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A Handbook of all the Cotton, Woolen and other Textile manufactures of Canada, with lists of manufacturers' agents and the wholesale and retail dry goods and kindred trades of the Dominion; to which is appended a vast amount of valuable statistics relating to these trades. Fourth edition. Price, \$3.00.

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THE BOARDS OF TRADE CONFERENCE.

The convention of Boards of Trade, which assembled in Toronto a couple of weeks ago, was a representative gathering. One hundred and forty-one delegates, representing sixty-three boards in all parts of Canada, were present and adopted a series of resolutions, which were afterwards taken to Ottawa and submitted to Sir Wilfrid Laurier for his guidance at the conference on trade relations shortly to be held in London. Of course the preferential tariff, from which

the manufacturers of certain classes of textiles suffer so grievously, formed an important subject of consideration. Two resolutions were passed bearing on the matter. One, dealing with trade relations with foreign countries, was as follows:

"Resolved, That the Dominion Government is hereby respectfully urged to make such alterations in the tariff upon importations from foreign countries not having reciprocal relations with this country, as will serve to protect the natural products and manufactures of Canada against the present discrimination under which they suffer, and thereby bring about in the near future fairer trade relations between Canada and said foreign countries."

The other bore on the preferential rebate on goods imported through the United States. It was expressed in the following words:

"Resolved, That in order to encourage the importation of British goods via Canadian ports this conference desires that the preferential rebate on goods imported from Great Britain arriving by United States ports shall be limited to 25 per cent."

Views deliberately expressed by such an influential body of representative business men should carry great weight, and we have no doubt the Canadian Premier—and the conference—will give due consideration to their representations.

FLAX GROWING IN MANITOBA.

Some time ago we drew attention to the question of flax growing in the North-West. The Department of Agriculture in Manitoba has taken the matter up, and has issued a bulletin for the guidance of farmers in that province who may be disposed to adopt flax as one of their regular crops. The enormous yield in North Dakota and Minnesota last year, as well as the success which has attended the Manitoba Mennonites in the raising of flax has had a stimulating effect, and this seems to be an opportune time for the department to assist in furthering what may become a very important industry. The area so far devoted to this crop has not been far from 20,000 acres.

The demand for flaxseed is just as constant as for other grains. Canada has always been a large importer of linseed oil, both in the raw state and manufactured. This demand is bound to increase. The oil is a staple product, and with the development of cattle-breeding, the demand for oil-cake and oil-meal will increase in the same proportion, as these feeds are as much of a necessity to the feeder as are bran and shorts. In Manitoba the quantity used is comparatively small owing to the abundance of pasture and coarse grains. As settlement becomes denser and pasture more valuable, larger quantities of concentrated foods will be required and our farmers will have a home market for these important by-products of the flax crop.

An important advantage claimed for flax is that it can be grown successfully on new breaking. Some think that it leaves the land in bad condition for a grain crop, and that only a season of summer-fallowing will bring it into good condition, while others claim that good crops of wheat may be secured regularly after flax on breaking. The effect depends largely on the way the land is treated after the crop is taken off.

It is a common belief that flax is very exhausting to the fertility of the soil. Experiments and chemical analysis on soils before and after flax and wheat crops seem to demonstrate that this prejudice is unfounded, and such is the result of experiments made by Prof. Sheppard, in North Dakota. Flax, however, should not be grown except in rotation with other crops. This is equally true of all grain crops. A better crop of wheat can, however, be secured after flax than after wheat.

Flax is a poor weed fighter and the ground therefore on which it is sowed should be in the best possible condition, otherwise the crop is heavily handicapped. The nearer the surface that the seed can be placed and still secure the requisite moisture, the better the results. Two pecks of seed per acre is about the proper quantity to sow. Seeding should be done late enough that the young plant will not be cut off by the late frosts. After the plant has a number of leaves there is no danger from this source. While it has only the two seed leaves the frost is likely to kill it. The crop requires a comparatively short time to mature and will usually ripen in good season when sown late in May or even in June.

A NEW MARKET FOR FABRICS.

A new market for manufactured goods, especially in the line of fabrics, is opening up in Abyssinia, where, according to Major Ciccodicola, Italian Consul at Adis-Ababa, the natives are, under the influence of Menelek, abandoning the predatory habits fostered by a long period of anarchy and civil war, and resuming agricultural operations. European tastes are becoming

general, even to the extent of employing the telegraph and telephone, to say nothing of railway facilities, and a very considerable demand has sprung up for such goods as felt hats, boots, umbrellas, and other manufactures. We do not know that foreign manufacturers would be willing to accept as payment for these goods the prevailing currency of the country, which consists of bars of salt and lengths of calico, the latter of which is imported through British traders, though said to be of North American manufacture, but silver dollars are coming into vogue, and the more Menelek sees his image and superscription upon them, the more is he likely to encourage their use. Some £240,000 worth of calico is imported annually, and so cheap is it that, notwithstanding the heavy cost of transport, a 34 yards' length of ordinary quality sells at Adis-Ababa for about 10s. 6d., while the same length of the best quality can be had for 15s. Silk, mostly of inferior quality, goes from France, and the Italian gentleman referred to is endeavoring to develop a trade in that class of fabric with his country, and has been commissioned, during a visit, to buy large quantities of various qualities. The Abyssinian is also learning to walk on carpets, and imitation Persian and Turkish rugs form an article of considerable traffic. As woollens are taking the place of cotton for native wear in China and other foreign countries, perhaps our Canadian manufacturers can find in Abyssinia a new field to exploit. May it not be that by opening up new markets, such as this, they can overcome to some extent the disability under which they are placed by the preferential tariff? Other classes of manufacturers might also look to such countries for new openings.

—The strike in the United States, against operating two looms, has almost come to an end, in favor of the mills. A constantly increasing number of looms are being put in operation, and the loom fixers, who went out in sympathy, are again at work. Sympathy in this case seems to have been generally with the American Woolen Co.

—Excellent as the negro may be as a cotton picker, and cheap as black labor is, he will have to give way to the inevitable and take a back seat to the machine. The first regular contract ever made in the world to pick cotton by machinery, according to the Boston Journal of Commerce, has been closed for next autumn. A Pittsburg man is the inventor of the device. He says that it has been modelled on a practical working basis, and feels confident that he will revolutionize the cotton-picking industry in the south. The machine, however, is valueless except on level uplands, low valleys and prairie grounds, but even if it should prove successful with this limit, its effect on the labor question in cotton-growing areas must be very marked.

—The difficulty of producing perfect goods is known to few people outside the mills. Though a marked improvement has been made in recent years, someone who disclaims being fussy, states that in cases of eight or ten pieces of the same style he often finds from two to five shades. Here is surely room for improvement.

—The employees who take part in a strike may usually be divided into two classes—the natives and transients. The latter do the most to bring it about, the former are usually the greatest sufferers. The gain in a strike can never make up for the total loss. While we look on at what is transpiring in the United States mills, we can congratulate ourselves that we in Canada now have a more excellent way of settling such disputes.

—The census figures of the United States show that Pennsylvania ranks first in the carpet industry, producing 48 per cent. of the output. The industry is carried on almost entirely in Philadelphia. Turkey and Axminster carpets were made in that city in 1791, and in 1857 there were more than 100 hand loom carpet weavers there and only one power loom factory. In 1868 the Murkland power loom gave a great impetus to the industry. The chief product is ingrain carpets, Smyrna rugs and tapestries.

—A member of Lord Saltoun's family was sitting by the fireside recently, when a celluloid comb, which she wore in her hair, suddenly exploded, inflicting a scalp wound, setting her hair on fire and giving her a general shock. Celluloid is a preparation made chiefly of gun cotton, and is therefore dangerous for articles of attire, such as combs, collars, cuffs, etc. Nor is it always sold under the name of celluloid. There is said to be a preparation of soda, which, when mixed with it, renders it incombustible. Regulations should be adopted for its manufacture.

—Reports of great industrial activity come from Mexico, and among the principal enterprises are the cotton mills, which have been very successful, considering the difficulties to be overcome. For ten years cotton manufacturing in Mexico has been growing rapidly, and some mills are turning out a finer fabric than at first. Labor is cheap and water power is abundant. Improvements in machinery are quick to find their way to places where new mills are being established, and some of the very best equipped plants on the continent can now be found in Mexico.

The use of Chinese matting, which has taken the place of carpets to some extent, will be checked by an increase in price, the result of greater expense in working, an increase of wages, and the larger demand.

These causes have also brought about a deterioration in quality, which has caused much dissatisfaction. The extent of the trade may be judged from the fact that about half a million rolls of matting were shipped last year on European and Chinese steamers. About 425,000 of these were sent to the United States, and the remainder to various parts of the world.

—It is not unlikely that binder twine may be removed from the free list. Nothing else can save the binder twine industry in Canada so long as the United States holds the advantage it does in the Philippine Islands. Manila hemp is exclusively the product of these islands, and cannot be secured elsewhere. There has always been an export duty of \$7.50 a ton, but since the United States has obtained possession of the islands, it has been exempt. Its manufacturers of twine thus have the advantage over the Canadian manufacturer to that amount, and the latter must go to the wall unless protected. It may not be pleasing to the farmer, but it will not do to allow the industry to be killed.

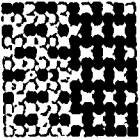
—The Division of Hydrography, of the Geological Survey of the United States, is engaged in a most important work in the form of an investigation of river pollution from city sewerage, factory waste and other like causes. An attempt will be made to discover the present extent of such pollution and its effect upon property values and public health. Factory pollution, as a result of industrial growth, is becoming more and more a menace to public health, and some means of overcoming the difficulty should be devised. Factory proprietors should seek as far as possible to avoid discharging their waste into streams from which water for domestic use is taken.

—A bulletin has been issued containing statistics of silk manufacture in the United States, as gathered from the census of 1900. It is prepared by Franklin Allen, expert of the silk division of manufactures of the Census Office and secretary of the Silk Association of America. It contains full statistics of the industry. There were in 1900, 483 silk mills reported in active operation. The value of the product was \$107,256,258, involving an outlay of \$3,134,352 for salaries of officials, clerks, etc.; \$20,982,194 for wages; \$10,264,208 for expenses, rent, taxes, etc., and \$62,406,665 for material, fuel, freight, etc. In addition to the mills enumerated, there are 78 hosiery and knit goods establishments, and 39 mills making braids and trimmings, into which silk enters as an element.

A United States contemporary, speaking of the hosiery trade, says: In solid color hose without embroidery, pearl gray is the leading color. After this, pinks, light blues, very light browns, yellows and greens follow in their respective order.

Textile Design

UNION TROUSERING.



Complete Weave.
Repeat 12x12.

Warp:—5,952 ends, 12-harness straight draw.

Reed:—16x6.

Dress:—

| | | |
|---------------------------------|---------------|------------|
| 19 ends, 2/50s worsted, black | } X2= 4 ends, | = 19 ends, |
| 1 end, 2/40s worsted, lavender | | = 1 end. |
| 1 end, 90/2s spun silk, crimson | | |
| 1 end, 2/40s worsted, lavender | | |

Repeat of pattern: 24 ends.

Filling:—64 picks per inch, arranged thus:

| | | |
|---|----------------|-------------|
| 12 picks, 3½-run woolen yarn, black | } X2= 4 picks. | = 12 picks. |
| 1 pick, 3½-run woolen yarn, lavender, | | = 1 pick, |
| 1 pick, 3½-run woolen yarn, black, | | = 1 pick, |
| 1 pick, 3½-run woolen yarn, dark crimson) | | |
| 1 pick, 3½-run woolen yarn, black, | | |
| 1 pick, 3½-run woolen yarn, lavender, | | |
| 1 pick, 3½-run woolen yarn, black, | | = 1 pick. |

Repeat of pattern: 20 picks.

Finish:—Worsted finish: 56 inches wide.

FANCY WOOLEN TROUSERING.



Complete Weave.
Repeat 8x4.

Warp:—2,640 ends, 8-harness, straight draw, all 3½-run woolen yarn.

Reed:—10x4.

Dress:—

| | | |
|---------------------|---------------|-----------|
| 1 end, brown | } X3= 6 ends. | |
| 1 end, peacock blue | | = 4 ends. |
| 4 ends, dark green, | } X3= 6 ends. | |
| 1 end, brown | | = 1 end. |
| 1 end, peacock blue | | = 2 ends. |
| 1 end, black, | | = 1 end. |
| 2 ends, maroon, | | = 1 end. |
| 1 end, black, | | |

Repeat of pattern: 20 ends.

Filling:—40 picks per inch, all 3½-run woolen yarn, myrtle green.

Finish:—Velvet finish: 56 inches wide.

THE INDIGO WAR IN FRANCE.

The British Consul at Marseilles reports that the artificial indigo is gradually replacing the natural product in the French market, and that the artificial product regulated the prices. The Badische Anilin und Soda Fabrik had already two years ago in the vicinity of Lyons manufactured indigo for the local consumption, while the Fabwerke of Hoechst produce in the same city artificial indigo by a different process. The artificial indigo is classed together with the natural for taxation, and as no statement is required regarding the character of the dye goods dyed with artificial indigo sell at the same price as those dyed with natural dyes. The dyers of cotton and woolen goods and the indigo dealers of Lyons state that the natural product has already been ousted from the dyehouses, particularly since the artificial product is furnished as powder or in paste form. Small dyers prefer the artificial indigo, because they can buy it in small quantities according to their requirements and the prices are subject to little change. But as the natural dyestuff is alleged to

possess greater fastness, it is still used for military uniform cloths. It is proved that the artificial indigo which is furnished the factories using it at 6s. 4d. per English pound, costs the manufacturers only 3s. 4d. per pound.

THE "ROYAL MUSKOKA."

The opening up of the Highlands of Ontario, and the beautiful Muskoka lake region, has been a veritable labor of love to the advertising department of the Grand Trunk Railway, and this season promises such an influx of American tourists as will amply justify the outlay in hotel accommodation which has been recently made. The "Royal Muskoka," in fact, promises to become to Canada, in summer, what the "Royal Ponciana" is to Florida in the winter months, the fashionable resort of the continent, where the romantic and the beautiful can be enjoyed with all the luxury and comfort of the most modern hotel life. The "Royal Muskoka" which has been built at a cost of \$150,000, very much resembles the architecture of the famous Flagler hotels, soft gray stucco walls, timbered across under its red-tiled roof, with deep, cool verandahs, commanding views of the surrounding lakes and islands. It has accommodation for 400 guests and is said to be the finest summer hotel in Canada. It will be opened on June 16th. Information can be obtained from G. T. Bell, general passenger and ticket agent, Grand Trunk Railway system, Montreal.

PURSES AND SHOES OF HUMAN SKIN.

The tanning of human skins is a profitable if not popular industry in Chicago. Shoes made from human skin are worn in the Polish communities of the northwest side, and silvermounted pocketbooks, manufactured from the same article, conceal the wealth of half the residents of the district near a tannery in Elston avenue. Five hundred such skins a year is not an unusual record for the tannery. Supt. Schroeder volunteered the information that students of the Rush Medical College of Physicians and Surgeons and other institutions make a business of leaving human skins at his tannery to be put through the tanning process.—New York World.

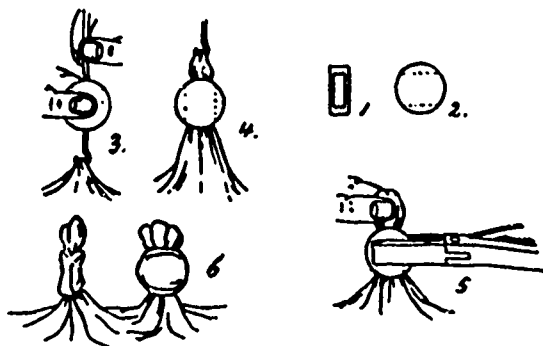
FIBROLEUM.

The American Consul writes from Cobourg that, according to the German Press, fibroleum, a new artificial leather, has just been invented by a Frenchman. It consists of pieces of refuse skins and hides, cut exceedingly small, which are put into a vat filled with an intensely alkaline solution. After the mass has become pulpy it is taken out of the vat, placed in a specially constructed machine, and after undergoing treatment therein, is again taken out and put through a paper-making machine. The resulting paper-like substance is cut into large sheets, which are laid one upon another in piles of from 100 to 1,000 and put into a hydraulic press to remove all moisture. The article is strong and pliable, and can be pressed or moulded into all kinds of shapes and patterns. It is said to make the best kind of wall paper. Decorators who have used this article speak of it in the highest terms.

C. E. Swaine, hats and furs, Halifax, N.S., is trying to compromise at 30 per cent. He states his liabilities at \$3,000, but it is said there are suits entered up against him to more than this amount.

IMPROVED METHOD OF DYEING PATTERNS ON FABRICS.

The method is a late English invention and relates to a novel and ingenious method of producing dyed patterns on fabrics. The accompanying illustrations show clearly the method of procedure.

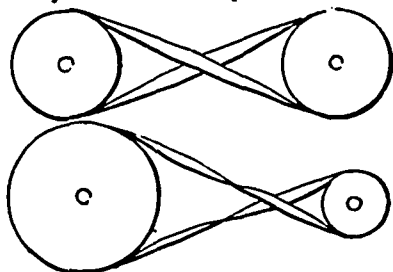


A small disc of lead is employed of the shape shown in Figs. 1 and 2. A small portion of the cloth is drawn through the opening in the disc, as is shown in Figs. 3 and 4. The cloth is held in the disc while the latter is compressed (see Fig. 5) to grip the piece of cloth firmly, as shown in Fig. 6. Any number of discs can be fastened on the cloth as are required to produce the pattern desired, the fabric being then introduced into a dye vat and dyed. Where the discs are fastened on the cloth the dye cannot permeate, so that a white space is left, thus producing a spot effect.

CROSS BELTS.

What are usually known as cross belts are very common in driving machinery, and it is a well-known fact that they run best when the two pulleys which they connect are somewhat near of one size. But sometimes it is almost necessary to use a cross belt on pulleys of very different diameters, and it does not seem to be generally known how this may be done and still have the belt run smoothly.

If the belt connects two horizontal shafts on the same level, and is given the ordinary single turn or twist, it will naturally stand in a vertical position at a point midway between the two shafts. Now, if the two pulleys are nearly of one size, this midway point is the natural crossing place for the two parts of the belt and all goes well. But if one pulley is much larger than the other, then the belt must cross at a point much nearer the small pulley than the larger one, and with the ordinary twist the two parts of the belt are apt to



Cross Belts.

quarrel, so to speak, at this point. To remedy this in many cases, it is only necessary to give the two parts of the belt an extra twist as they pass from one pulley to the other. The belt then will stand vertical at two points, marking the thirds of the distance between the shafts, and if the pulleys are of such sizes that the belts cross at or near one of these

points they will run smoothly again and with very little friction. The sketch shows the two positions.—American Machinist.

SHUTTLES.

The shuttle used in the old hand loom was not very different from that in use to-day in our modern fast running looms and the present form of shuttle will probably be in use until that day arrives when weaving will have undergone a complete change in all its details. The loom, however, as we have it, does not appear at present to be liable to immediate overthrow, and in those latest improvements with which we are threatened, such as automatic weft shuttling motion, the principal effort is to increase the importance of the shuttle. As the shuttle, therefore is such an indispensable feature in weaving, it is advisable, and in fact necessary for the successful and economical warping of the weaving shed, that the manufacturer gets only those shuttles that are suitable for the class of goods to be woven, that the overlooker understands the way to gait them and keep them in repair, and that the weaver also sees that they are kept oiled and in good order.

Shuttles are made of various kinds of wood, and are therefore of various prices, those of the cheaper kinds being dear at any price. In order to reduce the expenses of weaving as regards cost of shuttles various ingenious patents have been taken out for making shuttles of various materials, such as iron, steel, wire, Buffalo hide, etc., but the interesting fact remains that 95 per cent. of the shuttles in use are of wood, and those made from boxwood are the best and cheapest in the end. When shuttles arrive at the mill they should be steeped in oil a few weeks and then thoroughly dried. Before being put into the loom each shuttle should be thoroughly examined as some shuttle makers have a habit of sending out shuttles of various sizes, thus often giving a great deal of trouble to the tackler, who may not have compared the shuttles with each other when gaiting a pair. Both or all the shuttles for one loom must be of the same length, breadth, and height and weight if the loom is to run properly, and when looms are working requiring six or eight shuttles it will be seen that this is no light matter.

Generally shuttles are put into the loom with the eye end nearest to the weft fork when in that box, that is nearest to the weft fork or setting-on rod, though there are mills in which the opposite plan is the rule. Formerly a pair of shuttles consisted of a right hand shuttle and a left hand shuttle, the object being to equalize the strain upon the selvages, as each shuttle was supposed to pull more at one side than the other, and, judging from the promiscuous manner in which shuttles of both hands are placed in looms in some sheds, it is probable that some tacklers have the same opinion yet. The tackler should carefully examine the tips of the shuttles, and see that each has a sharp point, and also that the tips are smooth. The shuttle itself should be smooth and the tongue so that the cop may be shuttled without being stabbed. The edges should always be slightly rounded and smooth, especially the nearest top edge, which comes most in contact with the top yarn.

One of the principal mysteries of the art of weaving is the way in which some shuttles will weave with edges like saws and tips as flat as possible. In weaving the finer counts of yarn such as 100s with 100s or finer weft, it is necessary that great care should be taken with the shuttles, and in these sheds it is part of the duty of the inside manager, or of some person he appoints, to frequently examine the shut-

ties and to see that any defects are remedied. In the case of weaving low counts, with 8s to 20s w^eft, it is very necessary that the shuttle tongue is firm, otherwise the breaking of the w^eft and the liability of the tongue to fly up and so smash the yarn, would very seriously interfere with the production of the loom.

The manner of shuttling the cops, as it is generally practised, is open to very serious objection, having regard to the health of the weaver. This is especially the case in weaving colored w^eft, and the writer has known of cases of serious illness having resulted from the suction of colored w^eft through the shuttle eye. There have been numerous attempts made (some of them very amusing) to obviate this dangerous method but the best of these take the form of diagonal slots near the end of the shuttle, through which the weaver passes the w^eft, which is thus guided into the eye of the shuttle.—Cotton Factory Times.

THE RED HAND OF ULSTER.

The famous trade-mark of the Barbour Thread Mills continues an ever-recurring topic by writers on heraldic subjects. The London Court Circular, of late date, says: The Red Hand was first assigned by King James the First as a badge to those baronets whom he created in 1611, and which is still borne by their descendants on their coats-of-arms. Ostensibly, these baronets were created as aids to the king in keeping down rebellion, building towers and churches and in colonizing the province of Ulster. They were expected to maintain at least thirty soldiers each. The real reason for their creation, so it is said, was the more prosaic one "to raise money for His Majesty's service." Lord Salisbury of that period is credited with suggesting to King James "the creation of 200 baronets, each of whom was to pay the sum of £1,000 for the honor conferred." Many men named for the costly honor winced and declined and only eighteen baronets were created. It was on account of their connection with the province of Ulster that these eighteen baronets were given the badge of the red hand that had hitherto been borne by the forfeited O'Neils, princes of Ulster. How the O'Neils won their right to the "open red hand" has often been told. It was this way: On an ancient expedition to Ireland the leader of the party promised that he who first touched the shore should possess the territory on which he alighted. An O'Neil seeing that another boat was likely to land before him, cut off his hand and threw it ashore, thus securing for himself the province of Ulster and for his descendants the rank of princes and the badge of the open red hand.—Carpet and Upholstery Journal.

NEGROES THE BEST COTTON PICKERS.

Said a Mississippi planter: "The negro seems to have a natural talent in the matter of picking cotton. He can beat the world. I have been watching the negro for a great many years, having spent my life on a cotton plantation in Mississippi, in an effort to find the elements which give him a superiority in this respect, but I have not been able to formulate any correct theory with regard to the matter. Certainly there is nothing in the structural nature of the negro that would tend to give him any great advantage over the white man as a cotton picker. I have seen white men of the same size and build, having approximately the same arm reach, and the same measurements generally, pick cotton, row for row, with the negro, and at weighing time in the evening the negro would have anywhere from 250 to 350 pounds, while the white man would have probably less than

150 pounds. They would pick the same number of rows of cotton, but the negro, on account of his superior skill, would keep ahead, and he would cull the row next to him, and in this way would cram into his sack probably one-fourth of the cotton of the white man's row. Cotton picked by a negro is not as free from trash as the cotton picked by a white hand, but the quantity of trash in cotton picked by the better class of negroes does not in any way injure the staple unless the season is nearing the close and the bolls begin to rot. The negro seems to have a better use of his arms and fingers, and gets quicker action in picking cotton, and then there is the fact that the negro sings nearly all the time he is picking cotton, a low, musical sort of hum, which apparently aids him a great deal by closing his consciousness to all else around him except the cotton bolls, and I expect this has a great deal to do with the fact that he picks more cotton in a given space of time than the white man."—New Orleans Times-Democrat.

METRIC SYSTEM IN TEXTILES.

The following paper by Prof. Roberts Beaumont appeared in a recent number of the Yorkshire Post, England. Prof. Beaumont says in part:

Extraordinary as it may appear, it is a fact that if a number of manufacturers from the border towns of Scotland, the West of England, the West Riding of Yorkshire, and America were in conversation on certain technicalities of their trade, while speaking of the same subject, they would be using totally different terms, and these as confusing as the Tower of Babel. The Scotchman in defining his yarns would use the term "cut"; the West of Englander, "snap"; the Yorkshireman, "skein"; and the American, "run." Should the subject be that of the "setting" or fineness of the fabric, the words, "set," "dent," "reed," and "sley," would be employed.

Now suppose that in the fabric there are compound threads, say of wool, worsted and mercerized cotton. Here at once three systems of counting yarns have to be dealt with—the woolen by the yards per dram, the worsted by the hanks of 560 yards per pound, and the cotton by the hanks of 840 yards per pound—resulting in several calculations before the actual counts of this three-fold thread can be ascertained. It is remarkable that the trade should for such a period have endured these unsatisfactory methods, and that the American should hitherto have not only practiced them, but rather enhanced their complexity by the coining of other words and equivalents, such as "runs" and "grains."

The committee appointed by the United States Government to examine into the systems of coinage, weights and measures have recently issued their report, which embodies the views of the principals of the textile schools of America. The decision of the International Congress held at the Paris exhibition, 1900, on this subject, is approved by this committee—namely, one universal system of counting yarns, the basis of which would be that a No. 1 yarn would be a length of one meter weighing one gramme; or in other words, a length of one kilometer weighing one kilogramme.

In a statement which was read before the Associated Chambers of Commerce in London in 1895, I suggested that a fixed number of meters (one kilometer) should be taken as a unit of length, and the kilogramme as the basis of weight, in which case a 20 skeins yarn (Yorkshire counts) would be approximately a 10's thread. It will be seen that this is exactly the method recommended by the Paris congress of 1900, and now by the American textile technologist. An alternative system advanced in 1895 was the use of a con-

stant length, say to or, 100 meters, and a variable weight, the counts being indicated by the weight of the yarn in grammes. It is important to differentiate between these two bases on which yarns may be calculated; in one there is a variable length and constant weight, and in the other constant length and a variable weight. As pointed out, the Paris congress recommended the former, but the latter has one element in its favor, for in calculating folded yarns it would only be necessary to add them together, whereas in systems where the length varies and the weight is constant, the calculations have to be done by fractions.

The question as to which system should be utilized is one for the experts to determine when all technicalities have been adequately considered, but it is surely in the interests of the trade that the metric system should be practiced, and the "counts" should have the same meaning of whatever fibre—cotton, flax, wool, silk, etc.—the threads may be composed.

NEW DYESTUFFS.

Alkali Fast Green B and G are two new green dyestuffs for wool which are best dyed with the addition of Glauber's salt and sulphuric acid. The "B" brand produces a somewhat bluish green shade, the "G" quality a yellowish green, both being of great clearness of shade. The main feature of these new products is their excellent fastness to alkalis. The colors dye easily level and penetrate well; they are also extremely fast to chrome, and can therefore be dyed either on a chrome mordant or after-treated with bichromate of potash, which property makes them especially suited for shading chrome colors. Both brands are adapted for the dyeing of white wool, and also, owing to their brightness of shade, for shoddy. Alkali fast green B and G are also suited for woolen cloth and slubbing printing, and can be discharged with zinc powder.

Metanil Red 3B and 3B Extra.—These new colors, which are mainly adapted for the dyeing of paper, have given every satisfaction, and are sure to meet with a favorable reception from the paper manufacturers. They are also recommended for the dyeing of wool in all its branches, and owing to their valuable properties are superior to most of the red wool dyestuffs at present in the market.

Katigen Shades on Cotton Suitings.—This card shows dyeings of cotton suitings, such as fustians and moleskins, and it is of essential importance that colors be employed that are possessed of excellent fastness in every respect, and although cheap, should also dye in a very simple manner. For this class of goods nothing can equal the Katigen dyestuffs, as they are extremely fast to light and wear. This card should prove of interest and service to every one interested in this branch of the textile industry.

Information regarding these products can be had from the Dominion Dyewood and Chemical Co., Toronto, Ont., sole agents in Canada for the makers, the Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany.

A NOTED INVENTOR DEAD.

Benjamin Arnold, who died last month, was one of the noted inventors of Rhode Island. Probably no other man in the state had a more comprehensive knowledge of textile machinery, with the development of which he had been identified for 60 years. Mr. Arnold was the son of Azra Arnold, who has a place among the foremost of the textile inventors of Rhode Island, and, unlike his father, he received substantial recompense for his labor-saving machines. One of his

inventions is a new system of gearing, which is in extensive use in many different forms, for gaining power at the expense of speed. This consists of an external gear wheel having also an internal gear wheel with a greater number of teeth, the inner wheel being placed on an eccentric on the shaft so as to engage its teeth with those of the outer gear at one side when the shaft and eccentric revolved, one of the gear wheels being held fast and the motion taken from the other. The gain in power and reduction in speed is in inverse ratio to the difference in the number of teeth in the two wheels. Among the machines invented by Mr. Arnold are: A loom for weaving cloth on a bias, machines for making twill drills and mending stockings, a mariner's signal compass, a circular loom and a machine for the manufacture of interlocked cordage. All of these were practical, but his most successful invention was a machine for making seines and nets for fishing.

THE KING'S CORONATION ROBE.

Everything relating to the coronation is now of supreme interest, and as this issue of The Journal of Fabrics will reach its readers very shortly before that great event, the following particulars of the making of the coronation robe of King Edward, prepared by Mary Howarth for The Pall Mall Gazette, will be of interest:

It was at Braintree, in the mills of Warner & Sons, that the King's mantle was woven. The gold was bought by a firm of gold wire pullers, who prepared it for the loom, it was set up on the loom and then it was woven. Anglers who tie their own flies know exactly what the gold looked like when the weavers received it, for they themselves buy it on little reels, some of it a very narrow flat strip, some round, in which case the gold has been wound about a very fine silken thread, to make the tag, ribs, and sometimes the whole body of their lures. For the King's Coronation mantle, instead of the fine silken inner thread one of delicate silver was used, covered with gold exactly in the manner just described. The very purest gold only was naturally deemed suitable for the cloak, gold with less alloy in it than that used for the coinage of the sovereigns and half-sovereigns, gold with the brightest possible radiancy of glory, a luminous color like corn first touched with a radiant burnish of the harvest sun. Frank Warner, who knows the ins and outs of hand-loom weaving from beginning to end, tried first one weaving and then another, until the result was precisely what was wanted—a perfectly pliable cloth, stiff enough to stand alone, yet so amenable to the movement of its wearer as to fall from one glistening line of fold to another; perfect also for the needle of the embroiderer and the gold and silver stitchery it was to receive.

Albert Parchment and William Shoulder wove the King's mantle of gold, every inch of it by the hand. Both men and seven others in Messrs. Warner's firm received honorable mention at the Paris Exhibition of 1900, where the firm obtained the gold medals for silks. Opposite Albert Parchment and William Shoulder was a fellow-workman weaving the length of glorious purple velvet that is to form the Coronation Day robe of H.R.H. the Princess of Wales. Other looms were slowly creating—surely the sentiment expression is appropriate here—more velvets for royalty and the great ladies of the kingdom to wear on that all glorious day of glorious June.

There were 27 yards of gold tissue woven for the King's mantle, and as each few inches was completed, it was covered with a jeweller's cloth to preserve it in immaculate splendor. Once a slight flaw was detected in the cloth of gold, the

merest, tiniest excrescence, after several inches had been woven past it; and the weaver was directed laboriously to unpick his work until the flaw was reached—a task that occupied quite as long a time as the process of weaving itself. It was about the end of the month of February that the lovely length of stuff, glowing like molten metal, was completed in triumph and borne from the mill to undergo the next stage in its process towards completion, when hand embroidery it was decided should be given to it, instead of the woven patterns of crowns, eagles, roses, thistles and shamrocks in repetition, that garnished Queen Victoria's mantle.

CANADIAN COLORED COTTON MILLS.

At the annual meeting of the stockholders of the Canadian Colored Cotton Mills Company, held at Montreal, May 29, David Morrice, president of the company, announced that the profits for the year had amounted to \$221,000. Out of this was paid interest on the bonds, which amounted to \$111,000, and a four per cent. dividend on the paid-up capital of \$2,700,000, amounting to \$108,000, leaving a small balance to place to the credit of profit and loss. During the year goods to the value of \$2,700,000 were manufactured, which is \$350,000 less than was manufactured the previous year. During the twelve months the sales were \$150,000 in excess of what they were the year previous. The stocks on hand were thus reduced to a considerable extent. Considering the condition of the markets, this was the best policy. The president lamented that the manufacture of textiles had proved so unsatisfactory throughout Canada. What was needed was a population sufficient to consume a larger product. Foreign importation had also been such as to interfere with home industries. The tariff was in a most unsatisfactory condition. They had done what they could to make the Government see its error, but apparently had not made much impression. In the meantime, all those who had placed their money in manufacturing enterprises in Canada were suffering by the reduction which had been given in the preferential tariff. The \$2,000,000 worth of bonds which ran out this year had been renewed. Many had been taken up by the old holders, thus showing that they had every confidence in the ultimate destiny of the company. In answer to some questions, C. D. Owens, one of the directors, stated that the present condition of the cotton manufacturing business was unfavorable owing to the limited market and the number of mills now in operation. He referred to the keen competition which mills in Canada were subjected to. The cost of manufacturing a pound of cotton into indigo denims was in Canada about six cents. While on a recent trip in the Southern States he had seen these same denims manufactured for 3¾c. Long hours for the hands and the most improved and up to date machinery would account for the reduction. Mr. Owens stated that during the year the mills owned by the company were stopped 18 per cent. of the full working time and 20 per cent. of the spindles were not operated.

The old board of directors was re-elected as follows: D. Morrice, Hon. G. A. Drummond, C. D. Owens, E. S. Clouston, T. King and D. M. Morrice, jr.

REMINISCENCES OF THE ENGLISH COTTON FAMINE.

When the Civil War in the United States broke out, the supply of cotton to English mills stopped. Hard times followed, and the English working man watched the war with as much anxiety as did any American. James E. Holden, who writes, "My Story of Abraham Lincoln," in *The Outlook*, was born in Lancashire during the cotton famine on a day

when there was only half a loaf of bread in the house. The wealthy classes, supposing that the North, if victorious, would not give them cotton, were on the side of the South. But the working people were with Lincoln.

The emancipation proclamation is the best-known foreign document among the common people of Lancashire to-day. Many boys and girls have been taught it by their parents, who remember the day it was issued, and can repeat it off-hand. A Government inspector of schools asked a school of 1,200 Lancashire children:

"Whom do you regard as the greatest man outside of England?"

Hundreds of voices shouted in chorus, "Abraham Lincoln!"

When the question, "Who is the greatest living Englishman?" was put and variously answered—Bright, Gladstone, Thomas Hughes—one little fellow said, "My dad says Lincoln is bigger'n 'm all."

In the Cotton Exchange in Manchester is a stand on which is a miniature bale of raw cotton. Behind it is the inscription: "Part of the first bale of free cotton. Shipped from West Virginia to Liverpool, 1865."

The story of that bale of cotton marks a great holiday in England. Lancaster people walked to Liverpool, got a wagon, trimmed it with bunting and flowers, and put on it the bale of cotton, the flags of England and America, and between them the picture that appeals to plain people in all the world—Abraham Lincoln.

They dragged the wagon through the streets to St. George's Square, where it served as an altar for the Bishop of Manchester, who preached a sermon to 20,000 people on the lessons of civil liberty.

A WORKER AMONG THE WORKERS.

To know the real, genuine textile world one must not confine his attention to the prominent figures in it, to the great merchants and manufacturers whose names are household words, nor to the textile fabrics with which the people are clothed, nor to the complicated and ingenious machines that manipulate the fibres and convert them into useful cloths. To know this interesting world one must meet the mill worker in the mill, without whom the mill owner would be helpless, the production of cloth impossible and the mill and machinery worthless junk.

Let me, therefore, introduce my readers to a New England mill, now being refitted and started by new owners of a new class of cotton cloth, and in which a new lot of operatives have been gathered. The mills are situated on either side of a river, and are built of stone, brick and wood. The machinery in part of them is run by water power; this introduces an element of uncertainty into the operation of the works. In the winter the canal freezes and the mills stop until the ice is cleared. In the spring freshets cause another stop, while in the summer the water is so low that another vacation is necessary. Kerosene lamps are used for lighting the works, and it is a common occurrence to knock your head against one of them, which makes one think of the old tow path days, when the boat men would call "low bridge," and all hands on deck would duck their heads. The machinery, however, is nearly all new, the old machines having been thrown out by the new company.

My first impression on entering the mill was one of astonishment at the immense number of children pouring through the gates to work. In a recent report of the factory inspector of this state, he calls attention to the marked decrease in child labor. I do not question the inspector, but

from all appearances there is still a good opportunity for a further decrease. In years to come, these children will take the place of the older mill workers, of whom I am one, and around me now I see the causes of ignorance among the mill operatives of the future.

Two-thirds of the help are either French-Canadian or Polish. The most of the French-Canadians can make themselves understood to English-speaking people; I speak guardedly now, as I do not wish to insult the English language, and so refrain from the direct statement that they can speak English. Very few of the Poles can talk any English at all. The overseer of the card room is a young man who is holding down his first position as foreman. He has the usual amount of theoretical knowledge, and the years to come will improve him and also, let us hope, some of his theories. Of the second hand, I will say that he is the poorest fixer that I ever saw, and I have seen some poor ones in my time, too. The help appear very kind and obliging to one another.

After I had worked about three months in this mill, a man asked me if I was an old maid or a married woman. I enjoyed the laugh, which was certainly at my expense, as much as the rest, but I thought if there is any truth in the reincarnation of the spirit, Li Hung Chang must have evaded the Chinese exclusion act by appearing in the person of this Yankee.

The pay in this room averages \$6.50, perhaps \$7 per week. It is supposed to be reckoned by the piece. No list is shown, as is the custom in most mills where there is piece work. The hanks are taken down once a week and you get your pay once a week. I soon found out that we were not supposed to know enough to watch the clock ourselves.

Most of the great flock of children I have mentioned, work in the spinning room. I wonder if the foreman of that room has a diploma from the kindergarten. Some of the little tots were quite proud of the fact that they could run three or four sides, although one little girl told me that somebody, motioning to a little boy standing near, was running six sides. I asked how old he was. She replied "fifteen."

Upon my expressing some doubt, she said, "Well he ain't fifteen yet, but he soon will be. He is going after it."

In my opinion it will be two or three years before he gets it.

I was naturally interested in knowing the different overseers by sight, and so asked a little boy what kind of a looking man the boss weaver was. He replied, "Short, fat man; big chaw terbacker in his mouth."

This was brief, concise and accurate, for I had no difficulty in recognizing the man from the boy's description.

In the weave room a list of the cuts taken off by the weavers is shown. Some said that they can earn \$8 to \$9 per week; others cannot earn more than \$6 or \$7.

When I first arrived, I asked about the board at the corporation boarding house, and found that one wishing the privilege of a room alone must pay extra. Two tables were set, which again called for an extra to sit at the best table. The tenement houses are let at various prices, the amount being deducted each week. At the company's store, operatives can get trusted, but as one week's pay is held back, it can be seen that the debts contracted are fully secured, if indeed it may not be said that they are paid in advance. Go to an operative, and ask him about these mills, and the chances are, he will tell you that they are "on the bum," and yet there are many men and women who have been working here for years. One woman informed me that she had been here for twenty years. Still there are a great many changes

among the help and foremen, one room having had nine bosses inside of eighteen years.

Factory life, however, has its bright side if there is a good head to the department. I do not care how strict a boss is, if he is only a gentleman. Some, I am sorry to say, are not. Among the bright spots in the dreary monotony and grind of mill work are the little vacations, a new book, a chance to hear good music. These are small things, but are treasured by many of us.

The work is purely mechanical, and the tendency is for the hands to get into a rut in harmony with the steady, monotonous grind of the machinery. Still nature will out, and at the noon hour is often heard someone entertaining a group with a description of some place, a story or play, and not infrequently with a song. The voices are perhaps untrained, but the audience is not critical and the enjoyment of the music is equal to, if not exceeded by, that obtained listening to some noted prima donna at a cost of \$5 per ticket. —Speeder Tender in Textile World.

ELECTRIC DRYING OF TEXTILES.

Ordinary methods of drying by the direct use of the heat produced by the combustion of coal have many drawbacks. Among them are irregularities of temperature, and the possibility of burning the fabrics, the production of smoke and dust, and last, but not least, undue expense. The Chamber of Commerce at Lyons has tried with conspicuous success the use of electrical stoves for drying textiles, and has thereby got perfect safety and quicker drying at a cost considerably less than that incurred under the older systems.

Each stove consists of a cylinder of sheet iron, in the midst of which the fabric to be dried is suspended. This cylinder is surrounded by another, and the annular space between them contains the heating arrangement. This consists of tubes of copper, round each of which is wound a nickel steel wire, covered with asbestos, and carrying a current of sufficient strength to develop the necessary heat. The temperature in the interior cylinder is usually kept at about 120° C. To economize electricity as far as possible, two precautions have been taken. One is to prevent radiation from the stoves by suitable cleaning, and the other is to utilize the hot, moist air from the stoves for other heating purposes. For small installations the cost is somewhat greater than the older methods, but on a large scale, and especially if water power is available for generating the electricity, a considerable saving is effected.

SCOURING WOOL.

The evils which follow from an improper scouring of wool will harass the dyer for a long time; in fact, he will never feel safe from it until the goods are made up into clothing. As white, his wool will look dull and dingy, without that elasticity so characteristic of clean wool. If it is colored, trouble comes again in getting the shades right, having the wool made to look even, and the colors obtained as fast against soap as they should be. Then, as soon as the wool goes to the burr picker it fills up the burr cylinders and covers the screen with dirt, which ought to have been removed in the scouring. This goes on through the works, gumming-up the cards, causing trouble in the spinning, working bad in the loom, and last, but not least, in the mill, making it hard work for the finisher to get his cloth sweet and clean without dulling or destroying the colors in the goods. Even here the trouble has not ended, for after the goods have been sent to the merchant they may

be returned to be rescourd. In place of some of the alkalis mentioned, soap guano, stale urine, and various compounds may be used for scouring, the object being to get something that will act as well, and not be as harsh on the wool, as the raw alkali.

A good scouring liquor, said to be equal to stale urine and much pleasanter to use, is made by dissolving in hot water, in a 40 gallon barrel, 25 lbs. soda ash, 2 lbs. borax and 15 lbs. salt. The barrel is then filled up with cold water, and 5 gallons aqua ammonia added; about 5 gallons of this is used for starting the scouring tub. The barrel containing this liquid should be kept well covered, in order to prevent the evaporation of the ammonia.

Another good scour is made by dissolving 20 lbs. of guano and 20 lbs. soda ash in 40 gallons water. For starting the scouring tub 5 lbs. soda ash are used with $\frac{1}{2}$ gallon soft soap, and the same quantity of scour is added to every 100 gallons of water in the scouring tub. In the winter time, when the rinsing water is icy cold, soda ash alone, or with the addition of a little salt, will scour the wool in good form; but in the summer time, when the streams are low and the water is at a high temperature, resort has to be had frequently to a more carefully prepared scouring liquor, and at such a time some of these which have been given will work better than any one alkali. It seems as though soap manufacturers might supply a soap for this particular purpose that would do the work right. Whatever is used it has to be strong enough to dissolve and hold in solution the grease and other impurities in the wool without the assistance of any squeezing or rubbing, as in the case of washing cloth.

There should be trucks enough for holding the wool, so that the scouring-room can be about a day after a of the dye-house. It is better to have the wool drain some time before using, even if it is going to be white; and if it is going to be colored, the dyestuff will go on evener to the wool that has had time to drain. The cold water in the wool just taken from the rinsebox has a tendency to repel the warm dye liquor. In some mills, says the Boston Journal of Commerce, the wool for white is used just as it comes from the rinsebox, without any attempt to bleach it, or to in any way improve the color. Of course, the wool is not white, for all unbleached wool has a yellow cast, which increases with the lapse of time after scouring. Some persons bleach with sulphur, others use some of the so-called chemical bleaches; and others adopt another course, and dye the wool that is used for white, and so cover up the yellow cast. This latter way is simple, and when the quantity wanted is only a small part of the material used, it is the best. The following is a good bleach made in the way last indicated:

For 200 lbs. clean wool a little water is boiled in a dye tub with 6 lbs. of alum, 2 lbs. of tartar, and $1\frac{1}{2}$ drachms iodine violet. The vat is then filled up with cold water so that the bath will stand at 104° F. The wool is entered, handled and allowed to lie one hour (no more), and then the water is drawn off. After draining, a fresh bath at 104° F. is used, in which has been dissolved 3 lbs. of muriate baryta; the material is allowed to lie in this bath two hours, then taken out, whizzed, and dried. This gives a white with a pinkish tinge, which is lost somewhat in the fulling, and leaves the yellow tinge that wool has which has not been treated.

Another way is to use a few drachms of electric blue with a little sulphuric acid, handling in this till even. If too blue, such can be remedied by sprinkling on some dissolved sal-soda till the shade suits. This gives a bluish white. Any of the soluble anilines can be used, the object being to cover up the yellow of the wool with some other color. These are simple, easy ways of getting a good white which will answer

for all purposes in a fancy cassimere mill. Such wools do not grow yellow with age, and when used clean in stripes or as twist, give a good, bright, clean appearance.—Textile Manufacturer.

WATER AT DIFFERENT TEMPERATURES.

The component parts of water by weight and by measure are:

| | By Weight. | By Measure. |
|----------------|------------|-------------|
| Oxygen | 88.9 | 1 |
| Hydrogen | 11.1 | 2 |

One cubic inch of water at its maximum density, 39.1° F., weighs 252.6937 grains, and one cubic foot weighs 62.425 lbs.; it is 828.5 times heavier than atmospheric air.

The four notable temperatures are: 1., Freezing point, 32° F.; 2. maximum density, 39.1° F.; 3. standard of specific gravity, 62° F.; 4. boiling point at sea level, 212° F.

Below 39.1° it decreases in density very slowly at first, and very rapidly as it nears the point of congelation. A

cubic foot of ice weighs 57.25 lbs., and expands $.089 = \frac{1}{11.24}$ of its bulk.

| | Imperial. | U. S. |
|-------------------------|--|---------------------------------------|
| One cubic foot of water | { 6.23 gallons. 1728 cubic in. 62.4 lbs. | 7 $\frac{1}{2}$ gallons. |
| One gallon of water... | { 277.274 cubic in. 10 lbs. | 231 cubic in. 8 $\frac{1}{4}$ lbs. |

It has the greatest solvent power of any of the liquids; for common salt this is constant for all temperatures. For other matter, such as carbonate of lime, magnesium and the different sulphates, its solvent power increases as the temperature increases. It decreases in weight as the temperature increases:

At 32° F., weight per cubic foot 62.418 lbs.

At 39.1° F., weight per cubic foot 62.425 lbs.

At 62° F., weight per cubic foot 62.355 lbs.

At 212° F., weight per cubic foot 59.760 lbs.

Water is practically incompressible, and its capacity for absorbing heat is greater than any other liquid or solid.

ADULTERATION OF WOOLEN CLOTH.

Probably nowhere is pure wool so cheap as in Australia, nevertheless, loud complaints are being made against the extensive use of cotton and shoddy in so-called woollen goods. A correspondent in the Sydney Mail writes the following, which may be of interest to our readers in view of the complaints made here on the same score:

The disuse, to a large extent, of the finer quality of wools for clothing and dress materials during the last ten years has been the result not of the difficulty in obtaining the raw article, but of the demand by rich and poor alike for cheaper clothing. As an authority recently wrote: "Changed conditions demand changed materials. Owing to changes in fashion, the garments of to-day are 25 per cent. worse in quality than they were, even ten years ago.

"All this meant change in the quality of wool manufacturers had been used to consume, and it is on this very score that good, shaggy, merino wool has grown so popular these last five or ten years." To this must be added that the enormous strides made in the improvement of machinery have enabled the manufacturer to turn out material to look as good as the best, and to wear well, at a considerably less cost. The

fine broadcloth and the superfine dress material is still made but only to a small degree. But the wearer gets instead material that pleases the eye just as much as did the rich textures of the past. "What the eye does not see, the pocket will not feel," is a subversion of the old adage that may itly be applied in this case.

We often wonder why there should be such a great difference in price in two suits of clothes, looking very much alike both in texture and finish. If after wondering you are determined to look closer into the matter, you will find that while one consists of about 80 per cent. of wool, the other will not contain more than 20 per cent., and may contain less. The difference is in the cotton woven into the material, and this is so cunningly disguised that only a tradesman can discern it. In the past, when one took a piece of cloth in the hand, the weight, substance, and solidity of the material could be judged by weight. To-day we may get the same solidity and weight, but we cannot depend on the substance and texture of the material.

It happened only lately that two branches of the woolen trade, through their associations, had to take into serious consideration the filled and unfilled worsted coatings question. Certain manufacturers have for a long time past been adding chloride of zinc and other substances in order to secure weight to certain material, which was not made of pure wool, and the practice, if continued, was calculated to do the pure worsted trade a serious injury.

The dyers say that some of their customers are to blame for it, as they demand this weighted material. A compromise has, however, been arrived at, which will be of benefit to the retail man, but in view of the scanty knowledge the public possess of the materials they wear, the benefit to the wearer of the material is extremely doubtful.

Australasia has made great strides in the manufacture of woolen materials, and as the raw article costs the local man less than the man who has to import, it enters more largely in the cloth turned out from the local works. New Zealand is the most forward in this, and its factories have turned out material equal to that of its kind made in England, but up to now no worsted yarn has been made in Australasia, and it has to be imported. This is on account of the special machinery required for spinning it—machinery that is very costly; and the likely demand for some time to come will not warrant the outlay. Thus the duty placed upon the yarn under the Federal tariff has been made by the framers without a knowledge of this fact. How far the tariff can keep out the adulterated woolen cloth is a matter for the future, and it is one that cannot be discussed at present.—Textile World.

CANAIGRE—A HINT FOR THE INDIGO PLANTER.

The steady increase in the Indian leather industry has stimulated the demand for tanning materials which, in some cases, have to be carried for long distances by railway. The production of extracts for tanning in the forest, by means of which the cost of transport is greatly reduced, has scarcely been tried in this country, although the increasing cost of tanning materials at the large tanneries calls for some improvement in the method of supply.

A new and very promising source of supply has been discovered in a plant which is indigenous in Mexico, Arizona, and California. The *Rumex hymarosepalus* or canaigre is an annual, having a tuberous root similar to the dahlia or potato. It grows to the height of 1½ to 3 feet, and is cultivated like any crop plant. In 1878 its heavy proportion of tannic acid was proved by analysis to amount to 35 per cent. and a quantity was shipped to a German tannery; but it was

damaged by fermentation. The roots were then sliced and dried, and in this form were safely transported to Europe, where a demand speedily arose for the new product and thousands of natives in Mexico were soon occupied in gathering the wild root. The next step was the establishment of a factory at Derning in New Mexico for the extraction of the acid which by the process employed amounted to from 42 to 48 per cent. This factory on the exhaustion of local supply of the wild plant led to an organized culture on farms of 2,000 to 8,000 acres in extent. The roots remain two years in the ground when they are dried up. The larger ones are sent to the mill, while the small roots are used as seed. In appearance the root is of a dark red color and about 15 inches long, the flesh is pink and astringent to the taste. One plant yields about 1,000 lbs.

In 1896 the Anglo-American Canaigre Company got into working order with several millions of dollars capital stock. They sowed 8,000 acres in the San Bernardino Valley, California. The plant is said to require a light sandy soil, a wet, mild winter and a hot, dry, summer. It thrives under irrigation. Many of the appliances for the growth and treatment of the root have been devised by members of the company to whom is due much of the credit of having utilized a hitherto neglected plant. There is good reason to suppose that the Indian planter would find in this plant a profitable substitute for the indigo that has of late years offered so little encouragement. Americans have lost no time in putting the plant to practical use.—Textile Journal.

TABLE GIVING SPECIFIC GRAVITY, WEIGHT PER CUBIC INCH, AND APPROXIMATE MELTING POINT OF METALS.

| Name. | Specific Gravity. | Troy Ozs per Cubic in. | Melting Point. | | Authority |
|---------------|-------------------|------------------------|----------------|--------------|------------------|
| | | | Centi-Grade. | Fahr-enheit. | |
| Aluminum .. | 2.6 | 1.37 | 625. | 1157 | Roberts-Austin |
| Antimony ... | 6.8 | 3.58 | 432. | 809.59 | Pouillet |
| Bismuth | 9.8 | 5.17 | 268.3 | 514.94 | Rudberg |
| Cadmium ... | 8.66 | 4.57 | 320.7 | 609.26 | Person |
| Copper | 8.9 | 4.69 | 1054. | 1929. | Violle |
| Gold | 19.33 | 10.19 | 1045. | 1913. | Violle |
| Iridium | 22.42 | 11.82 | 1950. | 3542. | Violle |
| Iron, wr'ght. | 7.8 | 4.11 | 1600. | 2912. | Pictet |
| Lead | 11.35 | 5.98 | 326.2 | 619.2 | Person |
| Manganese . | 7.39 | 3.89 | 1850. | 3362. | Van der Weyde |
| Mercury | 13.59 | 7.17 | -38.5 | -37.3 | Regnault |
| Nickel | 8.6 | 4.53 | 1450. | 2642. | Pictet |
| Osmium | 22.47 | 11.85 | 3000.+ | 5432.+ | Deville & Debray |
| Palladium .. | 11.4 | 6.01 | 1500. | 2732. | Violle |
| Platinum ... | 21.5 | 11.31 | 1775. | 3227. | Violle |
| Rhodium ... | 12.10 | 6.48 | 2000. | 3632. | Pictet |
| Ruthenium . | 12.26 | 6.46 | 2000.+ | 3632.+ | Deville & Debray |
| Silver | 10.53 | 5.55 | 954. | 1749.2 | Violle |
| Tin | 7.3 | 3.85 | 232.7 | 450.86 | Person |
| Zinc | 6.9 | 3.64 | 433. | 811.4 | Person |

ELECTROLYTIC BLEACHING.

A process has been patented in Dresden whereby cotton yarn in bundles, and also cops and pirns, are bleached electrolytically. The goods are treated first with caustic soda, then with sodium hypochlorite made by the electrolysis of salt solution in a separate vessel, and finally with dilute sulphuric acid. The object of the caustic soda is to remove grease, and the goods are rinsed with water before the

bleach is admitted to them. Another rinsing intervenes before the goods are soured with sulphuric acid. The novelty seems to consist in the bleach being made by electrolysis, and used as it is made.

TABLE FOR CONVERSION OF THERMOMETER READINGS.

Degrees Centigrade $\times 1.8 + 32 =$ degrees Fahrenheit.

Fahrenheit $- 32$

Degrees $\frac{\quad}{1.8} =$ degrees Centigrade.

1.8

Reaumer $\times 9$

Degrees $\frac{\quad}{4} + 32 =$ degrees Fahrenheit.

4

(Fahrenheit $- 32$) 4

Degrees $\frac{\quad}{9} =$ degrees Reaumer.

9

Reaumer $\times 5$

Degrees $\frac{\quad}{4} =$ degrees Centigrade.

4

Centigrade $\times 4$

Degrees $\frac{\quad}{5} =$ degrees Reaumer.

5

KNOTS AND KNOT TYING.

The subject of knots and knot tying has been a problem for cotton manufacturers as long as cotton mills have existed. While a comparatively small and unimportant process, the spooling department is probably the source of as much trouble as any department in the mill. A bad knot causes trouble from the warper to the cloth room. In England, for many years, the manufacturers have claimed to tie weaver's knots. This does not, however, do away with the trouble, as it is as possible to leave a long end to a weaver's knot as it is to a spooler's knot. In the United States some mills have attempted to tie the weaver's knot.

Some time ago I was in a mill that claimed to tie weaver's knots exclusively. The superintendent took me to their spooling department, and standing in one corner of the room, we had a good opportunity to watch the spooler tenders. The girls near us were all tying weaver's knots, but glancing across the room, I saw several girls industriously tying spooler's knots. I called the superintendent's attention to this, and he readily admitted that it was only while the operatives were being watched that weaver's knots were tied. He said he did claim, though, that by paying the girls more than the other mills paid he was sure that if they did not tie a weaver's knot they would tie a good spooler's knot.

Much has been claimed for the weaver's knot in preference to the spooler's knot. The actual knot is very slightly smaller, but the great trouble from knots does not come from the knot itself, but from the long ends. Yarn tied with a short end spooler's knot will weave a better piece of cloth than yarn tied with weaver's knots when the ends vary in length.

Some two years ago a device was invented and shortly after marketed, that was intended to do away with bad knots. This machine ties a spooler's knot with short, even ends. Mills that have adopted this machine claim that a saving can be made in the cost of spooling of from 10 to 12 per cent. This, however, while a large item, is not the greatest advantage of such a machine. From tests made in a mill, we found that a section beam could be filled from half an hour

to an hour sooner than a section beam on which hand-tied work was being run.

The great saving, however, is neither in spooling or warping, but in the weave room. When a knot with a long end attempts to pass through the reed it almost invariably causes a break and the broken ends become entangled in the threads near it, and often seven or eight ends are broken before the trouble is discovered. Probably more than 95 per cent. of the seconds caused by imperfect knots can be obviated by the use of proper mechanism.

C. H. Draper has given me the following results of a test he made some time ago. The test covered the running of from four to ten looms for two or three months. The total running time, adding up that of each of the looms separately, was 378 days of 10 hours each. The number of warp ends broken was 3,641, out of which 1,722 were caused by bad knots. In the same time there were 731 stoppages due to slack threads, out of which 486 were due to bad knots. From these figures we find that 47 per cent. of warp breaks, 65 per cent. of slack threads, and 50 per cent. of these two faults added together, were due to bad knots. In these tests the looms were equipped with various kinds of mechanical stop motions made by the Draper Company and the cause of the trouble was in each case accurately noted down on the spot. Most of the slack threads caused by knots, and a large proportion of the warp breaks caused by knots, were due to the long, trailing ends left by the spooler tender.

If this machine will do away with bad knots, the work of the warper can be increased, and the capacity of the weave room increased, and at the same time the number of seconds reduced. As to whether it will do it or not, we will leave for the manufacturers to say.—Robert C. Webster, Boston, Mass.

DYEING NOILS AND LOOSE WOOL.

Noils are frequently mixed with loose, uncarded wool, in order to simplify and facilitate the dyeing of such mixtures, and it is often a question of dyeing comparatively small lots. By a shortened process, time and fuel are saved, of course, but then it is a speculation with the dyer whether or not the process will succeed. The better way is to dye the noils and the raw washed wool separately. If dyed together, the noils are almost always more felted than the wool, and the color of noils will almost without exception appear different from that of the wool. This is a serious defect if the material is to be used for unicolor goods. Furthermore, the disadvantage arises, in the case of mixtures, that the noils, if strongly felted, mix badly in the carding process. To avoid the disagreeable consequences of this mixed dyeing, it is better to dye each material by itself. In the case of loose wool, it is still possible to recognize the nature and source of the material, which cannot be accurately done in the case of noils. It frequently occurs that different kinds of wool are combed together, and thus it happens at times that a quite strong fibre will be combed in with defective goods in order to make the latter more fit for the manufacturing process. It hardly comes into consideration whether the inferior material be long or short, fine or coarse; the main question is to secure uniformity in the felting tendency. If this be the case, it is easy work for the dyer. He has only to be careful, when dealing with well-felting noils, that in mordanting the bath be kept near the boiling point without actually reaching it. If in this way the mordanting has lasted one and one-half hours, and the noils still remain loose and have the appearance of not being felted, a half-hour's boiling will do no harm. Nevertheless,

strong boiling is to be avoided. In the case of noils that have but a slight tendency to felt, one and one-half hour's boiling is permissible; but here, too, excessive boiling is to be guarded against, otherwise the weak felting tendency of the material will be still further weakened. As a rule, mohair noils felt most strongly in dyeing, so that in working with this material boiling must almost invariably be avoided and merely a seething temperature be maintained. In the dyeing out of the material the same cautious treatment must be observed.

If noils and wool are to be dyed according to one and the same sample, the best plan is to match each separately, and not to mix the noils and wool until dyed. In that way it is possible to give each material its proper attention. Precaution is likewise necessary in the case of uncarded wool, on account of its non-uniformity. The various colonial wools possess such an endless variety of characteristics that dyers are almost compelled to treat each wool according to its origin. For instance, one kind of wool comes from sheep that rest at night in the sand on the open plain. Such wool is usually not so yellowed as the wool of sheep kept in stalls. Then comes the feeding of the sheep, the washing of the wool, the health of the sheep, and whether the wool be live or dead. All this asserts itself very frequently during dyeing, in the most unexpected ways and in difficulties that involve all kinds of inexplicable phenomena. In spite of all pains and effort, the result can never be guaranteed; it can only be approximated, even if we work according to the customary and well-compiled recipes.

If noils be matched in dyeing and then an effort made to bring the same shade upon loose, uncarded wool, the working of the mixture for one-colored goods will present difficulties only if great non-uniformity exist in the felting tendency of the two materials. If one material felts strongly and the other not at all, a good smooth felt cannot be obtained. The so-called felt, after completion, will be stubby, or, as we may say, not fully closed. Loose and dense places will show, as if the object had been to produce rough, coarse goods. Whether noils and uncarded wool be dyed together or dyed separately, there is one point to be kept in view, says the *Deutsche Farber Zeitung*; both materials must have the greatest possible uniformity as to felting, and they should be alike in other respects as well, such as fineness, etc., in order to assure proper preparation for the manufacturing process.

RILEY AND THE SCOTCHMAN.

Eugene Field was fond of relating the following story of James Whitcomb Riley: "To beguile the tediousness of the return voyage from Europe it was proposed to give a concert in the saloon of the ship, an entertainment to which all capable of amusing their fellow passengers should contribute. Mr. Riley was asked to recite some of his original poems, and of course he cheerfully agreed to do so. Among the number present at this mid-ocean entertainment, over which the Rev. Myron Reed presided, were two Scotchmen, very worthy gentlemen, en route from the land o' cakes to the land of biscuits upon a tour of investigation. These twain shared the enthusiasm with which the auditors applauded Mr. Riley's charming recitations. They marvelled that so versatile a genius could have lived in a land reputed for uncouthness and savagery.

'Is it no wonderfu', Donald,' remarked one of these Scots, 'that a tradesman sud be sic a bonnie poet?'

'And is he indeed a tradesman?' asked the one.

'Indeed he is,' answered the other. 'Did ye no hear the

dominic intryjuce him as the hoosier poet? Just think of it, mon—just think of sic a gude poet dividing his time making hoosiery!'

HIDDEN FOR A CENTURY.

Whilst some workmen were employed in taking away the old thatching on the picturesque Swiss cottage in Ledbury Park Gardens (which surround the Herefordshire seat of Mr. Michael Biddulph and Lady Elizabeth Biddulph), they discovered a brown-paper parcel, which had been secreted in the roof for over a century. On opening it, it was found to contain a roll of linen, carefully tied up as if just from the makers. There was also an invoice for the goods, as follows:

Messrs. Pinnocks and Gibbs,

1794,

Bought of G. Watson.

Sept. 3rd.

25 yards $\frac{7}{8}$ fine Irish, $\frac{2}{5}$ £3 os. 5d.

Besides the above there was a written letter, of which the following is a copy,

Gloster, September 3rd. 1794.

Gent,—I duly received yours, value £40, which is plac'd to your credit with thanks. The cloth sent is a make I can recommend, if you think it fine enough, if not I shall have a parcel from Manchester on Saturday at farthest, when I can supply you with any quality you wish, tho' I doubt not but this will answer the purpose of any friend you may recommend it to.

I have got about 12 pieces herdens, cost me from 27s. to 31s., shall charge you only 5 per cent., and at present are worth more money.

Your future commands shall have every attention.

I remain, yours, etc.,

G. WATSON.

In the olden days there was a roadway across Ledbury Park. How the parcel became secreted under the thatch is a mystery.—*Birmingham Daily Post*.

SOME NEW DYES.

During the year 1901 some 136 new dyes derived from that everlasting source, coal-tar, were put upon the market. Of these, eleven came from English works, twenty from Swiss works, and the rest from German works, a circumstance which indicates the preponderance of German efforts in introducing new dyes. Thirty-two of these dyes belonged to the new group of sulphur dyes now coming so much into prominence, while only nine were basic dyes, which small figure indicates the decay in the development of really the oldest type of dyes. Forty-eight dyes belonged to the direct cotton dyes, 35 were acid dyes for wool and silk, and 12 were mordant dyes capable of being used in wool-dyeing and calico-printing.

CALCULATING HORSE POWER FOR BOILERS.

The expression "horse-power of a boiler," although frequently used in engineering practice, is highly unsatisfactory on account of its undeterminateness. The American Society of Mechanical Engineers' rule for determining the evaporative efficiency of boilers is practically the standard the world over, but that deals with terms more exact than those used when the ordinary engineer speaks about the horse power of his boilers. No one can calculate what actual horse power can be realized from a boiler without knowing what sort of an engine is to be used; for a boiler which gives 50-horse-power

with a small, non condensing, slide-valve engine, may give four or five times as much power when used in connection with an engine of more improved design. To get the horsepower of a boiler, by the centennial rule, or by any other rule, the first problem is to find the heating surface of the proposed boiler, which consists of all those parts of the shell heads and tubes which are exposed to the direct action of the fire on the hot gases that come from it. We shall proceed to consider these parts in detail.

To obtain the area we should know the exact length of the shaded area and also the height of the side walls of the furnace; but in practice it is usually assumed that the shaded area is equal to one-half of the shell. The front head of the boiler is of little or no value as a heating surface, because if the boiler is well designed the temperature of the up-take does not greatly exceed the temperature of the boiler itself, and hence there cannot be any considerable absorption of heat through the front head; this should therefore be entirely omitted in the calculation. The back head is more directly opposed to the heat of the furnace, and allowance is sometimes made for such heating surface as it contains. In practice, we do not allow for the back head, however, because the only part of its surface which is available, in any case, consists in the small segments which lie between the tubes, together with a narrow strip around the flange and just under the back arch. While there might be some heating value to these parts when the boiler is new, we do not consider that they are worth taking into account after it has been used for a time, because scale is likely to form upon them. The tubes are of great importance in computing the heating surface, because their combined area is very large, as can be seen in the numerical example given below. In computing the heating surface of a tube, we have first to consider whether we should take the internal or external surface as the effective one. This question admits of discussion, and could only be settled definitely by actual measurement of the external and internal temperatures of the tube when the boiler is in operation. If it were found by experiments of this sort that the tube, as a whole, is nearly as hot as the gases within it, then the external surface should be taken; while if the tube were proved to be hardly hotter than the water in the boiler, there can be no doubt that the internal surface should be taken as the effective one. We do not know that any such measurements have been made; and some engineers base the calculated heating surface upon the internal diameter, while others use external diameter and still others the average of the two. One practice has been to take the external diameter, and this course is justified by experience.

This point being settled, the next step is to find the area of the tube by multiplying its outside circumference by its length—the circumference being found by multiplying the outside diameter by 3.1416. (The diameter of the tube is usually given in inches, so that if the surface is required in square feet, it is necessary to divide the given diameter or circumference of the tube by 12, so that it may be expressed as a fraction of a foot). The area of one tube being found, we multiply it by the number of tubes, and thus find the united surface of all of them. This, when added to the heating surface afforded by the shell, gives the entire surface upon which the rated horse power of the boiler is to be based. A numerical example will make the rule plainer. Let it be required to find the heating surface of a 72-inch boiler, 18 feet long from head to head, with 92 tubes, $3\frac{1}{2}$ inches in diameter. The diameter of the boiler being 72 inches, its circumference is $72 \times 3.1416 = 226.1952$ inches. To express this circumference in feet, we divide the result by 12, thus: $226.1952 \div 12 = 18.8496$ feet. The length of the boiler between heads

being 18 feet, the total area of the shell is $18 \times 18.8496 = 339.2928$ square feet, and $339.2928 \div 2 = 169.6464$ square feet, which is to be taken as the effective heating surface afforded by the shell. Passing now to the tubes, we find that the circumference of a $3\frac{1}{2}$ -inch tube is $3.5 \times 3.1416 = 10.9956$ inches, which is equal to 0.9163 of a foot, since $10.9956 \div 12 = 0.9163$. The surface of the tube is then found by multiplying the circumference by the length, thus: 0.9163×16.4934 square feet, which is the area of a single tube. The combined area of the 92 tubes that the boiler contains is $92 \times 16.4934 = 1,517.3928$ square feet, which is the heating surface afforded by the tubes. Upon adding this to the heating surface afforded by the shell, we have heating surface of shell and tubes. Total heating surface of boiler $169.6464 + 1,517.3928 = 1,687.0392$. In round numbers, the effective heating surface of boiler would be 1,687 square feet. It will be seen that the tubes are of far more importance than the shell.

The heating surface of the boiler being known, the next step is to find what evaporative duty may be expected of the boiler in ordinary good practice. To solve this part of the problem we have to know from experience what amount of water can be economically evaporated by each square foot of heating surface per hour. In our own practice we find that when the boiler is well designed and the draft is good, an evaporation of $2\frac{1}{2}$ pounds of water per hour may be had from each square foot of heating surface. In exceptional cases the evaporation may run as high as 8 pounds; but under ordinary circumstances it is found that $2\frac{1}{2}$ pounds is all that can be reasonably expected.

If the data by experience be accepted, it follows that the boiler will have one nominal horse power for every 12 square feet of heating surface; for if each square foot evaporates $2\frac{1}{2}$ pounds per hour, the total evaporation on 12 square feet will be $12 \times 2\frac{1}{2} = 30$ pounds per hour. The nominal horse power of a boiler is thus calculated by dividing the total effective heating surface (in square feet) by 12. If it is desired to calculate the actual horse power that a boiler may be expected to furnish, we must first know something about the engine that is to be used; for the boiler merely produces the steam, and it is the engine which transforms the steam into mechanical energy. Now, if the engine is of good design and economical, a good average can be expected; while if it is wasteful, the boiler will be working just as hard, and the yield will be much smaller.

A numerical example of this rule may be given, taking the boiler whose heating surface has already been given. The heating surface being 1687 square feet, the evaporative duty of the boiler per hour will be $1687 \times 2\frac{1}{2} = 4217.5$ pounds. $4217.5 \div 30 = 140$ horse power, the actual horse power developed under such circumstances and data afforded by experience.—National Engineer.

PATENTS GRANTED.

The following Canadian patents, relating to the textile trades, have been granted:

Mattress for beds, couches, etc., O. R. Hunt, Minneapolis, Minn. Combination of frame, springs and mattress fabric.

Clothes dryer, W. M. Barnes, Philadelphia, Pa. Combination of heating coils and air circulating device in drying room.

Window shade fixture, F. H. Bassett, Waterbury, Conn.

Paper making machine, J. W. Moore and J. A. White, Philadelphia, Pa.

Shears, W. G. Henderson, Titusville, and E. P. Cole, Pittsburg, Pa. Extension appliance.

- Tailor's measure, S. M. Griffen, Summitt, N.J.
- Roller bearings for carpet sweepers, Thomas H. Bedell, Marion, Indiana.
- Garment and belt support, Wilhelmina W. Lowrie, Buffalo, N.Y. Combined garment and belt supporter.
- Stock or ribbon support, J. H. Whittington, Buffalo, N.Y. Method of holding stock or ribbon around the neck.
- Sad iron, Boston Gas Iron Manufacturing Co., Boston, Mass.
- Gore for gloves and mittens, H. T. Arnold, and Wm. Arnold, Acton, Ont. Elastic gore in wrist of gloves, etc.
- Garment fastener, Joseph Seligman, Manhattan, N.Y. Clip with jaws or gripping elements.
- Manufacturer of pile fabrics, A. E. Hodder, G. M. Lester-Lester, John Bingley and Garland Lester, London, England. Combination of series of healds in a two-shed weaving machine.
- Ring spinning machine, E. A. Work, Bath, Maine.
- Lacing device, Emile Savoyl, Paris, France.
- Eyeletting machine, E. L. Sibley, Bennington, Vt.
- Machine for winding cloth, Wm. P. Simpson, Overbrook, Pa.
- Sad irons, Alex. Luethe, W. A. Engsberg and Conrad Engsberg, Lake Mills, Wis.
- Carpet stretcher, Daniel W. Christian, Smith's Falls.
- Covering piece for pneumatic tire punctures, Ernest Matschull, Konigl, Schmelz, Germany. Patch with method of appliance.
- Means of securing buttons, etc., W. H. Hollingshead, Huntsville, and Geo. F. Richards, Ravenscliff, Muskoka.
- Construction of machines for treating cocoa and like fibres, W. H. L. Alfred, West Norwood, London, England.
- Art of making flat knit caps, N. E. Kahn, Philadelphia, Pa.
- Method of knitting, Henry Brown, Philadelphia, Pa. Improvement in knitting seamless stockings with lace effects.
- Manufacture of knit and fulled boots or socks, Chas. E. Wakeman, Pontiac, Mich.
- Spring for garments, Paul E. Wirt, Bloomsburg, Pa. (three patents).
- Gang lacing device, John C. Telfer, Kansas City, Mo.
- Knitting machine, Richard I. Croelman, Georgetown.
- Spring band for clasping aprons to the waist, C. S. Harris, Otterville.
- Dress stay, A. A. Dieter & Co., Boston, Mass. Stay made of cane.
- Umbrella and parasol, Johann Lingel, Budapest, Hungary. Handle jointed at one or more places with socket joints.
- Loom mechanism, John Houston, Sunderland, England. Use of compressed air in shuttle throwing mechanism.
- Curtain fixtures, Morgan Jolliffe and Wm. Ridenour, New Salem, Pa.
- Paper making machine, J. H. Gately, Bellows Falls, Vt.
- Suspender, John Bain and Andrew Bates, Toronto. Inelastic shoulder straps with elastic sections.
- Carpet needle, Albert Keane, Cooksville, Ont.
- Window shade for sliding doors, E. I. Pyle, Bridgeport, Conn.
- Cloth cutter, Charles F. Sharks, Alton, Ill.
- Cloth cutter, G. J. Nopper, Baltimore, Md.
- Lacing hook, E. Kempshall, Boston. Lacing hook capped or laced with fabric and celluloid. Also eyelet same.
- Velvet smoother, Helena Kendstrom, Brooklyn, N.Y.
- Curtain support, Joseph N. Anderson, Mono Lake, California.
- Burial garment, W. J. Warden, New York.
- Hand loom, Martha P. Todd and Dana Todd, Minneapolis, Minn.
- Tufting device for air mattresses and cushions, C. C. Henderson and John P. Kershaw, St. Louis, Mo.
- Skirt supporter, L. H. Flory, Ashley, Pa.
- Fastening device, Wenzel Cesak, Milwaukee, Wis. Improved fastening for garments, etc.
- Garment supporter, J. J. Bloom and A. W. Mensor, Seattle, Wash.
- Placket closure, Emile B. Hess, Philadelphia, Pa. Method of forming placket closure for skirts, etc.
- Machine for applying rubber soles, G. F. Butter, Framington, Mass.
- Buttonhole sewing machine, Wm. N. Parkes, Brooklyn, N.Y.
- Smoothing iron, R. E. Vancourt, Newton, Iowa.
- Mangle, Charles R. Hoyt, Arlington, Mass.
- Garment supporter, J. H. Taylor and Izora Taylor, Philadelphia, Pa.
- Shirt waist holder and skirt supporter, Frances E. Moody, Toronto.
- Apparatus for crushing, breaking or opening fibrous material, Albert A. Hermangor, Carinthia, Austria.
- Sole levelling machine, G. H. Gifford, Lynn, Mass.
- Garment hook, Mary G. Roeder, Manchester, Md.
- Apparatus for treating and coloring hides and skins, The Scott Leather Machine Co., New York.
- Button or stud, James Campbell, Providence, R.I.
- Tip for umbrellas, Vincent D. Tilley, Cornwall. Removable tip of resilient material.
- Umbrella, F. C. Hall, Norwalk, Ohio. Detachable handle device.
- Child's waist, Frank A. Platz, Brooklyn, N.Y.
- Catamenial Bandage, J. F. James and R. M. Kippen, Melbourne, Ont.
- Manufacture of waterproof asbestos, A. H. Hipple, Omaha, Neb. Waterproofing asbestos by means of oil vulcanized therein.
- Sewing machine motor, F. P. Huyck, Swarston, Ohio.
- Apparatus for purifying paper pulp, Albert Aberg, Hermagor, Austria.
- Fibre forming machine, C. M. Terrell, and O. C. Terrell, Grant's Pass, Oregon.
- Collar foundation, E. K. Wenzon, Three Oaks, Mich.
- Carpet stretcher, John Lawson, Markdale, Ont.
- Felt cleaner for paper making machines, R. M. Scanlon, Brownstown, Ind.

—The Textile Journal is the name of a new publication which has reached us. It is published in London, and is handsomely got up. We wish it every success.

—The June quarterly issue of the Bulletin of the National Association of Wool Manufacturers of the United States is largely taken up with a continuation of the history of New England wool manufacture, which is to be still further continued. There is also an article on the Metric System: Shall the United States adopt it? the answer being Yes.

FINISHING COLORED FABRICS.

It has been found that mercerizing and dyeing yarns before weaving so as to produce a colored fabric having a silky lustre is very difficult, both because the weaving of mercerized yarns is very troublesome, and because it has been found impracticable to mercerize the wet cops. Mr. Thos. Pickles, of Burnley, has patented a process whereby these difficulties are avoided. The process consists in putting the weaving between the dyeing and the mercerization. It is then obvious that the mercerization does not affect the weaving, which is done before it, and that if dyes are used which will resist the lyes used in mercerization, the subsequent mercerization will not affect the colors.

POISONS AND THEIR ANTIDOTES.

From the Handbook of the American Society of Dyers.

If poisoning is only suspected, give an emetic made of two tablespoonfuls of mustard in a pint of warm water; or 1.25 grains sulphate of zinc may be given, and afterwards employ the antidote mentioned in the list following; but in all cases of poisoning from whatever known cause, the first thing to do is the application of the above mustard emetic, and when the stomach is emptied of its contents, give the antidotes as stated below:

For sulphuric acid, nitric acid, hydrochloric acid, aqua regia, oxalic acid, solution of oxalates, give: Chalk, bicarbonate of soda, whiting, carbonate of magnesia, plaster, which may be scraped from the wall, powdered and mixed with a little water; then give milk, white of egg, or sweet oil, or in the case of oxalic acid or soluble oxalates, lime water and then castor oil.

For all cyanides, sulpho-cyanides, hydrocyanic acid (Prussic acid), nitrobenzol and oil of bitter almonds: Pour cold water upon the head, apply mustard to the sides of the feet, and keep the sufferer awake by shaking or walking him about if he be able to walk, until he is well awake again.

For chromic acid, chromates and chromium dyestuffs, give: Chalk mixed with water.

For carbolic acid, give flour and water.

For caustic soda, caustic potash, caustic ammonia, potassium carbonate, sodium carbonate, water-glass (silicate of soda), give: Warm water to produce vomiting; after that dilute vinegar or lemon juice, and then plenty of milk or some sweet oil.

For arsenic and its compounds, white arsenic and Fowler's solution, give: First the mustard emetic, to which a tablespoonful of kitchen salt may be advantageously added; then sweet oil, milk or butter; or give after the emetic dialyzed iron, or ferric hydrate (which is precipitated from ferric chloride by a slight surplus of ammonia and then filtered).

For corrosive sublimate (mercuric chloride), and nitrate of mercury, give: Abundant drinks of milk, or white of egg in water, and then flour and water.

For nitrate of silver (caustic), give at once: Kitchen salt dissolved in water, and the mustard emetic after it; then plenty of milk.

For sugar of lead (acetate of lead or white lead); other compounds of lead and compounds of barium, give: Glauber's salt, or Epsom salt at once, and after that an emetic of sulphate of zinc, or mustard emetic.

For iodine, give: Gruel, arrowroot, or starch paste.

For tartar emetic, give: Warm water to produce vomiting, then drinks of strong tea or bark (oak, slippery elm, etc.)

For laudanum, morphine and opium, give: Strong coffee, and keep the patient awake by moving about, shaking, or any other means.

For ether, benzine, petroleum, benzol, strong alcohol, fruit essences, chloroform, chloral hydrate: Pour cold water on the head, give plenty of fresh air, keep the patient awake, and employ artificial respiration.

ENQUIRIES RELATING TO CANADIAN TRADE.

The following are among the enquiries relating to Canadian trade received recently at the Canadian Government office in London. The addresses of those interested may be had on application to The Canadian Journal of Fabrics: Enquiry is made for importers of cotton yarns and cloth by an English firm who are desirous of extending their business with Canada in these lines. An important house in the linen trade desire to get into communication with some of the best Canadian wholesale houses in the soft goods line who are importing such linens as are used by clothiers or the making-up trade. A Liverpool house is desirous of appointing agents in Canada for the sale of their sheep dips, disinfectants, weed killers, etc. A Bradford house exporting raw wool, tops, noils, waste, yarns, cotton and worsted yarns, ask to be referred to a good commission agent in Canada who could bring such goods before the principal users in the Dominion. A Canadian firm engaged in the woolen trade desires to communicate with wool pullers in Great Britain.

NEW NAPPING MACHINE.

A new machine for napping cotton and woolen goods has recently been placed on the market in England. Instead of the ordinary teasels, or rotating card-covered rollers, this machine has a number of hexagonal rollers, which have imparted to them a rapidly reciprocating motion. Each bar or flat surface of the roller is covered with card fillets after the manner of the revolving flats used in cotton carding engines. The bars reciprocate vertically in front of the cloth, and by so doing raise the nap thereon to any required degree. This reciprocating motion is of a dual kind, the downward movement being parallel, while the return or upward movement is circular, in other words, the whole movement resembles the outline of the letter D. It is claimed that this particular movement is as near as possible that performed by the operative when raising is done by hand labor, and that, therefore, the merits of one method are embodied in the other. As the bars descend, the wire teeth of the clothing come into contact with the cloth, and comb out the fibres, but immediately on reaching the bottom of their strokes, the bars return by the curve mentioned, and the movement is repeated. For obvious reasons there are several sets of hexagonal rollers in a complete machine, and the number may be varied, moreover, according to requirements. The cloth to be operated upon is carried over suitable guide rollers in a stretched condition, and in a plane perfectly parallel thereto. As a natural result of the continuous reciprocating of the wire surfaces at such a great speed, the card teeth become charged with a certain amount of flock, which must from time to time be removed. In order to effect this object, the machine is provided with an arrangement which causes the hexagonal raising rollers to be revolved one-sixth of a revolution every few minutes. A fresh card surface is thus brought to bear against the cloth at such intervals, while those which have been in use are respectively cleaned by means of an automatic arrangement consisting of a series of flexible wire covered rollers having a reciprocating and

rotary motion combined. In the working of this machine the cloth is treated continuously, and after the machine has been once set, the nap raised on the cloth is uniform throughout.

Foreign Textile Centres

Bradford.—This market is quiet, and the amount of new business available exceedingly small. The London auction wool prices are altogether beyond this market, and for the time being are firmly resisted. Many spinners have covered their requirements for fine wools for some time to come. Moreover, new orders for yarns are far from plentiful. Merinos are slow, but topmakers are still confident as to the future and will not book further ahead, except on their own terms. Low crossbreds are easy, and all classes, including forties and under, are lower, and barely steady at the decline.

Belfast.—Business in this linen market continues fairly steady, but in no branch is there any improvement. Here and there the tendency is a shade quieter, but with old orders still unfilled machinery is kept engaged. The spinning branch is rather irregular. A good demand exists for all counts of tows up to 40's, but beyond these buying is slow. There is no improvement in line wefts or fine warps. The manufacturing end keeps very steady, but is devoid of briskness. Fine makers of bleaching cloths and housekeeping goods as a whole are a trifle quieter, but union goods, hollands, paddings and similar makes are meeting with a fair share of attention.

Dundee.—The home trade in linens shows a slight falling off, and there is nothing to boast about orders received from abroad. The United States, however, are placing a few lines for housekeeping goods. The jute market is somewhat easier. Holders of old crop are more anxious to sell to-day than they were, but find it very difficult to operate, even at reduced rates. Sellers of new crop show more disposition for business. Prices show no encouragement for spinners to operate in flax, tow, or codilla, and they are simply supplying their pressing wants in the meantime.

Kidderminster.—The carpet trade is fairly satisfactory, and looks as if it would keep busy at all events to the end of the half-year. The demand is more for the better than the cheaper grades of carpet, and some slackness is felt by makers of second quality Brussels and Axminsters. The improvement in the spinning trade is well maintained; a firm or advancing wool market and a better all-round demand for yarn are slowly affecting the price of carpet yarns, and they are now harder to buy than they were a short time ago.

Leeds.—There is a more hopeful tone in the woolen trade in consequence of peace in South Africa. A boom, more particularly in the shipping branch, is confidently looked for as the result of a cessation of hostilities. For some weeks past consignments both of piece-goods and ready-made clothing to the Cape have been growing in bulk, and merchants are anticipating a general return to industrial pursuits. In the home market a spirited demand continues for fabrics of the higher class makes of worsteds and mixtures generally, and fancies in particular have a good business. Some of this is of a speculative character. There is no decline in the competition, and prices of merinos and fine crossbreds have not weakened, the tendency being in the other direction. The latest advices from the wool-growing districts of Australia are even more discouraging than before, and the consumption of fine wool in all the great manufacturing centres is unusually high. Manufacturers of worsteds and the super-

ior class of woolens are only booking orders for future delivery at an advance, and as there is nothing to indicate that public taste is going to change from fine wool fabrics to rougher material, merchants are conceding the higher terms. The low-class woolen trade is a shade better, but any revival must spring from larger foreign and colonial demands. Business in ready-mades is fairly good, and the measuring departments are busy.

Leicester.—In the yarn market deliveries are now on a very large scale, the bulk of the yarn being absorbed as fast as it is spun. Choice hosiery fabrics are being delivered freely, while there is a strong demand for specialties and fancy fabrics.

Manchester.—In the linen branches there has been little to complain of, but the sales of goods on New York account have not been up to expectation. The enquiry for mixed goods has exceeded the average, and the enquiry on South American behalf has been above the average. The cotton warp trade is up to the average, but the difficulties attending the exploiting of this branch have kept buyers back. Mixed goods are growing in popularity, and the orders for makes of this class seem likely to continue for some time.

Nottingham.—A rather quiet time is noticeable in the lace trade, but the advent of more seasonable weather is likely to stimulate the demand, and manufacturers are not anticipating any material falling-off in the output of best cotton laces. These goods are, in fact, selling freely, and in many cases nets, galons and insertions are required to match the laces. A moderate business is being done in common cotton laces. Silk millinery laces are still comparatively neglected. Lace curtains are selling to a fair extent, but machinery is not fully employed yet. Good qualities of plain nets are moving at steady prices. The making-up department is active.

South of Scotland.—Bad weather has had a depressing effect on trade. People begin to look serious over the prospect of a cold and wet summer. The linen trade at home continues very quiet. There are some American buyers at present in the linen districts, but their buying is not very extensive, the across-sea purchaser evidently preferring to wait a little. Most makers have a fair amount of orders. Floor-cloth and linoleum manufacturers are fairly busy, and some improvement is noted in the industry. The lace curtain trade of Ayrshire continues fairly active. The home trade orders are coming in somewhat more freely, as the wholesale houses are now making their selection for the ensuing season, and, consequently, a general and steady improvement is anticipated. The shipping trade in these goods is also more active, and some fair orders are in process for the colonial markets. The continental enquiry is also much better. The Glasgow wool market, although influenced by the improvement at the London sales, is very firm, but buyers having bought freely at the last public series, the business doing has been confined to immediate requirements.

FABRIC ITEMS.

The Canadian Rubber Co. is opening a branch at Vancouver.

The Maple Leaf Woolen Mills Company has increased its capital from \$40,000 to \$100,000.

The Imperial Dry Goods Company of Winnipeg, is applying to have its capital stock increased from \$25,000 to \$100,000.

Foreign worsteds and woolen dress goods show an advance owing to the higher prices on wool. Quotations show an advance of from 12c. to 15c. per yard on some qualities.

The manufacture of gloves in Canada is being carried on this year on a more extensive scale than ever.

A decline in prices is reported at the last ostrich feather sales in London; 92,400 lbs. were offered and all sold. Previous prices had been abnormally high.

English capitalists have formed a syndicate to promote the manufacture and sale of tie silks, which are composed of half wood pulp and half artificial silk.

The Cassella Color Co. has issued a pamphlet describing the use of Immedial Sky Blue powder, a patented production, which they make. The Canadian agency is at Youville Square, Montreal.

The plan of fire-proofing flannelette, invented by Prof. W. H. Perkin, to which reference has already been made, is standing the test of experience, and seems to have solved an important problem in the textile trade.

The Plymouth Cordage Company have voted to increase the capital from \$1,000,000 to \$1,500,000. With this increase, the capital stock will be second in amount of any company devoted strictly to the cordage business.

According to the report of the British Cotton and Wool Dyers' Association the wool dyeing shows a considerable improvement for the past year, but the cotton dyeing trade has been in a very depressed state, though it is now improving.

In some parts of the Southern States, manufacturers are reported already to be paying $\frac{1}{4}$ to $\frac{1}{2}$ c. more for cotton than quoted spot prices. Even then they experience great difficulty in securing suitable grades. Northern mills that have not covered their season's needs will probably have great difficulty in finding desired grades.

A. H. Moore, general merchant, Magog, is embarrassed. He has been a leading trader in the place for the past thirty years, always taking an active part in the promotion of any enterprise calculated to advance the interests of the village, and was prominently interested in the establishing of the Magog Print Works, now operated by the Dominion Cotton Mills Co.

Paper barrels, or seamless cylinders, are now made at Crayford, Kent, England, out of waste paper. They are banded top and bottom with wood, and are very strong. They will be used extensively for the shipment of bananas. The process of manufacture is simplicity itself, and it will afford a use for waste material which is of abundant supply. They cost less than wooden barrels.

A Mr. Freedman and a Mr. Rosenfield, of Detroit, are talking of establishing a knitting mill in Sarnia. They ask no favors, but would not object to exemption from taxation. They are said to be men of good standing, who have made a splendid record in Detroit, starting with a payroll of \$15 a week which in five years they increased to \$1,500. What they want is a building, and Sarnia has two unused churches and a woolen mill, which the town council think might be turned to account.

Cotton half-hose is much in demand in China, and the market is extending. The poorer classes used to go bare-footed and most of them do to-day, but it is becoming more popular to wear half-hose and rubber shoes, which are imported from Germany and England. The best lines of hose are white cotton half-hose, and are sold for one Mexican dollar per dozen or twopence per pair, wholesale. The middle classes wear qualities ranging from four to five dollars per dozen. Lisle half-hose costs seven to eight dollars per dozen. China should be able to take enormous quantities of cotton half-hose, and Canada should command a portion of the trade.

The by-law to bonus the Union Co.'s hat factory at Brockville, though having a majority, failed to receive a sufficient number of votes to pass. An effort is being made to have it submitted again.

A lot of sealskins seized while being smuggled into the United States were sold by auction at Boston, May 26. The sale brought about \$10,300. It is said that the skins were all shipped from Montreal.

Household linen goods are worth five per cent. more than last year and in some cases are worth fifteen per cent. more. Crashes are firm and prices are advancing. The demand for linens is extremely good, and prices at first hands are steadily hardening.

A new firm has been formed in Montreal to carry on silk waist manufacturing. It is formed of I. Mishkin, formerly designer for the New York Silk Waist Co., and H. Margolin, lately the designer for the American Silk Waist Manufacturing Co. High class garments will be a specialty.

The Canadian mills have advanced the prices of underwear from 10 to 12 per cent. The effect will not be immediately felt, as wholesale houses have fair stocks for fall, but after these are exhausted it will be impossible to fill orders at the old prices. Hosiery is also advancing, the finer lines being especially firm.

G. A. Childs, of Montreal, Jas. Muir, sen., Jas. Muir, jr., Peter Johnston and Henry Willis, of Quebec, have been incorporated as the James Muir Co., with a capital of \$40,000, to take over and carry on the business of James Muir & Co., Quebec, as manufacturers of boots, shoes, leather and leather products.

Crawford Brothers have been incorporated to manufacture, buy, sell and deal in clothing and general merchandise and to carry on business as a wholesale and retail merchant. The incorporators are: James Crawford, jr., D. M. Crawford, Isabella Crawford, Helen Crawford, Rosie Crawford and Mary Ann Crawford, all of Toronto. The capital is \$40,000.

The Dominion Cotton Mills Co., in their spring price list for the Magog mills, introduced a new line of coronation goods. The design consists of a check formed of the Royal Standard, Irish Ensign, White Naval Ensign, Union Jack, St. Andrew's Cross and Canadian Ensign. This print is suitable for curtains, cushions and smaller household purposes.

Among the colors which are likely to be popular for fall dress goods are coronation red, which is a blend of magenta and cardinal, and coronation blue, which is something between a cadet blue and a bright navy. What we may term the refinements of color are numerous. A color combining apple green and myrtle will also be fashionable. Nor are plain blacks likely to be neglected.

Canadian woolen goods are in big demand at mills. Black and white and white lines are much in demand. Stocks of these are low, and assortments hard to maintain. Home-spuns, friezes and cheviots are expected to sell largely to United States tourists this year, as they are very popular with these people, and cannot be had on their side of the line in just the same styles as are shown in Canada.

Essex has voted a bonus to a new flax mill. The vote was almost unanimous, only four voting against it. Its terms provide for a site of three acres, \$2,000 in cash towards erecting the mill, free water and exemption from taxes, except school taxes, for a term of ten years. A. H. Raymond, the proprietor, agrees to erect a mill and give employment to 20 men for eight months in the year, the yearly pay roll not to be less than \$9,000. He has secured 300 acres of flax.

Ribbons are again coming into popularity.

Velvets promise to be in excellent demand next fall.

Indications point to an unusual wearing of flannels this year by men.

An advance in oilcloths is anticipated. This is due to the price of raw materials.

Fancy socks are an important feature of the gents' furnishings trade this season.

The trade in cotton shirts is more and more turning to soft bosoms and no cuffs.

Coronation ties and bows are all the rage. There are fully fifty lines in men's goods.

The fashionable woman of to-day is adopting the use of embroidery wherever she can advantageously apply it.

There has been a considerable advance in pearl button values, especially in the higher grades, owing to the scarcity of shells.

The Gibson waist is popular with ladies. Named after its designer it applies more to the cut than the material. The Gibson belt accompanies it.

The Montreal Cotton Company issued recently a revised price list, showing further advances of 5 per cent. on cambrics, foulards and siliesias.

Canadian made dress goods show continued strength owing to their increased demand for fashionable wear. Home-spuns and friezes are in particularly good demand.

McMillan & Company, hide and fur merchants, Minneapolis, have re-opened their branch at Victoria which was closed three years ago. J. Brown is their representative.

Fifteen hundred weavers of rugs went on strike in Philadelphia, and caused more than 3,000 operatives to be idle. The weavers asked that the standard rate be advanced 10 per cent.

The demand on high turn-down collars has begun to grow in the narrower widths, which, when the season for shirt waists and straw hats arrives will, without doubt, be in greater demand than any other collar.

Regarding the wool situation in the United States a Philadelphia firm says that supplies in the seaboard markets are lighter than at any time since 1897, and this, with the greater consumption is regarded as cause for encouragement.

Captain Edward Partington, of Glossop, England, the largest stockholder in the Cushing Sulphite Fibre Co., of St. John, says that a slump in the price of pulp will probably retard the extension of the pulp industry for a time, but will not seriously affect existing mills that are favorably situated.

A company doing business at Paisley, Scotland, claim to control a process whereby flannel can be made unshrinkable, not by excessive milling or shrinking, but by what they term "Keymo" finish, which "locks" the fibres. The claim is made that after undergoing this process the goods cannot be shrunk by any known method of washing.

As a result of the preliminary investigation into the Saxe conspiracy to defraud case at Montreal, Samuel Saxe, who had charge of the retail store and knew nothing of the finances or hypothecation of goods just before the assignment, was acquitted, while Henry Saxe and David Levi were committed to stand trial at the June sitting of the Court of King's Bench. Civil proceedings have also been taken against the firm by the Gault Bros. Co., accompanied by a writ of *capias*, charging them with secreting their goods with intent to defraud their creditors.

An increasing demand is noted for raw silks.

The insolvent stock of G. R. Lyth & Sons, Ottawa, is to be sold by the assignee on June 19th.

Heasley & Co. are applying for incorporation to carry on a gents' furnishings business at Winnipeg.

The Canadian cotton situation is firm and mills are refusing orders from most favored customers at anything under the latest list prices.

Three suits in connection with the Calder estate, involving some \$40,000, came before the court in Hamilton last month. Judgment was reserved.

Wm. Blackley, fancy dry goods manufacturers' agent, who was struck on the head last March by a flying fragment of a coupling pin from a Toronto street car, has brought an action for \$20,000 against the Toronto Railway Co.

Queen Alexandria is delighted with the beauty of the dresses made in India for the coronation fetes, under the supervision of Lady Curzon. The Queen has sent to Lady Curzon an autograph letter expressing her pleasure.

The Dominion Cotton Mills have advanced the price of all gray cottons of their manufacture, including gray drills, $\frac{1}{4}$ cent per yard; cantons, $\frac{1}{2}$ cent, and bags, 50 cents per bale. Ducks have been again advanced. The Merchants Mills have followed with a similar advance on grays and upon cheese cloth. There has also been an advance on their ducks, drills, and bags and on most lines of bleached cottons.

A deputation waited on the Manitoba Government regarding desired amendments to the Factories Act. The deputation asked that the provisions of the act be amended in regard to the time limitation for operatives. It was stated that the hours under the act were too short and the request was made that they be left as they are under the Ontario and Quebec acts.

The property and goods of the Maritime Wrapper Co. were to have been sold at auction by the sheriff on May 12 to satisfy a judgment against the company by the Colonial Bleaching and Printing Co. for \$4,250. On the day of the sale, Mr. Jones, acting for the Dominion Cotton Mills Co., served an order of Judge McLeod postponing the sale, and claiming that the judgment for \$4,250 should be set aside and the affairs of the Maritime Wrapper Co. wound up.

Cataract Power Co., Hamilton, which amalgamated with the Hamilton Electric Light Co., is suing the Parisian Laundry Co. for \$6,000, for electrical power alleged to have been used in excess of its contract. For years the laundry company got its power from the Electric Light Co. Up to 1895 its contract was for 5-horse-power, but in that year a new contract for 10-horse-power was made. Some time ago tests were made by the company, whose representatives allege that from 25 to 30 horse-power was required to operate the machinery in use. There had been no meter.

The choicest glove for men is made from mocha, originally used in the manufacture of shoes only. The colors that will be most popular for this season's wear will be a very dark gray, reindeer and assorted browns, with the first mentioned predominating. Buckskin is still used to a considerable extent, and is finished like mocha. For the heavy lines chrome tanned horse skin is particularly popular. This is good wearing material for a working glove and has replaced colored buckskin for gloves and mitts. Linings are shown in subdued colors, striped and plain, to harmonize with the material of which the glove is made. Silks and imitation silks for linings are becoming popular.

Estimates by the statistician of the Department of Agriculture in the United States, are that the area planted in cotton is about 3-10 of one per cent. less than last year. The condition of the growing crop is considerably better than last year or than the average of ten years.

The steamer Kinshin Marn, which sailed from Vancouver for the Orient on May 31st, in addition to 900 bales of cotton took an unusually large quantity of sheeting for merchants of Shanghai. There were 1,124 bales, or 899,200 yards, manifested at \$47,208.

The overcoat manufacturers' new fall lines show that the demand will run to long, loose garments and the overcoating manufacturer hopes that such will prove well founded. The long, loose ulster, in rough-faced fabrics, will be popular. The question of yardage is of great moment to the mills.

The closing exercises of the class of 1902 of the New Bedford, Mass., Textile School, took place on the 6th inst., when diplomas and certificates were awarded to students in cotton manufacturing, including carding, picking, spinning, weaving, cloth dissection and cotton sampling; also in plain and fancy weaving, loom fixing, designing, etc.

Depression is still affecting England's cotton-spinning industry. For eight weeks 16,000,000 spindles in Lancashire, employing 48,000 people, have been running only four days a week, and it is now proposed by the masters' association that four more Saturdays shall be closed days. The cause of the fewer hours is the overproduction of yarn and the accumulation of stocks in first hands.

Among the Mills

Co-operation is one of the guiding principles of industry to-day. It applies to newspapers as to everything else. Take a share in "The Canadian Journal of Fabrics" by contributing occasionally such items as may come to your knowledge, and receive as dividend an improved paper.

No. 1 mill at Almonte has taken to use soft coal for fuel purposes.

More machinery is to be added to the York cotton mill at St. John, N.B.

A permit has been taken out for a \$5,000 addition to the Hamilton Cotton Mills.

No. 1 woolen mill, Almonte, began operations again on the 20th ult., in all departments, after being closed for a few days.

The Montreal Cotton Company has declared a quarterly dividend of $\frac{2}{4}$ per cent., being at the rate of 9 per cent. per annum, payable 16th June.

Negotiations are in progress, and will in all probability reach a successful conclusion, for the occupation of the cotton mill at Brantford by a new industry.

Dr. H. Adams and William Stewart have purchased the flax mill in Embro, Ont., and have arranged for some hundreds of acres of land for the growing of flax this season.

In addition to the machinery from Durham, W. J. Webster is also removing some of the machinery from the old mill at Port Elmsley to his woolen mill at Edmonton, N.W.T.

Dobson's woolen mill at Cannington was burned May 27. The electric light and power house was also destroyed. The loss is estimated at between \$20,000 and \$30,000, with only a small insurance.

Boyd Caldwell & Co.'s woolen mill at Appleton is again in operation after a week's shut-down for some needed repairs and improvements. They are importing a German napper for this mill.

Owing to the breaking of driving gear and water wheel a few days' shut down was necessary at the Magog Mills last month, and the card and spinning rooms were run nights until repairs were made.

The woolen factory of Methot & Co., at Cape St. Ignace, Que., was totally destroyed by fire on May 19. Loss, \$17,000, as follows: Buildings, \$3,000; machinery, \$8,000; wool, \$3,000; stock, \$3,000, with no insurance.

Mrs. Gilbert Brouillet, a widow, has entered an action for \$5,000 damages from the Dominion Cotton Mills Company on account of the death of her son, who was fatally injured while employed in the company's service.

A strike of the employees of the Rosamond Woolen Company at Almonte, in the card room, the picker room, worsted department and warpers took place last month for an increase in wages. It was readily adjusted.

Jas. McLean, proprietor of the Pembroke Woolen Mills, has put on the road a handsome outfit, which will be used for the purpose of collecting wool and selling the manufactured products of the mill, such as tweeds, blankets, etc.

J. & J. Coates, the thread manufacturers, known the world over, have a factory at Pawtucket, R.I., and had a recent strike there which has been settled by a restoration of the scale of wages under the 60-hour per week schedule.

The Maritime Sulphite Fibre Co.'s mill at Chatham, N.B., is still the subject of litigation, with no immediate prospect of a resumption of operations, though it is said that New York capital is ready to be invested in it when there is a chance to purchase.

At a recent meeting of the shareholders of the Dominion Cotton Co., to confirm the action of the directors in issuing bonds to the amount of about \$3,000,000, it was announced by the president that the prospects of the company had considerably improved during the past few months.

An incipient fire in the fourth story of the Eagle Knitting Mills, Hamilton, on the afternoon of May 29, caused considerable excitement among the female operators. They fled down the fire escapes and climbed out of the windows. Little damage was done. Spontaneous combustion in oily waste was the cause of the fire.

At the last pay day in the Cornwall and York cotton mills at St. John, the pay list was the largest since the mills were reopened, and amounted to \$2,500. Business is good and both mills are running full time. A quantity of new machinery is being imported from England including carding and spinning machines, 18 of which have already been installed.

A new silk mill is to be erected at Ogdensburg, N.Y., by the Ogdensburg Improvement Company for the Oswegatchie Silk Company. The weaving shed will have accommodation for 210 looms and 50 or 60 auxiliary machines. The plans provide for future extension, if found advisable, for if everything is favorable, the mill will be enlarged so as to employ 1,000 girls.

A girl named Nellie Flint met with a serious accident in the Kingston hosiery mill. She was feeding a machine for brushing stockings when her right hand was drawn in. The fingers passed through the rollers without injury but when the thick part of the hand was drawn in the steel brush cut the flesh and muscle off the back of her hand, and in places scraped the bone. The machine had to be broken to extract her hand. She had only resumed work that day, after being laid off for some time.

J. M. Dods, of Alton, Ont., is putting in a new Jas. Smith mule.

Cockroft Bros., who formerly did the spinning for the Dominion Carpet Co. at Sherbrooke, Que., are starting a worsted spinning mill at Canning, near Paris, Ont.

The Mispec pulp mill has so much pulp on hand in consequence of low prices that M. F. Mooney, the manager, had to ask for storage room in some of the city warehouses of St. John for a few weeks or close the mill.

A serious accident occurred recently in the Anchor Knitting Co.'s mill at Almonte, by which Peter Miller lost his right arm. For the purpose of removing some loose wool in the picker he threw off the belt, and thinking the cylinder had ceased revolving, he placed his hand below it to take away the wool, with the result that his hand was caught in the teeth of the cylinder, which was still running with sufficient momentum to break the arm below the elbow and mutilate the flesh. The arm had to be amputated above the elbow. Mr. Miller had been employed in the mill only a few weeks, having recently given up the livery business. His fellow employees promptly raised the sum of \$76 to help him and his family, which was further augmented by subscriptions from the people of Almonte.

What might have been a very disastrous fire broke out at Cornwall May 18, in the mule room on the top floor of the big Canada mill, one of the Canadian Colored Cotton Company's factories. Just how the fire started is not known, as the mill was nearly all closed down for the usual Saturday half-holiday, and no one was in this department at the time. When discovered it had not made much headway, but the heat had started all the sprinklers, and the room in a minute or so was full of black smoke so that no one could enter it. The mill fire brigade had tested their appliances only a few hours before, and being called out, soon had a great number of streams playing into the room. They were assisted by the Cornwall fire brigade, but it was not until the fire burned through the ceiling that its exact location was ascertained, and it was soon extinguished. The flooding of the top story of the mill resulted in each of the floors below experiencing a similar fate. The damage from water amounted to between \$20,000 and \$30,000, which is covered by insurance. The bulk of the loss was on stock in various stages of manufacture, and to the machinery, which had nearly all to be overhauled.

Personal

Dillon Earon is now overseer of carding in the York cotton mills, St. John, N.B.

Frank Hogan, of Almonte, has taken a position in the woolen mill of Watchorn & Co., Merrickville.

Fred Doherty, second hand in the card room at Magog, has resigned and gone to Montmorency as carder.

Stephen Cairns, master carpenter at the Canadian Colored Cotton Company's Mills at Cornwall, died recently after a long illness.

William Clark, president of the Clark Thread Company, is seriously ill at Paisley, Scotland. He retired from active work two years ago.

George Hanley, formerly in the cotton mills at Kingston and Brantford, and latterly at New York mills, has taken a place as slasher tender at Magog.

M. F. Mooney, manager of the St. John Sulphite Pulp Co., of Mispec, N.B., has gone to England for rest and recreation.

S. J. Milligan, accountant for the Dominion Cotton Mills Co. for three years, has taken a position with the Montmorency Cotton Mills Co.

Word has been received of the death in England of John Edward Moss, who was formerly in the woolen business in Montreal as a member of the firm of S. H. & J. Moss.

President Hyde, of Bowdoin College, one of the recognized leaders of the educational world, once worked in a cotton mill and rose to the position of second hand in the card room.

Mr. Hastie, for over thirteen years an employee in the packing department of the Montreal Cotton Company, and a highly respected citizen of Valleyfield, died recently of typhoid fever.

Jonathan Hodgson, senior partner of the wholesale dry goods firm of Hodgson, Sumner & Co., Montreal, has been appointed vice-president of the Merchants' Bank of Canada, to replace the late John Cassils.

John Tetlow, of L. M. Tetlow & Sons, card clothing manufacturers, Cleckheaton, England, is in Canada in the interests of his firm. Robert S. Fraser, Montreal, is Canadian representative of this well known firm.

John Penman, president of the Penman Mfg. Co., Paris, Ont., has given \$6,000 towards the erection of a \$12,000 Y.M.C.A. building in that town, providing the directors can raise the other \$6,000. The building must be opened free from debt. In the event of the Y.M.C.A. being discontinued at any time the building would revert to the subscribers.

Robert Mercer, boss dyer in the Dominion carpet factory at Sherbrooke, Que., took sulphuric acid in mistake for liquor recently, and died from the effects. He had worked in T. A. Code's factory at Perth, in the Cornwall woolen mill, and at Almonte, before going to Sherbrooke, where he had resided only two months. He was about 50 years of age, genial and well informed, and leaves a widow and married daughter, both living in Almonte.

THE WOOL MARKET.

The third series of wool sales opened in London on May 6th. There were a large number of buyers present and competition was very brisk. Prices for Australasian merinos ruled in average $7\frac{1}{2}$ per cent., for fine and medium cross-breeds 10 per cent., and for coarse cross-breeds $7\frac{1}{2}$ to 10 per cent. above the rates current at the close of the March series. A small but representative selection of South African wools was included in the catalogues, and sold at an advance of $7\frac{1}{2}$ per cent. on last sales closing values, the position of the various descriptions comparing with that level as follows: Scoureds, $\frac{3}{4}$ l. to d. per lb. dearer; fleece-washed, $\frac{1}{2}$ d.; grease, $\frac{1}{4}$ d. to $\frac{1}{2}$ d. A further report, dated May 15th, stated that the attendance had increased since the opening and competition was very keen and animated. The advance originally announced had been fully maintained, and, in the case of superior fine greasy and scoured merinos and medium to fine cross-breeds, improved upon, till the average advance for these was quoted 10 to 15 per cent. over last auction. Coarse, rough and shabby cross-breeds, on the other hand, were somewhat irregular of sale, and, at times, hardly supported the previous week's prices. South Africans continue to sell readily at opening rates. The sales were adjourned from the 15th to the 21st. The sale closed May 30th. Towards the close inferior

and faulty stock showed some weakness. Finner crossbreds were scarce and the advance was maintained. Coarse grades were generally 10 per cent. higher. During the series 244,000 bales were catalogued, of which 215,000 bales were sold and 28,000 bales were held over. The purchase made by the continent aggregated 107,000 bales. The arrivals for the fourth series amount to 166,549 bales.

In the Boston market there is no excitement, and no indication of a boom. Representatives of both the larger and smaller mills have been testing the market, in anticipation of the opening of light weight goods, and in a quiet way they have taken some old and new wools. Prices have not altered to any extent. Some holders of old wool have shown a willingness to sell in order to make way for the new crop which is arriving freely. The future of the market will depend on the opening of the light weight season. In other markets there is no very marked activity. Quotations are about as follows: Domestic—Fine unwashed, 17½c., half-blood unwashed, 18½c.; half-blood unwashed, 17½ to 18½c., quarter and three-eighths unwashed, 19 to 20c., scoured, pulled and fleece, 16 to 46c.; pulled, 12 to 29c.; territory, 14 to 17c.; noils and scoured, 14 to 46c.; waste, 9 to 28c.; low waste, 3½ to 7c. Foreign—Carpet, etc., 12½ to 18c.; carpet, 8 to 16c.

At Montreal.—Sales are slow, but firm at last week's quotations. Greasy capes, 16 to 17c.; B.A. pulled wool slightly advanced over last week's quotations; fine merinos range from 51c. to 35c. Cross-bred, 20 to 25c. Canadian fleece quoted 14½ to 15½c., according to the condition and quality; very little old stock Canadian on hand; new coming in slowly.

In Toronto very little new clip wool has been received, though a good deal has come into dealers' hands in the country. The prices paid by the latter is higher than Toronto dealers say they can afford, and above what English quotations will warrant. For fleece in Toronto quotations are 13c. for washed delivered, and 7c. for unwashed. Pulled wools are quiet; supers 14 to 15c., and extras 18 to 19c.

The comparative dullness of Canadian wool is in a measure accounted for by the increasing demand for meats and the raising of sheep for mutton offer great inducements to grazing countries to produce the coarse wool sheep, directly competing with Canadian wool. New Zealand, Australia and South America produce sufficient coarse wool to supply the world, but the over-production of coarse wool is not alone responsible for the present low price of Canadian wool. It is partly due to the high tariff of the United States of 12 cents per pound, which does not lower with the market and is at present 100 per cent., against 50 per cent. in 1897. Canadian wool at that time was worth over 20 cents. There is still a considerable quantity of old fleece wool in Ontario and that must to some extent affect the value of the new clip.

OUR TEXTILE METHODS,

Henry Higson, one of the largest Manchester manufacturers and a member of the committee of Manchester spinners who have just made a tour of the United States and Canadian mills for the purpose of studying the textile methods and machinery employed on this side of the water, says: It must not be imagined we have come here solely for the purpose of getting pointers. Of course we shall keep our eyes open for anything valuable, but it is possible we may be able to give as many pointers as we receive. The visitors expressed appreciation of the excellent machinery in use in this country,

which is much lighter running than that employed in England. On the other hand, the help employed in England is much superior, and it will be many years before operatives in this country will compare with the English in capability.

DOMINION COTTON MILLS CO.

The statement of the Dominion Cotton Mills Co., presented at its annual meeting, recently held, is far from satisfactory, in fact is said to have been the most unsatisfactory in the history of the company. It shows a loss of \$312,000 on the business of the period covered. At the beginning of the year prospects were good, but later raw cottons, which opened high, went down, leaving the company with a large amount on hand purchased at advanced figures. Then competition brought the price of the product below the cost of manufacture. The president, Mr. A. F. Gault, in explanation of the unsatisfactory statement, said that the management had bought cotton at 10 cents, whereas afterwards the same cottons could be had as low as 8½ cents. From this cause alone the loss had been \$200,000. They also needed more protection from the English low priced goods. Under the present tariff the protection amounted to 16%, which is 1½ less than under the old regime. It was decided to separate the selling and manufacturing departments, and the directors were instructed to increase the company's borrowing powers.

—Just as we go to press the thirtieth annual report of the Silk Association of America has reached us. It contains the proceedings of the annual meeting held in March, and other interesting matter to those engaged in the trade.

—The New York Cotton Exchange has decided to boycott the bucket-shops. An amendment to its constitution excludes from membership on the exchange any person or firm who conduct bucket-shop business, or any representative of same.

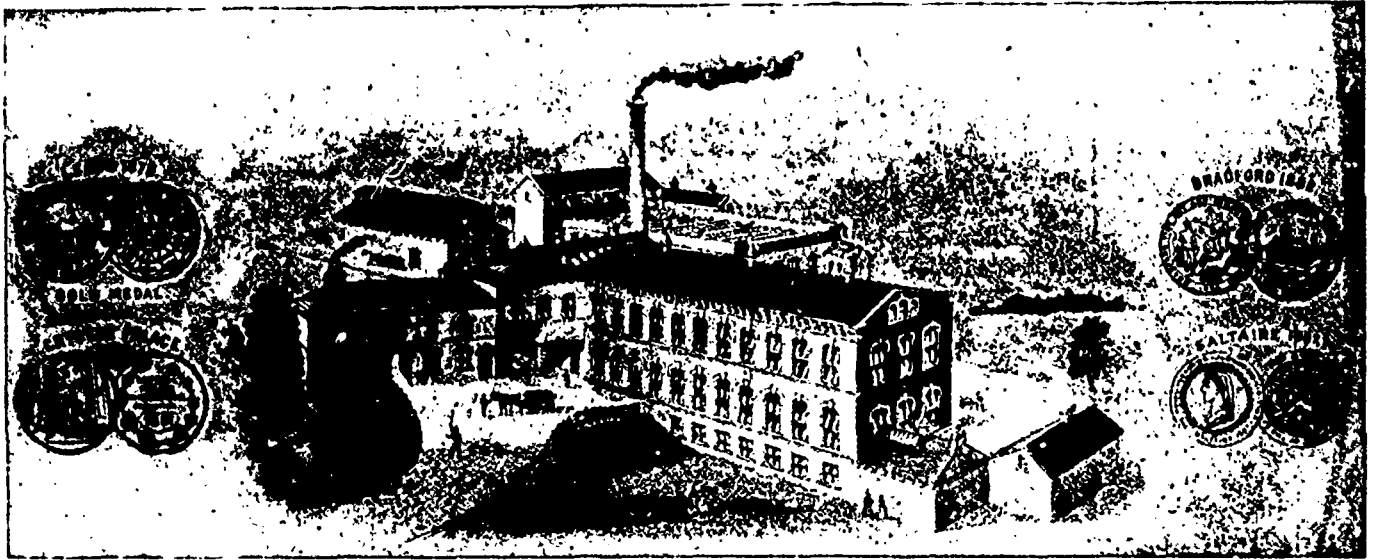
—It has been decided to postpone the textile drapery, etc., exhibition which was being planned for the summer months of this year in the Royal Agricultural Hall, London, and to hold it next year instead. The coronation is the chief cause of the postponement.

—The chief engineer of a Russian cotton firm is expected to arrive in America shortly for the purpose of purchasing spinning and weaving machinery for an extensive plant now under construction in Moscow. The equipment will consist of 500 looms and 40,000 spindles, and will represent an expenditure of \$150,000.

SPINNER.—Young man, aged thirty, single, wants situation as spinner in a woolen mill. Has had experience in operation of a two-set mill. Address H. G., care of Canadian Journal of Fabrics, Toronto.

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- Loom Fixing; a handbook for loom fixers working on plain and fancy worsteds and woolens; containing chapters on shuttles and bobbins, and their management; head motion; putting in warps; filling; adjusting and starting new looms; chain building, etc.; 104 pages, by Albert Ainley\$1 00
- Technology of Textile Design; explains the designing for all kinds of fabrics executed on the harness loom, by E. A. Posselt 5 00
- Structure of Fibers, Yarns and Fabrics, the most important work on the structure of cotton, wool, silk, flax, carding, combing, drawing and spinning, as well as calculations for the manufacture of textile fabrics, by E. A. Posselt 5 00
- Textile Machinery Relating to Weaving, the first work of consequence ever published on the construction of modern power looms, by E. A. Posselt..... 3 00
- The Jacquard Machine Analyzed and Explained; explains the various Jacquard machines in use, the tying up of Jacquard harness, card stamping and lacing, and how to make Jacquard designs, by E. A. Posselt..... 3 00
- Textile Calculations; a complete guide to calculations relating to the construction of all kinds of yarns and fabrics, the analysis of cloth, etc., by E. A. Posselt.. 2 00
- Wool Dyeing; an up-to-date book on the subject, by E. A. Posselt 2 00
- Worrall's Directory of Cotton Spinners, Manufacturers, Dyers, Calico-printers and Bleachers of Lancashire, giving the mills of the British cotton district, with number of looms and spindles, products of the mills, cable addresses, etc\$2 00

- Worrall's Directory of the Textile Trades of Yorkshire, comprising the woollen, worsted, cotton, silk, linen, hemp, carpet, and all other textile mills, giving looms and spindles, and the various lines of goods manufactured, etc\$2 00
- Worrall's Textile Directory of the Manufacturing Districts of Ireland, Scotland, Wales, and the counties of Chester, Derby, Gloucester, Leicester, Nottingham, Worcester, and other centres not included in preceding works, with capacity, products of mills, cable addresses 2 00

CHEMICALS AND DYESTUFFS.

Sulphate of copper is firmer in sympathy with the metal. Bleaching powder is firm and in good demand. Caustic sodas not so steady. Nitrate of soda weaker. Bichromes in better demand, and prussiates steady. Other chemicals show few fluctuations:

| | |
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| Bleaching powder | \$ 2 25 to \$ 2 50 |
| Bicarb. soda | 2 00 to 2 05 |
| Sal. soda | 0 85 to 0 90 |
| Carbolic acid, 1 lb. bottles | 0 40 to 0 50 |
| Caustic soda, 60° | 2 35 to 2 60 |
| Caustic soda, 70° | 2 60 to 2 85 |
| Chlorate of potash | 0 10 to 0 11 |
| Alum | 1 35 to 1 50 |
| Copperas | 0 70 to 0 80 |
| Sulphur flour | 1 70 to 2 00 |
| Sulphur roll | 1 90 to 2 00 |
| Sulphate of copper | 5 50 to 6 00 |
| White sugar of lead | 0 07 to 0 08 |
| Bich. potash | 0 7½ to 0 08 |
| Sumac, Sicily, per ton | 50 00 to 58 00 |
| Soda ash, 48° to 58° | 1 30 to 1 40 |
| Chip logwood | 1 90 to 2 00 |
| Castor oil | 0 08 to 0 09 |
| Cocoonut oil | 0 10 to 0 11 |

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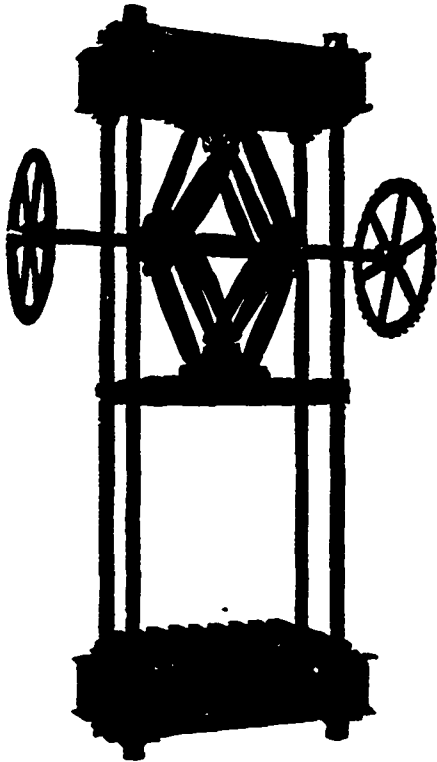
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D. McLean is contemplating the erection of a flax mill at Moose Jaw, in the vicinity of which considerable flax is grown.

From a student of men's clothes come a few hints on summer fashions. The Panama hat is to be the thing and a man who wears a rough straw hat cannot hope for recognition. Colored hat bands are no longer in favor. An ex-

ception in favor of college men wearing colored bands is made. The cut of clothes has not changed much from the styles of last summer. Tan and russet shoes will not be popular because they are too cheap. They may be tolerated in the country, but not in the city. The black boot is the thing, and in style it should be a low quarter or Oxford tie with rounded toes. There is a vague hint that the much neglected cane may again become popular.

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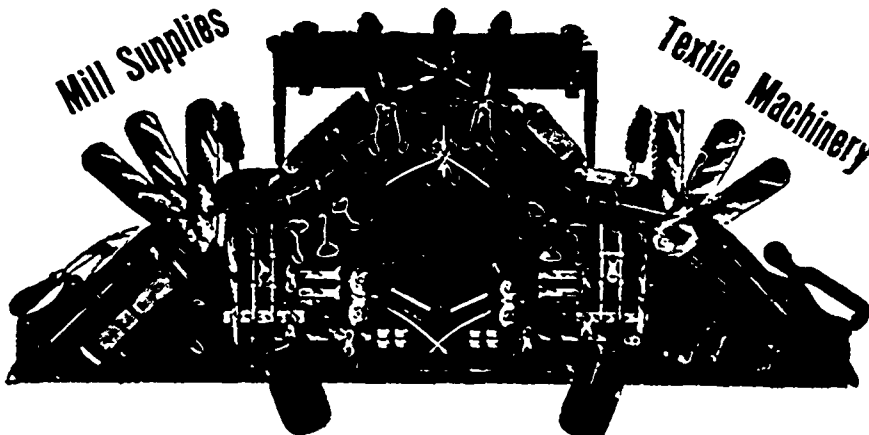
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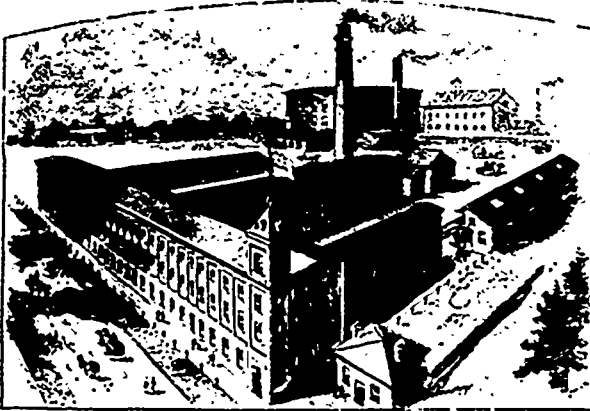
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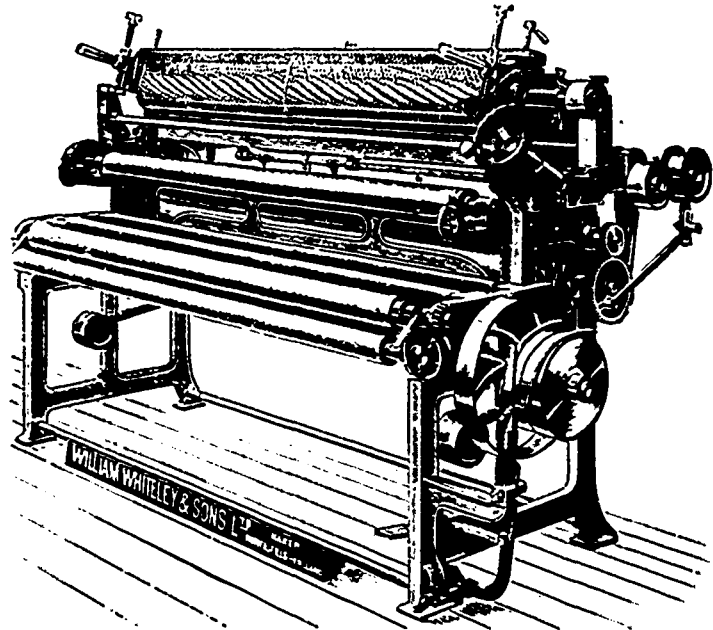
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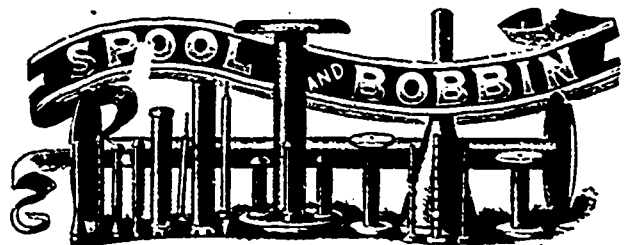
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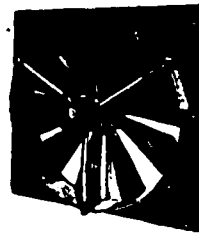
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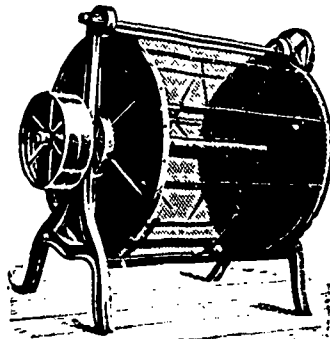
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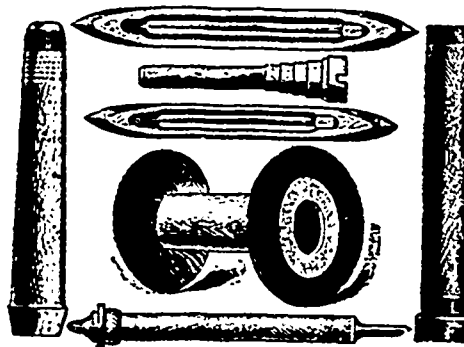
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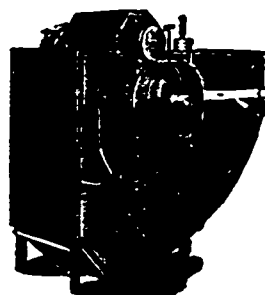
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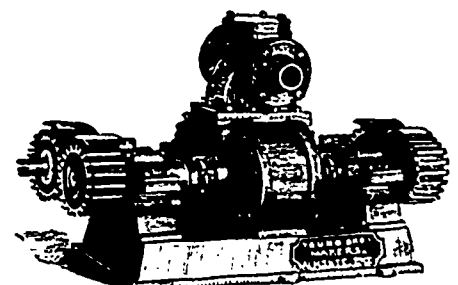


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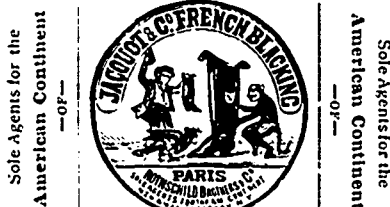
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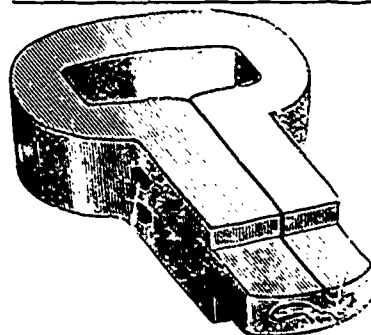
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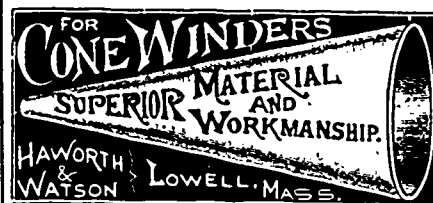
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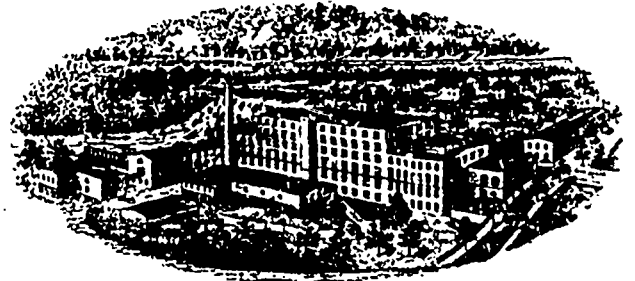
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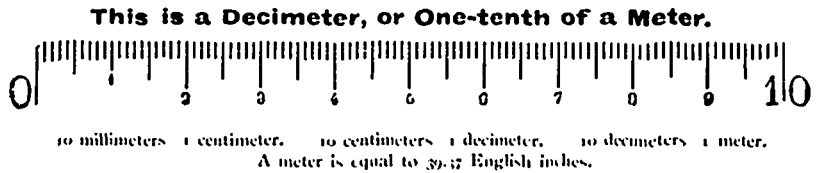
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Opinions of the Press

CHART OF THE METRIC SYSTEM.

The publishers have received many letters complimenting them on the issue of the popular Chart of the Metric System of weights and measures. The following are a few sample opinions:

I have very much pleasure in seeing you step to the aid of those pressing the Metric System to the front. I shall be glad to call the attention of teachers to your chart. The Metric System has for a number of years—since I came into office—been taught in all the schools of the province; and the metric measures are those called for in the returns from all our high schools—dimensions of school rooms, etc. I have much pleasure in sending you a few copies of my brochure on the "Three Great Reforms," in which it will be seen that for a number of years I had been an advocate of the system—even in the conservative city of Toronto. Wishing you much success.—A. H. Mackay, Superintendent of Education, Nova Scotia.

I am in receipt of your favor of the 7th ult., together with a copy of The Canadian Engineer for June, and a specimen of the Chart of the Metric System prepared by your firm. I am very pleased to read your article, but I wish particularly to compliment you on the chart. It is, I believe, the best I have seen for explaining briefly the principles of the Metric System. It will afford my committee much pleasure to hear of this awakening interest in Canada. Australia too is showing a growing disposition to adopt Decimal Coinage and Metric Weights and Measures, and here we keep gaining a step month by month.—E. Johnson, Secretary Decimal Association, London, Eng.

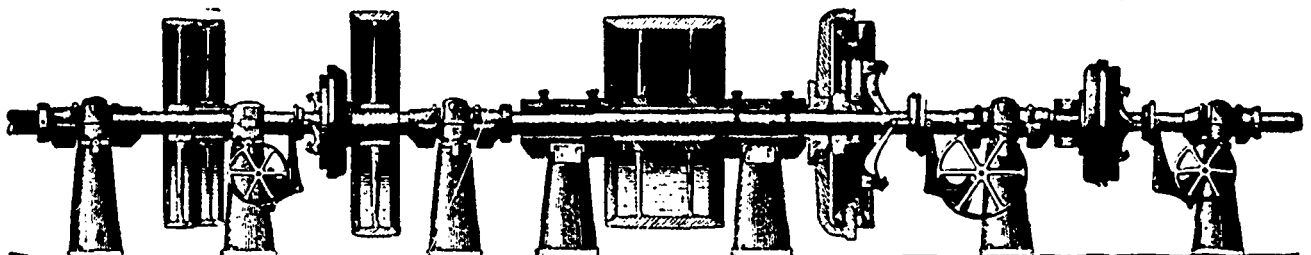
We see that you, too, advocate the general adoption of the Metric System of weights and measures, and we believe that as much as possible everywhere the same means should be employed to accomplish the desired aim. The widest possible distribution of your chart would no doubt be a good step forward. We request you therefore to forward to us two copies

for our office and for the library of the American Society of Dyers.—L. M. Carrier, Philadelphia.

The Monetary Times has a review of your Chart of the Metric System. I notice the price is stated at ten cents per copy, but if you have any other more expensive editions printed, I should be glad to receive a copy or two; as it is my intention to frame a copy (if possible), and present it to the library of the society of which I am an associate, viz., the Incorporated Accountants (Eng). It is high time that British traders and accountants awoke to the necessity of adopting decimal coinage and measures. Enclosed please find \$1 (Canadian), to cover your expenses for as many copies as the remittance will pay for. Trusting you will be able to assist our efforts on this side to foster "intercolonial and home-country" trade, and lessen the tide of German competition, which is a danger to all the English-speaking countries, if Germany gets the upper hand (both politically and socially), and assuring you of the awakening of the British to their surrounding dangers of subsidized continental competition.—E. Woodroffe, 121 Stapleton Hall Road, Stroud Green, London, England.

Please accept my thanks for the Metric System Charts. The adoption of the Metric System must shortly take place, as everything is to be said for it and next to nothing against it. As to the chart, I consider it is a valuable one, and one which every progressive citizen ought to have in his home. The mass of information, which it explains, is handled in such a simple manner that anybody can understand it without becoming in the least confused as to the use of the different terms, which is the only drawback, that I know of, to the Metric System. There is no doubt though that, if the system were adopted, the terms would be abbreviated to suit the rapid business methods this side of the Atlantic. I expect that a number of people, to whom I have shown the chart, will be calling upon you for copies of it ere long, as they have already expressed intentions of doing so.—Dermot McEvoy, Mechanical Engineer.

POWER TRANSMISSION MACHINERY. (COMPLETE OUTFITS.)



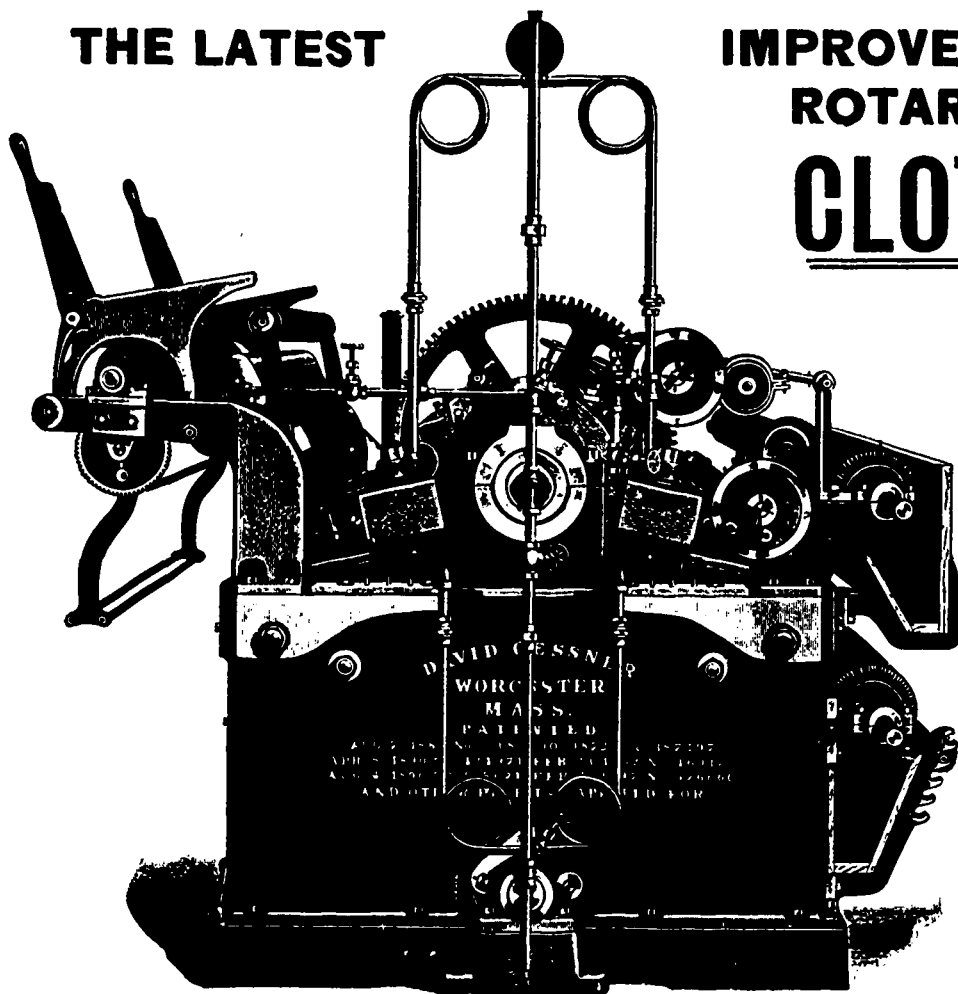
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This is a true story, otherwise it mightn't be so funny. A certain well-known carpet manufacturer of Kensington was very much later than usual in arriving at his home one evening, or rather morning. Be it known to his credit that this is not a common occurrence. Upon reaching his doorstep he made the startling discovery that his key was not in its accustomed place in his pocket. Undaunted, he dinged the doorbell. The second-story window rose, creaking in the still midnight air, and a head was thrust out, a woman's head. "My dear," said he, "I've left my key, please let me in." "Where've you been?" came back the answer. "Well, some of us manufacturers have had a meeting in regard to some striking weavers, and I was unavoidably detained." "All right, then, I'll declare a lock-out," she said. And the window came down with an ominous bang. The upshot of it was that Mr. Carpet Manufacturer was obliged to scramble up the back porch, and enter his own house like a burglar. The subsequent proceedings are not recorded.

—In paying a five per cent. dividend to employees on their wages during the past six months, the King Philip mills, Fall River, Mass., will distribute over \$10,000. In four years the mill's, it is said, have raised wages 33½ per cent. This wage dividend is for the purpose of encouraging a superior quality of work and making the employees interested in the welfare of the concern.

A wagon load of silver and gold coin, amounting to \$137,000, was delivered in Cleveland, O., the other day, as payment for the Muhlhauser woolen mills property. The company was declared bankrupt, the property appraised and a bargain made with W. H. Stecher. He made a cheque, but this was refused, as it was not legal tender. Stecher then went to a bank and got the coin. It was placed before the court and was refused by the creditors, but has become a part of the court record.

—T. Morley, of Leicester, Eng., has secured a patent for an invention to produce on a plain machine a ribbed instep and plain foot. The ribbed leg is first knitted on a ribbed machine, and then run on the plain machine. The rib needles alternate with the cylinder needles in such manner as to produce the required pattern of rib, and are preferably carried in tricked needle holders, which may be cast with the cylinder or which may be separate, in the latter case they have tails held in place by clasp rings. In running on the ribbed legs all the needles are at the same height. The rib needles are now transferred to tricks in a half dial provided with the usual supports and cams, no separate transferring points being then necessary. The heel is now knitted on the cylinder needles, and the foot on both plain and ribbed needles, thus producing a plain sole and ribbed instep. The needle holders may carry two rib needles, if desired.

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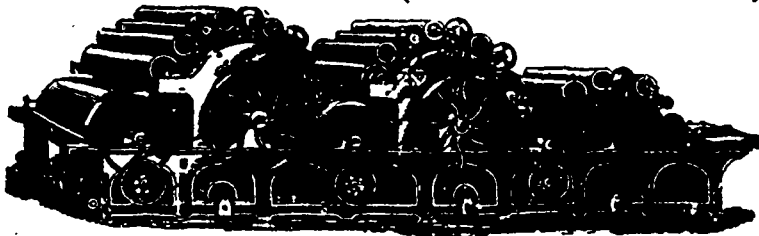
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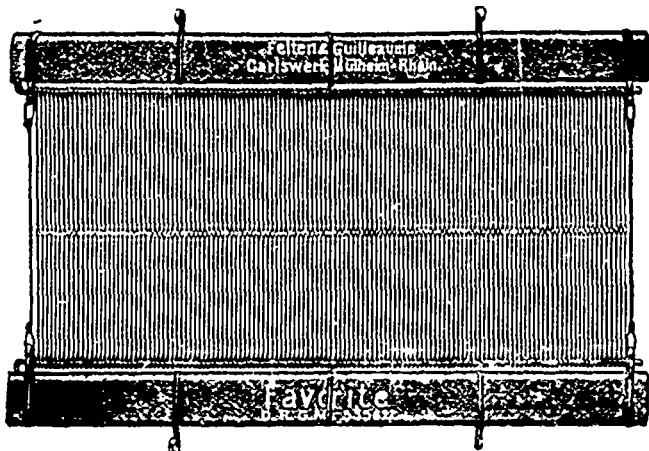
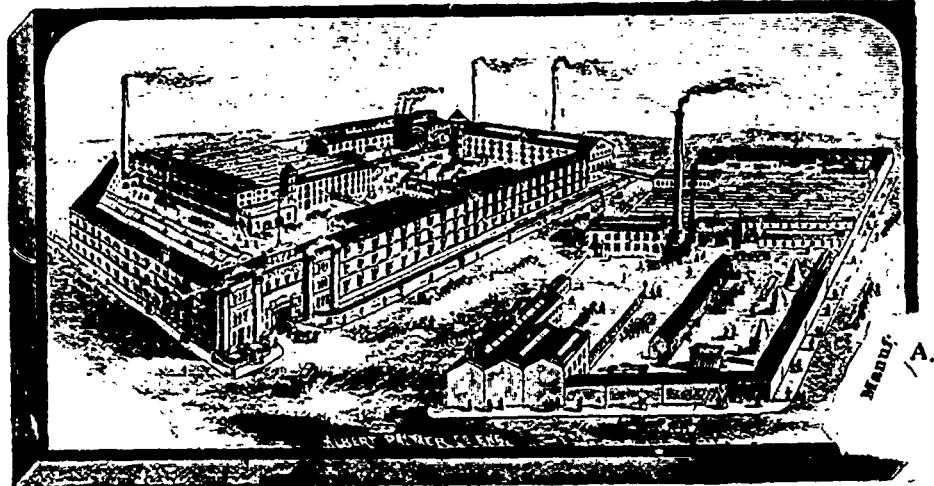
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