also an accumulation of water, while the dextrin will be practically unaffected, though possibly, if in a warm atmosphere, it will have dried up a little. Some white dextrins contain as much as 45 per cent of unconverted starch; one just tinted cream is preferable, dextrination having been taken further, as indicated by the color. In some cases, and for some finishes, starchy dextrins are most useful, but the composition must be governed by the result required on the material.

The color of a dextrin is chiefly due to the formation of the substance caramel. It is very apparent in dark shades, and shows to a certain extent that dextrination is fairly complete, but too much color shows that the process has been carried too far. Caramel is used for coloring sweets, etc., but is of no use in the treatment of fabrics. Consequently this is a loss to the user when present.

Some people consider that corn-starch dextrin can contain only from 30 to 37 per cent of real dextrin. This is not so, as very much higher quantities may be present, depending on how far dextrination has been carried. It is always as well to make comparative tests of dextrin, such as percentage of ash, moisture, and color, before purchasing. Then make comparative tests of the samples of pieces of cloth, and when finished leave for, say, three days, and then compare the results.

Dextrin may be freed from dextrose and maltose by heating with an excess of an alkaline solution of HgCy₂, which oxidises these two, leaving the dextrin untouched.

MILL NEWS

Philadelphia. The Firth & Foster Co., the most prominent Dyers and Finishers of Textile Fabrics in this country, amongst other improvements are building a new dynamo room and extending their electric plant. They have also installed new machinery in the dye house in order to be able to keep up with the ever increasing demand for their plant.

John Norris, manufacturer of cotton, worsted and silk goods, who has lately doubled his looms, has leased a portion of the mill of C. H. Feldstein & Co.

The Delta Spinning Mills, of Frankford, manufacturers of combed Egyptian and mercerized yarns, are reported with orders ahead for the next four months. They are running their warping, quilling, winding and twisting departments day and night, and after October 1 will do the same with their mules.

The Valkone Dye and Finish Works have added to their plant the floor recently vacated by the Columbia Dye Works. They will use the increased space as a pressroom.

Thomas Develon's Sons, James Pollock & Sons and The Philadelphia Tapestry Mills have added looms to their plants.

The Patterson Manufacturing Co. is installing 12 6-inch reed space looms as well as auxiliary machinery, to make a heavy grade of rugs.

The plant of Thomas Henry, Jr., manufacturing carpet, cotton and upholstery yarns, is transferred from the Madison and Jasper streets mill to the new two-story building, 80 by 50 feet, recently erected at Emerald and Willard streets.

Construction has been begun upon the two new buildings of the Thomas Wolstenholme Sons & Co., Inc., manufacturers of worsted and merino yarns. They are to be one-story buildings, one 40 by 200 feet and the other 50 by 160 feet, to be used for storage and finishing.

Robert Carson & Son, manufacturers of ingrain carpets and rugs, E. Huntington street, corner Trenton avenue, are erecting a four-story reinforced concrete building on the lot adjoining

their plant. It is reported that the same will be rented for textile purposes.

The addition to the mill of Ivins, Dietz & Metzger is completed and some of the machinery is being placed. It is reported that about fifty additional Wilton looms will be added.

The Elk Knitting Mills, manufacturing ladies' and children's ribbed underwear, in order to be able to increase their plant, have purchased new property, and will occupy it as their plant in December after extensive alterations have been completed. The H. L. Nelke Co., manufacturers of "Togards," will also occupy a portion of said new building.

George W. Remsen, George Weinman and John L. McCloskey have applied for a charter for the Remsen Knitting Mills to manufacture hosiery. The capital has been placed at \$15,000. The purpose is to take over the business of the hosiery plant of George W. Remsen.

Allentown, Pa. Samuel Thorp, of Elmira, N. Y., who was the general manager of the Reed & Lovatt Silk Mills at Elmira, Weatherly and Palmer

(Continued on page xiv.)

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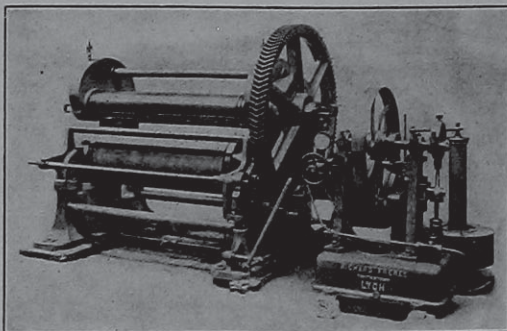
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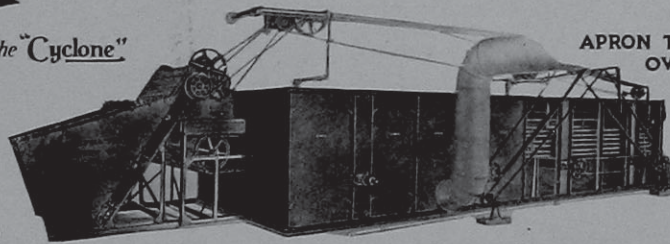
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ton, Pa., will be the president and general manager of the Reading Silk Mills, purchased by Allentown capital, and which Joseph S. Mack, of this city, is the principal owner. The name of the new concern will be the Berkshire Silk Mill Co., and the capital is \$500,000. New machinery will be installed, and as much of the old machinery as can be used will be retained. About 800 employees will find work and broad silk will be manufactured.

The Swissonia Knitting Mills are doubling their plant by new buildings. J. J. Taylor is the Treasurer and Superintendent of this concern.

Brownstown, Pa. The Conestoga Hosiery Co., Ltd., W. E. Snader, Supt., has moved into its new building.

Doylestown, Pa. The hosiery mill of H. L. Scheetz Co., which has been running part time for the past few months, has started to operate on full time, employing 100 new hands.

Norristown, Pa. Work on the new mill of the Ballard Knitting Co. is well under way. The foundations are all concrete. The building is to be six stories in height.

Elizabethtown, Pa. Work has been commenced on the erection of a new two-story 50 by 40-foot mill. When completed, the mill will give employ-

ment to about 50 hands and will be run as a branch of their Harrisburg plant.

Reading, Pa. The Continental Hosiery Mills have installed 50 new knitting machines and other equipment.

The silk manufacturing business of the Steiner & Talcott Silk Company has increased to such an extent that a new plant with double the capacity of the present factory is being erected at West Reading. The structure will be ready for occupancy on January 1, and will have a capacity of 200 looms. Half a dozen different qualities of silk dress goods and linings are turned out at present by the concern.

Terre Hill, Pa. Through the efforts of the Board of Trade here, Seidel Bros., of Reading, extensive hosiery manufacturers there, and at Blandon and Topton, are to locate a fourth hosiery plant here. The Michael building on Maple street has been leased and is being converted into a hosiery mill. The citizens of Terre Hill are raising a bonus of \$500 as well as the rent for one year for the building.

Wellsboro, Pa. It is rumored that a rug weaving plant is to be erected on Crafton street, by Jesse Beach and Jasper Dickinson.

Burlington, N. J. It is rumored that an additional silk mill, to employ 500

hands, is to be built here by the Martin L. Cohn Company.

Passaic, N. J. The new worsted mill of the Forstmann & Huffman Co. has been formally opened. A number of looms have been in operation for some weeks. The new mill is what must be considered a model mill with reference to lighting, the latter being of the G. Drouve Co.'s skylight type.

Trenton, N. J. Improvements, costing about \$100,000, are made at the worsted mills of F. A. Straus & Co.; it is expected that the new buildings will be ready for occupation about Nov. 1.

Amsterdam, N. Y. McCleary, Walin & Crouse, manufacturers of carpets and rugs at Amsterdam, are to increase their capital stock from \$1,000,000 to \$2,000,000. They are erecting an addition 50 by 80 feet to their tapestry mill, to be completed in November.

Shuttleworth Bros. Co., manufacturers of carpets and rugs, will build a plant 170 by 320 feet, thus doubling their present capacity. Three floors of the main mill will be used for looms.

Fulton, N. Y. The six-story yarn mill of the American Woolen Co., is completed and a large quantity of machinery installed. About five hundred additional operatives will be employed.

Johnstown, N. Y. It is announced that the P. P. Argensinger Company, of this place, has been incorporated with a cap-

(Continued on page xvi.)

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The grid with a comb is getting
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 better cleaning and lose less
 cotton in the process than by
 any other grid. : : : : :

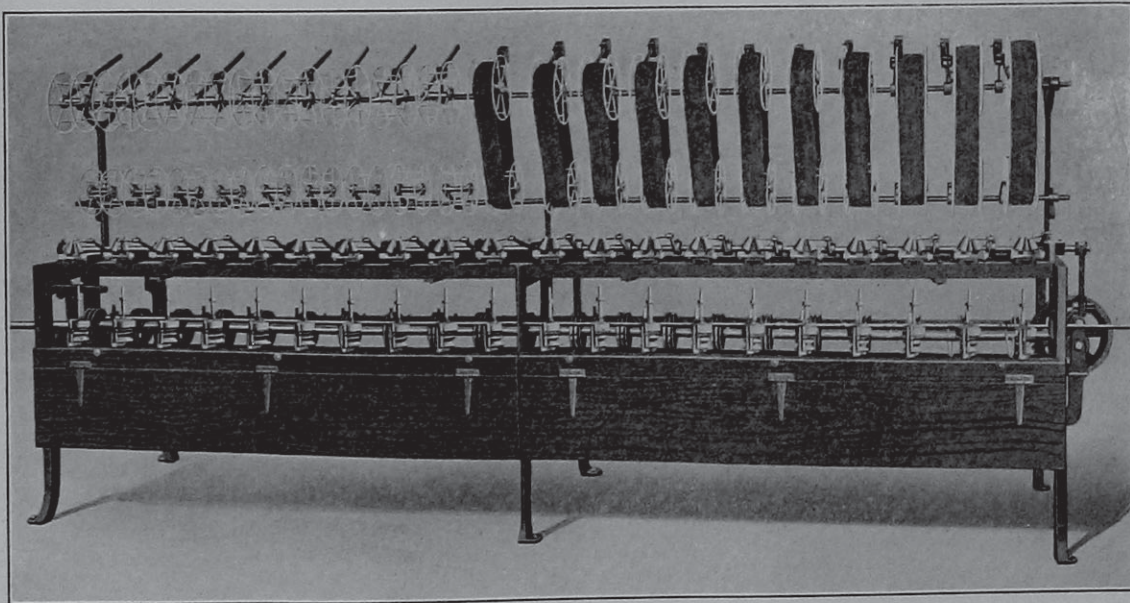
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 for Best Results—WHY?

Because the new features embodied in "Model B" do
 away with all the difficulties to be met with in silk thread
 finishing and make it the peer of any machine ever placed
 on the market. Investigate and see the number of dupli-
 cate orders we have received to date. Summed up, our
 success is due to the fact that we have the best and most
 complete system, and always honestly represent it and
 say to those who have tried the rest to try the best and
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Vat Dyes for Cotton Dyeing and Printing—also for Wool and Silk.

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Vat Dyes for Cotton Dyeing—Fast to Light, Chlorine and Washing.

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ital stock of \$200,000, by A. Judson Baker, John Wells Argensinger and Grace Argensinger Baker, all of Johnstown. They are to manufacture gloves and mittens.

New Hartford, N. Y. The Maxwell Manufacturing Co. (underwear) are to double their plant.

Poughkeepsie, N. Y. Curtis F., Asa, and George L. Hoag have incorporated the C. F. Hoag Co., with \$100,000. They are to manufacture knit-goods.

Syracuse, N. Y. The Syracuse Rug Works have moved to their new three-story brick building at 411-13 Tallman street.

Utica, N. Y. The Augusta Knitting Co. is to increase their capital stock from \$75,000 to \$150,000.

Victory Mills, N. Y. About \$30,000 will be spent in improving the plant of the Saratoga Victory Mfg. Co., of which Mr. J. P. Harrington is the agent.

Boston, Mass. The Bay State Cotton Corporation, comprising the Warner Cotton Mills of Newburyport, the Lowell Weaving Company of Lowell and the LeRoy Cotton Mills of LeRoy, N. Y., has been incorporated with a capital of \$1,500,000. P. T. Jackson, Jr., of Boston, is to be the treasurer.

East Boston, Mass. The Merchants' Wool Scouring Co. have installed a carbonizing plant, with a capacity of 5,000 pounds a day.

Fall River, Mass. The directors of the Lincoln Manufacturing Co. have voted to recommend to the stockholders, at their annual meeting in October, an increase of \$100,000 in capital stock, and adding 10,000 spindles to the plant.

Holyoke, Mass. An addition is to be erected by the Germania Mills. The new structure will cover 40,000 square feet and will be one story in height, costing about \$50,000. It is expected to have it ready for occupancy by January 1.

The Farr Albaca Co. has awarded the contract for building its new boiler house; the cost of the building being estimated at about \$50,000.

HOPEDALE, MASS.

The Ninth Annual Field Day of the Draper Company's Employees was held at the Town Park, Saturday, August 14. It proved far more interesting and was more keenly contested than in any other year, the event proving to be a banner attraction. The park was crowded with interested spectators from the first event at 8.30 A. M. until the last event

in the afternoon, and each and every number on the program was intently watched by all.

The attraction of the day was, of course, the baseball game between Draper Co. and the Hamiltons of Lynn. The Draper Co. team won by the score of 5 to 2, the game being witnessed by 1,800 people.

The Order of Events for the day was: 100-yard dash, novice; 120-yard hurdles; sack race; lawn tennis singles; lawn tennis doubles; 100-yard dash; shot put; potato race; pole vault; 220-yard dash; running broad jump; bicycle race; running high jump; relay race; obstacle race; mile run; potato race for girls; one-quarter-mile run; boat race; swimming race; hand paddle canoe; tail-end race; canoes; five-mile run; baseball game; sensational balloon ascension and parachute drop.

It was a day that will be long remembered by the Contestants as well as the visitors.

An attractive program of the affair was issued in pamphlet form, containing a fine portrait of Governor Eben S. Draper, a full account of the sports and games, with illustrations, and several views of the various rooms in the great Draper plant.

Jefferson, Mass. The Jefferson Manufacturing Co. has installed 10 new looms and will add more.

Lawrence, Mass. The Wood Worsted Mill of the American Woolen Company has ordered forty additional sets of worsted cards and twenty Noble combs, giving the mill a total of 130 sets of cards.

An addition to the Central power plant of the Arlington Mills has been started, which will double (adding 4,000 horse-power) the capacity of the plant when completed. The new building will be 148 by 60 feet, with a concrete chimney 250 feet high. This addition is for the purpose of supplying power for the new mill now under construction by the company.

Leicester, Mass. The Leicester Woolen Co. have installed two new sets of cards.

The new large mill building, just completed by the Lawrence Manufacturing Co., at a cost of \$110,000, is to be used by the concern, for spinning purposes.

New Bedford, Mass. Additions are to be constructed, to double the capacity of the present weave shed of the Soule Mill. Part of the new building will be one story in height and the rest, two

stories. The addition will be sufficiently large to allow the installation of 300 looms; providing also room for some twistors, thus relieving the frame spindles from doing twisting.

Better facilities for the weaving department of the Butler Cotton Mills are to be provided by a two-story brick addition, 98 by 128 feet. The enlargement of the weave shed is to provide more room for the slasher and cloth departments.

North Oxford, Mass. The new two-story addition to the plant of the Thayer Woolen Co. has been completed and the machinery will soon be placed in position. Three sets of cards will at first be installed in the new structure, although it is designed for holding four sets. The machinery at the White Village Mill of the company has been moved to the new building.

Pittsfield, Mass. The Tillotson Manufacturing Co. is building an addition 22 by 45 feet to its office at the West Pittsfield mill.

Wakefield, Mass. Work is rapidly progressing on the enlargement of the Harvard Knitting Mills. The addition is to be 139 by 67 feet, three stories in height. Two floors will be devoted to the new dyeing plant.

Watertown, Mass. The Bemis Mills have added 10 new looms to their weave room.

Anthony, R. I. At a meeting of the Coventry Company's officers it was decided to add a new weave shed to the plant here and to increase the capacity of the mills to 60,000 spindles by the addition of 20,000 spindles and 420 Crompton and Knowles looms. The new weave shed will be 344 by 80 feet and three stories high. It is to be ready for the machinery by January 1. All the looms now in the mills will be removed to the new weave shed and the present mill will be devoted to preparatory machinery and the preparatory processes of cotton manufacture. All the cotton used in the factory after the changes and additions are made will be combed and the product will be fine white and fancy cottons.

Greystone, R. I. Joseph Benn & Son, Inc., one of the most successfully managed Textile Plants in New England, is running night and day. The plant, we are informed, is to install the Tillotson type of Humidifiers.

Manville, R. I. A large addition, 150 by 200 feet, to the weave shed, for accommodating about 1,000 looms, is

(Continued on page xviii)

BOOKS ON TEXTILE SUBJECTS.

- Wool Dyeing (Part 1)**, by W. M. Gardner. Price \$2.00.
TABLE OF CONTENTS: Fibre, Scouring, Bleaching, Water, Mordants, Assistants and other Chemicals.
- Wool Dyeing (Part 2)**, by Gardner and Knaggs. \$3.00.
TABLE OF CONTENTS: Classification of Coloring Matters; Natural Dyestuffs: Logwood, Redwoods, Madder, Cochineal, Kermes and Lac-dye, Orchil; Cudbear and Allied Coloring Matters, Yellow-Dyes, Indigo; Artificial Dyestuffs: Classification of Coal-tar Dyes, Artificial Mordant Dyes, Acid Mordant Dyes, Acid Dyes, Direct Cotton Dyes Suitable for Wool, Basic Dyes, Dyes Applied by Oxidation, Reduction and other Special Processes, Metallic Dyes, Methods of Dyeing Wool in Various Forms, Suitability of Dyes for Different Classes of Work, The Theory of Wool Dyeing.
- The Dyeing of Cotton Fabrics**, by F. Beech. Price \$3.00.
TABLE OF CONTENTS: Fibre; Action of Alkalies, Acids and Oxidising Agents; Bleaching; Dyeing Machinery and Manipulations; Principles and Practice of Cotton Dyeing; Dyeing Unions, Cotton-Wool, Cotton-Silk; Washing, Soaping, Drying; Testing Color; Experimental Dyeing and Comparative Dye Testing.
- Silk Dyeing Printing and Finishing**, by G. H. Hurst. Price \$2.00.
TABLE OF CONTENTS: Fibres; Boiling Off; Bleaching; Dyeing Blacks and Fancy Colors; Weighing; Dyeing Mixed Fabrics; Printing; Dyeing and Finishing Machinery and Processes.
- Dyeing of Textile Fabrics**, by Hummel and Hasluck. Price \$2.00.
Three Volumes Bound in One.
Vol. 1: Textile Fabrics and Their Preparation for Dyeing.
Vol. 2: Coloring Matters for Dyeing Textile Fabrics.
Vol. 3: Mordants, Methods and Machines used in Dyeing.
- Wool, Cotton, Silk; Fibre to Finished Fabric**, by Posselt. Price \$7.50.
TABLE OF CONTENTS: Raw Materials; Preparatory Processes: Carding, Drawing, Spinning and Twisting; Winding, Warping; Weaving Machinery and Supplies; Knitting, Processes and Machinery; Dyeing, Bleaching, Mercerizing, Processes and Machinery; Finishing, Processes and Machinery; Heat, Power and Transmission.
- Color in Woven Design**, by R. Beaumont. Price \$7.50.
This work contains on 32 plates 126 colored illustrations of Diagrams Illustrating the Mixing of Colors; Fancy Yarns, Fancy Cassimeres, Worsteds, Trouserings, Coatings, Suitings, Ladies Dress Goods, Cloakings, Fancy Cotton and Silk Fabrics. Besides said 126 colored illustrations, the work contains 293 illustrations, in black and white, of Weaves and Color-Effects in Fabrics, etc., accompanied by 440 pages of reading matter.
- Chemistry of Dye-Stuffs**, by G. von Georgievics. Price \$4.50.
A textbook presenting to the student in as condensed a form as possible the extremely wide domain of the modern chemistry of dye-stuffs; bringing into prominence all the relations known to subsist between the various dyes and groups of dyes, as well as the connection between color and constitution, since the proper appreciation of these relations forms the main object of color chemistry.
- The Jacquard Machine**, by E. A. Posselt. Price \$3.00.
TABLE OF CONTENTS: Different parts of the Jacquard Machine and its Method of Operation; The Jacquard Harness; The Comberboard; Tying up of Jacquard Harnesses for all kinds of Fabrics, Modifications of the Single Lift Machine; Stamping, Lacing and Repeating of Jacquard Cards; Practical Hints on Jacquard Designing.
- Testing of Yarns and Textile Fabrics**, by J. Herzfeld. Price \$3.50.
A Guide for the Manufacturer and Large Purchaser, who observe definite specifications to insure standard material and workmanship; also giving a collection of tests, both of physical and of chemical nature.
- Woolen Spinning**, by C. Vickerman. Price \$1.75.
TABLE OF CONTENTS: Fibre, Supply, Sorting, Scouring and Drying, Bleaching and Extracting, Dyeing, Burring, Mixing and Oiling, Carding, Spinning, The Mule, Miscellaneous.
- Wool Combing**, by H. Priestman. Price \$1.50.
TABLE OF CONTENTS: Fibre, Washing, Water, Carding, Preparing, Intermediate Processes, Combing, Finishing, Tops and Top Testing.
- Silk Throwing and Waste Silk Spinning**, by H. Rayner. Price \$2.50.
A Treatise on the Principles of Silk Throwing and Waste Silk Spinning, with Illustrations and Descriptions of the Machinery used.
- Textile Calculations**, by E. A. Posselt. Price \$2.00.
A Complete Guide to Calculations Relating to the Construction of All Kinds of Yarns, Fabrics, and the Analysis of Cloth.
- Cotton Spinning**, by T. Thornley. 3 Volumes. Price \$6.50.
A Complete Self-Instructor (with Questions and Answers) on this subject, treating machinery and processes as used abroad.

The above books, as well as any other books on Textile Subjects, no matter where published, sent charges prepaid. Remittances should be made by Check or Money Order, or in Registered Letters. Not responsible for money lost, when otherwise sent.

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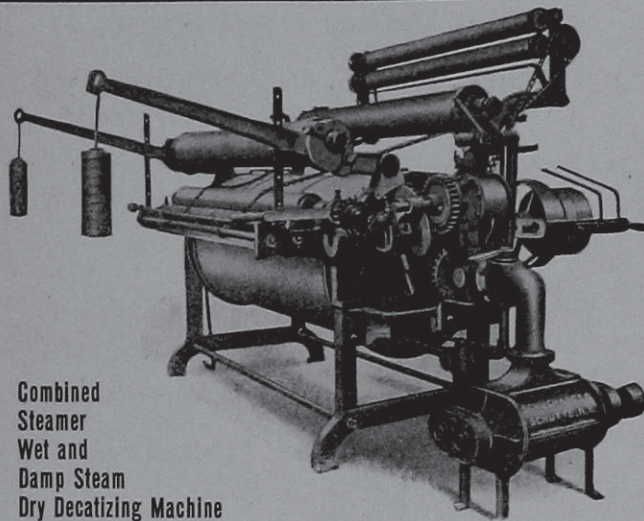
Central Falls, R. I.

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Woolen and Worsted
Finishing Machinery

New Spinning
Frame

MANUFACTURERS
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ANTHRACINE



COAL TAR
PRODUCTS
ANILINES

now in course of erection by the Manville Co. The bleachery will also be enlarged by additions and by utilizing some space occupied by looms in the large main mill.

Providence, R. I. Owing to the insufficient capacity of its mill on Calender street, the Norway Worsted Company will erect a new mill at South Barre, Mass. A plot of land has already been purchased from the Barre Wool Combing Company, and work on the building will begin immediately. Mr. Alfred T. Hustler is the successful manager of the concern. The company spins worsted and manufactures novelty yarns.

The American Silk Spinning Co., which was incorporated in 1908 with a capital of \$250,000, has started operations. About 100 hands are at present employed, but it is expected that this force will soon be increased to 600. The output of the new plant, which is equipped with 7,000 spindles, consists of spun silk yarn and silk noils.

It is reported that the Crompton & Knowles Loom works will erect a building on Harris avenue, which will double the size of their Providence plant.

Saylesville, R. I. An addition, 100 feet square and four stories high, and divided by a fire wall into two compartments, is being made to the storehouse of the Sayles Bleacheries. When completed the entire storehouse will be 400 feet long and 100 feet wide,

divided into seven compartments, and will have a capacity of about 20,000 cases. The method of constructing the plant in compartments is to prevent a fire from sweeping through the entire building.

Woonsocket, R. I. The new plant for the French Worsted Company will be six stories, as the concern is to add three stories to its new three-story mill building now in course of construction. The dimensions are 112 by 198 feet.

Bridgeport, Conn. Max Henkel, the representative of the American branch of the Henkel Lace Company of Barmen, Germany, has purchased about five acres of ground for the new factory referred to last month.

Danielson, Conn. The weavers in the Danielson Worsted Co. are operating two looms each, which is a new system in this mill.

Putnam, Conn. It is rumored that the Putnam Woollen Co. is to replace some of their old looms with 17 of a more modern type.

Taftville, Conn. The Ponemah Mills Company, it is reported, is to spend about \$225,000 for a 670 by 200 foot addition.

Bennington, Vt. Announcement is made of the incorporation by Tiffany Bros., manufacturers of knit goods and knitting machinery. The new concern has a capital stock of \$25,000 divided

into 250 shares. The incorporators are E. J., Eli, Harry E. and Carrie P. Tiffany, all of Bennington, and Frank W. Tiffany, Winthrop, Mass.

About \$60,000 will be expended on an addition being built to the mill of the Holden & Leonard Company, manufacturers of dress goods. It is expected the new building will be ready for occupancy about October 1. New looms will be added.

Manchester, N. H. The Amoskeag Manufacturing Company has increased the number of its spindles until it now carries 15,500 persons on its pay roll. The corporation comprises nearly twenty mills, all leased in Manchester and which have 620,000 cotton spindles, 50,000 worsted spindles and 24,200 looms. The plant is the largest engaged in the textile industry in this country and possibly in the world.


Springvale, Me. The Springvale Spinning Co. is installing three twisting frames besides making other extensive improvements.

Waterville, Me. The Lockwood Co. will build a brick and stone addition to their mill, the same to cost \$20,000.

Westbrook, Me. The Dana Warp Mills, it is reported, are to build an extension to their dyehouse, 50 by 100 feet, 3 stories high. The first floor will be used as a dye room and the other two floors for the beaming process.

We are prepared to prove that Sodium Peroxide is the best for Bleaching animal & vegetable fibres or their mixtures.

Roesler & Hasslacher Chemical Co. New York



Wilton, Me. Extensions are to be built by the Wilton Wool Co. to their mill, to accommodate about 36 new looms.

Baltimore, Md. The income from sales of the Consolidated Cotton Duck Company for the six months ending June 30 was \$3,649,877 and from other sources \$18,160, a total income of \$3,668,037; cost of labor, materials and supplies, \$3,268,874; current interest and general expenses, \$117,600; net earnings, \$281,562; interest on bond, constituent companies, \$212,775; surplus, \$68,787; for renewals and repairs in various plants there was \$70,555 expended.

Danville, Va. A merger of the Riverside Cotton Mills and the Dan River Power & Manufacturing Co., two of the largest cotton mill corporations in the South, has been effected. The name of the new company is the Riverside and Dan River Cotton Mills. This company has a total of 165,164 spindles and 5,966 looms and is building an additional mill of 50,000 spindles and 1,500 looms at a cost of \$1,000,000.

Parkersburg, W. Va. The United Woolen Mills Co. has been incorporated with a capital stock of \$5,000. Its incorporators are George V. Uhl and John F. Laird, of Parkersburg; Charles H. Hersch, of Dunkirk, Ind., and others.

Burlington, N. C. The Aurora Cotton Mills are building a 60 by 100 feet one-story brick addition to their dye house. New dyeing and bleaching machinery will be added.

Charlotte, N. C. The Odell Bleachery, erected at a cost of \$150,000, is about ready to begin operation.

Cherryville, N. C. The Vivian Mills are changing from a yarn to a sheeting mill, and are just starting 50 new Crompton and Knowles looms.

Henderson, N. C. The Henderson cotton mills will build a No. 2 mill, to be equipped with 10,000 spindles.

Henrietta, N. C. The old looms of the Henrietta mills have been replaced by modern Draper looms.

Hickory, N. C. The A. A. Shuford Mill Company has been incorporated with a capital stock of \$80,000 by A. A. Shuford, G. H. Geitner and others. They expect to have the mill running by March, 1910.

High Point, N. C. J. H. Adams, of the High Point Hosiery Mills, has organized another knitting company, known as the Piedmont Mills Co. It will erect a three-story brick building, 60 by 150 feet, and install machinery for knitting hosiery.

High Point, N. C. The Piedmont Mills Company has been organized to build a mill for the manufacture of hosiery. It will erect a three-story 60 by 150-foot brick building and install the necessary machinery. J. H. Adams, of the High Point Hosiery Mills, will be its manager.

Kannapolis, N. C. The Cannon Mills are installing new looms, building also an addition to their bleachery.

Lenoir, N. C. The Moore Cotton Mill Company will add 2,176 spindles to its present equipment of 3,200 spindles.

Lincolnton, N. C. The Saxony Spinning Company has been fully organized and elected Edgar Love, president, and James Lee Love, treasurer. They will

erect a one-story mill structure, 360 by 75 feet. They will install about 8,600 spindles for manufacturing fine cotton yarns from combed Sea Island cotton staple. The company is capitalized at \$100,000.

Monroe, N. C. In order to meet the increased demand for its wide sheetings the Monroe Cotton Mills have placed an order with the Crompton & Knowles Loom Works for ten 99-inch and thirty-two 72-inch looms, which will make a total of one hundred and ninety-four 8/4 to 11/4 looms.

Thomasville, N. C. Business men have accepted the proposition of outside capitalists to furnish a site for a \$150,000 cotton mill, as well as to subscribe half the capital for the proposed mill.

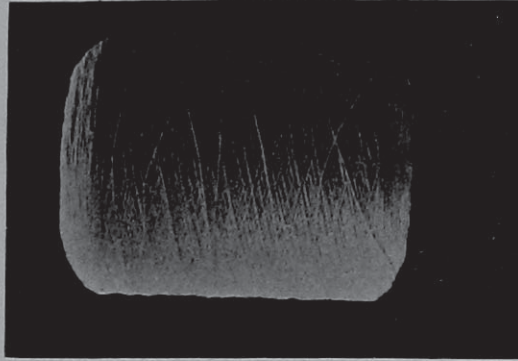
Wilmington, N. C. John D. Bellamy and J. Walter Williamson have purchased the Wilmington Cotton Mills at \$125,000. They will organize the Bellwill Cotton Mills to operate the plant, which has 7,000 spindles and 290 narrow looms.

Anderson, S. C. The plans for the establishment of a library at the Orr Cotton Mills have been carefully considered, and it is expected that within a very short time they will have been fully realized.

The Cox Manufacturing Company is contemplating to install looms to weave into cloth the yarns now produced by its 15,000 ring spindles. The company has for this purpose increased its capital by \$150,000.

The Conneross yarn mill is arranging to install additional spinning frames, to increase its annual output about 40 per cent.

WOONSOCKET YARN GASSING MACHINES



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Woonsocket Machine & Press Company, WOONSOCKET,
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THE HIGHEST GRADE OF
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New England Butt Co.

Providence, R. I.

Braiding Machinery, both American and German types, for making Dress Braids, Shoe and Corset Laces, Underwear, Trimmings, and all kinds of Round and Flat Braids.

Clover, S. C. The Clover Cotton Mfg. Co. has declared its regular 10 per cent. dividend.

Edgefield, S. C. The Beaver Dam Mills has been incorporated with a capital stock of \$200,000 by B. F. Zimmerman, W. E. Beattie, Lewis F. Parker and others, of Greenville; W. W. Adams, T. H. Rainsford and others, of Edgefield. This company takes over the Edgefield Manufacturing Company's plant of 5,000 spindles and 328 looms. They are to erect a new 2-story 80 by 10 foot building at a cost of \$10,000.

Goldville, S. C. The Banna Manufacturing Company is proceeding with the construction of its additional building, which will be of brick, 100 by 162 feet, mill construction, costing \$15,000. Its machinery for this addition will comprise 4,096 spindles and 250 looms, costing \$40,000. Contract has also been awarded for operatives' cottages. They have awarded the contract for a humidifying system to John W. Fries, 45 Lafayette street, New York, Manufacturer of the *Hygrosso*. The installation will consist of the belt-driven *Hygrosso* in all its departments.

Greenville, S. C. After having been closed for a long time on account of the dull times, the McGee Woolen Mills will resume operations at once. Arthur Trappleton is the Superintendent.

Articles of incorporation have been granted to the Conastee Cotton Mills, the capital stock being placed at \$200,000. The incorporators of the company are W. E. Beattie, Ellison A. Smyth, Lewis W. Parker and Thomas I. Charles. It is rumored that they will take over an established plant.

Greenwood, S. C. The Greenwood Cotton Mill No. 1, which had been idle since November 1 last year, is running full time. Since the mill was shut down it has been equipped with new machinery. Four hundred new Draper looms are running and the capacity has been increased from 10,000 to 16,000 spindles. The superintendent is P. D. Wade, formerly superintendent of the Pelzer Mills.

Rock Hill, S. C. The Hamilton Carhartt Cotton Mills is building a 140 by 40 foot addition, to accommodate 400 looms. The mill is at present operating 7,488 spindles and 204 looms on denims.

The Wymajo Yarn Mills, which have only been in operation a few months, will hold a meeting of its stockholders on September 11 for the purpose of increasing its capital stock from \$150,000 to \$300,000, by issuing \$150,000 in preferred stock. W. W. Moore is president and Simms Gill Wylie secretary of the mill.

Walhalla, S. C. The Hetrick Hosiery Mills have been incorporated with a capital stock of \$33,000 and organized. Wm. A. Hetrick is president, R. T. Jaynes, vice-president, and Chas. F. Hetrick, secretary-treasurer. This company is a consolidation of Wm. A. Hetrick & Bro., Philadelphia, and the Oconee Knitting Mill at Walhalla, purchased by Mr. Jaynes. The Philadelphia plant has been removed to Walhalla and the enlarged mill has 168 knitting machines, with accompanying dyeing and finishing apparatus, etc., for a daily output of 800 dozen pairs of hosiery for men, women and children.

Athens, Ga. The new mill building of Ingle & Jordan, in East Athens, is now ready for the installation of the machinery.

College Park, Ga. The Gate City Cotton Mills has installed twenty new spinning frames, seven cards, six speeders, two slubbers, two intermediates and ten winders.

Columbus, Ga. The executive committee of the Bibb Manufacturing Co. has authorized the expenditure of \$100,000 for the purchase of new machinery. A large amount of this machinery will be installed in the Columbus branch. The output of the plants consist of hosiery, yarns, warps and thread yarns.

The Georgia Manufacturing Company has given an order for new machinery for knitting mill purposes amounting to more than \$50,000 in value and will double the capacity of the mills in that line, dispensing entirely with the machinery for making pants, shirts and overalls, which they have been making in connection with their knit goods.

The new addition to the Columbus Manufacturing Company's plant will result in doubling its capacity. The present building, which is four stories high, 261 feet long, 128 feet wide, will be extended west a distance of 272 feet. The enlarged building will thus be 533 feet long, 128 feet wide, four stories high—an imposing structure that will rank as among the largest cotton manufacturing plants in the world, under one roof.

Elberton, Ga. The Home Cotton Mills, successors to the Swift Cotton Mills, has purchased \$15,000 worth of new machinery, including pickers, cards, drawing and fly frames, spoolers, slashers, etc. The mill operates 75,000 spindles and 210 looms.

Eufaula, Ala. All the old looms at the Cowhee Cotton Mills are being replaced with improved Draper Looms. New rings are put in on all the ring frames and all defective spindles replaced with new Draper spindles.

Montgomery, Ala. The Montala Manufacturing Company, which recently purchased the old People's Cotton Mill and a few weeks ago started operations, is now running with all the departments working. About 200 hands are employed and the 320 looms are running.

Earle, Ark. N. B. Graves is reported as planning to form a corporation for a 10,000 spindle and 300 looms, sheeting mill.

Cleveland, Tenn. The Cleveland Woolen Mills have installed 12 broad looms, making it a 78 broad loom mill, running on men's wear. Mr. Durkee is superintendent and designer.

Knoxville, Tenn. The Knoxville Knitting Mills Co. has doubled its capacity. Their output is women's and children's hose.

Loudon, Tenn. The Loudon Hosiery Mills will build a brick addition and install machinery to increase their capacity.

Nashville, Tenn. The idle machinery of the plant of the National Hosiery and Yarn Company, which has been operating on a reduced schedule during the past two years, is being overhauled. Steps have also been taken by the concern toward the operating of its mills at Mount Vernon, Ill.

Rockwood, Tenn. The Rockwood Mills has completed the \$10,000 addi-

tional one-story 60 by 200-foot brick building, and will have the new machinery in operation by October.

Memphis, Tenn. The Central Textile Corporation was chartered during the past week, in Augusta, Me., with an authorized capital stock of a million dollars. Half of this amount is to be paid in at once, and the remainder of the stock will be held for the future development of the business. About half of the capital has been subscribed in Memphis, the remainder by men in the New England States. The local subscribers are among the best known business men in the city. At first it is the intention to manufacture sheetings and the material used for the manufacture of cotton bags. This mill will have the unique advantage of having its source of supply right at its doors, and a market for its product equally close.

Memphis, Tenn. Memphis may get a \$100,000 hosiery mill provided the plans of Geo. T. Andrews, manager of the Enfield Hosiery Company, operating mills at Enfield and Rocky Mount, N. C., and A. A. Andrews and G. A. Macon, local business men, mature. The mill, it is intended, will furnish the Western trade which the company is building up, while the two present existing mills cater to the East.

Evansville, Ind. Earl J. Jenckes, of Woonsocket, R. I., is the new superintendent of the Evansville Cotton Factory. Mr. Jenckes is a graduate of the Massachusetts School of Technology. After graduating he was connected with the Draper Co., and after that he was superintendent of the Paul Whittin Manufacturing Company, of Northbridge, Mass., manufacturers of cotton goods.

Owosso, Mich. F. E. Sutfin, John Himmelberger, and W. F. Hall, of Lansing, have formed the Owosso Knitting Company, Ltd., the capital stock being \$12,000. Mr. Sutfin last spring purchased the plant of the Burnett Knitting Company.

Lacon, Ill. The Lacon Woolen Mills are building a new one-story dyehouse, 26 by 50 feet, to make room for five new dyeing machines.

Lawton, Okla. It is reported that a deal has been closed for the location here of a \$2,500,000 lace and cotton goods factory, to be built by Chicago capital. It is claimed that it will be the largest textile factory west of the Mississippi.

Cleveland, O. The Cleveland Worsted Mills Co. has placed an order through Edward Jefferson & Bro., Philadelphia, for Hall & Stells spinning, drawing and twisting machinery for the new addition which is being built at the Redfern Mills, Ravenna, O. This addition will mean increased capacity of 10,000 spindles.

Montreal, Que. C. F. Smith was appointed director of the Dominion Textile Co., Ltd., Aug. 16; H. S. Holt, second vice-president, to replace Charles B. Gordon. Mr. Smith is a director of the Merchants Bank of Canada, and his election is highly satisfactory to the large English interests in that corporation.

The Canadian Spool Cotton Co. has completed its new mill at Riverside Park, Hochelaga, P. Q., and is installing the machinery.

EXPLANATIONS FOR THE CHART OF WEAVES ON "Textile Designing Simplified."

The object of this chart is to show how easy weaves for all classes of Textile Fabrics can be constructed; it will be a search light in the misty matters in the field of designing Textile Fabrics. Keep this chart of weaves for reference. Millions of new weaves can be obtained by it.

All weaves for Textile Fabrics have their foundation in Plain Twills and Satins.

PLAIN—This weave and its sub divisions are explained on the chart in the top row by 16 weaves, the sub divisions covering common, fancy and figured Rib and Basket weaves.

TWILLS—The foundation of constructing regular (45°) twills is shown by rows 2 and 3 with twenty six weaves, covering twill weaves all the way from 3 harness up to 13 harness. The sub divisions of twills are quoted next on the chart, being Broken twills, Skip twills, Corkscrews, Double twills, Drafting twills, Curved twills, Combination twills warp drafting, Combination twills filling drafting, 63° twills, 70° twills, Wide wale twills, Entwining twills, Checker-board twills, Pointed twills, Fancy twills, thus covering every sub division of twill weaves possible to be made.

SATINS are next shown, giving also their sub divisions, viz: Double satins and Granites. How to PUT A BACK FILLING ON single cloth is shown below the satins by two examples, and at its right hand is quoted the principle of

How to PUT A BACK WARP ON single cloth.

On the bottom line are given the four steps for:—

THE CONSTRUCTION OF DOUBLE CLOTH, 2 @ 1; and above the same one example, with the arrangement 1 @ 1.

THREE PLY CLOTH is shown by one example.

HOW TO BACK SINGLE CLOTH WITH ITS OWN WARP is shown by two examples.

WEAVES FOR SPECIAL FABRICS are quoted: Tricots (warp, filling and Jersey effects), Rib fabrics, Honeycombs, Imitation Gauze, Velveteen, Corduroy, Chinchillas Quilts Plush, Double-plush, Tapestry, Crape, Terry, Worsted coating stitching, Hucks, and Bedford cords

HOW TO WORK THIS CHART OF WEAVES.

CAPITAL LETTERS of references refer to the plain weave and its sub divisions.

SMALL LETTERS of references refer to twills and their sub-divisions.

NUMERALS of references refer to satins and their sub-divisions.

Example—How to ascertain the construction of the weave at the right hand top corner of the chart; being the figured rib weave marked C C'. These two letters of reference mean that said figured-rib weave is nothing else but the combination of the 2-harness 6 picks common rib weave warp effect C, and the 6 harness 2 picks common rib weave filling effect C'

Example—The letter of reference *e*, underneath the first broken twill indicates that the same is obtained from the 1/3 4 harness twill *e*, (third weave on the second row; in other words, letter of references below each weave of any of the various sub divisions refer always to the corresponding foundation weave.

Example—Twill *q*, and *o*, are the foundation for the eight combination twills filling drafting, said common twills are drafted 1 @ 1, the different designs being obtained by means of different starting.

Example—The wide wale twill *w'*, has for its foundation the 63° twills, marked also respectively *l'* and *w'*, the latter two weaves have again for their foundation respectively the common twills marked *l* and *w*.

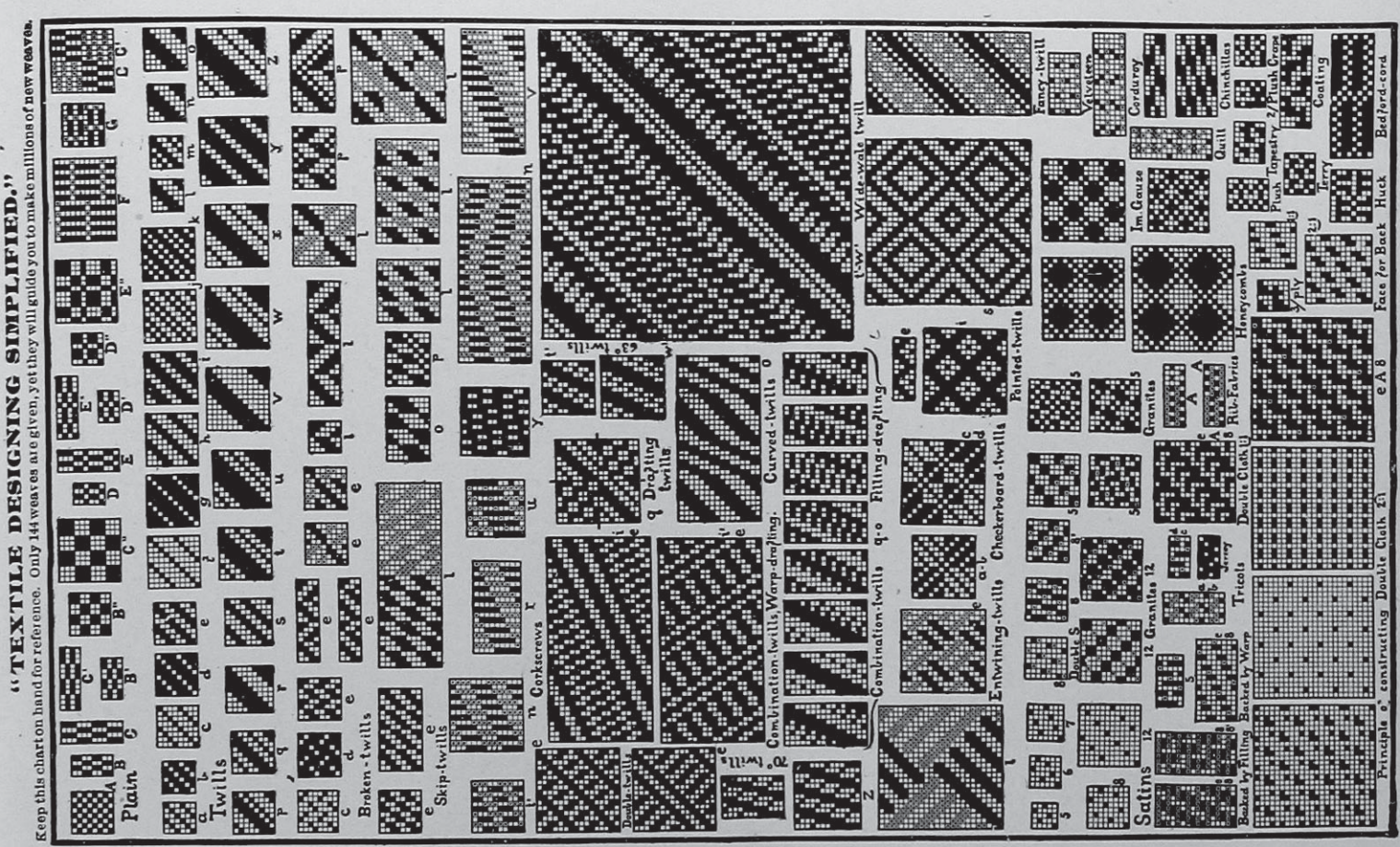
Example—Granites marked 8 have for their foundation the 8-leaf satin, such as marked 12 the 12-leaf satin.

Example—Backed by filling *e* 8, means the common 2/3 4-harness twill *e*, (fifth weave on second row) and the 8-leaf satin is used in the construction of this weave.

Example—The complete design of double cloth, marked *e* 8 A, means that the common 2/3 4-harness twill (*e*), the common plain (A) and the 8-leaf satin (8) are used in the construction.

Example—Rib fabric A, indicates that the plain weave forms the foundation. It will be easy to substitute different foundations in constructing weaves for heavy weights.

In reference to single cloth weaves we only want to indicate that by following rules shown in the chart, millions of new weaves can be made up from it.



"TEXTILE DESIGNING SIMPLIFIED."
Keep this chart on hand for reference. Only 144 weaves are given, yet they will guide you to make millions of new weaves.