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CANADIAN Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. X.

TORONTO, JULY, 1893

No. 7

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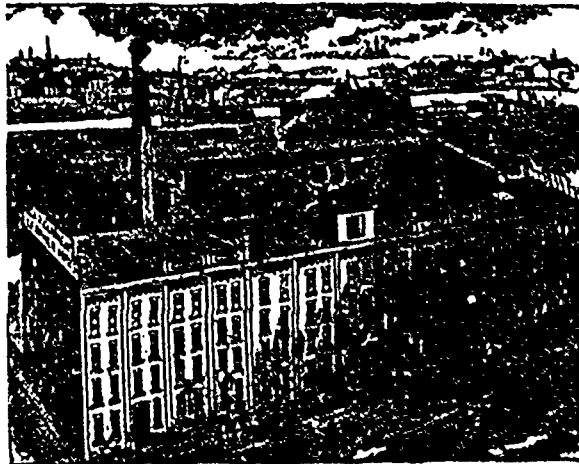
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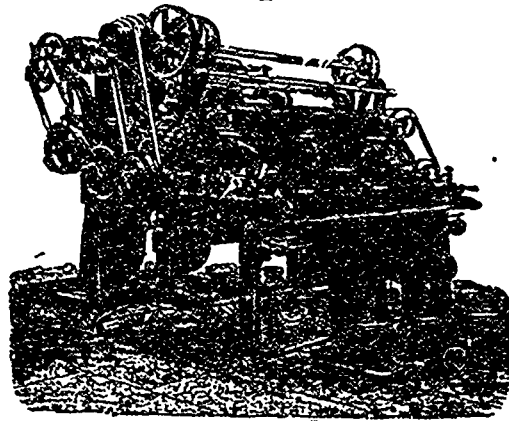
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Vol. X.

TORONTO, JULY, 1893

No. 7

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THE CANADIAN TEXTILE DIRECTORY

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BRITISH TEXTILE EXPORTS TO CANADA.

The following are the sterling values of the exports from Great Britain to Canada in the month of May, and for the five months ending May, compared with last year. There is a marked increase in our takings of cotton goods, and a good increase in jute goods, worsted goods, and carpets. In readymade goods and haberdashery there was a falling off:

	Month of May.		Five Months ended May.	
	1892.	1893.	1892.	1893.
	£	£	£	£
Raw--Wool.....	171	1,138	4,369	6,104
Cotton Piece-Goods	19,218	25,394	198,627	269,388
Jute Piece-Goods	12,561	17,847	49,167	64,295
Linen Piece Goods.....	7,488	9,976	67,483	60,736
Silk Lace.....	3,757	1,975	32,397	26,632
" Articles partly of	1,683	2,924	18,408	25,486
Woolen Fabrics	12,568	9,764	134,558	134,875
Worsted Fabrics	22,406	30,219	232,430	287,924
Carpets	6,236	10,615	106,962	134,948
Apparel and Slops	19,014	18,324	163,300	142,305
Haberdashery.....	20,601	12,698	189,856	127,690

THE WOOL SITUATION.

The forecasts made by THE JOURNAL OF FABRICS during the last three or four months regarding wool prices have been fully borne out by the present position of the market. Had the local dealers bought wool on the low basis we advised, they would have been able to clear out their stocks. As it is, numbers of them have stocks to the amount of thousands of dollars, which they cannot sell and are not likely to sell this season at more than a cent below what they paid the

farmers for it. The farmers have already pretty well cleared out their stocks, which are now largely in the hands of these local dealers, who, failing as a rule to sell at the prices they paid, are holding for a possible rise. The American market, on which the chances of such a rise depend, is not very encouraging. A large New England woolen manufacturing firm, replying to a Canadian dealer, describes the situation there very clearly as follows:—

"I do not think there will be anything done in regard to reducing the tariff on wool at the coming special session of Congress, and we manufacturers are having such a hard time in getting pay for our goods that we do not feel interested in speculating in either Australian, English or Canadian wools in anticipation of the duties being taken off. Our domestic wools are very low and very close to a free trade basis, especially the wools that are of similar blood to your Canadian wools, such as our Kentucky, Indiana and Missouri long lustre combing wools. We are willing to buy these wools at the present market prices and take our chances on free wool, rather than tie up money in speculating in foreign wools."

Prices in the Toronto market are quoted as follows:—Combing, 17 to 18c.; clothing, 19 to 20c.; rejection, 14c.; unwashed, 11c.

CANADA'S TEXTILE DISPLAY AT THE WORLD'S FAIR.

(Special correspondence of the CANADIAN JOURNAL OF FABRICS.)

Nothing more clearly shows the material progress of a country than the variety and finish of its textile fabrics. All other progress is in a measure subsidiary. It is for this reason that the march of civilization has more truly been northward, than, as the words of a modern singer would seem to indicate, westward. This comes from stimulated production arising out of the greater need for warmer fabrics in more northern climes. All ancient commercial countries were as famed for the number of their spinners and weavers as for that of their fighting men. In the thirteenth, fourteenth and fifteenth centuries the low countries of Europe grew in wealth, culture and population; for in their cities was manufactured all the cloth needed for the then known world. It was only when its vast army of weavers was scattered, and part driven across the channel, that England's commercial supremacy began. This supremacy is thus based on the power of the loom.

A glance at the great Chicago Exposition will clearly point out those who wield this power. Although we may be charmed by the wonderful ceramic displays of Austria, China, Japan and other countries; or by the higher flights of art shown by Italy and her apt pupils, we cannot help but see that it is the cloth producing nations of the world which hold commercial sway.

But so many are the omissions and so imperfect are even the fullest displays, that we can only in a limited measure pursue our studies and draw our conclusions. While admiring this grand museum (for museum it is) of the world's workshop, we are led most likely to conclude that the master idea—to teach the relative position of the arts and manufactures of nations—has not always been kept in view. There is often too much display, or, in some instances, too little, that is, utility is sacrificed for the æsthetic, or beauty is altogether neglected. The true mode is, not so much to seek beauty, but to make the useful so beautiful that it cannot fail to attract. No other countries have so well succeeded on this point as France and Germany. Had some master mind been placed over all and selected from each country just such fabrics as should best teach its real manufacturing standing, these ideas would no doubt have found full fruition. But that were impossible, and each country has followed its own bent, and even in some cases, in a *laissez faire* way, permitted each exhibitor to do what seemed right in his own eyes.

This latter course has been pursued by Canada. The exhibits in the Manufacturers' Building are jumbled together without any idea as to order or agreement. Different classes of goods should have been kept together as much as possible and the less slightly relegated to the background, so as not to detract from those which more properly come to the front. There should have been some uniformity in the size and design of the cases. Great lumbering unshapely cases dressed without taste spoil altogether any attempt at careful arrangement made by smaller exhibitors. The space at command is altogether too limited. Canada has not been assigned more than the small and most remote colony of New South Wales with its limited industries. The extent of our territory, our varied and ever extending productions, and our close proximity to the United States should have given us the right to at least four times the present allotment. The exhibits have been sent in haphazard without any regard to their fitness or representative character. As an instance, a small enclosure subdivided into a series of compartments is devoted to showing off the work done in the Indian industrial schools of the North-West. Here are specimens of crude workmanship in tailoring, shoemaking, carpentering, knitting, weaving, and so on—good enough for young Indians but altogether out of place among the higher manufactures of the Dominion. All this, too, while our best factories and our most characteristic production—woolen cloth—has either been crowded out or totally neglected. A master

in the art of exhibitions should have been appointed, and he should have selected only such exhibits as would show our industries to the best advantage and then arranged them as a symmetrical whole. As it is the whole Canadian court has the appearance of some miserably kept supply warehouse.

This is a great disappointment to those who expected to study our relative advancement in textile fabrics, or to those who had expected from the great sacrifices we through protection had made, to see a wonderful display worthy many an older country. The amount of money voted and the great promises held out have also led us into great expectations. But the fact that some one has slumbered or blundered will sooner or later dawn upon the public. Recapitulating, we find too little space secured, no proper selection of exhibits, no general design for cases, no artistic arrangement of exhibits, nor a properly qualified director to oversee the whole.

Let us now take a hasty glance at the different Canadian textile exhibits. In cottons two large cases are shown by Messrs. D. Morrice, Sons & Co., filled with goods from the different factories which that firm represents. In the first place these cases are too large, they stand on legs and they are made of light wood. Goods show to better advantage in smaller cases made to imitate ebony finished in gold. There should be a background calculated to display the colors or quality in the best light. Then there should be a careful separation of the different kinds of goods, smaller cases or subdivisions arranged along a wall, similar to the design followed with such good effect in the French section. In these cases are white, grey, colored and printed cottons, besides different grades of cotton and woolen hosiery and underclothing and braids. When one can study these goods apart from their surroundings, they are found to be equal in quality and finish to anything of similar make. The designs on some of the colored goods are all that could be desired, but the printed goods are hardly up to the mark. The Magog works cannot yet compete with the English or American printing works in clearness of design or beauty of finish. In the hosiery, although not the best that Canada can produce, more care should have been shown in selecting good and slightly colors. We are informed that two Chicago window dressers were paid thirty dollars each for arranging these exhibits. To the general onlooker they do not appear to have earned their money, and for their work this enterprising firm who have made this large exhibit have suffered.

The exhibit from the Montreal Cotton Company at Valleyfield, shown by Messrs. Stevenson, Blackader & Co., is better, in shape and size of the case; but here, too, there is a mixing up of different kinds of goods, and the larger cases close by dwarf the smaller one. The linings manufactured by this company indicate great improvement since it first was started in that line, some grades equaling the best English and American productions.

In woolens, the great textile industry that may

now be classed as indigenous to Canada, there are only two small exhibits. One is shown with Messrs. Stevenson, Blackader & Co.'s cotton exhibit, and the other from the Oxford Mills, in Nova Scotia. Neither of them are representative, although the goods are better displayed than any of our other textile exhibits, and would appear to better advantage were the surroundings more in keeping. But why are the finer makes not shown? Properly exhibited displays from the Rosamond, Paton, Auburn, Mississippi, Cobourg, and the many other mills would have been a credit to Canada, and revealed to our neighbors the fact that when the walls of protection are thrown down, Canada will be able to supply them with better and more durable woolen fabrics than any their own country has produced. The excuse given for not exhibiting is, that it is no use showing goods in a country where the markets are closed; protection has secured to us our own home trade and that is enough.

There is also an exhibit of woolen carpets, but these have not yet reached perfection. Belding, Paul & Co. and the Corticelli Company make two highly creditable silk exhibits; perhaps the best arranged and the most sightly in the court.

The Sanford Clothing Company has another of those cumbrous cases that mar the symmetry of the whole court. It might well be relegated to some back corner where those hideous wooden figures should glare at no one. The clothing appears to be well made, and the prices on the goods enable people to judge of the lower cost of manufacturing in Canada. This marking the prices, as some exhibitors in the English court have done, is a great help to interested visitors.

Besides the woolen factories already mentioned, there are many other familiar friends, as the Merchants' Manufacturing Company, the Kingston Hosiery Company and other knitting mills, conspicuous by their absence.

FIBRE PLANTS.

Chas. Richard Dodge, who has been making a detailed investigation on behalf of the American Government into the leaf fibres of the United States, says that true sisal hemp is always found in situations near the habitations of man, or near places where human habitations have been in former years. On the other hand, where the country is in a state of nature, no plants of the true sisal are seen, although the ground may be literally covered with the false sisal. The true sisal is much affected by changes in the temperature, and this renders its growth for commercial purposes always somewhat risky, that is, unless its cultivation is only carried on in countries where frosts are practically unknown. Mr. Dodge himself considers latitude 27°, which runs across the peninsula of Florida, a fairly safe northern limit for the establishment of plantations. The gathering of the leaves requires some care, the plants in many districts being almost in a state of nature and their lower leaves spreading out very near

the surface of the ground. The handiest implement with which to cut them is found to be a large pruning knife, having a blade about four inches in length. The hook-like point of this knife often makes it possible to sever a leaf with a single cut. As fast as the leaves are cut, they are bound in bundles of about fifty, and thrown into piles for transportation. The leaves are of considerable size, and are on the average from 1½ lb. to 1¾ lb. each in weight, though from selected plants it is quite possible to obtain an average of over two pounds per leaf. The soil does not appear to be of much consequence. The plant is indifferent to moisture, though it appears to grow better in localities not very far from the sea. There are many districts in Florida where it grows luxuriantly, but which are rocky and scrubby and unfit for the cultivation of anything else. One of the largest expenses connected with the establishment of a sisal plantation is the clearing of the ground, and where this is not done properly there will not be much chance of success. It is most important, also, that there shall be no shade. Where there is shade the plants generally fail to mature. The yield of fibre per acre varies in the different species, of which there are several, but it may be taken to be about 1,200 pounds per acre. In Yucatan, according to a report signed by Mr. Stuart, "the yield of fibre per acre is from 1,000 pounds to 1,470 per annum. The number of plants usually set out in an acre is 650, giving an average of thirty-three leaves from each plant, and from fifty to seventy pounds of clean fibre to the 1,000 leaves. Thus the return would be 1,287 pounds of clean fibre per annum. The planters never speak doubtfully of their returns, as experience shows them that their crops can be relied on with almost complete certainty." A considerable waste of fibre is caused by the machines used for separating it. There are several kinds of machinery used for this purpose. Plantations cleaning less than 75,000 leaves per day use the Raspador and Barraclough machines, while those cleaning 80,000 or more leaves, use larger and more complicated machines, such as the Prieto, Death, Villamore, etc.

Reference has been made above to the false sisal plant, which is so often confounded with the true sisal. This confusion of the two appears rather strange, for the men who accompanied Mr. Dodge on his cruise of investigation, were often able, with the aid of the ship's glass, to distinguish between the two kinds of plants growing on the shore long before they landed. The true sisal throws up its mass of leaves from the surface of the ground, though sometimes with a very short footstalk. On the other hand, the false sisal's footstalk is of a considerable length, sometimes six feet or more, and from the top of this the leaves radiate from a common centre. The latter also is of a much brighter green color, and its spines, which are re-curved, are extremely sharp. Another difference between the two is the manner in which the leaves spread. In the *Agave decipiens* (false sisal), the leaves spread out, the lower series usually bending almost to the ground and

the leaves themselves being short stocks, and with turned-up edges. The *Agave sisalana*, on the contrary, shoots up its leaves at a lesser angle, and they are stiffer and more erect. In the fibres themselves, the distinction is even more marked, that of the *decepticus* being whiter, softer and finer, but of lower quality—and less strength. The work of cutting the leaves of the false sisal is extremely difficult; the spines are so sharp and strong that the workers become covered with wounds and torn clothing. This species will grow in the shade and among the densest of undergrowth. It is often seen completely covered in with vegetation of the most luxuriant nature.

Besides the sisals there are many species of agaves from which valuable fibre may be obtained. One is the Maguay (*Agave Americana*) which has leaves from 3 to 6 feet in length, thick and fleshy, and formed of hard, pulpy matter, intermixed with the fibres. In color they are very light green, and are covered with a whitish bloom, and armed along the edges and at the tips with spines. In America it is known as the century plant or American aloe, and elsewhere as Corata, Pita, or Cutthalernar. The Indians of Mexico and Arizona use it for saddlecloths and cordage. In South America it has been used for large cables. The "Pita" is the name given in many countries to the fibre. This is the case in Spain and Sicily, where it is turned into mats and cordage. In Mexico it is made into paper, which is said to be of a very good quality, being white, clear and of fine texture. An authority upon this species, writing from New South Wales, says, "it produces such an excellent fibre of such strong and durable quality that I may recommend it for cultivation for its fibre alone, particularly as it will grow in almost any situation, and so freely that under favorable circumstances it will flower in from seven to eight years." The celebrated "Fayal lace" possesses an allied form known as the bitter aloe. In its composition India pita has been found wonderfully strong and admirably suited for ropes and cables. In an experiment comparing it with Russian hemp, the latter broke with 160 pounds weight, whereas the pita required 270 pounds to break it. The fibre is composed of large filaments, white, brilliant, stiff, and light in weight. Viewed under a microscope, the fibres are short, with slender walls and very large central cavity. They are swollen in the middle and terminate in a point, the most frequent form of which is that of a spatula blade. One marked peculiarity is its elasticity, "which is so great, with its fineness," says Mr. Dodge, "that I believe it could be used with advantage in the manufacture of hawsers for towing moderately large vessels." Sometimes as many as 6,000 plants may be found on an acre. The average number of leaves is forty, each measuring one foot wide by eight or ten feet long.

Another species is the Lechuguilla (*Agave Heterocantha*), from which the Ixtle or tampico fibre of commerce is obtained, so largely used among brush makers. This and several closely allied species have a coarse

and somewhat rigid fibre. It is found chiefly in Mexico, where it grows wild along the desolate tablelands near Tula, Yanmare and other places. The leaves are described as being elongated, thick, and fleshy, though tapering, and are armed along the sides with a row of hooked spines or thorns, the edges being thickened into a kind of brown epidermis to which the spines are attached, and which can easily be stripped off with the thorns intact. It is said to give 25 per cent. of fibre to the weight of leaf.

(Concluded in next issue.)

WOOL AND MOISTURE

The *Industrial Record* describes some interesting experiments on the hygroscopic conditions of wool. Six samples were put into a large vessel with a tightly closed cover. It was one-third filled with water, above which there was a frame upon which were spread out the samples. The whole arrangement was placed in a hanging cupboard, two yards above the floor, near a stove, which was heated every day. The results were as follows:—

Sample 1.—Unwashed clipped wool attained its highest percentage of moisture on the eleventh day, with 40.26 per cent.

Sample 2.—Washed wool attained its highest percentage of moisture on the eighth day, with 37.94 per cent.

Sample 3.—Gray cloth (containing glue and olive oil) attained its highest percentage on the fourteenth day, with 36.24 per cent.

Sample 4.—Washed gray cloth attained its highest percentage on the eighth day, with 38.21 per cent.

Sample 5.—Heavy cloth attained its highest percentage of moisture on the eighth day, with 38 per cent.

Sample 6.—Cotton attained its highest percentage of moisture on the twentieth day, with 40.02 per cent.

Samples 2, 3, 4 and 5 were perfectly fresh and normal in feel and smell on the twenty-eighth day. The cotton was also, except that it was a little clammy. But Sample 1 (raw clipped wool) felt very moist and had a mouldy smell. The caution to wool raisers, therefore, is a well-founded one, not to try and increase the weight of their fresh wool by adding water. It will perhaps ruin the entire lot. From the above results it will be seen that the greater the accommodation for the absorbed fluid, the greater is the absorption, and *vice versa*, the smaller the surfaces and receptacles, the less capacity they possess for absorbing moisture. From this it follows, that the finer the wool the more moisture it can accommodate, because there are more single fibres, and consequently a larger number of absorbing surfaces. And the coarser the wool the fewer single fibres there will be, taking weight for weight, and the less will be its absorbing surface.

Oxygen, as a substitute for chlorine in bleaching operations, is being much discussed.

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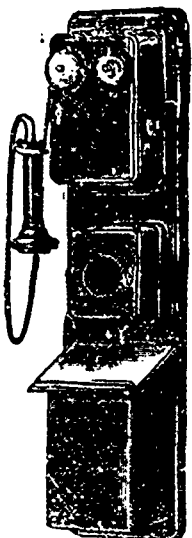
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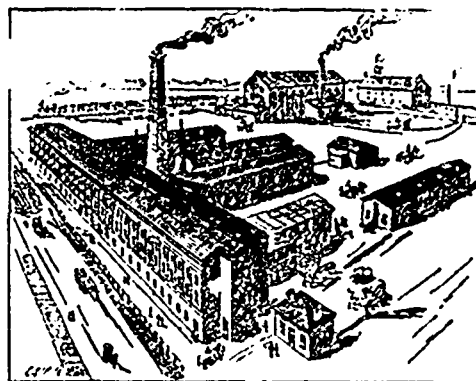


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The essential points of a good roller cloth, says the *Textile Mercury*, are firmness, equality and thickness and quality of wool. Only the finest and soundest wool ought to be used. It must also possess milling qualities, that is, its fibres should shrink and adhere together firmly, so that the cloth when made has the appearance of having been felted together, no threads being perceptible to the eye. To make a level cloth the yarns used must be very carefully carded and spun, all vegetable fibre being removed from the wool in the process of carding. The weaving must also be performed very carefully, the weight and levelness of the finished cloth depending upon the operation. The softness, hardness and apparent thickness of the cloth are accounted for by the pressing, which is accomplished by means of hydraulic presses with heated plates or continuous heated hydraulic rotary presses. If,

therefore, more pressure is given to one piece than to another, there will result a difference in thickness. The only way to prevent this is to ascertain the exact pressure registered on the presses and to adhere carefully to one standard. A roller cloth to be reliable and satisfactory should be firm, yet pliable. The color is not of vital importance, though perhaps the best is usually of a creamy shade. An unbleached cloth is best, as it wears better.

EXPERIMENTS show that while the oxide, sulphide and sulphate of copper all tend to increase the resistance of coloring matters to the action of light, the ferrocyanide has no such effect. It is probable that copper exercises its protective action on coloring matters by means of re-oxidisation. Oxide of tin and chloride of vanadium have the same effect, though in a less marked form.

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TO THE WHOLESALE TRADE

THE MULTIPHASE SYSTEM OF ELECTRICITY.

The multiphase system, or the generation of electricity by wave motion, marks a new departure in electrical science. In a paper before the New England Cotton Manufacturers' Association, C. J. H. Woodbury describes the system as follows, and gives some account of the application of electricity to the textile trades.

In the dynamo the electricity is generated in the armature in currents passing to and fro, first in one direction and then in the other, forming what is known as the alternating current. The function of the commutator and the brushes upon a dynamo is merely to convert this alternating current into a continuous current. There is no reason why an alternating current is not just as well suited for electric lighting as a continuous current.

But many years ago, when Sir Frederick Siemens, one of the pioneers in the application of electricity, made a dynamo for arc lighting, he required a continuous current to operate the regulator in the upper part of his arc lamps, and instead of trying to invent a form of regulator to feed the carbons which could be operated by an alternating current, he placed the commutator and brushes on the dynamo, producing a continuous current, and in that manner set for years the practice of electric lighting by continuous currents, although in the meantime there have been numerous devices for regulating the carbon-feeding mechanism of arc lamps by alternating currents.

Electricians have of late years begun at the place from which they were diverted a number of years ago, to investigate and apply alternating currents for lighting and power purposes. These investigations have opened up a wealth of electrical principles and applications, of which the world has but just seen the beginning.

One of these new forms of alternating currents is what is called the multiphase current, of which the electricity is generated in waves, one wave following another before the first wave has been completed, using currents of electricity which will affect other apparatus by induction through space and without the intervention of metallic conductors, being as a matter of principle comparable to the results produced upon a telephone system when it receives by induction the noise of electric motors or the click of the message transmitted along telegraph wires in juxtaposition to the telephone wires, or even the voice which is transmitted over other telephone wires.

In its application to these multiphase motors, I would say that the method of construction differs entirely from the motors hitherto in use. Instead of using commutator and brushes to transfer electricity from one part of the armature to the other, as has been already alluded to in the continuous current motors, the magnetism revolves through the magnet, causing the armature to revolve in exact synchronism with it.

For purposes of comparison the general arrange-

ment of these motors may be compared to that of a hat rim, as representing the circular magnet, and a ball of twine stands for the armature on the inside, which is a suitably-wound collection of insulated wires joined together at the ends and not electrically connected to anything else. Electric wires from the generators are wound upon this circular magnet, and the wave-like currents which the wires carry produce similar magnetization travelling around and around through the magnet; and by this inductive effect to which I made allusion, electric currents are produced in the wires of the armature, so that it will be susceptible to the attraction of the magnet. The wires in the armature revolve, following the attraction of the magnetism circulating in the magnet.

Dynamos similar in principle produce the waves of current which supply this motor, but for economy in transmission, both as regards the small amount of wire and the small loss by resistance, these currents can be generated at a high electrical pressure, which is increased by transformers for the main wires, and then at the motors reduced to a very low pressure by transformers, which answer the same purpose as the reducing valve for steam, except that they can act in either direction to increase or reduce the electrical pressure.

The other advantages of these multiphase motors are that being without any brushes or commutators, there is no sparking. There is hardly a possibility of a burned armature. The motor being operated by a succession of wave currents, will keep at a speed comparable to that of the generator as long as it can keep up. If overloaded, it will not run slower, but will stop. Under similar conditions of overloading, a continuous current motor will burn its armature, unless defended by its safety fuses. Its regulation is very close, the variability of some tests being only one and one half per cent. between no load and its full load. Such a motor will start under its full load or even a greater.

In connection with such a system of electrical transmission of power, it is feasible to use a portion of the current for incandescent lighting without any interference. These motors can be stopped and started without the exercise of any particular skill, and can be inclosed for protection against dust and dirt in a case which merely allows for the protrusion of the shafting carrying the driving pulley.

It is this type of electrical apparatus which will be used in transmitting the power from Sewall's Falls on the Merrimac River, about four miles north of Concord, for power and lighting throughout the city of Concord, and also to any establishments which may be built on the large tract of land in the vicinity owned by that company. There is a capacity of 5,000 horse-power at this point, and it is expected that 2,300 horse-power will be distributed during the early summer.

The uses of electric motors in connection with the transmission of power are becoming more widely extended, one of the best examples in this vicinity being that of the Page Belting Company, at Concord, N.H., where the power is distributed throughout their

extensive new establishment by means of electric motors, for which the electricity is generated in the original works of this company. Mr. George F. Page, the president, informs me that the whole cost of the electrical apparatus was 20 per cent. less than would have been required for a steam plant applied in the usual manner. There is a further economy, by reason of the elimination of much of the shafting required in connection with the transmission of power from numerous motors in comparison with the shafting and pulleys which would have been required to distribute the power from a steam engine on the premises. The largest shafting now in these works is $2\frac{1}{2}$ inches in diameter; but if an engine had been used the main shafting would necessarily have been at least 5 inches in diameter, and the length of shafting many times greater than at present, the difference in this respect being greater than in cotton manufacturing on account of the greater distance between the various machines.

In addition to safety and convenience, it may be interesting to note that this method of transmission has been carried out in such a way that there is not a single open hole through the floor for any purpose, the openings for the steam pipes being packed around with asbestos.

I have been informed that at a new cotton-mill in South Carolina the power will be transmitted by wire to a motor driving the line shafting in each room.

One of the latest applications of the electrical transmission of power is in the Croker-Wheeler Electric Works, at Ampere, N. J., where a pair of copper rods answer as line shafting, and from these the connections are made at will to motors operating machine tools in various parts of the establishment. In some instances it has been preferable to drive short lines of shafting by motors, and to belt down in the usual way. In the former case, the motor is attached directly to the machine, as for example, under the headstock of a lathe, and in place of using the cone pulleys for variation in speed, or the clutch for reversing the direction of the motion, the lathe is controlled by the operator in a manner comparable to the usual way in which the motormen of a street car controls the speed or direction of the car; and from these same wires at every machine an incandescent lamp suitably protected by wire guards is used whenever artificial light is necessary, and such a light can be placed on the carriage, or wherever it may be desirable to apply the light for the purpose of the work in hand.

A recent application of electric motors has given practical results of the greatest importance in operating cloth printing machines at the Dunnell Print Works in Pawtucket. At the time of their reconstruction after their late fire, about two years ago, Mr. W. W. Dunnell, wishing that the new print works should contain all of the improvements possible in the business, considered favorably the suggestion that electric motors should be tried for the operation of printing machines. A motor was applied to a seven-roll print-

ing machine in order to give the matter a thorough trial.

This work was undertaken in spite of the skepticism of his associates, and the opposition of the men engaged in the printing-room. There were some difficulties at first, primarily owing to the fact that the electricians were not calico printers, as well as that the printers were not electricians. It required a little time for each to learn of the other; but since the several modifications in the arrangement for this work were introduced, the operation of the system has been not merely satisfactory, but has given results in advance of any other method of driving a printing machine.

The whole tendency of later invention in regard to electric motors appears to be in the successful use of large motors.

The Baltimore and Ohio Railroad are to use three 120-ton electric locomotives for carrying the trains in the tunnels under the city of Baltimore, being able in that manner to perform the same service in traction as with the largest locomotives, and without producing any smoke to interfere with the air in the tunnel. In connection with these locomotives is a supplementary motor, which produces an air pressure for the air brakes, and also for the whistle.

The advantages of electrical transmission are that each room may be entirely independent of other rooms, and any motor is always ready for service as long as the machinery from which it derives its electricity is in operation.

The method given by the Philadelphia *Textile Record* for calculating the loss of twist through the varying diameters of the bobbins as they fill, is as follows: "The layers of yarn deposited, one up and one down, in the motion of the ring rail, must be measured and multiplied by the number of turns, per inch, and the number of coils in the second layer of yarn must be counted and divided into total number of turns. Thus, if the up motion of the ring rail deposits 72 inches of 20's yarn with 16.75 calculated turns per inch, then $72 \times 16.75 = 1206 \div 20 = 1.8$ per cent. of loss; and if the down motion deposits 178 inches of yarn with 16.75 calculated turns, then $178 \times 16.75 = 2981.5 \div 46$ coils = 1.6 per cent., or an average for one up and one down motion of the ring rail of 1.7 per cent. Of course, the finer the yarn spun, the less percentage of loss in twist, as the rings are smaller and the difference between the diameter of empty and full bobbins is less, and the number of turns per inch is more.

The Hudson Bay Company have taken out a suit against Judges Chauveau and Joannette, of Quebec, for \$18,000, the value of the furs seized by the latter on the ground of their having been obtained out of season. The Government can safely pounce upon the goods of an ordinary firm, but when they come to interfere with a company who, until recently, were the unquestioned rulers of half of British America, the case is somewhat different.

HOLLIS SHOREY.

Few men connected with the textile trades of Canada succeeded better in business than Hollis Shorey, head of the widely known clothing firm of H. Shorey & Co., Montreal, whose death we are called on to chronicle this month; while none have attained their success more honorably than he. Indeed, it was the honest improvement of old methods, united to industry and perseverance, which ultimately gave him the position he gained, of being the largest manufacturer of clothing in the Dominion.

At the time when Hollis Shorey conceived his idea of a great clothing factory, Canadians had to depend for their garments either upon what were imported from England, or upon what were made by a few poor-class houses in Montreal. These houses were known

by no means an easy task, especially as people used to have such strong objections to offer to ready-made clothing. Then the only hands available were the same as those employed by the smaller houses, and they had to be taught their trade from the beginning in order to be of much use, and then after they had been taught, there was a difficulty in retaining them as great inducements were held out by other houses to work people who had been drilled by this firm. However, it was not long before the public were awakened to the fact that they could get well-fitting suits ready-made, and very soon the houses engaged in the "slop" trade found their occupation gradually slipping from them. Before the house of H. Shorey & Co. had been in existence five years, eight houses engaged in the Montreal wholesale clothing trade had either failed or retired from business, owing to the fact



HOLLIS SHOREY

by the name of "sloppers"; and certainly, judging from the quality of the goods turned out by them, the epithet was one fully deserved. In 1865, Mr. Shorey, after a good deal of consideration, came to the conclusion that it was quite possible for a class of clothing equal to the best, and certainly superior to what was made by the majority of tailors, to be manufactured in Canada and disposed of at a fair profit. Nothing is done so well that it cannot be improved upon, he used to say, and always bearing this motto in mind, he put his idea into execution, and succeeded in placing the clothing trade in a higher position than it had ever occupied before. At first it was

that they were losing money through not being able to hold their trade and sell slop clothing, and not having sufficient enterprise to advance with the times. Such houses as did continue were forced to follow in the wake of the pioneers of well-made and well-fitting clothing. The clothing business has in a wonderfully short time developed from a comparatively insignificant trade to one of the most important industries in Canada. It now gives employment to thousands of people and keeps hundreds of thousands of dollars annually in this country which otherwise would go to England or the United States. Montreal being in the centre of the cheap labor market, is particularly well adapted for a

manufacturing business of this kind. The house founded by Hollis Shorey has alone been the means of feeding thousands upon thousands of people, mostly French-Canadians living in Montreal and the neighboring small villages, though some of the cheaper grades of goods have been manufactured for them as far away as Quebec. In this class of labor the firm employ from 1,200 to 1,500 hands.

Hollis Shorey was born at Barnston, Que., on December 2nd, 1823. His father was Samuel E. Shorey, of English descent, and a native of the United States, and his mother was Fanny Jones, of Three Rivers. The former came to Canada when eight years of age. Mr. Shorey was educated at Hatley Academy. At sixteen he began the world as an apprentice, but when twenty years of age his father died, and the responsibility of a large family of brothers and sisters, eight in all, fell entirely upon his shoulders. He began business for himself in Barnston, where he remained for over twenty years. He came to Montreal in 1861, and was at first connected with the firm of Wm. Stephen & Co., when the present Lord Mount Stephen was one of the partners. For six years he was a very successful commercial traveller. In 1865 he began business again for himself, and laid the foundation of the present establishment. After two years he took as partner his son-in-law, E. A. Small, and after a partnership of eighteen years it was dissolved. Mr. Shorey then associated with him his two sons, S. O. and C. L. Shorey, who now attend to the duties of the establishment. He was for over eighteen years a member of the Council of the Board of Trade, and was chairman of the Citizens' Committee during the smallpox epidemic. He was elected alderman for St. Antoine Ward in 1890, and has been acting mayor during his incumbency. He was president of the Montreal Improvement Association, vice-president of the Sanitary Association, and also a member of the Civic Board of Health. He was also a governor of the General Hospital and the Women's Hospital, a director of the Dispensary, and a director of the Society for the Prevention of Cruelty to Animals. He was made a justice of the peace in 1887. In 1844 Mr. Shorey was married to Miss Fanny Wheeler, of Barnston, who died in 1850. In 1851 he was married to Miss Clara Gilson, of Vermont, U.S. His family consists of four children, two sons and two daughters, all married.

Mr. Shorey was what might be called a good old-fashioned man, unpretentious, sincere, and possessed of a happy combination of frankness and business shrewdness. He had a good fund of original anecdotes and a quaint humor all his own, which made his conversation agreeable. Mr. Shorey had withal a high sense of his duties as a citizen, as may be gathered from the offices he filled, and during the rebellion of 1837 served as a volunteer, rendering, also, some risky service afterwards in surprising a gang of counterfeiters on the borders.

SEVEN YEARS' APPRENTICESHIP IN A WOOLEN MILL.

A DETAILED ACCOUNT OF THE BUSINESS FROM THE FLEECE TO THE FINISHED FABRIC, BY GEO. DAMON RICE, JR.

[Author of "Treatise on Woolen Textile Manufacture," "Worsted Manufacture," "Designing Woolen and Worsted Goods," "From Apprentice to Superintendent," "The Structure of Textile Fibres," "An Essay on Wool Carding and Spinning," "An Essay on Finishing Woolen and Worsted Textiles," etc.]

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ARTICLE 14.

In the Mass. Institute of Technology.

My first work in this institution consisted in mixing colors. Ordinary water-colors were used, and the object of mixing them was for the purpose of instructing the student in the art of originating new shades and tints. No compensation was received by the student of course, and he was under the expense of purchasing the paints, brushes and paper. These usually amounted to \$12 for the year. No tuition was charged, and as I managed to secure board for \$3 per week I felt confident in being able to get through the year on the few hundred dollars which I had saved while employed in the mill at Lowell. I had learned the art of "picking out" and analyzing a woven fabric before coming to the institute, and also the method of constructing the principal weaves, consequently I was fitted to enter an advanced division, which I did immediately after I became familiar with the process of color mixing. The advanced division were working on the principles of combining weaves when I joined them, and my first lesson consisted in combining two plain weaves one above the other. This method of making a double or two-ply cloth is explained by the following diagrams:—



THE FACE.

The face weave is represented by the above sketch, and the back, which is substantially the same, by the next.



THE BACK.

The object is to unite the two together in such way that one weave will form a distinct fabric above the other. Hence the first move is to adjust the face weave in its respective place on the new design as shown in the plan.



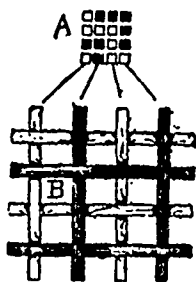
PLAN OF THE FACE AND BACK COMBINED.

The black squares indicate the face and are also designated by the letters (F). Then the back weave, represented by the shaded squares, is marked in its respective place in the same design and designated by the letters (B). Thus the two weaves are now formed to the one design, but they would not produce a weave as they are. The face warp threads must be arranged to raise when the back picks enter, which is accomplished by indicating these threads as raisers at the time these picks are introduced.



THE DESIGN COMPLETED.

When this is done the design appears as above with the exception of the "cross." If the weave was produced in this form without further addition a perfect double-cloth in the form of a bag would be produced, as shown in the next illustration.



DOUBLE-CLOTH.

(A) represents the weave which is slightly modified, yet precisely the same in its principle as that of the one just designed. (B) is the effect produced with this weave. A careful examination of the arrangement will readily show that the dark lines are the face, and entirely separate from the white lines which are the back. Therefore the two independent cloths are shown and may be woven in this way on the loom.

It is not practical, however, to make cloth of this nature unless it is desired to manufacture bags, or articles of a similar character, so a stitching thread is applied for the purpose of uniting the two cloths together.

APPLYING THE STITCH.

The mode of applying the stitch is considered one of the most difficult operations relating to the design of this class of goods, consequently special consideration is called for on this point. The back threads, usually the warp, are generally used for uniting the two weaves into one, in which case it is necessary for the stitching thread to rise at intervals where the pure warp thread, on either side, rises at the same time. Imperfect stitching invariably results in destroying the general characteristics of any weave, notwithstanding its good qualities otherwise. The stitch applied, which in this case consists of a "cross," and the weave is completed and ready for the loom.

FANCY EFFECTS.

A large range of fancy figured effects are obtained through the agency of diversifying the colors of the yarns employed in the various weaves. This is illustrated by the great variety of figures derived by introducing colored yarns into the manufacture of "repp" cloth for ladies' dress goods. In these goods almost the whole variation is the result of diversifying the character of the yarns. Again, a simple check effect may be derived with the plain weave by a systematic arrangement of the colors in the yarns. Three colors

are usually employed in patterns of this class, and arranged in the following order :

2	threads of black yarn,
2	" " " white "
2	" " " brown "
2	" " " white "
2	" " " brown "

This combination produces what is generally termed an overplaid. The above is an arrangement of both the warp and filling yarns.

HAIR LINE EFFECTS.

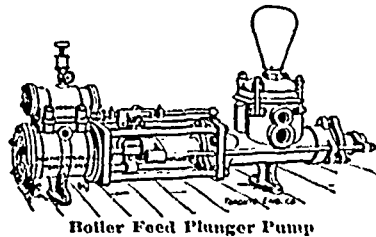
A wide field in what are known as hair line effects, is opened for the enterprising designer, and my class in the institute devoted considerable time to the study of these popular weaves. Probably the chief feature which distinguishes this weave as a valuable one, is its neatness, and general desirable appearance. Its uniformly striped character appears to have a very taking effect. In order to suitably develop this weave, it is very essential that yarns of perfect regularity in circumference be used. The hair line weave is constructed by arranging two or more threads of a certain color parallel with the same number of another color, thus forming the warp. Thus two solid colors are side by side, and the striped character is maintained by allowing the filling to enter at a time when it can cover its own color. For instance, if the pattern was two of black and two of white yarn in the warp, then two black filling threads would be introduced when the black warp threads are depressed, and the white elevated. And in the case of the white filling, the circumstances would be just the opposite. Consequently the black warp and black filling unite, and the white warp and white filling do the same, thus forming a perfect stripe the entire length of the goods, and technically known as a "hair-line effect."

(Continued.)

A PROCESS has been described in some of the recent English papers for obtaining designs on plush fabrics. If the design is printed in the ordinary way, the pile is spoiled, and the starch used in preparing the colors cannot afterwards be got rid of, which tends to stiffen it. The inventors of the new process work upon the principle, first, that the pile of such fabrics possesses great porosity or capillary attraction, and if the surface be moistened the liquor is drawn up into the body of the fabric; and, secondly, that a good many of the coal-tar colors are destroyed by the presence of tin salts. Bearing this in mind, a wooden printing block is prepared and charged with a solution of tin chloride. The fabric is printed with this roller and then steamed, whereupon its color is more or less destroyed, according to the strength of the tin solution. In this way light designs on dark grounds may be obtained. By mixing the tin solution with such coloring matters as are not affected by it, it will be seen that color designs may be printed.

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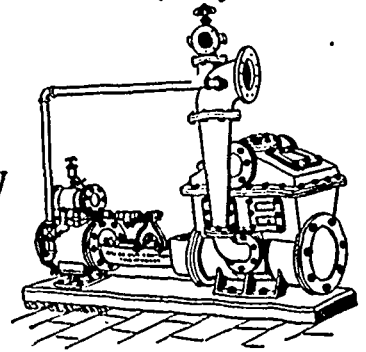
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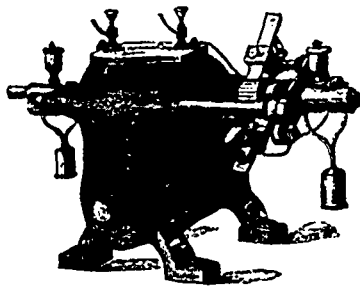
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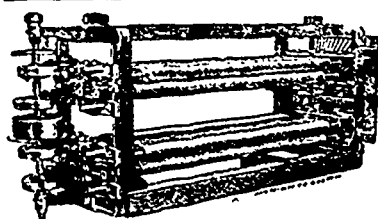
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JOHN LOVELL.

With the death of John Lovell, on the first of this month, an epoch is closed in the history of Canadian literature. In that sphere of our national life, he might emphatically be called the "grand old man" of the Dominion. A valued correspondent with literary tastes writing to this journal on his death, says of him:—

"On frequent occasions has he been named amongst Canada's oldest and most public spirited benefactors, and particularly as having done much the same grand work as a publisher, in 'this Canada of ours' which the brothers Chambers, of Edinburgh, did for the mother land. Mr. Lovell's long-continued and nobly fearless part in journalism; his patriotic and unselfish enterprise in educational and literary publications; his generous and self-sacrificing beneficence in worthy causes, and specially in such as concerned the welfare of Canada; his readiness to acknowledge good—even in opponents—just for 'goodness' sake; and his manly denunciation of meanness and wrong, either in individuals, parties or communities, even 'though it were to his own hindrance,' have ever secured for him that confidence which he so well merited. Exceptionally remarkable, too, were Mr. Lovell's activity and enterprising industry all along to the last. At the ripe old age of eighty-three, none will grudge him the well-earned 'rest from his labors,' whilst all who know anything of the man, and of his large-minded and painstaking activities, will be thankful to think how these must follow him in the continued promotion of knowledge and truth."

Thousands who knew John Lovell can applaud and endorse this. He had a heart above creed and a soul above party. An illustration can be given of each of these statements. Though a staunch Protestant, he once taught the nuns of one of the convents the art of printing, and helped them to establish a printing office. Years afterwards when he had a serious strike in his office, these good nuns, remembering his unselfish act of a former day, came down to his office and took their place at his cases till his trouble was overcome. Exemplifying the other statement, a good many years ago a certain cabinet minister sent the manuscript for the entire census down to John Lovell's office, to print at his own price, provided he would take a given line of policy in his paper on a political question of the day. The job was worth thousands of dollars, but John Lovell returned the manuscript on the instant with a message that left no doubt of his independence on the mind of the cabinet minister, who expressed his surprise with a muttered curse. There is a savor of redemption for humanity in the remembrance of such acts of self-forgetting goodness in the one case, and of rock-firm integrity in the other. When John Lovell felt moved to do a thing the financial consequences of his course were of no more weight with him than if money had never been invented. He could have been a millionaire three times over, but he valued character

above wealth. As for patriotism no man ever loved Canada with a more intense and constant love than he. Many a book by a poor Canadian author he published, foreseeing a loss to himself. The first Directory of the Dominion he issued at a loss of about \$5,000, and yet up to the day of his death he was intent with all his soul on the issue of a great gazetteer and history, in eleven volumes, which would give an account of every known lake, river, stream and mountain, and of every city, hamlet and settlement in British America. Everyone who knew him knew that such a work, though of immense benefit in showing to the world the wonders of our country, would have been published at a certain loss; but they also knew that the question of financial gain never entered his head in evolving the enterprise. It was simply his desire to pay one great last tribute to his beloved country, and it was most touching to see with what earnestness he talked, and with what industry he worked on his darling scheme at spare hours. He never knew an idle hour in his life, and idleness in others was about the only thing of which he was intolerant. Day after day he might be seen, at the age of over eighty, in his printing office at half past six or seven in the morning, sometimes with a broom in his hand sweeping out an untidy corner, sometimes setting type at the case, sometimes reading proof. He was the oldest publisher on the continent, and few people have any idea of the number of books that have been turned out of his establishment since he began business—15,000 to 20,000 different books, besides pamphlets and catalogues, would be a reasonable estimate.

When we review a life like his, we may well ask ourselves and our neighbors the question, What might not a nation like Canada—small in numbers as we are in the community of nations—attain to in character, power and enterprise, if every individual composing it had the patriotism and the spirit of John Lovell?

THE IMPERIAL INSTITUTE.

In connection with the Imperial Institute which has just been established in London, in order to show to the world the various resources of the British Empire and to extend the trade relations between the Colonies and the Mother Country, circulars have been issued appealing to the manufacturers of Canada to send in suitable exhibits. Separate spaces have been reserved for each of the provinces, with the object of showing the natural resources and manufactured products of each to the best advantage. It is hoped also that owing to the Institute being always open to the public, there will result a large increase in the flow of immigration into Canada. Exhibitors are requested to forward with their exhibits, price lists and circulars giving full information, which will be judiciously distributed by the officials in charge. The curator will carefully attend to any instructions with regard to the position and manner of displaying the goods. Cost of transport and of suitable show-cases will be defrayed

by the Government. In arranging the exhibits, an attempt will be made to afford full, scientific, practical and commercial information relating to the sources, nature and applications of Canada's natural products, and of the industrial and commercial condition of the country. The Imperial Institute building itself is one of the most elaborate and elegant in the "World's Metropolis." There will be an increasing interest in the institution as time goes on, and Canadian manufacturers who are cultivating a foreign trade will do well to be represented there. It is the outcome of the Colonial and Indian Exhibition of 1886, at which Canada made such a fine display and from which many Canadian manufacturers developed a foreign trade which has gone on increasing to this day.

The curator of the Canadian section is Harrison Watson, Imperial Institute, Imperial Institute Road, London, to whom all packages should be addressed. Information regarding exhibits from the Province of Quebec will be given by S. C. Stevenson, 76 St. Gabriel street, Montreal.

THE SINGEING MACHINE.

The singeing machine, for two or three reasons, is specially adapted to what is called the threadbare finish, either in woolen or in other goods. One of these reasons is that an excessive fulling on a threadbare finish, would felt the threads of the pattern so closely into one another as to render a clear and distinct outline in pattern and color impracticable. And, secondly, a long or excessive fulling would produce so much of a felt that the nap would be so thick and heavy that the gig and shear could not possibly clear it completely out. Thus we see the utility of some such contrivance as the singeing machine; but in order to understand it more clearly, we will first enquire into the cause of the formation of nap.

It owes its origin to the small fibres which cling to the surface of the threads as they lie next to each other in the fabric. These small loose fibres, when the piece is put into the fulling mill, intertwine so compactly that they form a sort of minute network on the surface of the threads. The only thing to be done is to remove the loose fibres before the piece is put into the fulling mill. Of course, the shear and gig will do much toward removing these, but there is always the danger of cutting too close, and thus weakening the fabric. This renders the singeing machine almost a necessity. We will now look into its construction, taking as an example the type most in use. The body of the machine, says *The Textile Record*, consists of an iron frame, on which the pulleys, rollers and burners are arranged. The cloth enters at one end of the machine, passes successively over the sets of rollers and burners, and at length leaves the machine at the opposite point. Much of the success of the work depends on the efficiency of the burners. They are made for gas and have a continuous slot so that a uniform and regular sheet of

flame may be produced which will act equally upon the face of the cloth from selvage to selvage. By means of thumbscrews, etc., the size and position of the flame can be regulated, as well as its length, so as to correspond with the width of the goods. The burners are arranged so as to render the operator able to turn them away instantly. A gas governor regulates the supply of gas, and an air reservoir and fan furnish the elements necessary to insure perfect combustion with no loss of fuel or gas. It is better to have a double pair of burners, so that both sides may be singed at once. The cooling of the burner rolls is accomplished by running water through them and a steam apparatus at the end of the machine pours a vapor of steam upon the goods in order to render them smooth and agreeable to the touch. So efficacious is this machine when properly managed, that it not infrequently is made to fill the place of shearing altogether, besides doing its own proper work.

CAST iron fly-wheels should not be run at a greater speed than 80 feet per second to be quite safe.

NIKOLA TESLA observes that the day when we shall know what electricity is, will chronicle an event probably greater, more important, than any other recorded in the history of the human race.

A LOOM has been invented in which is provided a mechanism for measuring the length of cloth as it is produced, and for stopping the action of the loom as soon as any desired length has been woven.

A good potash soft soap, taken pound for pound, contains, though it may appear strange, less water than the majority of hard soda soaps. As also it is more soluble, the same quantity will do more work.

AN electrical acid meter, or instrument for measuring the amount of acid substance in liquids, has recently been invented, and is expected to come into use in refineries, breweries and similar places.

A NEW method of obtaining indigo is to subject the yellow liquid from the plants to the action of an electric current, instead of the treatment in ordinary use. It is claimed that this method renders it finer and purer.

THE telephone-meter is a newly invented instrument for registering the time of each conversation at the telephone. By its use, rentals of telephones would be fixed on a scale according to the amount of service rendered.

SINCE last month the general outlook for the harvest in Canada has improved. Recent rains have especially helped the crops in the maritime provinces, while the reports from Manitoba and the North-West continue favorable.

THE great advantage for wool cleaning possessed by potash soaps over those made by soda is that the former readily assimilate with the grease or waxy matter contained in the wool. The grease thus becomes removable with greater ease.

A FRENCH inventor claims that he has discovered a method of rendering cloth bacteria-proof. This he accomplishes by "metallising" the stuff by means of copper. One defect of this system is that washing lessens the resisting power considerably.

HOT bearings may be remedied by pouring upon them a liberal quantity of liquid ammonia and following this by a fair amount of good oil. The bearings should not be adjusted too close. A mixture has also been recommended, made from plumbago and cow beef tallow.

THE reason that twist gives strength to spun thread is, that the fibres which were at first disposed in straight lines parallel to each other, then take the form of a helix. The resistance offered by the thread to traction depends upon the greatness of the angle formed by this helix with the rectangular section of the thread as a whole.

To counteract the effects of exposure to the sun in hot climates, clothing either yellow in color or lined with yellow lining is said to be a great advantage. This is due to the protective effect of certain colors against the sun's rays, and is upon the photographer's principles of only exposing his plates to light which enters through colors possessing little chemical energy.

THE late Sir William Siemens, after several experiments as to the influence of the electric light upon vegetation, came to the following conclusions: (1) That the electric light is efficacious both in producing chlorophyll in the leaves of plants and in promoting growth. (2) That plants do not require a period of rest during the twenty-four hours, but that they make vigorous and increased progress if subjected during the night to the electric light. (3) That the flowers produced by its aid are remarkable for intense coloring and the fruit for its bloom and aroma. (4) That the expense depends on the cost of energy and that it is moderate when the natural energy of water is available.

THE amount of indigo contained in cloth may be easily determined by De Bechi's method. A sample of the blue dyed cloth or yarn should be boiled in solution of soda until dissolved. Then neutralize with hydrochloric acid, which causes the indigo to precipitate. Then let the solution run through filtering paper and collect the indigo and wash it. This is next treated with hydrosulphite of soda for the purpose of dissolving it. By adding acid the indigo is again precipitated, then filter, wash with acid and water, and dry. The indigo is then dissolved with smoking sulphuric acid, and the amount of indigoline determined with permanganate of potash by the ordinary method. From this can be calculated the amount of indigo contained in the cloth or yarn.

AN inquest was held on the body of Joseph Lanthier, who was killed in the machinery of the Royal Electric Company's works, Montreal, when a verdict of accidental death was rendered. The jury added the

recommendation that "in future proper safeguards be placed around all shafting." This is rather a reflection on the administration of the factory act of Quebec, and at the same time an index of popular ignorance on the same subject. While one cannot say that the factory inspectors are chiefly to blame, it must be confessed that in some respects the factory act of Quebec is so far a dead letter. In Ontario the factory act is fairly well administered, and, as a consequence, accidents are far less numerous, considering the larger industrial population, than in any other part of Canada. None of the provinces of Canada except the two named have laws regulating factory work, and for the sake of uniformity in the law, as well as uniformity in the administration of it, it is a great pity that this had not been made a subject for federal, instead of provincial legislation.

WM. BRILL has opened a general store at Wellesley, Ont.

J. & J. LIVINGSTON's flax barn at Baden, Ontario, has been burned down.

R. J. BOWES, dry goods merchant, Kingston, Ont., has assigned.

ALEX PATERSON, dry goods merchant, St. John, N.B., died on the 4th inst.

WOOLEN buyers are leaving for England in large numbers, and many have already started.

ROBIN & SADLER, leather belting manufacturers, Montreal, are building a new belting factory.

J. N. MCKENDRY, C. B. Botsford, and J. S. Sutcliffe, dry goods retailers, Toronto, are now making purchases in Europe.

R. E. HOTCHKISS, late superintendent of the Granby Rubber Factory, is now superintendent of the Boston Rubber Company, Chelsea, Mass.

ANTHONY STRONG, mechanical engineer at the Kingston, Ont., cotton mill, was badly scalded the other day by the sudden opening of one of the valves.

AN acre grows 500 mulberry trees, each tree has twenty pounds of leaves; from twenty pounds of leaves one pound of cocoons is produced.

L. W. SIMONDS, formerly traveller for Jacob Y. Shantz & Son, button manufacturers, Berlin, died recently of heart disease at his home in Brattleboro, Vt.

C. SROUSS & Co., wholesale dry goods, Victoria, have dissolved, C. Strouss retiring, and Emanuel Bloomingdale continuing the business under the old style.

THE creditors of G. J. Hiseler & Co., hatters and furriers, Halifax, have met in Montreal, and are likely to accept an offer made them of 35 cents on the dollar cash.

W. H. FITZPATRICK, proprietor of the woolen mill at Hopewell, N.S., proposes to form a company to put in a plant to supply electric light to New Glasgow, eight miles distant.

GEO. S. WILSON, late of J. C. Wilson & Co., paper manufacturers, Montreal and Lachute, has been visiting Canada. Mr. Wilson is now conducting a cloth quilting factory in London, Eng.

A PERMANENT and durable joint can, it is said, be made between rough cast iron surfaces by the use of asbestos mixed with sufficient white lead to make a very stiff putty. This will resist any amount of heat, and is unaffected by steam or water.

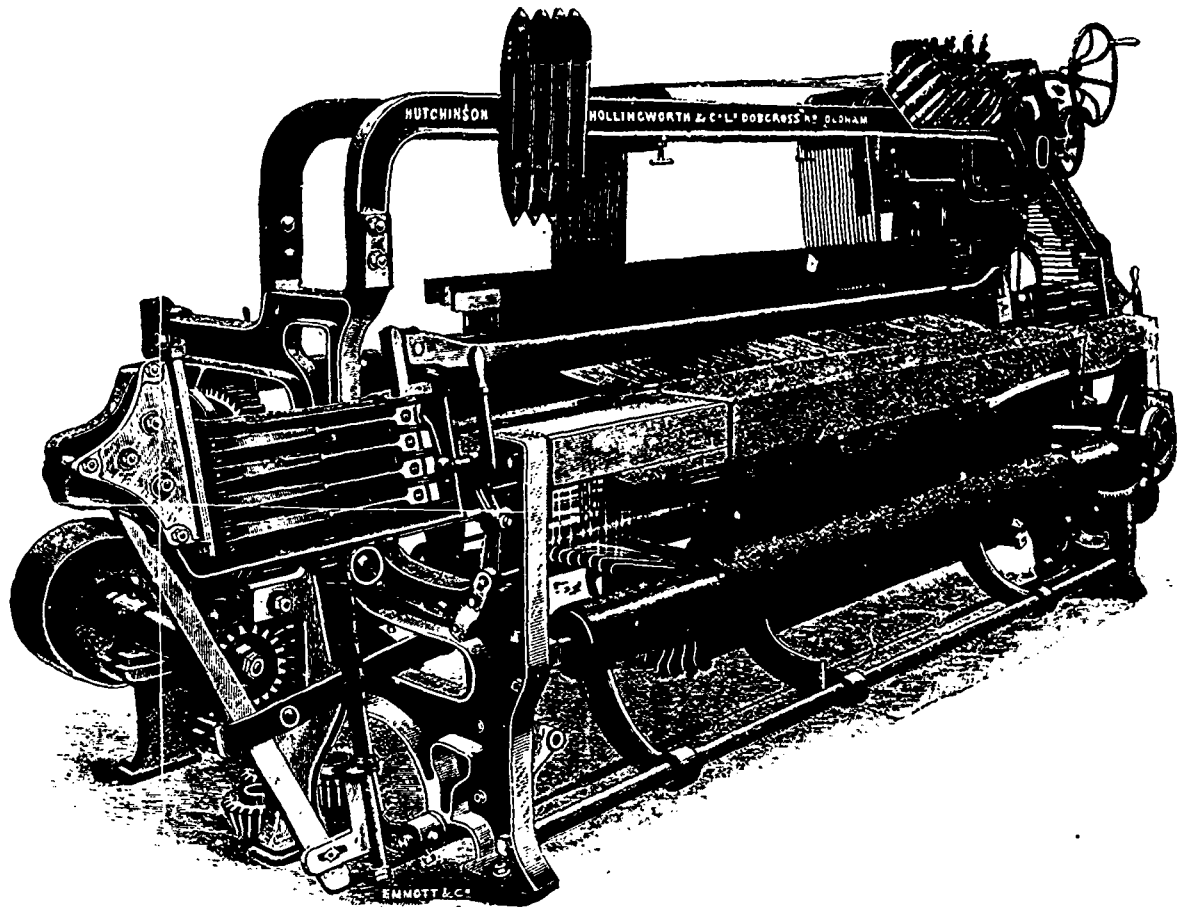
PROBABLY the largest shipment of raw material ever made to a paper mill in Canada was that which arrived the other day at the mills of J. C. Wilson & Co., Lachute. It consisted of thirty-one carloads of cotton covers for paper stock. It made a trainload, and weighed over 300 tons, including the contents of some extra cars which came in by a later train the same day.

HOLLINGWORTH'S & KNOWLES' OPEN SHED LOOM.

The accompanying illustration represents the Hollingworth's & Knowles' Patent Open Shed Fancy Loom (as made by Hutchinson, Hollingworth & Co., of Dobra, England). It is made with four or six boxes on each side, with warp beam arrangements and with 16's, 24's, 36's, harness and embraces all the improvements which have been suggested during the years in which the loom has been in practical operation. This loom is also made with harness jacquards from 200's to 1200's hooks.

The builders give the following points about the construction of the loom: "The loom is of the style of working called "Open Shed," which causes the weaving to be done in the same manner as the cam loom, even on the most intricate fancy patterns, either in weft or warp. The motion of the harness from top to bottom is one

remain open and at rest until it arrives in the opposite box, which is unusual in fancy looms. The construction of the harness motion is of the most perfect workmanship. The wheels are of cast steel, turned, cut and hardened. The harness levers and connectors are finished and hardened at all the working points, and are now made in segments entirely of steel, and afterwards secured together, thus holding the wheel between them, and are so constructed as to reduce wear and breakage to the least possible amount. We have recently made an important improvement in the top jack and connector, thereby ensuring a certain and effective locking of the levers, which will enable the loom to weave heavier goods than has hitherto been woven on any other loom. The chain rolls are turned and hardened, and run in steel pockets, so that when in use, no pressure comes upon the chain bar or links, thus removing the great source of mis-picks by crooked bars.



HOLLINGWORTH'S & KNOWLES' PATENT OPEN SHED LOOM.

movement instead of two, as in the closed shed, thus saving one quarter the time in each pick. The change of pattern chain is at the same time the shuttle is passing, and the harnesses are open and at rest, thus saving all the time of such change at each pick. The pattern chain is driven by a gear wheel and pinion, and is a constant and not an intermittent motion. This is of great advantage when long patterns are being woven, which require a heavy pattern chain. Each harness is driven by a crank pin upon the sides of the gear, thus giving a movement upon the yarn which is extremely easy, and is very desirable, especially upon tender yarn. This peculiar harness motion will allow a much larger shuttle to pass through the same opening of the warp, or the ordinary sized shuttle through a much smaller opening, thus avoiding much of the strain and consequent wearing of the same. The reason for this is, the harnesses arrive at their full opening before the shuttle starts from the box, and

The pattern chain for the boxes is upon the same shaft as the harness chain, and can never get out of harmony with it, and consequently the loom can never be made to put the wrong weft in any shed. The drop boxes and swells are now constructed of steel, and are so arranged as to combine strength, lightness, and durability. They are operated by cranks, set at the opposite ends of their throw, and the chain controls the boxes positively, and will call anyone designated by the chain without any setting of cams or lifters. The boxes at either end are operated independently of each other, so as to use conveniently seven shuttles, and can be run at great speed, and not jump or jar. No combination of box changes can be desired that this mechanism will not work as readily as the most simple patterns, and it does not require any skill whatever on the part of the operator. When the chain is made up and put upon the loom it will command the right box, and cannot be made

to do otherwise. We have attached to this loom our well-known let-off motion—viz., the worm and worm wheel. This motion has now been thoroughly tested for years, and fully meets all that is claimed for it, making even and better goods than can be obtained from looms with the friction let-off motion. The many thousands of these motions now in use testify to their value.

Another valuable addition we have made to this loom is our patented improvement for changing the speed at which the loom is run, to suit the different classes of goods requiring to be woven. By this improvement the speed of the loom can be increased or decreased one-third in a very short space of time by the simple method adopted. The loom is also provided with an irregular beat motion, whereby the speed of the lay at the cloth-making point is greatly increased, and consequently decreased while the shuttle is passing through the warp, thus enabling the loom to put in more picks, and affording more time for the shuttle to get home before the boxes change. These improvements, together with other new devices, combine to make this the very best loom in the market, and one upon which we guarantee to weave every variety of fabrics, from the simplest to the most intricate, that can be woven on any other loom in the world."

The agents for Canada are Wm. Shaw & Co., Montreal, from whom further information may be obtained.

GARMENT DYEING AND CLEANING.

(From the Dyer and Calico Printer—Continued.)

Bright Blue on Cotton Dresses.—Mordant the cotton by steeping for six hours in a bath of $\frac{1}{2}$ lb. tannin, then pass for 30 minutes through a bath of $\frac{1}{2}$ lb. tartar emetic, finally dye in a warm bath of 3 oz. New Methylene Blue N until shade is obtained. Instead of this blue, Cotton Blue, Nile Blue, Victoria Blue or Capri Blue may be used with good results.

Navy Blue on Cotton Dresses.—Mordant the cotton with tannin and tartar emetic as for bright blue, but dye with New Blue Red Shade.

Deep Blue on Cotton Dresses.—Mordant the cotton by working through baths of sumac extract and iron liquor as given in previous recipes, then dye in a warm bath of New Blue or Vacanceine Blue.

Yellow Brown on Cotton.—Lay down for 4 hours in a decoction of $\frac{1}{2}$ lb. cutch and $1\frac{1}{2}$ oz. bluestone at about 120 deg. F., then pass through a warm bath of 1 oz. bichromate of potash, rinse and dye in a new bath with $\frac{1}{4}$ oz. Bismarck Brown G, at 180 deg. F., wash and dry.

Bismarck Brown on Cotton.—As above, but use $\frac{1}{2}$ oz. of Bismarck Brown R in the final dye-bath.

Cherry Brown on Cotton.—Lay down for 4 hours in a bath made from $\frac{1}{2}$ lb. cutch and 1 oz. bluestone; then work in a warm bath of 1 oz. bichromate of potash, rinse, steep in a cold bath of $\frac{1}{2}$ lb. alum for 3 hours, and dye in a fresh hot bath of Brazilwood and logwood.

Dark Brown on Cotton.—Steep in a bath of 1 lb. sumac for 6 hours, then pass into a bath of iron liquor at 2 deg. Tw. for 2 hours, re-enter into the sumac bath, and finally dye in a new bath made with $\frac{1}{2}$ oz. walnut brown at 180 deg. F.

Dark Brown on Cotton.—Prepare the dye-bath with 2 lb. salt and 6 oz. Benzo Brown NB, and $\frac{3}{4}$ oz. Benzoazurine R, dyeing at the boil for an hour.

Black on Cotton Dresses.—Work for 45 minutes in a hot bath of 1 lb. logwood, then for an hour in a warm bath of 1 oz. bichromate of potash and 1 oz. copper sulphate, then re-enter into the logwood bath, to which $\frac{3}{4}$ oz. soda has been added, work to shade, lift, wash and dry.

Green on Cotton Goods.—Steep the goods in a bath made with 2 oz. tannic acid for 4 hours, then wring and pass into a bath of $1\frac{1}{2}$ oz. tartar emetic for 20 minutes, wring and rinse. Dye in a new bath at the boil with 1 oz. Brilliant Green and $\frac{1}{4}$ oz. Benzoflavine, rinse and dry. By varying the proportions of these two dyestuffs a great variety of shades can be obtained.

Dark Green on Velveteens.—Prepare by steeping in sumac liquor all night and passing into a bath of iron liquor, then dye in

a bath containing 2 oz. Brilliant Green and work for 20 minutes, lift, wash and dry.

Olive Green on Cotton.—Steep the goods in a decoction of 1 lb. cutch for 5 hours, then pass through iron liquor at 3 deg. Tw., working in this for 5 minutes, then wring and dye in a bath containing 1 oz. Bismarck Brown and 1 oz. of Brilliant Green for 30 minutes at the boil, if not dark enough add more dyestuff. The addition of a little Auramine will brighten the color and a little fustic make it go on darker.

Violet on Velveteen.—Steep for a few hours in a bath made with $\frac{3}{4}$ lb. tartar emetic, then lift, rinse and run through a bath made with $\frac{1}{2}$ lb. tartar emetic, working in this for 20 minutes, lift, rinse and dye in a new bath containing 1 oz. Methyl Violet, working at a hand heat until the color is properly dyed, then lift, wash and dry.

Buff on Cotton Curtains.—For 50 yards. Prepare a bath with 1 pint of nitrate of iron, work in this for 20 minutes, then pass through a warm bath made with 4 oz. soda, if the shade is not deep enough repeat the operation.

Brown on Cotton Velveteens.—Boil up 4 lb. sumac and allow the dresses to steep in this all night, then lift and pass through a bath of iron liquor at 4 deg. Tw. for about 30 minutes, lift, rinse and dye in a bath of 5 oz. Bismarck Brown, 1 lb. of logwood, working at about 170 deg. F. for an hour, then lift, wash and dry.

Sea Green on Cotton Goods.—Mordant the goods with 1 oz. tannic acid and $\frac{1}{2}$ oz. of tartar emetic in the usual way, then dye in a bath containing a little Green Crystals Y and Benzoflavine to shade.

Lilac on Cotton Goods.—Mordant for Sea Green as above, and then dye in a bath of Methyl Violet 3 R to shade. If not blue enough use Methyl Violet R to tone it down.

Bronze Green on Velveteens.—Prepare a bath with 3 lb. sumac and work the goods in this for an hour, then allow to steep all night, then lift, rinse lightly and fix in a bath of iron liquor, working in this for 30 minutes; after rinsing, dye in a bath of $1\frac{1}{2}$ oz. Bismarck Brown, $1\frac{1}{2}$ oz. Malachi Green, 4 oz. fustic extract, and $\frac{1}{2}$ oz. bluestone; from 1 to $1\frac{1}{2}$ hours in this at a hand heat will be sufficient.

A good vat for black iron liquor is made with 1 gal. black iron liquor to 200 gals. of water. This vat may be kept standing as it improves with age, and if frequently used, it may be freshened up by adding from time to time 1 quart of iron liquor; such additions may be made weekly or oftener if the quality of goods passed through it demands it. To keep it as clean as possible, it is advisable that after coming out of the sumac or tannin bath, the goods be rinsed in water before being put in the iron bath.

It is advisable to keep a stock of cutch liquor in bath. A very good method is to boil up 20 lb. cutch and 2 lb. bluestone until all the cutch is dissolved. This is strained off into a store tub and used from time to time to keep the working cutch vat up to strength. A cutch dye-liquor is never completely exhausted, and if a garment dyer has frequent occasion to use cutch, it is well to keep a cutch tub standing. In fact, old vats work rather better than new ones; this vat will need some new material, adding from the stock tub described above, to replenish that abstracted by the goods which have been dyed in it.

(To be continued.)

COLONIAL WOOL SALES.

At the colonial wool sales now going on in London, the Americans are poor buyers. English buyers believe that prices have now touched bottom, and that next sales will show an advance. The total new arrivals expected for the balance of the year will fall 100,000 bales below last year, for the same period.

At the last monthly meeting of the Montreal Wholesale Dry Goods Association the subject of cheap fares to the Montreal wholesale fall millinery openings was discussed. The matter is being brought before the railway authorities, but it is feared that the World's Fair traffic will affect the case.

Foreign Textile Centres

MANCHESTER.—The great event of the last few days affecting the staple industry here has been, says the *Warehouseman and Draper*, the action of the Government in closing its mints to the free coinage of silver, and practically establishing a gold currency on the basis of a 1s 4d. value of the rupee. Under existing circumstances this seems to be the best thing they could have done. Exchange at once advanced on an average to the rupee's new gold value. It is believed here that this step will after a time greatly facilitate business, by relieving it of that paralyzing uncertainty which has distinguished it owing to the instability of the exchange. Our trade continues without much change in its general aspects. Producers are moderately well engaged, and prices are steady. No industrial difficulty exists at the moment, and beyond the possibility of trouble arising to it from the possible occurrence of a great dispute in the coal mining industry, there is no visible trouble impending. The cotton market during the past week has been of a very equable character. The fluctuations in value have been too small in any instance to affect quotations of spot cottons beyond one or two small changes in special grades. Of these we may note an advance of 1-16d. in middling fair American. The silver question has had considerable effect in checking business, few frequenters of the Flags having a clear idea as to its incidence upon their interests. Egyptian cotton has declined, others firm but unchanged. The estimated sales of the week are, for the first half 22,000 bales, and for the second half 28,000 bales, included in the total, there being 3,000 for speculation and for export. The amount of business done lately in yarns and cloth has placed spinners in a much more advantageous position than any they have held for some time past. Stocks were very greatly depleted, and forward engagements entered into. The result has been that they have been able to check the conflicting influence of the silver question upon the market without much concern. A fair amount of business has been offering at rates a little below those they were disposed to accept. The amount transacted, however, has not been large owing to the steadiness of prices. In cloth there has been some considerable difficulty on both Indian and China accounts. The silver question has influenced both buyers and sellers, stimulating the former to complete transactions and the latter in many cases to decline. On the whole it has probably led to an increase of business.

LEEDS.—The woollen trade is dull, few good orders having been placed during the past week. There are complaints of a want of novelties in mantle, ulster, and costume cloths, and old styles of any of these are cheap. The rate of production in this particular branch is not more than one-half its capacity. Ordinary serges, vicunas, and tweeds are slow, many buyers holding back in expectation of low prices. The worsted coating demand is not evenly distributed. Union worsteds have seldom been lower than at present. Makers of naps, twills, and diagonals are rather busier. Of miscellaneous goods Venetians, corkscrews, stripes, and doekings sell fairly well, but at variable quotations. Some Canadian orders have arrived for next spring, and the winter trade is already above the average. Business with India has improved. The home trade in blankets is dull, but large quantities of colored are made for shipment.

HUDDERSFIELD.—The woollen trade is quiet, buyers having been few. The goods chiefly in request are the better descriptions of fancy worsted cloths, vicunas, serges, and the lower-priced tweeds, with a tendency in favor of the finer qualities of smooth-faced goods. The demand for serges has dropped considerably, but producers are busily engaged in executing orders for fancy worsteds both for home and foreign contracts. Manufacturers complain again that prices are cut down to a very low point by reason of excessive competition, and it is so general as to be somewhat serious. Employment throughout the district is fairly good. Yarn spinners are moderately well off for orders. The local wool market is quiet.

BRADFORD.—Business in this market is fairly satisfactory, prices being well maintained. There is a moderate demand for bright descriptions. Business in mohair is again increasing, and prices are hardening. Alpaca is also steady. The yarn market displays no new features. The amount of new business doing is only small, but spinners are kept employed, and prices are fully maintained. Mohairs are in request, as also are super lustre yarns. The piece trade continues pretty much as at the end of last week. The home trade is slow, and the demand for export is not much better.

NOTTINGHAM.—The state of the lace trade remains unchanged, business being anything but brisk. There is a diminished sale for both silk and cotton millinery laces. Even the guipure d'Irlande and Valenciennes styles are less run upon, and the demand for common cotton laces is decidedly quiet. Only a moderate enquiry prevails for Maltese, and there is not much doing in torchon or tattings. Crochet edgings, Swiss embroideries, everlasting and other trimmings are slow. Orders for silk laces are scarce, and the local demand for raw and spun silk remains quiet. A few light silk nets are being disposed of at recent prices, and there is a moderate sale for flouncings. Business in the making-up department is quiet, and there is not much doing in ruchings and frillings. Curtain manufacturers complain of the paucity of orders and unprofitable prices. The plain cotton net branch shows little change. Cotton yarns generally maintain their value, but meet a dull sale. In the hosiery trade prices are maintained, but the demand is quiet.

LEICESTER.—The consumption of wool is fully maintained, and supplies bid fair to fall considerably short of the demand. Colonial wools sell very slowly, buyers operating with caution, but prices are a little firmer. The yarn market is fairly active. Stocks are small, and the prospects are more encouraging. On home account a good business is doing in woollen hosiery, but little is passing in cotton goods for export. Autumn specialties and football jerseys are attracting attention, and a very heavy season's trade was anticipated. The leather trade is flat. Cords, braids, and dress beltings are in good demand.

BELFAST.—The *Warehouseman and Draper* says that business in the linen trade, though far from "booming," is in a sound and fairly satisfactory condition. In the yarn market spinners still decline to book further orders, even at the extreme rates ruling, except in just sufficient quantities to take the place of expiring contracts. As it is, the amount of fresh business transacted in the past week is just about equal to the output from the spindles, which is, perhaps, the most satisfactory shape business could assume for either buyers or sellers, even if spinners were not afraid of dearer flax and consequent increased cost of yarns. There is no disposition to force up the yarn market, but the reverse; nevertheless the market is gradually rising by force of natural law, and every day or two sees occasional numbers the turn dearer. Tow yarns, especially, are gradually creeping up, and are very scarce in the market, notably the medium numbers.

DUNDEE.—The market here is sensitive owing to the change in silver coinage made by the Indian Government, and this disquietude tends to restrict business, says the *Manchester Textile Mercury*. New jute is being offered, but buyers are very shy. £14 a ton is named for special marks, and one hears of a few thousand bales being done for the Continent. Flax remains very quiet indeed, only sheer necessity compels a few spinners to buy for assortment. Prices are quite out of the question compared with the price obtainable for yarns. Jute yarns are done at the same price as last week, say 1s. 3d. for 8 lb. cop, and 1s. 4d. for 8 lb. warp, common. For fine 7 lb. 1s. 6d. is the price, and for good 8 lb. 1s. 6d. is obtained, extra quality 1s. 8d. for 8 lb. warp. Flax yarns are firmer. Some of the leading houses issue advanced lists, but business in yarns is difficult, and spinners find it hard to keep selling their production. Tow yarns are also firmer. For common 3½ lb. tow wets 1s. 5d. to 1s. 5½d. is the price, for fine warp 1s. 8d. to 1s. 9d., for 5 lb. 1s. 10d., and for 6 lb. good warp 2s. 2d. is paid to-day. Jute hessians are without change in value. The demand takes off production,

but some large manufacturers, unwilling to run on at a loss, have put up a notice to run only four days a week. The Arbroath heavy flax trade remains unusually dull, resulting in further stoppage of machinery. Fife is still busy in flax fancy goods, and Brechin and Forfar are only moderately busy. They now buy yarns, and are compelled to demand list prices for linen goods, and so find sales difficult. The Dundee fancy jute trade is fairly busy, and makers of cords are all well engaged.

CALCUTTA—Last reports stated that in the jute market prices locally were steady and unchanged, but in the interior rates at the close were a shade easier. Reports regarding the new crop state that a cyclone in parts had created some damage, later sowings being washed out. In baled Rs. 32 remained the nominal quotations for standard marks, but there was nothing doing, and no home advices, except £13 10s. a ton, which was named for new crop.

CHEMNITZ.—Buyers in Chemnitz this season are generally placing smaller orders than usual, anticipating a change in the tariff within a year, and naturally wishing to have a small stock on hand when the change takes place. This will considerably reduce the volume of exports to the United States for the balance of this year, and perhaps for the whole of next year as well. There seems to be but little fluctuation in prices of hosiery and no probability of many changes this year, although the quotations are still too low to enable the manufacturers to make much profit. Most of the hosiery and gloves ordered last summer and fall are already shipped, and small amounts going forward now are for repeat orders sent in late in the winter to fill up stocks. Silk yarns are still more than 50 per cent. higher than a year ago. Silk gloves have not risen in price in a like proportion, owing to the fact that many of the manufacturers have had a considerable stock of yarn on hand; but this being now nearly exhausted, it is difficult to see how silk goods can be sold much longer at present quotations. An increase in price of at least 25 per cent. may be looked for if yarn remains at the present figure.

MILAN.—The New York *Dry Goods Economist* states that latest prices for yellow cocoon average as follows.—4.34 lire at Brescia 4.06 at Mantua, 3.84 at Cremona. The total result of the crop appears to be from 10 to 15 per cent. larger than in 1892, when the production of cocoons amounted to 34,600,000 kilograms. Business in raw silk is exceedingly quiet, there are no efforts on the part of manufacturers in Germany, Switzerland, France, and Russia to break the dulness. From the United States no orders are yet discernible. Present quotations are.—Very best raws, 12-14 or 13-15, 63 to 64 lire, classical, 14-16, 58 to 60, strictly No. 1, 12-14, 56 to 57; good No. 1, 14-16, 55 to 56. It is generally expected that a revival will set in ere long; here and there enquiries are being made for organzines and trams, which denote that consumers take more interest in the market.

LYONS.—In sympathy with the quiet tone of the raw silk market, business in dress fabrics and ribbons is rather light, says the *Dry Goods Economist*. Manufacturers report that sales from stock are unimportant, and that orders are coming in very slowly. It appears that many wholesale houses expect a material decline in the prices of silk goods, overlooking the fact that the serious advance in the raw material since last July has never been fully realized in the manufactured article. In ribbons, black, garnet and cardinal satins for ornamentation of dresses, capes and parasols are much patronized. Faille, bengaline, taffeta, armure and ottoman participate, as usual, many being used for belts and rosettes. The exports of French silk fabrics, which showed at the end of April last, an excess of 1,000,000 francs, compared with the same period in 1892, have materially declined since then, inasmuch as they amount to 108,866,000 francs for the first five months of this year, against 112,500,000 francs for the corresponding period in 1892. This diminution is principally due to the falling off in transactions with Great Britain consequent upon the crisis in Australia. Shipments to the United States show an improvement in the figures of 1892.

CREVELD.—The silk business shows little animation. Orders for future delivery are not so extensive as might be desired, but

there are indications of improvement in a short time. In ribbons, no relaxation is perceptible. Velvets of silk and chappe are firmly supported. No doubt their consumption next fall and winter will be very large.

BASLE—Owing to the general abatement in activity—not unusual at this period—the movement in ribbons is not very brisk, although manufacturers have but little reason to complain about business on orders for future shipment. The raw silk market seems to have settled down to reasonable prices. A further decline is not very likely, as almost every unfavorable feature has been anticipated.

ZURICH.—The *Dry Goods Economist* reports that business in silk fabrics, as far as sales from stock are concerned, is very light, orders for future delivery continue on a fairly liberal scale, embracing plain and changeable surahs, taffetas and mervelleux, light weaves, figured, dotted or striped, in bright tints on dark grounds. There is a steady demand for satin duchesse, peau de soie, rhadames and bengalines, in black and fashionable colors. Armures, faille, damasses and brocades, besides serges and matelasses attract considerable attention. Lining materials, parasol and tie silks show moderate activity.

CHINA-GRASS AND RAMIE.

THE CHINA GRASS PLANT.

China-grass, or Chinese grass, is the popular name of a fibre used in China for the manufacture of a beautiful fabric known as "grass-cloth." The name seems to have originated in the belief that the fibre was obtained from a grassy substance, but such is not the case, it being chiefly procured from "*Boehmeria nivea*," a plant allied to the nettle.

The fibre is obtained from the stalk of the China-grass by a system of scraping; the stalks being first subjected to a steeping process, which tends to aid the stripping. This work is accomplished by the natives, who seize a stalk and by applying considerable strength the loose filaments which constitute the fibres are pulled off by hand. The fibres are exceedingly strong, therefore it seldom breaks, even if an excessive amount of muscle is used. It is, however, a slow process, and the comparatively small portion of material procured would seem to convey the impression that the operation was an unprofitable one. When the fibres are bleached, they present a clear white color, and resemble the famous ramie plant very closely.

China-grass has no affinity for dye-stuffs, therefore it cannot be utilized in any but a white fabric. This defect is somewhat overcome, however, by combining it with twenty or twenty-five per cent. of dark colored wool, which tends to communicate a relative color to the China-grass staple; therefore, the result is to obtain a combination sufficiently darkened to use in the fabrication of a limited range of textiles.

In ordinary use in China, the fibres are not spun together as in other staples, but are simply twisted together by hand. China-grass will lose forty per cent. in weight during the manufacturing processes. It lacks all felting properties, and consequently cannot be introduced into cloths which necessitate this operation. As the fibre is characterized by its exceptionally fine, glossy appearance, and possesses a peculiar transparency, it is often substituted for silk or silk waste in a large range of woven textiles.

RAMIE.

Ramie fibre is a textile material yielded by one or more species of "*Boehmeria Utilis*" which is found over a wide range in India, China, the Malay Peninsula and islands, and Japan. Ramie is also capable of being grown in temperate latitudes, and has been experimentally introduced into the south of France, and Algeria. A series of experiments are now being made to introduce the ramie plant into the Gulf States of this country, and extensive arrangements for advancing the enterprise are in operation in the vicinity of New Orleans.

The plant thrives in hot, moist, shaded sections. Considerable time is devoted to its cultivation by the Chinese, and they prepare the fibre by a tedious and costly process of selection and manual labor. The stems when ripe are cut down, stripped of leaves and branches, and, either split or whole, are freed of cortical layers until the bast is exposed. In this state they are collected into miniature parcels, and placed in position where they will receive the benefit of the sun's heat for several successive days. The dew of the night also aids in advancing the desired end, which causes the fibres to partially separate from the woody core, thus making it a comparatively easy matter to remove them by hand.

These fibres are then steeped in boiling water for the purpose of removing all foreign materials, such as the gummy and resinous matter in which the fibres are embedded in the stalks. Then the material is evenly distributed over the surface of a grassy lot, and bleached by the alternate exposure to the sun by day and the dew by night. Ramie treated in this way arrives in the market as brilliant white filaments, with a fine silky gloss having a strength, lustre, and smoothness unequalled by most species of vegetable fibres.

The distinctive characteristic of ramie is that, having no elasticity, it retains its shape, and is not affected by dampness; it will neither shrink, swell, nor rot. On this account ramie should be excellent for shoe linings, sail cloth, cordage, serges, dress facings, etc. The strength of the fibre combined with its imperviousness to dampness renders ramie suitable for belting for transmitting power.
—George Damon Rice, in *St. Louis Dry Goods Reporter*

A DICTIONARY OF LITTLE ECONOMICS.

The following directions for removing stains, spots, etc., must be used with exceeding caution. Chloroform, benzine, turpentine, kerosene, and gasoline are all dangerous substances unless handled with extreme care.

Sponge a grease spot with four tablespoonfuls of alcohol to one of salt.

Sprinkle salt over the soot on a carpet and sweep all up together.

Rub finger marks from furniture with a little sweet oil.

Put a lump of camphor in an airtight case with silverware to keep it from discoloration.

Remove paint spots from a window by rubbing a copper cent over them.

Sprinkle salt over fresh claret stains.

Wash ink stains in strong brine and then sponge with lemon juice.

Hold a fruit stained article over a bowl and pour boiling water through the cloth.

Rub egg stains on silver with salt on a damp cloth.

Use wood ashes on discolored tableware.

Clean steel knives with raw potato dipped in fine brickdust.

Rub brass with hot vinegar and salt and scour with fine ashes.

Clean a carpet with a broom dipped in a very weak solution of turpentine in hot water.

Cleanse grained woodwork with cold tea.

Scour ironware with finely sifted coal ashes.

Soak mildewed clothes in buttermilk and spread on the grass in the sun.

Wash rusty gilt frames in spirits of wine.

Wash oilcloth with a flannel and warm water, dry thoroughly and rub with a little skimmed milk.

Purify jars by soaking them in strong soda water.

Wash blackened ceilings with soda water.

Rub white spots on furniture with camphor.

Rub a stove zinc with kerosene.

Cleanse bottles with hot water and fine coals

Remove fruit stains from the hands with weak oxalic acid.

Clean jewelry with prepared chalk.

Wash hair brushes in weak ammonia water.

Rub stained hands with salt and lemon juice

Remove ink from wool with muriatic acid, after rinsing with water.

Wash japanned ware with a little lukewarm suds.

Rub mirrors with spirits of wine.

Apply spirits of salt to ink-stained mahogany.

Use sulphuric acid, wash off with suds, for medicine stains on silver.

Remove oil stains from wall paper by powdered pipeclay moistened.

Use gasolene for removing paint.

Use jeweler's rouge and lard for rubbing nickel plating.

Remove writing from books by a solution of tartaric acid.

Wash willow ware with salt water

Clean hard-finished walls with ammonia water.

Rub whitewash spots with strong vinegar.

Rub soft grease over tar and then wash in warm soda water.

Dip a soft cloth in vinegar and rub on smoky mica

Sponge faded plush with chloroform

Take paint out of clothing by equal parts of ammonia and turpentine.

To remove machine oil from satin use benzine. Be careful about having a light in the room, as it is very explosive.

ELECTRICITY is now used to put a fancy shine on silk hats

At Redditch, England, 20,000 people make more than 100,000,000 needles a year.

TENDERS will shortly be invited for the supply of winter clothing for Toronto firemen.

FRED REYNOLDS, master mechanic in the St. Croix cotton mill, N.B., has resigned his position.

THE stock of the Fawcett hat factory, of Toronto Junction, has been seized by the bailiff for taxes.

CHAS. KOEHLER'S crop of flax at Wellesley, Ont., promises well. He is going to begin pulling early next week.

THE efforts that have been made to galvanize the Oriental Traders Co., of Vancouver, into new life appear to have failed.

THE dry goods and clothing stores of London, Ont., are going, until the end of August, to close down every Wednesday afternoon.

THE Hudson Bay Company have announced a dividend of \$3 per share as compared with \$1.25 per share last year. The balance to be carried forward, also, is nearly \$55,000 more than that of last year.

Geo. GOULDING, head of the firm of Geo. Goulding & Sons, who died last month at his home in Toronto, had been connected with the wholesale millinery business for twenty-five years. He was probably the oldest man in the wholesale trade.

FOR a green waterproof cloth, prepare a boiling bath of brilliant green, gelatine, and alum; then work the cloth in this for a short time, squeeze out all surplus liquor, and pass through a bath of soap. Dyeing between the two baths is a slight improvement.

THE shirt manufacturing firm of Skelton Bros., Montreal, has dissolved. Leslie Skelton, whose health has been somewhat indifferent for some time, has retired, and will travel abroad for a year or two. The business will be conducted without other change by F. C. Skelton.



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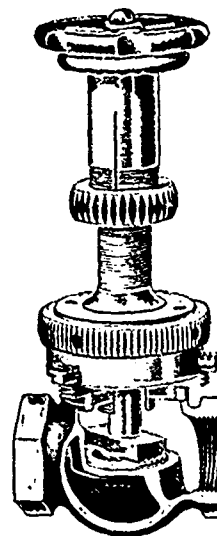
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Reseating
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This machine will
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from 1/4 to 4 inches, and
make it perfectly
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out having to re-
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pipes or coils.
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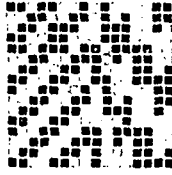
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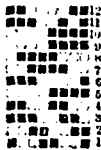
Textile Design

(Designed for the Canadian Journal of Fabrics by an English designer.)

STRIPED SHIRTING OR FANCY TROUSERING.



WEAVE PLAN.



This is a cotton fancy shirting stripe, in demand for the summer season, and as trousering in out door sports; the 4 shaft twill is thrown to the left; number of shafts 12; weft picks 8 to the round; 30 dents per inch; 2 in a dent, 16's cotton warp; 56 picks per inch of 12's filling, slack twisted, say with 225 for a factor in spinning, the object being to have a very soft and elastic cloth. The pegging plan being numbered, the warp pattern and draft will be better understood: 12 bleached white or dark cream, either; 2 red; 2 white; 2 red; 2 white; 2 red; 12 bleached or cream. These 34 warp threads drawn on the shafts shown in weave plan numbered 1, 2, 3, 4, then 4 light blue; 4 dark blue, drawn on 5, 6, 7, 8, 9, 10, 11, 12 shafts; 12 white; 2 dark blue; 2 white; 2 dark blue; 2 white; 2 dark blue; 12 white, these on 1, 2, 3, 4 shafts; 4 light blue; 4 dark blue; on 5, 6, 7, 8, 9, 10, 11, 12 shafts, and repeat from the first 12 at the commencement of these particulars; thus the warper's pattern and the draft are in unison, the weft all white. Of course, any other color arrangement can be adopted on the same lines, and will be suitable for this class of goods; good material, and dyes paramount. J. R. L.

A NEW material for curtains is glass. Little squares of colored glass are set in a zinc frame, and fastened together by little hooks. The effect is said to be very similar to that of a stained glass window.



ELECTROTYPES OF THE ABOVE CUT will be supplied parties on receipt of 60 cents. Very nice for retail dry goods dealers to use on their note heads.

Address, "Canadian Journal of Fabrics," MONTREAL OR TORONTO.

FIFTEEN Winnipeg ladies have banded themselves together with the object of introducing dress reform into that city.

NETTLE fibre is so fine that it is possible to spin out a quantity weighing two pounds and a half into a length of sixty miles.

THE latest material for carpets is linen. It is used also for rugs, mats, and, from a sanitary point of view, is a desirable material.

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JANUARY.				FEBRUARY.				MARCH.												
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OCTOBER.				NOVEMBER.				DECEMBER.												
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GREASY BELTS.

There are many places where leather belts are used so greasy from drippings that cannot well be prevented, from flying oil and spray, or from other unavoidable causes, that they become thoroughly saturated with grease, so much so that they become very inefficient. In such a case take a large piece of chalk that will cover the width of the belt, and hold it hard against it while running. The chalk takes up the grease as it is worn off by the friction of the belt. After chalking awhile, take a scraper and hold it against the belt in such a manner as will scrape the accumulated mixture of chalk and grease all off, and then renew the chalking operation, and keep repeating until the belt is in good working condition, when the cleaning process can be discontinued until it becomes dirty again. This is a simple remedy, and is by some considered the best way for keeping greasy belts clean and in good working condition.

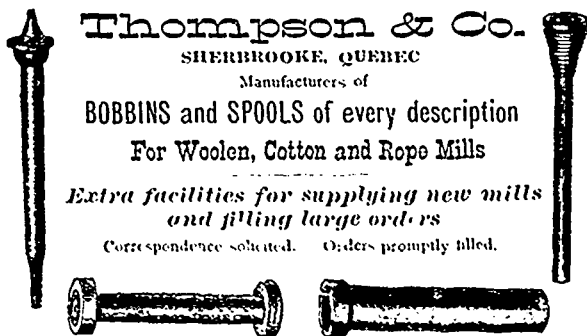
A Boston despatch of July 19th announced the shutting down for the month of August of the Amoskeag Cotton Mill. This is the largest cotton mill in the world. It is probable that similar action will be taken by a number of New England mills. The cause of this is the present condition of trade.

His many friends in the trade will regret to hear that C. J. Grenier, corset manufacturer of Montreal, is going to wind up his business and retire. Mr. Grenier has means of his own outside the corset business, and does not care to strive under the present grinding competition in prices. All businesses are liable to such periods, however, and we should think it would pay some enterprising man to buy this establishment as a running concern. It is well equipped, and what is more, has a good name. Mr. Grenier has had an honorable career, and his retirement is learned with the general regret of the wholesale trade, with whom he dealt exclusively.

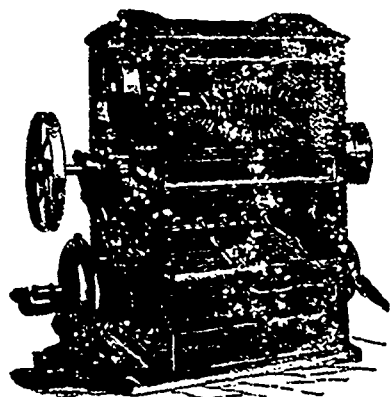
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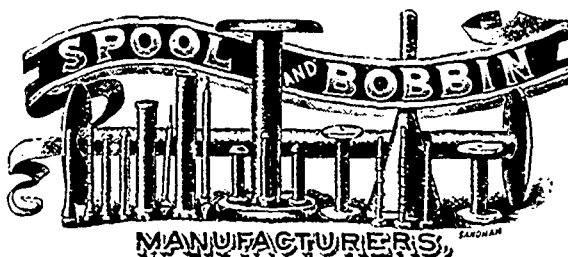
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Reels, Spooling and
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Ring - Twisters, Card
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(For Warp or Dresser
Spools), Pat. Double-
Acting Gigs, etc., etc.

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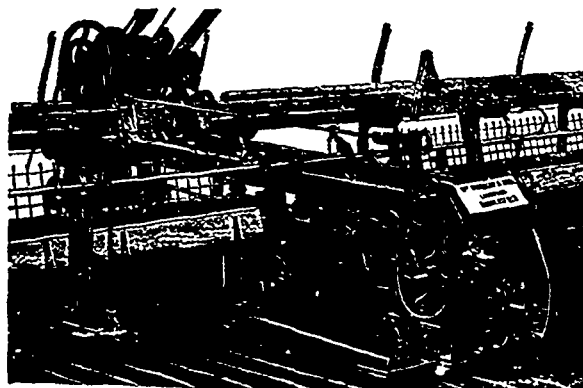
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Steam Driven Centrifugal Hydro-Extractor, Teetering and
Drying Machines, Patent Wool and Cotton Dryer, Patent Wool
Scouring Machine, Cross Raising Machine, Patent Crabbling and
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Rags, Carbonizing and Neutralizing.Best prices paid for Wool Pickings, Woolen
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purchased or worked up and returned.
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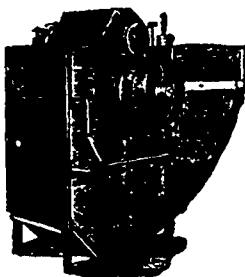
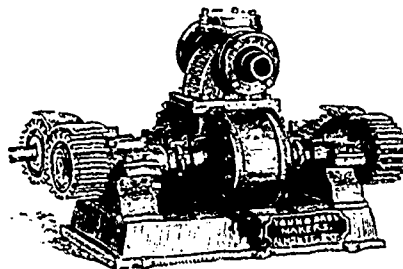
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PAPER COP TUBES FOR MULE SPINNING.

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PAPER TUBES SILK MANUFACTURERS.

PAPER CONES & TUBES FOR CONE WINDERS.

LOWELL... MASS.

Among the Mills

The flax crop of Ontario promises well. Some of it is 3 feet long.

A. Deagle is now carrying on a job dyeing works at Brandon, Man.

The Oxford, N.S., Woolen Mills are reported to be having a busy season.

The work of enlarging the woolen mills at Brantford, Ont., is being pushed forward.

The establishment of a felt boot manufactory at Wingham, Ont., is being considered.

L. E. Morlock, of Mount Forest, has purchased Peterson's woolen mill and store in Dundalk.

The Thorold knitting mill broke a shaft last month and was closed down for a few days in consequence.

A number of the woolen mills of central Ontario are closing at noon on Saturdays for the summer months.

The cordage factory at Hedleyville, Quebec, owned by the Consumers' Cordage Co., has been closed up.

The new additions to the Waterloo, Ont., Woolen Co. will give employment to 75 or 80 more hands than formerly.

The employees of the Hamilton Cotton Company had a very pleasant picnic to Niagara Falls on the 22nd inst.

P. Dunlop, of the Paton Manfg. Co., Sherbrooke, has gone to the States to take a place as finisher in a woolen mill.

The Canada Colored Cotton Mill at Hamilton closed down for a week, this month, for repairs and improvements.

W. Forler had a narrow escape the other day from being caught in some machinery at the woolen mills, Waterloo, Ont.

The Gillies woolen mill and the Hawthorne mill at Carleton Place close at noon on Saturdays for the summer months.

Willie Lanz had his finger injured in the gearing of a mule in the Forbes worsted mill. It was found necessary to amputate the finger.

John Hallam, wool dealer, Toronto, is making a trip to Winnipeg and goes out as far as Calgary to take a view of the wool situation there.

Taylor & Sons' knitting mill, which was recently burnt at Merritton, has not yet been rebuilt, owing to the non-settlement of the insurance claims.

A Chinaman, Lee Chu by name, is proposing to start a silk factory at Belleville, Ont. We are afraid Lee will bite off more than he can chew.

The bonus of \$50,000 to the proposed cotton mill at Sorel has been sanctioned, but no definite steps have yet been taken in the formation of the company.

The flax company at Sebringville, Ont., have elected as their president D. K. Erb; Geo. Hamilton is secretary and John L. Kastner, treasurer.

James Leslie, card clothing manufacturer, Montreal, has returned from a trip to Ontario. Mr. Leslie is well satisfied with the results of his trip.

The June Bulletin issued by the Department of Agriculture and Immigration of Manitoba, shows that the area in that province under flax is now 9,737 acres.

John Hallam, who has been appointed agent for the Central Prison binder twine factory, has already sold almost the entire output of the factory.

The J. C. McLaren Belting Co. are equipping the new weaving shed of the Waterloo, Ont., Woolen Co. with their celebrated leather belting.

The Dominion Cotton Co., Brantford, Ont., has leased water-power for the wincey mill, from the Seingsby Woolen Mills. The wincey mill is to be re-started with 150 hands.

J. A. Chapman, in the dyeing department of Newlands & Co., Galt, for the past six years, is now travelling for Theo. H. Eaton & Co., of Detroit.

The new chimney at the Canada Cotton Mill, at Cornwall, was struck by lightning the other day. It was shattered for about twelve feet from the top down, while the roof of the spool room was set on fire. The rain, however, put it out.

About 180 employees of the Kingston Hosiery were laid off during the past month, through the bursting of the cylinder of the engine. The engineer had just stepped out a moment before the explosion, and thus saved himself. A new engine is being put in.

The John Ryan Woolen Company, Toronto, have been slowly liquidating since last February. The Attorney-General is now commencing proceedings against them for breach of the Ontario Limited Liability Act, in not having given notice of their intention.

Shorey & Co., clothing manufacturers, Montreal, have issued to their customers a very fine cabinet-sized photograph of Lord Aberdeen, our new Governor-General. In this way Shorey & Co. have published photos of every Governor of Canada since Lord Dufferin, and of many of the prominent public men of the Dominion.

The people of Mission City, B.C., are in negotiation with a Scotch manufacturing company with a view to securing extensive woolen mills. The mill, it is reported, will be one of the largest on the coast and employ between 200 and 300 operatives at the start. The people of British Columbia have no small ideas in the matter of woolen mills.

So far as we have heard, no trace has been discovered of C. R. Smith, boss finisher of the Brodie mills, Hespeler, who disappeared in May, one Sunday, after attending church and Sunday-school. There is nothing to account for his disappearance unless he might have become mentally unbalanced. Mr. Smith was formerly in the Lanark woolen mill and at Almonte.

Our readers will remember that at the risk of his life, W. W. Cummings, secretary of the Trent Valley Woolen Mills at Campbellford, rescued Miss Harcourt from drowning last May. A few days ago a number of his townspeople presented him with a handsome bookcase and secretary, with an easy chair for Miss Cummings, in public recognition of his bravery.

A small boy named Noonan, who is employed in the Glen Tay Woolen Mill, received a very painful accident the other day. His sister heedlessly threw one of the small needles used in the mill at him, and although only done in sport, it entered the calf of his leg about one and a-half inches. There is a sharp barb on the point of the needle which caused some trouble in removing it.—Perth *Expositor*.

We noticed in last issue that Bellhouse, Dillon & Co. had been appointed agents for the Dominion for Ralli Bros. This firm are the largest dealers in indigo, catch, etc., in the world, and have warehouses in Bombay, Calcutta, London and New York. A large part of the indigo hitherto consumed in Canada has come from this firm through indirect channels, but now the goods of this celebrated firm will be shipped here direct through their newly appointed agents.

At the last meeting of the Almonte town council, a communication was read from D. M. Fraser, on behalf of D. Shaw and others, asking for exemption from taxation of the stone mills of the Elliott estate, to be used as a two set blanket mill and file factory, the exemption to be for a term of ten years. Mr. Fraser was present, and explained that the intention was to employ about \$10,000 capital in the file works, with about 10 to 12 hands; and that the blanket business would start with \$20,000 capital, and run a two-set mill. He asked an expression of opinion from the Council as to whether exemption would be granted. A motion was passed expressing the desirability of granting the exemption if the conditions were satisfactory on both sides.

J. Hampden Shaw, of Wm. Shaw & Co., Montreal, laid plans in May for an extensive trip among the textile manufacturers of Ontario and the West, but had only got as far as Toronto when his journey was cut short. On the 24th of May, while viewing the

aces at the Woodbine, a section of the grand stand on which he was seated collapsed, and he, with about one hundred others, was thrown to the ground and so severely injured that he was laid up for several days at the Queen's Hotel, under the care of a doctor, and had to return to Montreal. A number of others were injured at the same time. Mr Shaw has taken an action against the proprietors of the grand stand, as the structure was unsafe. Mr. Shaw suffered severely by the accident, not only by reason of his bodily injuries, but because he had brought his brother out from England especially in connection with this trip.

LITERARY NOTICES.

The Rose & Trumbull Co., 318 Broadway, New York, proprietors of our able contemporary the *American Silk Journal*, have given to the world a most valuable work of reference on the silk industry of the United States. This work is entitled the "American Silk Industry," and gives, besides, a complete directory of the manufacturers, importers and brokers connected with the silk trades, the full details of statistics of the industry compiled from the census of 1890, along with tables of yarns, a comparison of the methods of expressing the size of yarns, etc. Along with such matter there are tables of yarns, information for manufacturers and officers of the American Silk Association, etc. The book is well printed on good calendered paper, as almost all American books are, and the price is only \$2.

The *Trade Review* of Montreal issued last month a special edition in a colored cover, which was very creditable to the publisher, Mr. Harvey, and which was patronized most liberally by wholesale merchants and others.

The July number of the *Canadian Magazine* is one of the best issued of that bright and well-edited literary monthly, which is making such a good impression, and fast proving the fact so often doubted that there is scope in Canada for a first-class native illustrated magazine. The present number contains 80 pages of reading matter, and embraces about a dozen articles and poems of more than average ability. Prof. A. B. Willmott gives some interesting and instructive thoughts on the formation of our noble Lake Ontario. Thos. L. M. Tipton tells, in an interesting way, many interesting things about Dunnville and its vicinity at the mouth of the Grand River. Two very amusing articles—worth the price of the magazine for their own sakes—are "The Automatic Maid-of-all-work," by M. L. Campbell, and "Humor in the School Room," by J. L. Hughes, Inspector of Schools for Ontario. History is represented by a well illustrated description of the "Battle of Stony Creek," which has been referred to in complimentary terms by the press, and which contains a portrait—the first yet published in Canada—of Col. Harvey, the hero of that gallant fight of eighty years ago. The *Canadian Magazine* is published by the Ontario Publishing Co., King street west, Toronto, the subscription being 25 cents per single copy, or \$2.50 a year.

The chief feature of the *Century* for July, and one of interest in connection with the Extradition Treaty with Russia, is a continuation of the discussion of the internal affairs of the Czar's empire. The personal interest of the number is strong. There is a third paper by Mrs. Oliphant, on characters of the reign of Queen Anne, the subject this month being "The Author of 'Gulliver.'" Mrs. Oliphant draws a vivid character sketch of the Dean of St. Patrick's, and there are portraits of Swift, Sir William Temple, "Stella," and the Earl of Berkeley, together with views of scenes connected with the life of Swift, drawn by Fenn and Woodbury. Other papers are: A sketch of the famous actress Sarah Siddons, by Edmund Gosse, in the Notable Women series, with a striking frontispiece portrait. Among the artistic features of the number is a series of medallions of "Famous Indians" from the Northwest, including Chief Joseph, Lot, Young Chief, Moses, Poor Crane, and others. These were made by the sculptor Oliver Warner, and are remarkable for the power and beauty of the heads selected for representation. The accompanying text is written, from personal knowledge of these chiefs, by Lieut. C. E. S. Wood, late of the

army and of Gen. Howard's staff. In the group of papers on health there is a thoughtful article on "Mental Medicine," by Dr. Allan McLane Hamilton, who discusses "The Treatment of Disease by Suggestion," with a leaning toward a scientific form of mind-cure, and with some reference to hypnotism and the methods of inducing the hypnotic state. This article is illustrated with plans referring to this phase of the subject. There are many other interesting features in the July number of this, America's leading magazine.

The *Imprint* is the name of a new monthly issued in Toronto and devoted to the printers' art. Its typography is excellent, and the first two numbers contain well executed portraits.

If there are any Canadians who have not read of Laura Secord, the heroine of Beaver Dam, they should get the dramatic poem on the subject by Mrs. Curzon, of Toronto. Those who know the history of our Canadian heroine should equally have the book, for it is a noble tribute of a gifted Canadian woman to one of the noblest of her countrywomen. It is not often that literary ladies tread the paths of true history, but the few who have made the essay have acquitted themselves so highly as to make us wish there were more women in the historical field. Mrs. Curzon has written much on purely Canadian subjects, and her drama and the notes and other poems in the same volume show evidence of extensive reading, as of patriotic fervor. This neat volume is from the press of C. Blackett Robinson, Toronto.

SETTING UP A DYNAMO.

Use special care to avoid dropping anything on to the lamp rods or arc lamps.

Never lay an arc lamp on its side, but set it up in some secure place.

After taking lamps out of boxes, remove the packing blocks, and see that all parts are in proper position and working freely.

In unboxing the dynamo, do not attempt to remove it from the box after simply taking off the cover; but, instead, knock the entire box apart, leaving the machine standing on the bottom piece only. If the armature is shipped in a separate box from the balance of the machine, it will, in most cases, be necessary to use a hoist for the purpose of placing it in position, and great care should be used to avoid scraping or cutting of the shaft wires, or armature bobbins, in dropping the armature into place. Look the machine over thoroughly, and see that everything is in place and all screws tight. Secure the pulley firmly on the shaft.

It is a good plan to run a dynamo idle for a day, or even longer, if possible, following this with several hours' run with only a light load. This load should only be sufficiently heavy to warm up the fields and armature, so as to dry them out thoroughly in case they have become damp during transportation. A little care of this kind before putting the machine into regular service, will avoid trouble at a later stage of the proceedings.

It is very important to locate the machine in a dry place, and as near the source of power as possible, providing of course for sufficient length of belt to prevent accidents to shafting, or slippage of belt, and also arranging the distance so as to get sufficient belt-grip on the pulleys.

If the power is taken from an engine used specially for the lighting work, and this engine drives a main shaft, which, in turn, drives the various dynamos, it is best, if possible, to locate the machine on that side of the shaft opposite the engine, so as to divide the strain as equally as possible.

It is often the case that an engine must be used on other work as well as for the electrical apparatus, or, if it is operating a number of lighting machines, it may not be necessary to run all of the dynamos for exactly the same length of time. Under such circumstances, a clutch pulley must be provided on the main shaft, which will permit throwing on or off the dynamo which it drives, as such dynamo may be needed or dispensed with.

A light double belt is the most desirable for lighting work. It should never be less than 30 feet long and should be very pliable. If the belt is new and stiff, it can be softened up by applying neat's foot oil, or belt oil, on the outside.—*Scientific Machinist.*

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An efficient staff of Trained Inspectors

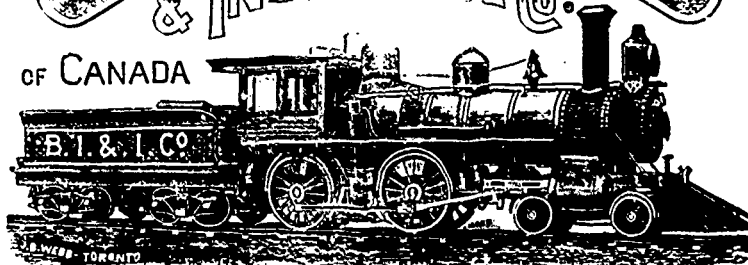
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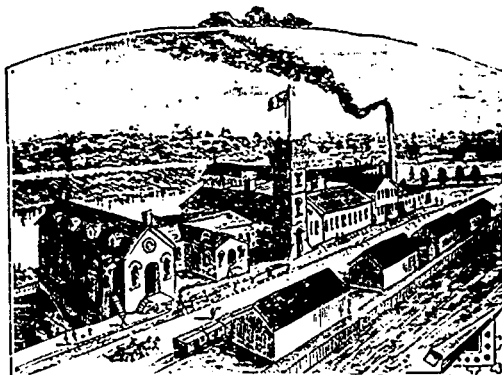
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(CAPACITY 10 TONS DAILY)

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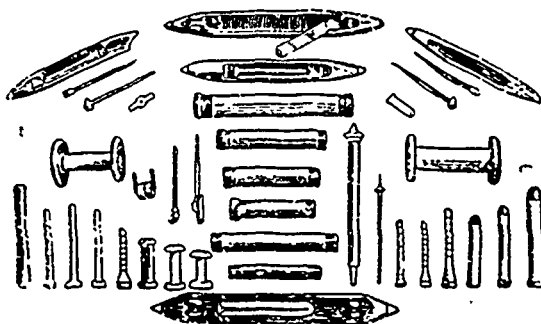
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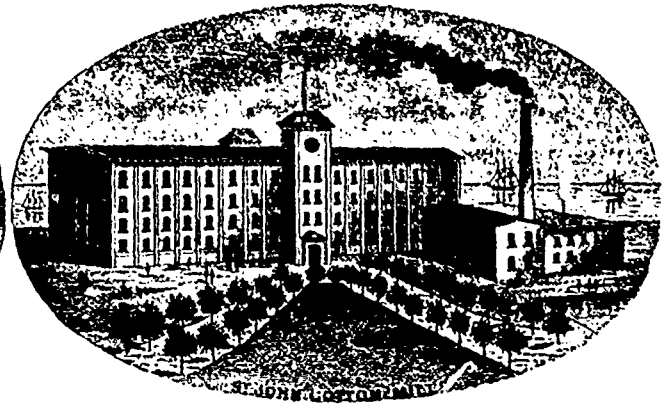
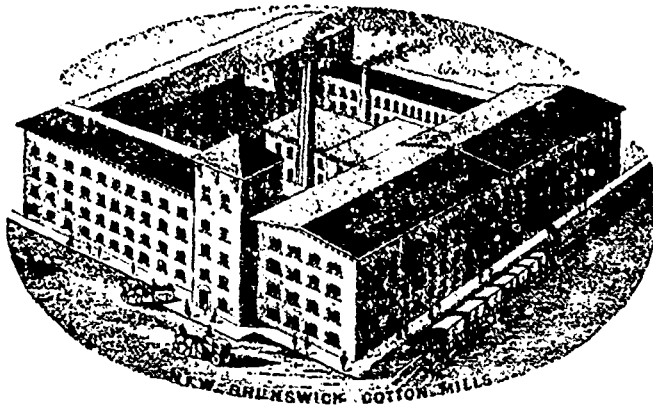
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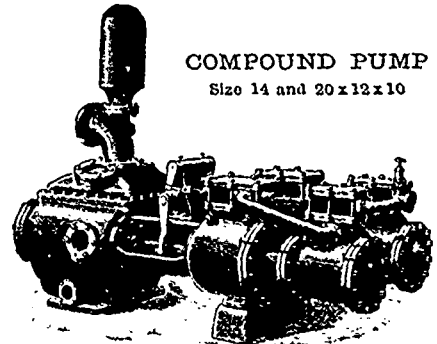
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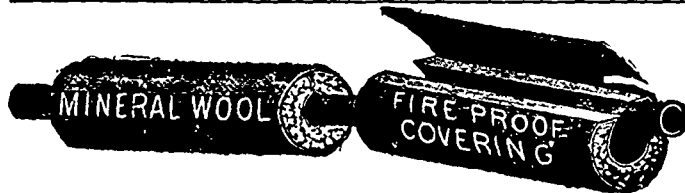
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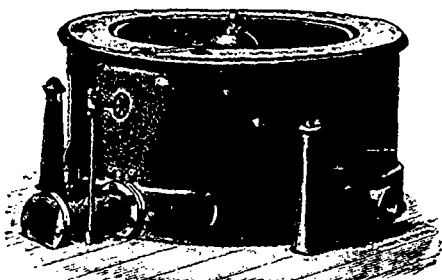
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DOUGHERTY & MOORE, merchant tailors, London, Ont., have retired from business.

THOS O'REILLY, a well-known dry goods merchant of Carleton, N.B., was married recently to Miss Flossie Hayes, daughter of Capt. Hayes, of Lancaster.

MCNEE & NIMMO, Kingston, have the contract for supplying dry goods to the Kingston penitentiary this year, and Daniel & Boyd, St. John, to the Dorchester, N.B., penitentiary.

THE proprietors of the Montreal Blanket Co. are putting in two new Garnett machines, one for fine work and one for coarse. The cost of these machines will be about \$3,000, and may require further extensions to the factory buildings at Cote St. Paul.

AN Ottawa exchange says.—Robert Craig, of the clothing firm of J. & R. Craig, purposes making a trip to England, Scotland, and Ireland, and probably other European points, in the fall. He will be accompanied by Mrs. Craig. This will be their second trip within a few years.

JAMES MANCHESTER has retired from the firm of Manchester, Robertson & Allison, the wholesale dry goods firm of St. John, with which he has been connected for so many years. Mr. Manchester was a much esteemed member of a firm that stands high in the trade, and his friends will wish him comfort and rest in his retirement.

AN action was brought some time ago by William Wodefield, the successor of John Croft & Sons, needle manufacturers of England, to restrain William Croft & Sons, Toronto, from using the old English firm name. William Croft is a son of the late John Croft, and came to Toronto in 1855, naturally using his own name in business. The case has proved a rather expensive one for the English firm, as the costs have been about \$10,000 and Justice Ferguson has dismissed the action.

WHEN you go to see the World's Fair do not stop in the heart of the City. It will take you an hour and a half to get there. Three hours a day is too much to waste when your time is limited. The HOTEL GENOA, 5311 Lake Avenue, is one of the nearest places to stop at while in Chicago, and is only seven minutes walk from the grounds. If when going by Grand Trunk you get off at Harvey and take the Illinois Central to Hyde Park Station, you will find the GENOA just round the corner, and you will save over an hour. The GENOA HOTEL is bright and new.

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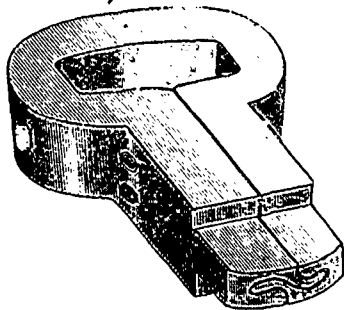
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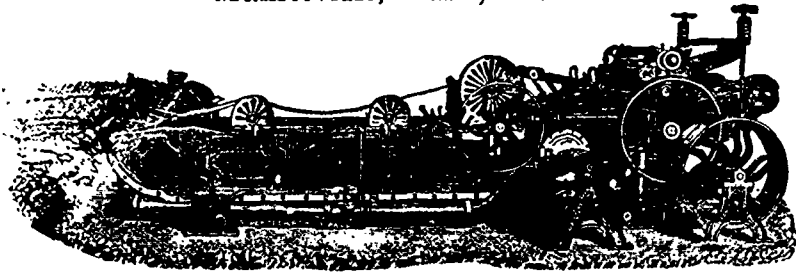
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A BRIDGE OF WOOL.

When the national pike bridge west of Richmond, Virginia, was in process of construction, the workmen struck an apparently bottomless bed of quicksand. Finally the civil engineer and the contractor made a novel experiment to overcome the difficulty. They sent men all through the country to buy wool. This wool, unwashed, burrs and all, was tumbled into the foundation. As pressure was applied it sank some distance into the sand, but finally it would sink no further. At last, on this woolly foundation, the rocks were laid, and to-day the western abutment of the old national bridge rests on a bed of compressed wool.

TEXTILES IN ANCIENT INDIA.

A writer on the epic poetry of the ancient Indians devotes a paragraph to the textile industry of India in early ages. The manufacture of stuffs of every kind, he remarks, seems to have attained a high degree of perfection. The materials employed were mainly cotton, linen and silk; and the fine muslin of India was celebrated in antiquity under the name of "Sindon." Cotton stuffs were worn on common occasions, linen and silken stuffs were articles of luxury. The latter figure in the presents of kings and the dowries of princesses. Thus the king of Videha gave with his daughters furs, magnificent tapestries, fine silks, and garments of various colors. Silk seems to have been worked in India, as in China, in the most distant ages. It is not generally known that several species of silkworms found in India are indigenous. The Sanscrit names of silk, it is added, are purely Indian, and have no connection with the Chinese word *ser*, which has passed into all the

languages of the West. Other materials used for garments, and worn according to the requirements of climate, rank and caste, were wool, stuffs made of bark, and the skins of animals.

HATS AND MILLINERY.

Reports from Paris show that large hats are in greatest demand this summer. One correspondent says fully sixty per cent. of the hats are now trimmed with ostrich feathers. Wings have become too common. Some flowers and buds, notably roses, are seen, and more or less aigrettes. There is an entire absence of the jet and stones so much run on in the early spring. As this style requires simplicity in everything, the complex *Loire Fuller* shades are now going out of style, and the materials in these extravagant combinations of rainbow shades for dresses, parasols, handkerchiefs, ribbons, etc., that have been so heavily employed, have all come to grief.

There is a rage for lace, and almost all varieties are worn.

The Berlin correspondent of the *N. Y. Cloak Trade Journal* predicts a good trade for the coming winter in fur trimmings. "The great rise in the prices of all kinds of furs used by cloak manufacturers indicates that this belief is general. Paris, also, has a most pronounced predilection for furs. A leading Paris house recently placed a very large and comprehensive order for all sorts of furs and fur trimmings, including large lots of wolverine, mink tails, sable tails, beaver tails, etc. The prices of some species have gone up 100 per cent. and are likely to rise even higher, in view of the enormous demand. Black, natural musk, which heretofore has been thoroughly despised by many, can now be had but sparingly in good qualities, and is in considerable demand."

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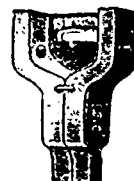
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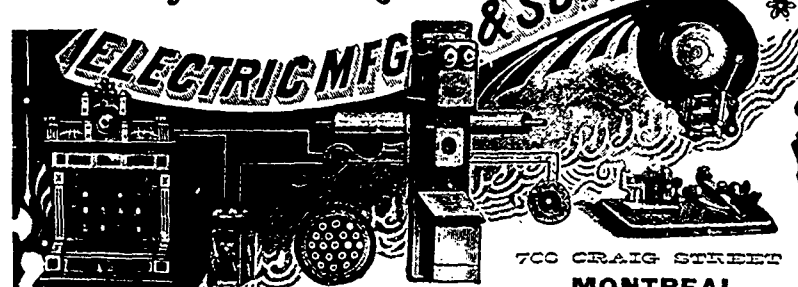
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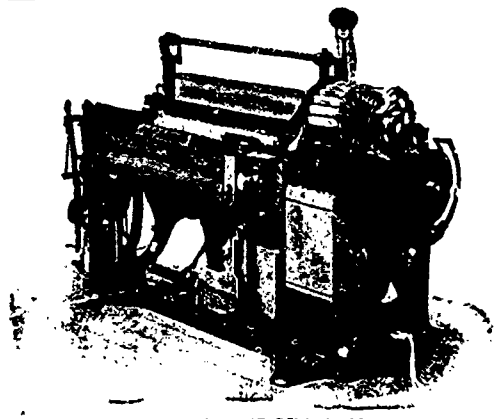
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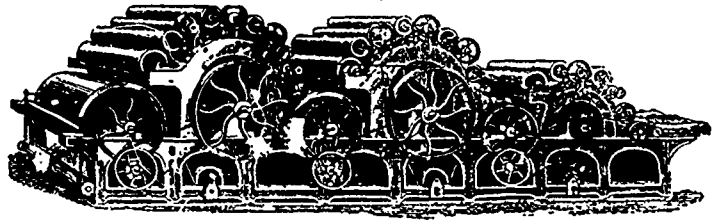
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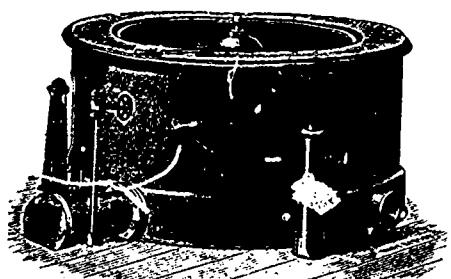
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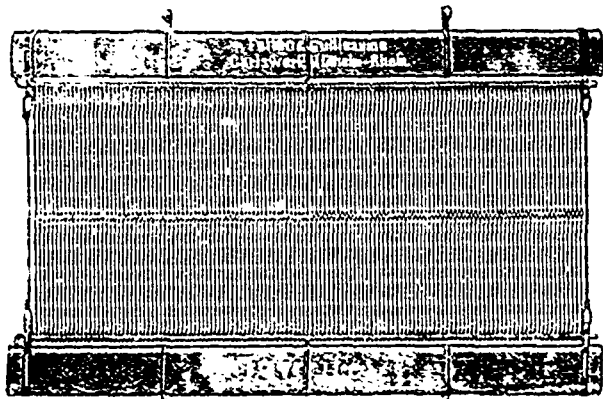
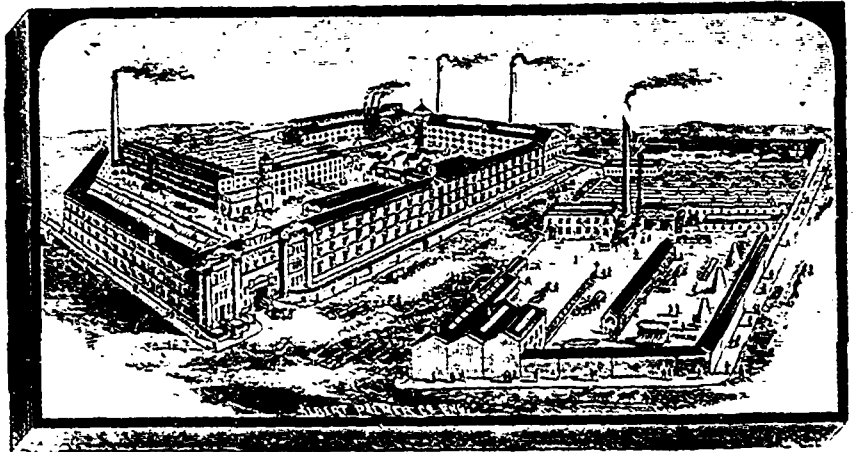
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