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# CANADIAN Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XV. TORONTO AND MONTREAL, JANUARY, 1898. No. 1.

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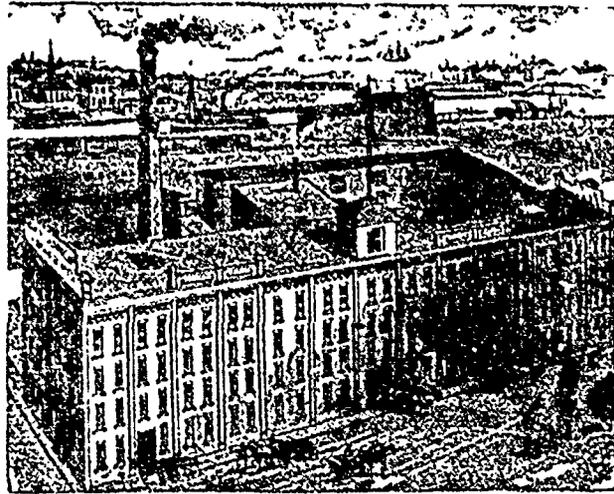
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# CANADIAN JOURNAL OF Fabrics

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Vol. XV.

TORONTO AND MONTREAL, JANUARY, 1898.

No. 1.

## Canadian Journal of Fabrics

A Journal devoted to Textile manufactures and the Dry Goods and kindred trades.

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### CONTENTS OF THIS NUMBER:

Aniline Colors, New .....	9	Mills, Among the .....	21
Bleaching by Peroxide of Sodium .....	9	Oil Cloth, The First Floor .....	8
Card Wire .....	6	Personal .....	20
Carding, The Art of .....	16	Power Plant, Rental Value of a .....	4
Combine in Knit Goods, A .....	2	Prices .....	2
Color, Influences of Wear on .....	17	Shuttle Check, A New .....	8
Crossing, Combinations of .....	3	Textile Centres, Foreign .....	12
Departmental Stores, Taxing .....	1	"    Design .....	10
Dyeing, Piece .....	9	"    Imports from Great Britain .....	8
Editorial .....	1	"    Machinery, Some .....	7
Electricity in Mills .....	23	Trade in 1898, The .....	1
Ewan, The Late Alexander .....	10	"    with South-Western China .....	17
Fabric Items .....	20	Tweed Industry, The Scotch .....	15
Failures of the Past Year .....	2	Underwear, Cut v. Fashioned .....	11
Imports from Great Britain, Textile .....	8	Wool Australian .....	10
Knit Goods, A Combine in .....	2	"    Market .....	20
Laces, The Manufacture of .....	7	"    in 1897 .....	1
Mechanical Draft .....	15	"    "    Argentine Republic .....	2

## Editorial.

**Taxing Department Stores.** The session of the Ontario Legislature just closed has been marked to a most extraordinary extent by class legislation proposed and accomplished.

Whether the acts were levelled at the exploiters of the agricultural fairs by means of the peanut game, or the exploiters of our forest resources by exporting our logs instead of manufactured lumber, or are intended to render the keeping of departmental stores unprofitable, most, if not all of them, have been designed to affect the interests of a single class, and that not in the

direction of extending its privileges. We will only refer to the act respecting departmental stores, which has been very advisedly withdrawn. By this act a municipal council by by-law would have been empowered to tax a departmental store carrying on more than three classes of business, a special tax upon each additional class of business. The tax might be of any kind or amount almost that the council might determine. Such an Act as this is simplicity itself. It cannot have been at all difficult to draw up, and could be evaded, if it had been passed, without any inconvenience whatever. What are departmental stores? What definition will include them and exclude the country general store? If that is settled, who could prevent the real departmental store, which is aimed at in this Act, from forming itself into a number of limited companies, each with the same directors and officers, and each carrying on the lawful three classes of business? Then what would prevent the ill-disposed from prosecuting the hardware merchant who sells cordage that is usually had of grocers, or the dry goods merchant who sells the lamp-wick which could be only obtained lawfully from the hardware store? As far as legislative interference goes, the old adage of letting well enough alone seems very applicable.

**The Trade in 1898.** The prospects of the woolen manufacturers of Canada are much better at the beginning of 1898 than they were a year ago.

Tariff uncertainty has been mitigated, and though adequate protection is claimed to be lacking in some lines yet, reviving business generally and the improved outlook do much to stimulate the demand for woollens. The idle mills are few, and most are working full time, and many overtime. The rush to the Klondyke, which has already begun, is the source of much of the present activity, not only in the demand which has sprung up for special goods but also from the enlarged general demand consequent on the considerable increase in population which is already taking place.

**Wool in 1897.** The chief feature in the Canadian wool market in the past year has been the brisk demand caused by the imposition

of increased duties in the United States in the face of improving commercial conditions. The manufacturers and wool importers felt that the outlook was bright, and so bought largely, and endeavored to get the importations completed before the Dingley tariff came into operation. The sales of foreign and domestic wool,

for 1897 in the three principal markets of the United States amounted to 527,055,574 pounds. So that the sales for 1897 were nearly 71 per cent. larger than for the next heaviest year, namely, 1892. Among other facts we notice that in normal years the sales of wool in the three principal markets amount to between 4,000,000 and 5,000,000 pounds per week, whereas the average for 1897 has been over 10,000,000 pounds. Much of the buying was speculative, but it has been estimated that fully two thirds of the wool passed into manufacturers' hands. The Canadian market has reflected United States conditions and the trade of the year has been highly satisfactory. We give below the ruling prices during the year of the leading classes of wools:

	Jan.	Feb.	March.	April.	May.	June.
Fleece (combing) ..	22 to 24c.	22c.	22c.	22c.	22c.	.....
Pulled (super) .....	21 " 21½	20 to 21	20 to 21	20 to 21	20 to 21	.....
Capes (greasy) ..	14 " 16	14 " 16	14 " 16	14 " 16½	14 " 16½	14 " 16
B.A. ....	26½ " 35	26 " 33	26 " 33	26 " 33	.....	28 " 30

	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Fleece (combing) ...	20 to 21c.	20 to 21c.	22 to 21c.	21c.	21c.	20 to 21c.
Pulled (super) .....	.....	.....	.....	21 " 22	21 to 22	20 " 21
Capes (greasy) ...	15 to 17	15 to 17½	15 to 16½	.....	.....	14½ " 16½
B.A. ....	25 " 35	29 " 35	30 " 35	29 to 36	29 to 36	25 " 35

There is a tendency at present among the manufacturers of the United States to employ the profits made in the recent

boom in the wool market to keep their mills running. That is, the profits made on the raw material are considered a justification for selling the finished product at prices below what present market conditions would justify the trade in demanding. Every manufacturer should make the most determined effort to secure the best prices possible on the market. The time for keeping mills running, no matter what it costs, is passed. The man who is selling goods for less than they cost is making a serious mistake somewhere, and the sooner he looks around and finds out which of his employees is incompetent, or how much he does not know about the business himself, so much the better.

**A Combine in Knit Goods.** A short time ago a Montreal paper stated that the knit goods manufacturers were looking about for means to form a combine. This is even a more difficult task than would be the formation of a trust by the tweed manufacturers. The formation of the cotton combination was a comparatively easy matter when once the owners of the mills decided to combine. Their product was largely uniform, and such variety as characterized it was easily systematized. Everyone will recognize at once, however, the complex nature of the problem when it is proposed to systematize the output of our knitting mills. Wool and cotton, each of many kinds and qualities, is combined in an infinite variety of proportions, mixed with the waste of both or either variously prepared. The resulting yarns, of varied fineness, are worked up upon machines of all styles and dates. It would be impossible to make a classification which would be either fair or workable. But even if a combine were perfected, it would last only so long as might be necessary for some enterprising capitalist to rent space and power in a woolen mill, buy a few machines and some yarn, and enter the market as a free lance.

## FAILURES OF THE PAST YEAR.

The mercantile failures in Canada in the past year have, we are pleased to note, been considerably fewer and the aggregate liabilities much less than in the previous year. The failures of 1895, according to *Bradstreet*, namely, 1,876, owing \$15,347,000, had increased in 1896 to 2,179, owing \$16,208,000. But last year the number of failures was 1,907, with liabilities of \$13,147,929. An allotment of them into provinces for two years gives the following comparison:

Province.	1897		1896.	
	No.	Liabilities.	No.	Liabilities
Ontario ..	866	\$5,201,159	930	\$5,024,476
Quebec .....	699	5,999,743	870	8,158,426
New Brunswick .....	62	389,667	81	597,311
Nova Scotia .....	181	976,729	155	782,520
Prince Edward Island ..	10	84,292	23	125,737
Manitoba .....	43	470,397	29	323,599
North-West Territory ..	10	88,342	19	104,085
British Columbia .....	66	356,600	72	1,092,306
Totals, Canada ..	1,907	\$13,147,929	2,179	\$16,208,460

Ontario shows a reduction in number of failures, but no decrease in liabilities, while Quebec is able to show a decided reduction in both. New Brunswick, Prince Edward Island and British Columbia all exhibit an improvement in the list, inasmuch as they have fewer failures and smaller liabilities than in 1896, but Nova Scotia and Manitoba reverse these conditions. There is no improvement, but a slight decline in the proportion of assets to liabilities. It was over 40 per cent. in the previous year; it is slightly under 40 per cent. this year. Both wholesale and retail merchants may find some comfort for the future in the fact of a lessening in failures during 1897.

## WOOL IN THE ARGENTINE REPUBLIC.

The following article, written by the Hon. William I. Buchanan, United States Minister at Buenos Ayres, is extracted from the United States Consular report.

The general interest manifested both here and in the United States on the subject of sheep husbandry and wool, leads me to transmit the following data and impressions regarding the industry in this republic.

In the beginning, let me say that I am inclined to believe, although I realize fully the risk of criticism I run in making the conjecture, that a probable maximum production of wool has been nearly reached here. In making this statement, I in no sense wish to be understood as believing that the development of the country will be either slow or small in the future. I am a firm believer that this country will show a remarkable development during the next ten or twenty years. My reasons for this belief regarding wool production here are: the great increase which has taken place, and which continues, in the exportation to Europe of live sheep and of frozen mutton; the marked and profitable attention being given the production of fat cattle for export and the consequent neglect of sheep husbandry by such estancieros; the reasonable proba-

bility, it appears to me, that whatever increase may take place in the production of wool in the undeveloped southern portion of the republic, by reason of an increase there in population, will be offset by a reduced wool production in the central and northern portions of the republic, where the area of grazing land which can be profitably left uncultivated will be reduced if the desired tide of immigration sets in toward this country; because it is but reasonable to conclude, using the past history of the country as a basis, that four-fifths of whatever immigration comes here will remain in the present well-settled central zone rather than go to the cold and unsettled lands of the southern portion of the republic. If this is true, the area of grazing land now occupied by sheep in the centre of the republic, will certainly be greatly decreased by an increased agriculture. In addition to the above, there is to be taken into account the effect had on the flocks of this country, as on those of all other countries, by drought, locusts, cold seasons and diseases. I think two-thirds of the immigrants now coming here are Italians. Using our own experience as a guide, it seems probable that these will add but little to the development of sheep husbandry in the far southern portion of the republic while opportunity is found to settle in the warmer and more closely populated portions of the country, where they are more than reasonably sure to succeed in accumulating a modest competence as a result of their labor upon small farms and in different industries.

During the past twenty years in the quantity of wool exported from this republic the increase in production has been a trifle over 92 per cent. It may be noted that the sum total of Argentine wool exported to the United States during any one of the past twenty years has not exceeded 6.05 per cent. of the total exports of the republic, while it has fallen as low as 0.89 per cent. The mean average for the twenty years has been 3.51 per cent.

I have stated that the statistics of this year's clip have not yet been made up. It may be safely estimated, however, as about 435,000 bales. Of the wool exported to the United States during the present season—50,000 bales more or less—I estimate that 35,000 bales have been fine "cross Lincoln." The remaining 15,000 bales have been what is known by us as "Cordoba." This would indicate that we have found here a very desirable wool, and evidently one required by our manufacturers, which we have not heretofore bought. I am told by those engaged in the wool trade, and have been shown confirmatory letters from the United States, that this Argentine "cross Lincoln" wool has been well received by our manufacturers; that it has given them excellent results; and that they will continue their purchases. From my knowledge of our wool industry, I should say that we produce but very little of this class of wool, which is, it may be said, a specialty of this country alone. Regarding what is here termed "Criollo" wool, or "Cordoba," as it is known with us, I believe that the production of this particular class of wool is decreasing here slowly, but steadily. This arises from the use of Lincoln blood. It has been found, however, by flock owners in Cordoba, that crossing their flocks with this blood is not giving as good results as

were anticipated. In consequence of this, many are discontinuing the use of Lincoln or other long-wool blood, preferring to keep their flocks in the original condition.

It is exceedingly interesting to note the rapid and striking change which has taken place in the character of the flocks of this country during the past ten years. At first, there was certainly not more than 7 per cent. of "cross Lincoln" wool in the total Argentine clip. Now, it is estimated that this wool forms more than 65 per cent. of the total clip. This change has been brought about primarily as a result of the growing demand, to which I have already referred, for large-bodied sheep for export. There are those who believe that the great change which has thus taken place in the character of the flocks of this country will be found to be disadvantageous within a few years. Their argument is, that this country would not be in a position to satisfy a demand for fine wool should a change take place in the character of woolen goods demanded. They seemed to think, on the other hand, that if the demand for long wool and for mutton sheep continues, this country will soon have to compete with the newly developed sheep and wool producing countries; and, in consequence, they think the flocks of this republic will have no special advantage.

In considering the wool industry here, it is interesting to notice the relative cost of transporting Argentine and United States wools to a United States market, say Boston. During this season, the freight on wool by steamer between this port and Boston has been \$3 to \$3.20 (gold) per bale for full cargo, and by sailing vessels \$2 to \$2.50 for full cargo. Some shipments by sailing vessel to Boston have been made at \$1.50 per bale. The rates for less than full cargoes have been \$4 per bale to New York, and \$5 to Boston. The average weight of a bale of wool is about 800 pounds. This makes the rate on full cargoes between this city and Boston, more or less, 40 cents per 100 lbs. by steamer, and, say, 30 cents per 100 lbs. sailing vessel. Comparing these rates with those in force on our railways, it will be found that the highest is 28 per cent. less than the carload wool rate between Columbus and Boston, 43 per cent. less than that between Chicago and Boston, and 67 per cent. less than that between Dallas and Boston.

#### COMBINATION OF CROSSINGS.

Having such an extensive series of simple weaves at command, there is ample scope for the origination of new varieties of effects by blending several makes together in the formation of one pattern. The most striking or effective designs of this description are got by employing weaves dissimilar in flush. Two-rib weaves, for instance, one warp and the other weft flush, produce a very bold and decided pattern. This style of combination has been frequently applied to worsted coatings, vestings and mantlets, and will in all probability have another run, possibly in a slightly different form or in new materials. Nothing less than a thorough practical knowledge of weaving, writes Roberts Beaumont in the *Textile Recorder*, will insure success in this class of textile designing. A complete acquaintance with every variety of small weaves and the nature of

each when applied to the woven product are essential. To be conversant with the form of the makes on point paper is not sufficient. The characteristics they possess in the woven fabric must also be understood. Weaves regular in arrangement and attractive to the eye on paper may have a very defective appearance in the cloth. Of course, this is not always due to the imperfect construction of the crossing, but to the use of inappropriate sizes of yarn and indifferent setting, which are calculated to destroy the regularity of the most systematically arranged weave or design. Unless these points are carefully attended to, whatever weave is employed will be irregular in structure or build. Weaves as well as colors should be combined in accordance with certain well defined and accepted principles of cloth construction. There are some varieties of crossings which are altogether unsuitable for combination purposes. They make good standard cloths when used alone, but defective patterns result from introducing them into designs which contain several other classes of weaves. This is, no doubt, to be accounted for by the fact that the various makes are not similar in one important essential, namely, weaving capacity. That is to say, one weave is adapted to small yarns and fine setting, another to comparatively thick yarns and more open setting; a third would work in small yarns if the number of threads to the inch were somewhat decreased. The marvel would be if the pattern resulting from such an incongruous arrangement were not faulty. Let the makes in the effects which they impart to the cloth be as different as possible, providing they produce a harmonious combination and weave well together.

#### RENTAL VALUE OF A POWER PLANT.

At the recent meeting of the American Society of Mechanical Engineers, in New York, in his paper on the valuation of textile manufacturing property, Charles T. Main touches upon the rental value of a power plant and the sources of power:

"The rental value of a power plant depends upon its character and efficiency to produce power cheaply. The cost of producing power in small amounts is very much greater than in large amounts, and the amount which the lessee should pay may be obtained in comparison with the cost of producing the amount of power required with a reasonably efficient plant with steam power or by some other means. Thus, supposing the power to be rented is water power and plant, its value can be determined by estimating the cost of producing a uniform power by water power, supplemented by steam power if necessary, and comparing the cost of producing the same amount of power by steam power alone, in each case adding such charges as the lessee is to assume. The difference, if in favor of the water power, will represent the value of the power for the length of time the estimated cost covered. If the power plant be a steam plant, it is possible that it has no rental value, that is, it may be so wasteful that it would pay to replace or change parts of it to bring it into an economical state. If it is an economical plant, and is to be run by the lessee, he should pay such rent as will cover depreciation and a fair rate of interest, and assume repairs, insur-

ance and taxes, or pay enough rent to cover them. In the same way, if power is sold to the lessee, the proper amount to pay per horse power per year will vary with the amount which he requires.

"The problem of a fair price to be paid for water to a water company which owns and operates the water rights, and leases the water to persons or corporations who use it in their wheels and power plants connected therewith, is not an uncommon one. There are now more sources of power than there were a few years ago. In fair-size cities electric power can be had, which is very convenient and requires very little care. Where gas is reasonable, the gas engine can be used with a good deal of satisfaction, especially where the work to be done is intermittent. Gasoline and oil engines are now used with satisfaction. All of these sources are measures of value, and the one which presents the most advantages with the least cost is the one to adopt, if not tied down, or is the standard on which to estimate other values."

A member of the committee on the revision of the methods of conducting steam-boiler tests, said: "Until recently, two methods of determining moisture in coal have been in common use; first, the one usually adopted in boiler testing, which consists in drying a large sample, fifty pounds or more, in a shallow pan placed over the boiler or flue; second, the method usually followed by chemists, of drying a one-gram sample of pulverized coal at 212° Fahr., or a little above, for an hour, or until constant weight is obtained. Both methods are liable to large errors. In the first method, the temperature at which the drying takes place is uncertain, and there is no means of knowing whether the temperature obtained is sufficient to drive off the moisture which is held by capillary force or other attraction within the lumps of coal, which, at least in case of bituminous coals, seem to be as porous as wood, and as capable of absorbing moisture from the atmosphere. The second method is liable to greater errors in sampling than the first, and during the process of fine crushing and passing through sieves, a considerable portion of the moisture is apt to be removed by air-drying. In an extensive series of boiler tests made by the writer in the summer of 1896, it became necessary to find more accurate means of determining moisture than either of those above described. It was found that by repeated heating at gradually increasing temperatures, from 212 degrees up to 300 degrees, or over, and weighing at intervals of an hour or more, that the weight of coal continually decreased until it became nearly constant, and then a very slight increase took place, which increase became greater on further repeated heatings to temperatures above 250 degrees. It has often been stated that if coal is heated above 212 degrees Fahr., volatile matter will be driven off; but repeated tests on seventeen different varieties of coal mined in western Pennsylvania, Ohio, Indiana, Illinois and Kentucky invariably showed a gradual decrease of weight to a minimum, followed by the increase, as stated above, and in no single case was there any perceptible odor or other indication of volatile matter passing off below a temperature of 350 degrees. The fact that no volatile matter was given off was further proved by heating the coal in a glass retort

and catching the vapor driven off in a bottle filled with water and inverted in a basin; the air displaced from the retort by expansion due to the heating displacing the water in the bottle. When the retort was cooled, after being heated to 350 degrees in an oil bath, the air thus expanded contracted, and returned from the bottle to the retort, leaving the bottle full of water, as at the beginning of the heating, showing that no gas had been given off, except possibly such exceedingly small amount as might be absorbed by the water."

Another member, treating on maximum economy, says: "If the object of the trial is to ascertain the maximum economy or capacity of the boiler as a steam generator, the boiler and all its appurtenances should be put in first class condition. Clean the heating surface inside and outside, remove clinkers from the grates and from the sides of the furnace. Remove all dust, soot and ashes from the chambers, smoke connections and flues. Close air leaks in the masonry and poorly fitted cleaning doors. See that the damper will open wide and close tight. Test for air leaks by firing a few shovels of smoky fuel and immediately closing the damper, observing the escape of smoke through the crevices."

In another paper a member summed up that there are eight sources by which the heat from fuel is a total loss, as follows: 1. Loss of coal or coke through the grate. 2. Unburned coal or coke carried in the shape of dust beyond the bridge wall. 3. Heating to 212° the moisture in the coal, evaporating it at that temperature, and evaporating the steam made from it to the temperature of the flue gases, = weight of the moisture in pounds  $\times [(212^\circ - t) + 966 + 0.48(T - 212)]$  in which  $T$  is the temperature (Fahr.) of the flue gases and  $t$  the temperature of the external air. 4. The loss of heat due to steam which is formed by burning the hydrogen contained in the coal, and which passes into the chimney as superheated steam, = 9 times the weight of the hydrogen  $\times [(212^\circ - t) + 966 + 0.48(T - 212)]$ . 5. Superheating the moisture in the air supplied to the furnace to the temperature of the flue gases, = weight of the moisture  $\times 0.48(T - t)$ . 6. Heating of the gaseous products of combustion (not including steam) to the temperature of the flue, = their weight  $\times 0.24(T - t)$ . 7. Loss due to imperfect burning of the carbon of the coal and to non-burning of the volatile gases. 8. Radiation from the boiler and furnace.

Smoke measurement is also the subject of another paper. The writer says: "In a series of competitive trials between two furnaces which the writer made in June, 1897, for the Detroit waterworks, a method of obtaining a continuous record of the quantity of smoke was introduced, which seems to him of great value in making specific what has heretofore been based upon the judgment of the person conducting the observations. The method referred to consisted simply in suspending, at a suitable point in the smoke passage between the boiler and the flue, a smooth, flat, brass plate, having its face at right angles to the direction of the current. This plate served to collect a certain portion of the soot which was carried along by the waste gases, and indirectly furnished

a means of sampling the gas in respect to its smokiness. The plate was 24 inches long and seven-eighths of an inch wide, and it presented a surface amounting to 21 square inches. Being inserted through a hole in the top of the flue and suspended by a wire, the hole being covered, the plate could be readily withdrawn from its place whenever desired, and the collection of soot removed by the use of a stiff brush. This was done every two hours during the progress of the trial. The quantity of soot which collected on this plate varied according to the type of the furnace and the character of the fuel, as also according to the conditions of the firing and the working conditions of the boiler. The records of the smoke-measuring device and those of the ocular observations of the chimney were in accord with each other. The quantity of soot which was collected, reduced to the hourly rate, varied in these tests from nine milligrams to 184 milligrams. The method has not as yet been tried in the case of a flue carrying very dense smoke."

#### CARD WIRE.

William Middleton, a card clothing manufacturer of Clackheaton, Eng., recently delivered a lecture upon card wire before the Bolton and District Managers' Association, in which he said:

"There are only three modes of setting commonly in use, namely: plain, twill, and ribbed. In regard to their merits, there are many different opinions. Some authorities tell us that plain and twill are the best, but why this should be so I do not understand, as this class of wire cannot be produced without the open edges or rows, with which every carder is familiar. The defects also in these settings are more difficult to detect than in the ribbed, for when the tooth is a little out of shape it takes an experienced man to discover it, whereas in the case of the ribbed this is not so. This, however, leads us to that portion of our subject which is perhaps the most important to deal with, namely, the material used for the construction of the card tooth. I can remember the time when what was known as L and D wire was commonly used, and was then considered by the trade to have reached the height of perfection; in fact, if this wire were now in use instead of mild steel wire, many of the difficulties which we as card makers have to face would be overcome. Both these, however, have been largely substituted by hardened and tempered steel. This also has been much improved upon of late years. This wire was originally produced in a black and scaly condition, which for some time made dirty cotton, and was the cause of much annoyance to cotton manufacturers, but it is now practically as bright and as smooth after leaving the furnace as it was before entering it. Much could be said here in reference to the treatment of the wire in the furnace, and the process of hardening and tempering. In the first place, the material operated upon is but slender, and thus the slightest variation in the heat will cause a like variation in the temper, which in turn, when set into the foundation, will cause irregular angles and will alter the form of the tooth altogether. This

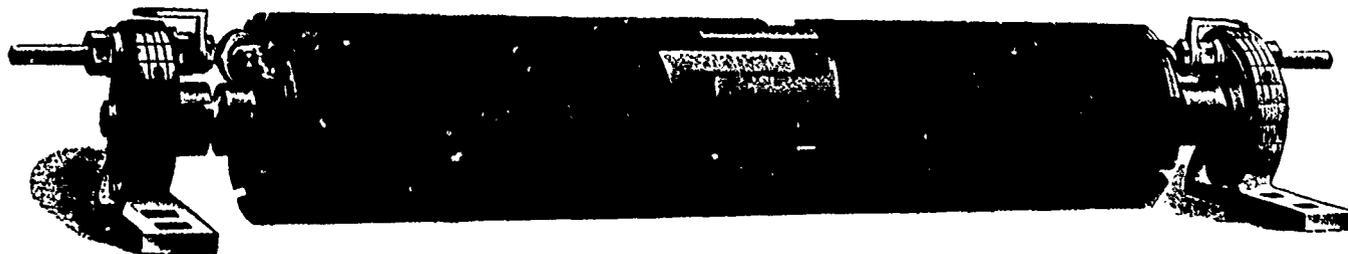
has often been a source of trouble both to the card maker and to the cotton spinner.

"We now come to the different sections of wire in use at the present time, of which round is the most common. All the attempts that have been made to improve upon this wire have been with the object of producing finer carding points and to increase the space between the teeth without lessening the number of points. This was by what is known as 'flat to bend wire,' introduced in the year 1873. One reason why this wire has not been more successful is, I believe, because of the difficulty of producing it satisfactorily. If it had been produced with the desired uniformity it would have been a far greater success. Next comes angular and rolled double-convex wire. With these, as with flat to bend wire, the ideal has not been attained. Angular wire, when properly produced presents a sharp point to the cotton, but this is about the only merit it possesses. In regard to the rolled double-convex, there are many disadvantages in its production. Some time ago I was consulted by an established firm of card-clothing manufacturers in reference to the difficulties there are in producing it. Their workmen were unable to make it satisfactorily, much unpleasantness being caused. My own experience leads me to say that it is very difficult, and I may say almost impossible, to insert the teeth into the foundation and put an angle to the wire so as to present a parallel point to the working face of the card. I find, also, that the two thin, outer edges of this wire are often rough and serrated, this being caused, I believe, by the process of hardening and tempering, as these thin, outer edges receive more heat than the body of the wire, it being much thicker. Another probable cause is that the slightest variation in the thickness of the wire causes it to overlap in passing through the rollers, and is thus the means of roughening the surface of the wire. This roughness must certainly prevent it from carding and stripping properly.

"Next we come to what has been the subject of much controversy, namely, plow or side-ground wire. The reason why it is called plow-ground wire is because small plows precede the emery disks, to keep the various rows of teeth apart. It was first introduced by Ashworth Brothers, of Manchester. As I have already stated, this has been the subject of much controversy, which is still going on. It is a well-known fact that the system of passing the emery disks through the various rows of teeth in the card clothing produces a rough surface upon the tooth, which is very injurious to the delicate cotton fibers. The experience of most cotton spinners confirms this; but, apart from the serrations upon the sides of the teeth caused by grinding through the surface of the wire, there are many other objections. Most of you will be aware that during the process of grinding, the card is traversed at a very slow speed, while the emery disks which follow the plows between each row of teeth revolve at a very high velocity; the result of this being that the wire becomes heated and loses a portion of the temper, and the resisting power is considerably weakened. Another objection is that in order to enlarge the space between the teeth the best portion of the wire has to be ground away.

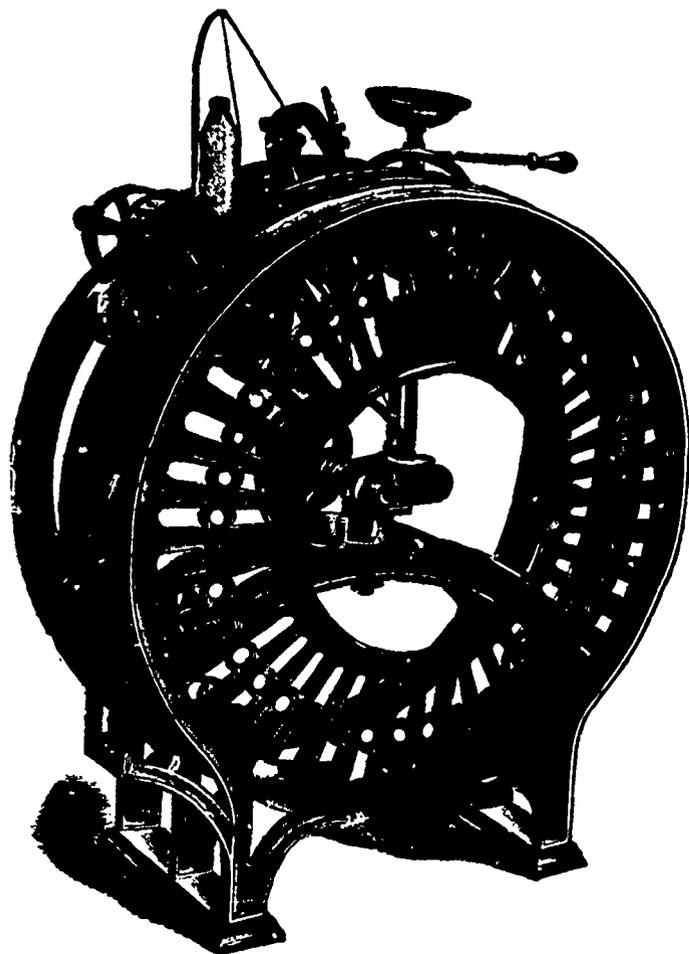
Again, as a consequence of plow and side grinding, burnishing has to be resorted to, in order to modify the mischief done by the emery disks; and it is no uncommon thing to go into the card room and find that the burnishing process has been going on for a year or two in order to obtain decent stripping. So it may be concluded from these facts that plow or side-ground wire has not yet reached that state of perfection that many of its advocates claim to be possible. The investigations that were published in 1892 by Sir Benjamin Dobson go far to prove these points clearly. In his book upon the 'Principles of Carding,' page 48, he says that 'the inevitable conclusion that will be drawn from a very careful inspection of these plates is, that in all side-ground wire there is a very large amount of surface asperity capable of injuring the delicate wax walls of the fibers.' But, perhaps, some may say that he has changed his opinion since that time. That may be so, but it does not necessarily follow that this is not correct, for we must remember that the illustrations then used were taken from specimens of card wire obtained from all the principal makers of card clothing.

"In concluding my remarks upon this class of wire, I may say that, apart from all the objections that have already been mentioned, rough or side grinding is at the best a very precarious operation, as during it the teeth are often damaged and completely cut off. Not long ago, along with another gentleman, I paid a visit to a firm to inspect a machine that had only been a few months in use, and which the inventor claimed to be a great improvement upon all previously introduced. Upon our arrival we were taken into the grinding room, where all had been specially prepared for our visit. After a full explanation as to how the machine worked, it was set in motion, but it had not been going long before it damaged the card by cutting the wires off in all directions, to the complete discomfiture of the inventor. This only confirmed what my experience had previously proved to me, that there was something superior to plow or side-ground wire needed. Perhaps some may ask at this stage what class of wire I myself recommend as the best. My answer to this question would be, that I consider round wire double convex to bend to be the best for all cotton and worsted fibers. My principal reasons for this are as follows: First, because it is free from striation, which must inevitably accompany side grinding, secondly, because the surface of the wire not being broken into by grinding, there is no necessity for burnishing. For the same reason it will strip all the more easily. Again, as it is admitted that all side-ground wire damages or weakens the yarn, I contend that wire double convex to the bend, being free from the objections of side ground wire, will produce a stronger and better yarn. And lastly, this wire, being compressed upon the working parts, gives it a greater amount of resisting power and durability. In conclusion, I may say it is of the utmost importance to have a suitable angle for the different cards upon the carding engines. It is a fact that a great amount of card wire is broken and good carding lost for the want of sufficient attention to this important matter."



### SOME TEXTILE MACHINERY.

The Expander or Stretcher, made by W. H. Harrap, engineer, machinist, etc., Richmond Hill, Blackfriars street, Salford, Manchester, is claimed by the makers to be the best expander in the market. The greater advantages of expanders of small diameter is established, and so need not be here enumerated.



The Rayer and Lincoln Combined Sewing, Trimming and Stamping Machine is, if desired, supplied without marking mechanism at reduced price. It sews the piece ends and cuts off the raw edges. This is the simplest make of this machine, having no complicated and elaborate mechanism for stripping the cloth. Repairs are therefore reduced to a minimum. Made by W. H. Harrap, Richmond Hill, Blackfriars street, Salford, Manchester.

### THE MANUFACTURE OF LACES.

There are three distinct methods of making laces by machines in Chemnitz, although the kinds of machine-made laces are very numerous. There are (1) Nottingham and Calais laces. (2) St. Gall and Plauen laces; (3) Barmen laces. Nottingham and Calais lacemakers "weave" from yarn, both employing the same principles. St. Gall and Plauen do not "weave," but embroider on material. Barmen "weaves" on a circular machine on pretty much the principle by which it makes

braids. The machines for the Nottingham and Calais laces are made mostly in Nottingham, although recently Chemnitz has been selling quite a number to Calais. Many, if not most, of the so-called Nottingham and Calais laces are made on Lever's machines.

Lace making is an expensive, as well as difficult and interesting trade. Beginning with the designers or pattern makers every step in the construction, to the picking processes, calls for the employment of great skill, tact and large sums of money. Designers are dear, very dear. Only artists of excellent training are able to originate anything new or striking. This art, designing for laces, was practically exhausted by the ancients. It is very hard to hit upon anything that has not had its run in Egypt, India, or some part of the East; add to that the wonderful laces of Malines, Valenciennes, Brussels and Venice. The very mounting of patterns is expensive, hence it is that few houses can afford to have many. Besides designing or pattern making, there is weaving, or call it knitting, if you will, bleaching, dressing, mending and finishing. Goods leave the frames "grey," or, as they say in Nottingham, in a "brown" state. The single widths are made or divided off by drawing out a thread. In many cases unnecessary tissue must be "scalped" away by hand. Threads on patterns that cross and cannot be avoided, must also be cut away or removed by hand. After the lace is "woven," the single strips are run through rollers, pressed and measured. For every 12 yards a bell rings automatically, whereupon the workman makes a cut with the scissors. The lace is then wound very quickly on a card, by a machine called a jenny. After the lace leaves the looms it undergoes a most searching examination. Then follow mending, clipping, scalloping and carding. Most of this is done by hand, by people working in their homes. The pay for such work is by the piece.

The Nottingham machines are propelled by steam, water or electricity, they are known as power "looms," as against the hand or house looms. They work on or may have the jacquard principle. Several German concerns use only the Nottingham machines. The lace, when it leaves these machines, or looms (I use the latter word because it is, perhaps, best understood), is in the form of a long, large piece, containing many pairs of curtains of the same design or pattern. This piece is afterwards bleached, dressed (starched), mended and cut into curtains. These last are then trimmed and "taped" along the edges or borders. The taping is done by machinery. Most of the German manufacturers, who use the Nottingham lace making machines, sell or send very few goods into foreign parts. In these lines, i.e., on these machines, the kinds of curtains or laces turned off, imitate Valenciennes, Chantilly, cheap, novelty, cotton and silk laces. Spanish laces, veilings, bobbinet laces and silk, so called illusion nets. In Nottingham, these machines run day and night, most of the time; i.e., when orders are in, and the demand is great. A time has come when textile producers over here are satisfied if their factories run full ten hours out of every twenty-four. The help are called twist hands, and earn, nowadays, an average of 30 shillings a week. So divided or differentiated are the lines of labor, in lace making, that it may be interesting and profitable to go a little into details.

Of designers there are two classes, independent and regularly employed. The former make for, and sell to, any one who wants their work and is willing to pay for it; the latter are engaged usually by a large concern, for only very large concerns can keep regular designers; as a rule, such men are highly educated, well trained and expensive. They serve long apprenticeships in industrial and industrial art schools. Plauen has one of the best schools of industrial art and designing. The men it has given, and is giving, to the empire's industries, entitles it to national gratitude. The draughtsman is not to be confounded with the designer, though the latter very often does

duty as a draughtsman In the big shops, the draughtsman takes the design or plan, prepares it in a practical way for work on the machine. He mounts and adjusts it properly, looks to the bringing out of every idea and effect, supplementing the designer's work in a way to get the very best results

The woven goods are, in a way, worthless, till the bleacher, dresser, dyer and finisher have put their part into them When it is said that the doctors of chemistry sit in council over the concoction of starches, degrees of heat to be employed in cooking same, etc., a pretty good idea is given of the care that large concerns give their products Behind the bleacher and dyer are chemists, who keep watch of every action and reaction, who keep a record of every cause and effect, and end by getting as good results as usually reward such care To get the goods out soft, when softness is desired, or stiff, when stiffness is wanted, to get a silky finish on cottons, and elegant colors on silks, are some of the problems solved. Behind the bleacher are chemists, behind the dresser, starcher, dyer and finisher, i. e., behind each is a chemist. After the goods are finished, they must be made marketable Nothing is neglected till the goods are in at our custom gates. Special attention is necessary to put up and pack them in attractive boxes Strange as it may seem, the putting up is not the least important factor in the marketing of goods Long experience, great skill, artistic tendencies, study, travel and observation are necessary to fit men for these important positions A very great deal depends, nowadays, on the get-up of goods.

Nottingham and Calais have a class of workmen and women who have inherited skill, technical training, long experience. The two places work together This enables them to bring out the very best results at the very lowest possible prices

### THE FIRST FLOOR OIL CLOTH.

The manufacture of oil cloth floor coverings was first undertaken in East Winthrop, Me., by Ezekiel Bailey. But his very first attempt was not at carpet-making Having met a peddler one day, he bought a table-cover, made of a combination of burlap and paint Such things were a luxury in the country at that time, and Ezekiel Bailey was shrewd enough to foresee a big demand for them if the cost could be moderated a bit He decided to try to make them himself. Procuring a square of burlap, or rather enough burlap from which to fashion a square of the desired size, he framed up the fabric as the women used to quilts at a quilting bee, the only difference being that the burlap was framed, or stretched over a table made of planed boards large enough for the full spread of the burlap. With paint and brush he began his work The first coat was a filer, the next, a thicker one, gave body to the cloth, and when this was rubbed down to a smooth surface the last coat was prepared. This was of a different color, and was spread on thick Then, with a straight edge, a piece of board with a true thin edge, reaching across the whole surface of the painted cloth, the finishing touches were put on Commencing at one end of the fabric, the straight edge was moved back and forth, and straight along over the fresh paint once or twice, and the whole left to dry.

Employing a boy to help him, he turned out tablecloths as fast as his limited facilities would permit, and, as he progressed, new ideas for decorating took shape in his mind In less than a year he had men out on the road selling them It was while engaged in this work that he thought out the idea of oil-cloth carpets, tracing out the figures he wished to stamp on blocks of wood His first carpet was a wonder in its way, and, could it now be found, it would, undoubtedly, find its way into some museum of curiosities But the scheme was a success, and from that time, when the first oil cloth carpet was made, Ezekiel Bailey's fortune was assured. The turning out to perfection of an oil-cloth carpet in those days was a task that would make a person in these piping times of labor-saving machinery wish for something easier All the smoothing or rubbing down was done by hand Heavy long-bladed knives were used to scrape down the rough body coats of paint, and a smooth surface, on which to stamp the geometrical figures in colors, was fetched after polishing with pumice stone. Ere long the demand for oil-cloth carpeting became so general that other factories were built There was living not far from East Winthrop at this time a shrewd farmer named Sampson, who had kept his

eye on the progress of Bailey, and when the demand for the carpeting increased, taking a neighbor in as a partner, Mr. Sampson built a factory, and in a very short time was in a position to be considered a formidable rival of Mr. Bailey.

But the originator of the oil-cloth carpet was not to be outdone Discerning good returns from a plant established close to a big centre of consumption, Mr. Bailey entered into a deal with New Jersey capitalists, and a big factory was set going in that State A trusted employee of the Bailey concern in East Winthrop, Levi Richardson, who still lives and is the proprietor of a modest little store in East Winthrop, was sent to New Jersey to instruct the green hands there in the art of the manufacture. While thus engaged, Mr. Richardson's brain was busy with the problem of labor-saving The result was the present patent used in most factories, whereby as much rubbing down can be done in one day as could have been accomplished in four by the old hand method.

The original factory erected by Ezekiel Bailey was long ago burnt down. Another put up in the same place was also burned The present factory is well protected by devices for extinguishing fire, and it is kept busy all the year through. The work done at East Winthrop now is all hand work, just the same as thirty or forty years ago, the makers still adhering to the belief that printing done by hand is much more durable than the machine-made work. The Sampson factory, which stood within three miles of the original Bailey factory, was also burned.

### A NEW PATENT SHUTTLE CHECK.

D. W. Sherriff, Carleton Place, Ont., has invented a shuttle check to take the place of the roll of cloth or waste behind the picker, by so doing to take the sudden stop from the shuttle, also to prevent so many breakages in the filling. Much softer bobbins and tenderer yarn can be used, the makers claim. The loom will run much easier, will need less fixing, can be run much faster, no picking sticks being broken from weaver's starting up loom when the shuttle is put up against the picker; can be run with a poorer picker, the pickers and shuttles will run longer, break less binders, less waste, etc.

The advantage over other checks are as follows:—The strap or buffer will last much longer; where the wear comes behind the picker, there is a small strap which can be removed and replaced without removing check from loom There is not a solid attachment about the strap, as each part rocks and moves at each pick of loom, and by so doing there is less wear on the strap Pickers can be changed without removing check from loom. With this advantage, you are not looking for new set screws, getting new threads cut, etc. This check is very simple, neat, nothing to wear or get out of order, and can be put on any loom.

### TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the textile imports into Canada during Nov., 1896, 1897, and the eleven months to Nov., 1896, 1897 —

EXPORTS TO CANADA.	Month of Nov.,		Eleven months to Nov.,	
	1896.	1897	1896.	1897
Wool .....	£ 1,522	£ 9,285	£ 8,562	£ 40,261
Cotton piece-goods .....	14,124	26,699	386,196	342,578
Jute piece-goods .....	11,101	9,513	143,831	117,550
Linen piece-goods .....	3,983	7,787	126,223	107,320
Silk, lace .....	\$4	441	6,984	5,088
" articles partly of .....	1,302	1,902	25,768	19,269
Woolen fabrics .....	5,049	6,109	244,028	208,354
Worsted fabrics .....	10,854	27,646	478,049	519,294
Carpets .....	3,453	9,097	146,396	129,890
Apparel and slops .....	17,639	17,538	329,141	283,117
Haberdashery .....	3,189	5,127	145,151	132,314

—The J of F has to thank D. K. McLaren, textile mill furnisher, Victoria Square, Montreal, for a copy of a very handsome calendar, showing a view of Windsor Castle, with portraits of the Queen and Prince and Princess of Wales.

### BLEACHING BY PEROXIDE OF SODIUM.

Sulphur bleaching is not absolutely successful, the color cannot be claimed to be permanent, and the odor which sometimes clings to the goods, undeniably is so. Many substitutes have been found which are successful bleaching agents, but are debarred by cost from becoming competitors of established processes. A company which has an extensive chemical works at Niagara Falls, N. Y., is now placing on the market a new bleaching agent—peroxide of sodium—which the bleaching depends on the action of the available active oxygen on the coloring material, while there are no injurious compounds formed to hurt the fiber. The oxidation processes have none of the disadvantages of the older methods, but have until lately been debarred from extensive use by their cost. This is still the one prohibitory feature of the hydrogen and barium peroxide processes, while with peroxide of sodium this last barrier is removed. The ideal bleaching method should possess the following qualities:

It should bleach to the shade wanted; leave no foreign odor, leave goods in perfect condition for dyeing, not injure the goods or make them tender, the bleach obtained must be permanent, it must be simple to carry on, and require only ordinary attention, it should consume little time and labor, it must be cheap. These requirements are all of vital importance in the bleaching of good material. A process which fails in one of them is doomed, and will be superseded in the near future by methods which do possess all these qualities. The peroxide of sodium process, by four years extended use in Europe and in America, has been proven to possess all these characteristics.

### PIECE DYEING.

One of the most delicate operations in the preparation of woollens for the market is this dyeing of the fabric in the piece. It is so easy to make colors off shade, so easy to get clouds and blotches in the same piece, and so easy to turn out the different pieces so that in some slight respect or other they will fail to match, that the whole operation becomes very difficult and very troublesome, says a writer in an exchange. The trouble is that oftentimes the foundation for these uneven effects is laid in the earlier details of treatment, and then when the dyer and finisher get hold of the goods the mischief is already begun. This would not be so bad, perhaps, if there was any possibility of passing over a slight error or a slight departure from the mark of a perfect piece. But in piece dyeing it is a well-known fact that the piece is subjected to the most rigid inspection, and then the least failure to come up to the mark is noted and observed. The goods are looked at in all lights, they are tested in all ways, and in every respect the demands are most rigid, so that the least imperfection carries with it its judgment of woe for the poor dyer. The particular thought we wish to dwell on is "cloudy goods." It is an evil that has at some time or other darkened nearly every dyer's skies, and like the thunder bolt it is likely to peal out at any time. There must be a cause, a reason, for cloudy effects in woollens. The important and all-essential thing is that we get at that reason.

In nine cases out of ten when clouded piece dyes are being produced we look most naturally at the scouring in the finishing room to get at the seat of the difficulty. This is not strange. The scouring is, on the surface of it, supposed to take everything out of the cloth that does not belong there. But when you look into it, it would be nearer right to say that the scouring is expected to remove all the foreign substances in the cloth that the ingredients used in the scouring will attack and loosen. This is technically all we have a right to expect from the scouring, and if we look for more we will be disappointed. Suppose now that some material or other has got into the piece that the scouring substances will not touch. In this case it is manifestly impossible to remove it, and yet the finisher cannot be blamed. At any rate, he cannot be blamed if the material is one which really has no right to be there, or which is put there without his knowledge. Then, again, suppose there is a weakness along some particular line in the scouring liquor, and just in that line the goods happen to need all the strength in the liquor that can possibly be brought to bear. Here is a case, too, where defective scouring will result not from the process

being imperfectly done, but from the conditions of the cloth and liquor not being suited to each other.

The scouring is not to be altered by any means just because a piece or two happen to come along with clouds in them. I have known scourers who would increase the alkalies used as soon as such a condition arises, but it is always a question whether that is a wise plan, for too much alkali is just as likely to make bad work as too little, and while the excess might work all right in one grade of goods it would work all wrong on another. It is just as well to keep to the old methods of scouring if they have always worked well, and look for the causes of the cloudy appearance elsewhere. More than likely the cause will be found somewhere else. If anything has gone wrong in the goods previous to this stage, it will usually manifest itself in harder work being necessary to get the goods clean. Now, if we find that a class of goods is getting to require more work to get the dirt out we must begin to exercise care and caution. The trouble may be away back in the preparation of wools, or it may be in some of the earlier manufacturing processes. But at any rate it is the finisher's business to find it if he possibly can.

In the wool scouring, if too little alkali or too much has been used, the result is liable to be a wool that will make hard scouring when it gets into the piece. Too much alkali is worse than too little, and when too much has been used the grease is liable to stick to the goods in such a way that the piece scouring can scarcely remove it all. A further feature of the use of a hot excessive amount of alkali is that it acts as a mordant upon the fiber, and as the mordanting is of course done unevenly, the colors when they come to be applied to the goods are uneven too. In connection with an excessively large amount of alkali, a hasty drying at a high temperature will sometimes produce effects which result in clouds. The best plan is to take time in the drying, and dry only when it can be done at more moderate degrees of heat. The combined action of alkali and heat has an effect upon the fiber that cannot help but be noticed in the way in which it will take the color. If color is a mechanical action, and not a chemical, it is quite evident that the physical condition of the wool fibers will affect the shades. Anything that will act upon the wool fibers so as to alter their physical formation will have more or less of an effect upon the way the fibers will take the color. This all, of course, means shady or clouded goods when piece dyeing takes place. Other features of this difficulty may be noted later.

### NEW ANILINE COLORS.

*Direct Yellow R*—This new color, as the name implies, is a direct dyeing substantive dye, which dyes cotton full yellow shades with the aid of common salt or similar mordant. It resembles Chloramine Yellow very closely, but is somewhat inferior in fastness to light. Direct Yellow R is, however, superior to Chloramine Yellow in its coloring power, and on this account will be found to be more serviceable in certain combinations where a yellow at a very low cost is desired.

*Jute Yellow G*—This color is only suitable for jute, on which fiber it produces a full old gold shade, which is quite fast to rubbing. The method recommended for dyeing is as follows: Directions for dyeing 100 lbs jute yarn—Dissolve 2 lbs. Jute Yellow G in water at about 140° F., add this solution to the dye bath, enter cold and gradually bring to 140° F., at the same time working well, rinse, but not too long, and then dry.

*Benzo Nitrol Dark Brown N*—Information was given some time ago in this paper regarding Benzo Nitrol Brown, the above color Benzo Nitrol Dark Brown N is a new addition to this series of fast to washing cotton browns, by that new process of developing already described, viz., by dipping cotton material dyed with the above color, or any of the other direct dyeing cotton colors which are named in our pattern card, into the diazo solution of Paranitraniline. The following colors are also suitable for this after treatment, viz. Chloramine Orange G, Toluylene Orange G, Direct Fast Brown B, Pluto Black B, Direct Blue Black B, and Toluylene Brown R. A special pattern card has been prepared, in which the tests can be removed in order to test their fastness to washing. The Nitrol colors are suitable for dyeing velveteen, in consequence of giving such full shades. With this color, oxblood shades can be produced on hosiery, so much in fashion now.

*Double Ponceau 1 R, 2 R, 3 R and 4 R.* - A description of this color was given some time ago in this paper. They comprise a range of colors twice the strength of ordinary ponceaus. The cause of shades dyed found to be too dull is on account of using too much color, an extra brightness may be obtained by using perchloride of tin, so well known to dyers. The easy solubility of the double ponceaus is excellent, they are very fast to alkalies, acids and stoving, and are faster to washing than the ordinary ponceaus.

Circulars, samples, and dyed skeins of any of the above products and latest shade cards from Germany, may be had on application to the Dominion Dyewood and Chemical Co., Toronto, sole agents in Canada for the Farbenfabriken vorm Friedr. Bayer & Co., Elberfeld, Germany.

## Textile Design

### HEAVY-WIGHT FANCY WORSTED CHEVIOT.

Yarns dyed in slubbing. Finished weight 22 ozs. for 56-inch width.

#### DRESSED.

- 2 gold, blue and gray mix.
- 2 gold.
- 4 gray and white mix.
- 4 olive, tan and white mix.
- 4 gray and white mix.
- 3 times ( 4 gold, blue and gray mix.
- 4 gray and white mix.
- 4 olive, tan and white mix.
- 4 gray and white mix.

64 threads in pattern

#### WOVEN.

- 2 black and garnet mix
- 2 red
- 4 gold blue and gray mix.
- 4 gray mix.
- 4 gold, blue and gray mix.
- 3 times ( 4 black and garnet mix.
- 4 gold, blue and gray mix.
- 4 gray mix.
- 4 gold, blue and gray mix.

64 picks in pattern (20 picks to inch)

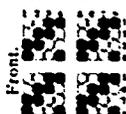
3) 152 ends in 6-4 warp.  
384 ends in section  
6 patterns

- 12 gold.
- 84 gold, blue and gray mix.
- 96 olive, tan and white mix.
- 192 gray and white mix.

384 total section.

Straight draw on 4 or 8 harnesses, 8½ reed 2 in dent; 68 inches nearly inside selvage

#### Chain Draft.



Twill to right.

Warp — 1. 52 ends equal 2-6 wors., weigh 10.24 oz.  
Fill. — 2. 7 picks equal wors., weigh 13.63

Weight 6-4 yard from loom equals 23.92 oz.

23.92 oz worsted shrink 5 per cent equal 25 16 oz. stock required for 6-4 yard.

25 16 oz at 95c per lb. equal \$1 49

Stock worsted yarn, 6-4 yard costs \$1 49  
Manufacturing 6-4 yard costs 25

Total cost 6-4 yd. at mill equals \$1. 74

The above cost for 6-4 yard seems altogether too much at first thought, but when you come to study the construction, and kind of yarns used, you will soon see this is a very expensive fabric. First, all the yarns are mixes, 2-18s., at least, 4s stock (a quality named by one of the best worsted mills in New England), which costs to day 95c. per pound. Then every thread, both warp and filling, is a three-ply; that

is, three threads, 2 18 twisted as one, which process, if done at weaving mill, adds very materially to cost of manufacture — A. W. & C. R.

### THE LATE ALEXANDER EWAN.

Alexander Ewan, formerly of Cantlie, Ewan & Co., dry goods commission merchants, but for the last seven years in business for himself as sole selling agent of the Merchants' Cotton Co., Montreal, died at his home in Drummond street, Montreal, on the 23rd December, after a protracted illness. He was a native of Scotland and began his business career in a commercial house in Aberdeen, where he remained twelve years. At the age of 32 he determined to try his fortune in Canada, and arrived in Montreal in 1864. There he found employment with the firm of Wm. Stephen & Co., the head of which was Geo. Stephen, now Lord Mount-Stephen. In business Mr. Ewan was known for his energy and ability, and for his uprightness and sound judgment. While devoted to trade, he took a deep interest in a number of benevolent institutions, and was a hearty supporter of the Presbyterian Church, to which he belonged. He was treasurer of St. Paul's Church for ten years. He was an enthusiast in the game of golf, was a keen fisherman and, like most Scotchmen, was a good curler. Mr. Ewan had been almost completely disabled from business for over a year before his death, owing to heart trouble, and though a trip to the sea-side appeared to do him some good, it did not restore him to health. He leaves behind two sons, David Ewan, of the Bank of Montreal, Herbert Ewan, now at College, and two unmarried daughters. At a special meeting of directors of the Merchants' Cotton Co., after his death, a resolution expressing the company's appreciation of his abilities as selling agent and of his integrity as a man was passed and copies ordered to be sent to members of his family.

Since the death of Mr. Ewan the company has decided to abolish the position of selling agent and will now sell direct to the wholesale trade. W. A. McKay, who has been for some time Mr. Ewan's able assistant, will represent the company's interest in Montreal, the city offices in Fraser Buildings being still maintained, and J. E. Knox continues to act as representative in Toronto.

### AUSTRALIAN WOOL.

Fuhrmann & Co., Limited, Melbourne and Sydney, have sent out the following quotations to the trade in cents per lb. sterling, clean without washing charges, cost and freight per steamer to Boston. On the basis of estimates of yield, without guarantee. —

	Nov. 1896. Free of duty.	Nov. 1897 Duty paid
Geelong—Choice merino greasy combing, almost free, for 80s. and above .....	45	71-72
Geelong—Super merino greasy combing, for 70s. to 80s. ....	43 44	69-70
Geelong—Super merino greasy combing, for 64s. to 70s. ....	41-43	68
Geelong—Super merino greasy combing, for 60s. to 64s. ....	40-41	66-67
Victoria, Riverina—Super. greasy merino combing for 64s. to 70s. ....	40½-42	67
Victoria, Riverina—Good to super greasy merino combing, a few burr, 60s. to 64s. ....	40	65-66
Geelong—Best greasy merino, broken and pieces, almost free .....	38	62
Riverina — Super greasy merino, broken and pieces, a few burr .....	36	60
Super greasy crossbred fleeces for 50s. ....	26	58
" " " " for 40s. to 44s. ..	32-34	52-54
Good to super greasy crossbred fleeces for 36s. ..	30	46
Good greasy Lincoln fleeces, for 32s. ....	28-29	43
Good greasy crossbred pieces, for 40s. to 50s. ..	30	44-46
" " " " for 40s. to 44s. ..	27	42

The Australian market was firm with a brisk demand; America, France and speculators are keenly competing for shafy sound merino combing wools, whilst Yorkshire and Germany were less active.

The clip of West Victoria in fairly good condition, but partly less deep-grown than last year and less showy (dusty tips). Riverina generally not so well grown, but finer than last season, often short and

tender, showing effects of the severe drought. In general, great scarcity of shafty clips for warp, large proportion of mushy and tender wools.

REPORTS FROM AUSTRALASIA FROM 1ST JULY, 1896, TO 30TH JUNE, 1897

New South Wales .....	691,000	bales
Victoria .....	444,000	"
South Australia .....	152,000	"
Queensland .....	146,000	"
Tasmania .....	17,000	"
West Australia .....	14,000	"
<b>Australia .....</b>	<b>1,464,000</b>	<b>"</b>
New Zealand .....	370,000	"
<b>Australasia .....</b>	<b>1,834,000</b>	<b>"</b>

APPROXIMATE ESTIMATION OF DECREASE AND INCREASE 1897 TO 1898.

New South Wales .....	125,000	bales.
Victoria .....	20,000	"
South Australia .....	30,000	"
Queensland .....	10,000	"
Tasmania .....	3,000	"
West Australia .....		
<b>Australia .....</b>	<b>188,000</b>	<b>"</b>
New Zealand .....	Increase 38,000	bales
<b>Australasia .....</b>	<b>Probable total decrease 150,000</b>	<b>"</b>

CUT v. FASHIONED UNDERWEAR.

During the past few months, considerable attention has been brought to bear on the advantages and disadvantages of cut or fashioned underwear. Certainly this has been of particular interest to those who study the varying principles of the trade. In the earlier period of the hand and rotary stocking frame, and before the advent of circular machinery, fabrics were usually made in straight pieces, or in certain cases, shaped as required by the process of hand narrowing or widening. Certain of the straight fabrics of those days were cut into shape to make certain garments that difficulty attended in making on the fashioned principle. With the introduction of circular machinery, cut goods became a strong department, though in the early period of its introduction, there was a difficulty in making a good reliable joining. This has now become a matter of little importance, the advance made in sewing machines has done away with many of the former prejudices. It is not our intention to give an opinion on the advantages of the one system over the other, but rather to deal with each, says a writer in the *Knitter's Circular*, showing those points that have come before our notice as being of interest.

In the cut underwear department, the first point of attention is that of the cost of machinery in relation to its production. Roll fabrics are made on both the English loop wheel frames and the French circular frames with bearded needles, and also on the English latch needle frames. Each of these machines are specially adapted for different fabrics, each machine having some peculiarity in its mechanism which tends to favor its use in special cases. There is no doubt as regards the production of low grade fabrics, that the English latch needle frame on the feeder principle, is the largest producer, but as regards its use for finer gauges, where the fabric is required to have a good face, other machines are far more satisfactory. A deal may be said as regards the different system of bearded needle circular frames, and though both have been used very largely, at the present time, the opinion of many is in favor of one, rather than the other. The particular merits of each of these machines, would, no doubt, be an interesting subject, but this we prefer to leave to our readers; however, we should be pleased to know the opinions of those closely connected with each system. Having produced the fabric, it becomes necessary to cut up same into garments. Another point of interest is the advantage or disadvantage of cutting same in the rough as it leaves the machine, putting together the garment, and then to dress and finish, and board to shape afterwards; or, on the other hand, to finish the web in the piece, pressing same before cutting out the garment, such garment being cut to the exact size and shape required. It is not intended here to treat on these details, but rather to confine ourselves to cut underwear in general. The great difficulty of making satisfactory and bulkless joinings having been most suc-

cessfully overcome by the "overlock" system of sewing machines, together with the point linking machines for joining the links together, the only apparent question at issue is that of "waste." It is well known that in cutting out certain garments, to get the required shape, a deal of the fabric is cut away, and in such a form as to be useless for other purposes. This being so, the question of fashioned vs cut underwear seems to rest more on this point than any other. Some special garments can only be produced satisfactorily from the fabric by the cutting process, it is not of these that we speak, but more especially the more general garments, as shirts, pants, vests, and combinations.

These articles, produced upon the rotary frame, are shaped as required, and then no waste occurs by cutting. Here, the point of interest rests on the cost of production and working plant. This, in wrought or fashioning machinery, of the latest type, is well known to be expensive, but the class of garments made on these machines bears a fair proportion of trade. Each class of garments being salable, both should be made on their own merits, and left to depend on same, and not be set up as the enemy of the other, but rather for each to run side by side for the benefit of producers and consumers. The great competition of both cut and wrought goods in the hose and half-hose branch of our industry, has been that of producing goods entirely seamless. This, as yet, has not been introduced to any extent in the underwear department, though it must be understood that steady progress is being made in this direction. At present, only latch needle machines have been used with any amount of success, but with the introduction of bearded needle flat frames, capable of producing circular fashioned web, then we may expect circular underwear to compete with both cut and fashioned makes.

—The January *Century* has the opening part of Dr. Weir Mitchell's new novel, "The Adventures of Francois: Foundling, Thief, Juggler and Fencing Master during the French Revolution," which is illustrated by Castaigne and is expected to be a worthy successor of "Hugh Wynne." The beautiful Gainsborough portrait of Mrs. Graham, engraved by Cole as the frontispiece of the December *Century*, is replaced by another beautiful Gainsborough, engraved by Muller, the "Portrait of General James Wolf," one of several pictures of this hero given in an article on that topic by Paul Leicester Ford. Other contributions on English topics are "Scenes from Huxley's Home Life," by his son, Leonard Huxley, with a new portrait engraved by Johnson, and a graphic account of the curious features of "The Lord Mayor's Show" by Mr. and Mrs. Pennell. Among the French subjects are an article on "French Wives and Mothers" by Miss Anna L. Bicknell, author of the books on the Tuilleries and Marie-Antoinette, with illustrations in his picturesque style by Boutet de Monvel, well known to *Century* readers by his recent illustrations of the career of Joanne d'Arc, etc.; a short paper on Jean-Charles Cazin, a French artist of a different type, with illustrations of his work, by William A. Coffin; and an historical study by Archibald Forbes, the distinguished war correspondent, entitled "A Myth of Waterloo." The American material includes "Recollections of Washington and his Friends" as preserved in the family of Nathaniel Greene, contributed by Martha L. Phillips and daintily illustrated by Malcolm Fraser, "Every Day Heroism," a paper in the "Heroes of Peace" group, by Gustav Koube, the continuation of Mrs. Stevenson's Reminiscences of Mexico during the French Intervention, with illustrations—the first popular account printed in America of this period; and last, but not least, "The Mysterious City of Honduras," the recent discoveries in Copan, here described by the explorer, George Byron Gordon, with a rich array of pictures by Henry Sandham. Other fiction in addition to Dr. Mitchell's story, is the third part of Mrs. Burton Harrison's "Good Americans," and three short stories "The Courtship of Mr Philip Johns," by Elizabeth Carr-oll Shipman, "Miss Stacy's Buryin' Money," by Alice M. Ewell, and "Madame Butterfly," a story of unusual interest and pathos, with an attractive Japanese heroine, by John Luther Long, illustrated by Weidon. The "Topics of the Time" deal with current popular subjects, including "straight" voting, lynching, etc. and in addition to the amusing miscellany in the department of "Lighter Vein" there is an "Open Letter" by Jonas Stalling with a fac-simile of the message from Andree, with its envelope, sent by the carrier pigeon which was shot on July 15th.

## Foreign Textile Centres

MANCHESTER.—The end of the year brings the issue of a batch of cotton companies' reports, an examination of which serves to explain the reason for the employers' change of front towards the close of the recent dispute in the staple trade of the district. Out of thirteen reports of limited companies which came out on one day, only one shows a loss. Some declare dividends of  $7\frac{1}{2}$  per cent. for the quarter, and others 8 per cent. Nine other concerns also distribute profits, and although cotton spinning is far from being the way to riches, it may be admitted that of late the position has improved. Margins, unfortunately, have been pared down since the settlement of the wages question, but an improvement in India and South America would speedily reinvigorate Lancashire. The Coats' thread group in a single year make more profit than the group of the cotton limiteds in several years. There are 42 limiteds with credit balances totalling £4,712, and 44 with debit balances, amounting to £317,750. Investors who examine these figures are not likely to support new cotton mill enterprises without careful examination. In the home trade the year has not been a good one for the accountants, which is, of course, a satisfactory feature. Many small retailers have been hard hit by the effects of the engineering struggle, the depression in the West Riding and the poor condition of the cotton industry; but leniency has often been shown by the wholesale houses in cases of this kind. The early months of 1898 may, however, prove disastrous to some, unless the difficulties now pressing upon them are quickly removed. Calico printers have again had artificial indigo brought prominently to their notice. The material has been known for about fifteen years, but the Badische Anilin Soda Fabrik, one of the most powerful concerns of the kind in the world, claims now to have made a marked advance in the preparation of the article. An indigo planter not long ago said: "I cannot help feeling that we cannot in the end compete with the chemists; we are stationary, they are progressive, and must score in the end." I have this week inquired of a well-known textile chemist whether he thinks the Germans (who lead in the production of aniline dyes) are yet able to challenge the position of the Indian planter, and his answer is negative. Synthetic indigo is still too dear compared with the natural product, and even were it slightly cheaper the former would possess important advantages. Natural indigo contains an element absent in its rival, which greatly facilitates the dyeing process. Per contra, must be placed the fact that it often contains 30 to 40 per cent. of impurities. Improved quality and cheaper production are therefore the points to be aimed at by planters if they are to hold their own. The Calcutta trade circulars do not exhibit alarm at the advance of the artificial product, but it is not likely the firms issuing them would show their hands in any case. The heads of the big German firm referred to are shrewd men, who have not spent scores of thousands in experimenting with synthetic indigo for nothing. If they can cheapen it, any slight inferiority will not bind the trade. People nowadays do not go in for permanence, either of fabric or color, as they used to do, and a low-priced blue, moderately fast, would undoubtedly injure the trade in natural indigo. A public which year after year keeps on contentedly buying and wearing silks largely mixed with the oxide and other foreign ingredients will not be squeamish about indigo "made in Germany." There is, by the way, this important difference between artificial indigo and artificial "silk." The former is indigo, but spun collodion is spun collodion, and nothing more. The year closes with the drapery trade in a fairly healthy condition. Manchester houses have not done at all badly considering the difficulties with which they have been surrounded. The engineers' dispute has had a very disastrous effect upon the retail trade in such centres as Oldham and Bolton, but on other "grounds" travelers have done fairly well. Local business men, who have inspected the

samples of German cotton goods collected by the Colonial Office, say that there is nothing whatever in the exhibition to create alarm. Some of the goods are prints in twelve-yard lengths, selling at 6s. 6d., a price which reveals no astonishingly wonderful ability to produce cheaply. The Germans can, in fact, be beaten in smartness by their Dutch neighbors occasionally. In Munster Dutch capitalists have built five cotton-spinning mills, with 185,000 spindles. They employ 1,500 hands, most of whom are Dutch. Every week end these operatives return home by the trains of the Dutch Railway Company, spending their earnings in their native villages. It is galling to German capitalists to be thus outwitted by their neighbors over the border, but there is nothing to prevent the latter from thus getting all the advantages of the German protective tariff. Heavy shipments to Australia may be noted. Liverpool, in one week recently, exported 854,000 yards of linens to the Antipodes, a quantity actually in excess of the New York takings. This is much above the average for the Australian market, and it is believed that consignments have been swollen by goods intended to replace stock destroyed at the Melbourne fire. The exports of machinery in 1897 have been small. During the three months ending November, 1896, the export was 6,300 tons, against 3,900 tons for the same period in 1895. This year the export fell to 3,900 tons again. The labor troubles explain the decrease, textile machinery shipments having suffered greatly from the dispute in the engineering trade.

BRADFORD.—The wool combing firms, who can look back on a satisfactory year's business, must be very few, although there was a great rush preceding the re-introduction of the higher duties on wool and tops by the United States in July last, work has been very scarce and prices have been very closely cut since that time. The topmakers, who, to a great extent, find the work for the master wool-combers who comb on commission, have all along been most awkwardly placed, as the prices at which fine wools could be bought at the colonial sales in London have been relative to much higher than the price which could be got for tops in Bradford, as users here have been very quiet, whilst the buying excitement in London has been kept up by American and continental competition. Cross-bred wools have shown very little fluctuation during the year, as the Americans were able to obtain what they required, either of raw wool or goods in the various stages of manufacture made from cross-bred wool without paying any advances of moment. The two great trades in which a large proportion of cross-bred wool is consumed, viz., the two-fold export yarn trade and the cheaper classes of worsted coating manufacture, have all through the year been very quiet, and cross-bred wools and tops have for some time been slow of sale with gradually weakening values. English wools have been exported to the United States to an unusually large extent, but even at the height of the rush to get them off in time prices were hardly affected at all, and to-day, with stocks of all classes of home-grown wools at an unusually low point, this department of the market is quite devoid of animation. The importation of wool, closely resembling the best classes of English lustre wools, from the River Plate District, is attracting more attention from the Bradford trade, and is increasing in importance. At the sale at Liverpool last week some very nice wool was well competed for by Bradford buyers. Any sensationalism which could have been discovered in the wool trade this past year has certainly been confined to mohair, as at the beginning of the year prices had receded after the bright goods boom to a point very near to the low prices which were ruling before that period. Early in the present year, however, the high-class mohair braid trade commenced to improve, and certain classes of dress goods, largely composed of mohair yarns, became fashionable, and the prices of mohair quickly rose 25 per cent. to 30 per cent.; at this latter point they remain quite firm to-day, whilst spinners of mohair yarns are all fully employed for months to come. In 1897 the lot of the worsted spinner cannot be described as a

happy one, and it is greatly to be feared that the annual stock-taking, which is in many cases now proceeding, will not be satisfactory. As the amount of worsted spinning machinery in the Bradford trade has for years been increasing at a rapid rate, whilst the number of looms has been probably nearly stationary, it follows that only a very large and healthy export trade could keep the spinners well employed. As a matter of fact, the export yarn trade has been unusually depressed all the year, and both employers and employed in the worsted spinning trade have probably only been saved from distinctly acute suffering by the increasing use of worsted and mohair warps in Bradford fabrics, many of which used to be made with cotton warps. The past year cannot, on the whole, be looked upon as a favorable one for Bradford textiles, and the worsted coating trade, since the American trade closed up on account of the new Tariff bill, has shrunk to most insignificant proportions, and there have been months when the whole exports of these goods to the United States did not amount to £20,000. Within the past few weeks some of the larger makers of worsted coatings have become much busier, and conclude that as there is very little doing in other markets, these makers must have been enabled, by the ruinously low price of material, to get hold of some considerable American business. Makers of dress goods who have confined their attention to plain staple fabrics have found business very difficult throughout the greater part of the year, and even at the present time have a considerable proportion of their machinery idle. Fancy dress goods makers, on the other hand, have been much better off, as they found a good demand for coating costume cloths for the spring season, and new developments of broche crepons have been continuously introduced which have kept some of the high-class goods makers well employed. Bradford also secured a fair share of the rage for Tartan checks, and both in dress goods and moreens some very tasteful fabrics have been largely sold, both for the London and Paris trade. The prospects for the coming spring season are somewhat uncertain: although quite an average number of orders have been taken, and a large variety of styles ordered, the general feeling of the trade is not cheerful, and the wholesale houses seem in no hurry to get their spring purchases into stock. In the woolen trade the first half of the year was generally satisfactory, but since the commencement of the engineers' strike business has greatly deteriorated, and in Leeds itself, Morley, Yeadon, Batley, Dewsbury and Huddersfield, the aggregate business for the last three months has been much below the average. The Leeds clothing factories have quite upheld their position, and have no doubt obtained their full share of the business going, but this recently has not been sufficient to keep them fully employed. Huddersfield makers, who have recently made such a successful onslaught on the trade in the very highest class of both woollens and worsteds, have again made headway during the year, and now practically monopolize this part of the trade. Blanket and flannel makers, although made very quiet recently by the exceptionally warm weather, found quite an average business in the earlier part of the season, and have probably kept their stocks quite within average compass.

**NOTTINGHAM.**—The end of the year is generally a dull time in most trades, and the lace trade is no exception to this rule. Stocktaking is now monopolizing most attention, and will continue to do so until the turn of the year. Prior to the holidays there was a moderate degree of activity noticeable through the desire to clear orders off the books before Christmas, and also in the preparation of novelties and samples for the New Year. Some tolerably good shipping orders came to hand and put local manufacturers in good heart. Considering how slack business has been in most departments for such a long period, it is to be hoped that the coming year will be one of increasing prosperity, and that the end will be most satisfactory. Anyhow people are more inclined to be optimistic in their predictions than was formerly the case. Cotton millinery laces

have received more attention, and the assortments of Valenciennes of all kinds are rich and abundant, and are certain to attract favorable notice in the best fashionable circles. Oriental laces still hold an important place, though they are less of a monopoly than they were some time ago. Some point de Paris laces have been selling for special markets. Malines, duchesse, and other fine laces have sold for some special centres. Torchons, Maltese and guipures of various kinds still keep a fair place. Besides the goods required in white, cream, and ivory there are many selling, especially for making-up purposes, in butter, natural, grass lawn and two-tone effects. There has been a considerable demand for insertions, not only to match sets of lace, but also for making-up and trimming purposes. French manufacturers appear to have taken the chief part of the trade in silk laces, and the prospect locally is not encouraging. Silk millinery laces show no sign of improvement, and though here and there some excellent sets are offered, the French manufacturers appear to have taken a firm hold of the best part of this trade. Nets of the richer kinds are moving in moderate quantities, and good sales are reported of insertions to match sets of laces as well as for making up and trimming. Trade in the Irish crochet, embroidery trimming and cotton edging departments has fallen off. Honiton braids, beadings and purls are steady, while the American crochet and warp lace departments are slack. Furniture lace, curtains, window blinds and toilettes sell to an average extent. The plain branches continue prosperous and manufacturers find it impossible to keep up with sales. They are booked long ahead, practically on their own terms. Bobbinets, Brussels, Mechlin, and zephyr tulle are most in demand, but there is a good sale for mosquito and corset nets. Much of the spotted and striped net machinery has been utilized for the production of plain goods. The plain departments of the trade still remain prosperous, and current goods are disposed of in advance at the highest quotations attained. Much of the spotted striped net machinery has been utilized for the production of plain goods. There has been a fair demand for point d'esprit and other tulle, and prices are much advanced. Stiff foundation nets have only been moderately inquired for, owing to higher prices and adverse fashions. Before Christmas there was a fair demand for fancy articles, and absolute novelties in collarettes, caps, aprons, and blouses commanded attention. In this branch there has been considerable expansion, giving a large amount of employment to the hands engaged therein. Falls and veilings have met with a poor inquiry, and there is much unhealthy competition for available orders. In the hosiery trade manufacturers complain that the demand is sluggish, and that stocks are remaining on hand in consequence of the mild, unsettled weather. Natural wool vests and other large goods keep steady in value, but the possible supply greatly exceeds the actual demand. Fast black merino and cashmere stockings have been in moderate request.

**GLASGOW.**—A very interesting report on trade in the West of Scotland appeared in the *Glasgow Herald* recently. With regard to textiles it is stated that manufacturers of muslins, lappets, grey goods, and fancy dress cloths have had rather a depressing experience. The revival has been in zephyrs, the demand for which has been so great that some difficulty was experienced in executing orders. Calico printers talk badly of the past year, and short time amongst them has unfortunately been only too general. Turkey red dyers should have small cause of complaint, as their consumption in yarns and goods shows a full average. The announcement lately of an amalgamation of the three large firms came as a great surprise although it after all is but on the lines of current tendency. It should, for one thing, put an end to undue competition at home and abroad, and values fortunately being at present very low this even to consumers must in the long run mean more comfort. Cotton spinners have worked full time, and doubtless as a whole to some profit, although the margin certainly could not be other than narrow. Speaking of the Paisley and Glasgow

thread trade, the report states that the prospects for the future are very good. For some months short time was general in Paisley to work off stocks here and abroad, but of late full time was resumed. This fact ought to stand well for next year, taken more particularly in conjunction with the friendly rivalry that now rules in this business. Evidently whilst recognizing there must be competition in the "sewing cottons," it is the intention to "live and let live," but all the same the management must continue to show no disposition to grasp undue profits. The retail clothing trade for 1897, compared with that for 1896, shows a considerable falling off. The causes were the unfavorable weather and the disastrous engineers' strike. Large stocks were laid in for the winter, but as the climatic conditions have been mild, merchants were disappointed in not getting rid of their goods. Manufacturers, finding it impossible to secure repeat orders, are equally unfortunate with the retail trader, in holding stocks far in excess of anticipations or the much-desired attitude of their balance-sheets, and thus it is that 1897 will have proved one of general disappointment to the clothing trade throughout.

**SOUTH OF SCOTLAND.**—There is no activity in the South of Scotland tweed trade. A great scarcity of orders still continues, and the consequence is a number of looms are unemployed. Trade has been bad all the year, and makers hardly hope they have seen the lowest depth of the depression. Yarn spinners also complain of want of work. Very few wool transactions are reported. Manufacturers' stocks are light.

The Kirkcaldy linen trade is reported to be in a fairly active state. Competition continues extremely keen, and prices consequently are low. Great activity prevails at the numerous floor-cloth and linoleum factories, which have had a splendid year.

**DUNDEE.**—With the arrival of four steamers from Calcutta, jute-laden, in one week, an impetus has been given to the trade at the port, the result being that quite a large number of men have been employed. In consequence of importers not removing the jute landed, the sheds have become blocked to a great extent, so much so that part of the cargoes has been discharged on the open quay. So large an importation of jute has not taken place at one time since last year, when a similar state of matters prevailed.

**BELFAST.**—The yarn market is particularly quiet just now, as is usual at this season of the year. Spinners are satisfied with neither orders nor prices, and manufacturers are disinclined to do anything beyond what is urgently required. It is said that in some instances to clear stocks there has been a slight reduction on previous low rates in tow yarns. In the market for brown cloth quietness also prevails, as is usual at the end of the year, but the tone of the market generally is steady and hopeful. Tow-made goods have sold to a moderate extent. The demand for unions is keeping up fairly well, at late rates. For damasks the inquiry has been somewhat brisk, and manufacturers have contracts on hand which will keep them employed for some time to come. A steady business has passed in 38-inch power-loom linen for bleaching, and the amount of the sales of cloth for dyeing, and hollands, would about equal the amount of production, and prices remain firm. Hand-loom linens are meeting with a quiet demand, and prices are unchanged. Stocks generally are of moderate dimensions. For bleached and finished linens there is but a slow sale. Stock-taking is imminent, and until it is over there will be little likelihood of any activity. Cross-Channel buyers have apparently satisfied all their requirements. The blighting influence of the dispute in the engineering trade continues to be felt, but the possibility of its settlement at an early date lends a little brightness to the outlook. The demand for tailoring goods has been moderate, and prices remain unaltered. A slight improvement is noticeable in the demand for union pales and dowlas for the apron and pinafore trades. The export trade to the United

States is well sustained, and with the new year a substantial improvement is anticipated. Continental trade is fairly good for the season, though not up to that recently. Colonial business in both Canadian and Australasian is rather better than the average for this period, but the demand from Foreign West Indies, and from South America continues stagnant. Local stocks are much the same, and prices continue unchanged.

**LYONS.**—The Lyons market shows less activity now after the spring contracts have been placed; a few orders still continue to arrive, but can only be placed with difficulty, on account of the lack of looms and weavers. It can now be clearly seen that cases will be frequent where goods will be delivered late. Altogether the situation is highly satisfactory and promising. Power-loom factories, as well as the different kinds of hand looms, have all the work they desire, principally in light goods, both plain and fancy. Rich qualities in all-silk fabrics, particularly the fine grades of black silk, are not favored to the same degree, and complaints are heard from those mills confined to the production of such grades. Their looms, however, have readily been taken up by other mills. Considerable activity exists in piece-dyed goods, prominent among these being pongees in plain and fancy, but taffetas also continue in good demand, and from stock are eagerly sought, but are scarce. Fancy taffetas are required for skirts, and their production adds largely to the present manufacturing activity, which is greater than has been witnessed for many a year. The fashion still calls for wool-filled fabrics, principally bengalines and moire velours, which are sought for London. Fleurs de velours have lately gained in importance. Mousselines will be more in demand than last spring. Velvets continue to sell well in low schappepile grades and in better makes of silk pile and all-silk. Parme and bleuets are still first in demand, but are by no means the only shades which are being sought. The sales of full lines well assorted are of frequent occurrence, and the quantities bought now are considerably larger than for several seasons. Good parcels of all-silk velvets were bought by some American buyers. Fancy velvets sell well from stock, and also checked velvets and coteles. Ribbons do not show the activity that was expected, but the demand has improved for cotton-mixed grades. It must, however, be taken into consideration that orders have been very heavy, and that a comparative lull was therefore but natural. A special demand sprang up for wide-width moire ribbons in light colors with black borders. Taffetas also sold fairly well, and a good demand existed for velvet ribbons.

**CREVELD.**—The wholesale branch of the silk trade at Crevelde is quiet at present, and sales from stock are of little importance, but the retail trade is fairly active, and promises to develop well. The mills are in an exceptionally good position; the only complaints heard are regarding the lack of the necessary number of hands to fill the orders which are being received from all sides. The returns could be largely increased if the goods could only be produced, and for this reason many orders had to be refused, although the time for delivery has been extended far into the spring season. No orders can be placed for delivery before Easter. Most prominent are the lining silks, which will be as much a feature of the coming season as they were during last spring and summer. Black and colored taffetas are leading in this branch, but the many cotton-filled piece-dyed fabrics are also conspicuous. The cloak trade will require large quantities, but their use as linings for costumes and dresses also forms an important item. There is a large demand for moires in different forms, and this fashion promises to be stronger than last year. In novelties for dress silks checks appear to have the leading place. Orders for necktie silks have largely increased, and the entire production for the coming season is engaged. The leading styles for this branch also are checks. For cloaking silks, of which so far only small quantities have been bought for sampling purposes, more important orders are beginning to

arrive. Ribbed goods seem to be leading, but brocaded styles also attract more attention. Orders from London are more important. The situation of the velvet factories is promising. Orders for millinery velvets, principally in the cheaper grades, are more numerous now, and mills producing these are well occupied for some time to come, while fine grades have not shown any increased activity lately. Velours du Nord and mantle plushes have been ordered again, and promise to play quite a prominent role during the spring season.

**CHEMNITZ.**—The time has come again when all Chemnitz is busy and mills and finishing-rooms are running on full time with as many hands as can be possibly used. December is the month in which the large shipments commence, and all manufacturers send off as many goods as they can possibly put out. Trade is fair and prices firm. The great demand is still for fancy hosiery, and Scotch designs are most in request. Several leading import houses are buying a good many red designs, and blue shades, too, are freely taken by them. The general trade favors green for the main color; the light green is not so much liked now; a shade with a bluish hue is preferred. Embroidered hosiery is also bought in great variety of styles, especially in better grades, while the demand for printed goods is comparatively small. In staple goods business has picked up so well that stocks have been reduced considerably, and prices are firm. One reason for this is that many makers who can produce striped goods are doing so, and consequently the production of plain goods has been curtailed. A number of leading houses are showing extensive lines in bicycle and golf hose and leggings, and have booked enough orders on these goods to keep them busy until March. In misses' hose the demand for Scotch designs has increased considerably, and especially in ribbed goods the output is sold ahead for months. These goods are to a great extent bought without braids, as this makes them a great deal cheaper, and when worn they look as well without braids as with them. For fall trade the manufacturers are getting their new collections ready, and in course of this month the lines will be sent out. On fancy styles quite a few orders have been placed, to be delivered in May and June, and buyers will do well not to wait too long before making their selections, as they may be disappointed again in the deliveries. In gloves business is satisfactory, and the manufacturers are expecting a good season on fall goods in spite of the high tariff. The underwear trade might be better.

#### MECHANICAL DRAFT.

"Mechanical Draft" is the title of a volume just issued by the B. F. Sturtevant Company, Jamaica Plain, Mass., and is one of the most useful and instructive books that we have received for a long time. Its treatment of the subject of draft is exhaustive, and it cannot fail to be of great value to all who are interested in the economical and expeditious production of steam. The subject of mechanical draft has been discussed at greater or less length in the technical press, and before various engineering societies; but in this volume, for the first time, an attempt is made to give to the subject the treatment which its importance demands. Whatever methods of draft are adopted, a clear presentation of the merits of the different systems is necessary to an intelligent choice, and such presentation is given in this book. Its object is two-fold: First, to instruct by a lucid discussion of the entire subject, with such supplementary information as may be necessary to show the superiority of mechanical draft; second, to show the special adaptability of the Sturtevant fans for this purpose, and to indicate in some degree the extent to which they have already been applied. In doing so, the publishers present a vast amount of useful information pertaining to draft and engineering generally, treating the subject scientifically in great detail. The comparative tables, formulas, diagrams and illustrations embodied in this work are very complete and will be found valuable for

reference. The chapters on water, steam and fuels are prepared with ability and will be found to be instructive. In the chapters on the efficiency of fuels, the principles which pertain to the efficiency, convenience and adaptability of mechanical draft are presented in their abstract relation to the subject in general. In so far as such statements are general in their character, their treatment is that of a text-book. But wherever they particularly concern the utility of mechanical draft and the employment of fans for its production, they are substantiated by quotations from eminent authorities, and in all cases references are introduced. An impartial character is thus given to all statements, while the actual facts are doubly emphasized. In so far as possible, all statements regarding the application and operation of Sturtevant fans, as well as those relating to the character and advantages of certain other systems or devices, have been quoted and the references given. An honest endeavor has been made to render the work authoritative, to discuss the subject in all its aspects and treat it impartially. The volume contains 385 pages, is substantially and attractively bound, and beautifully printed. The work is a credit to the concern, and a copy of it should be in the hands of everyone interested in mechanical engineering.

#### THE SCOTCH TWEED INDUSTRY.

Hundreds of years ago the Scottish border was a land of chivalry and romance. Noble fought against noble—marauder against marauder—the warlike Scotsmen harried the lands of their English brethren, and the English retaliated whenever opportunity occurred. Then came quieter times, and after many a fierce struggle the Borderers gave up their swords, and turned their attention to peaceful branches of industry. That these efforts were rewarded with success is well known all over the civilized world. During the present century the chief industry has been the manufacture of tweed cloths. Large fortunes have been made in the industry; employment has been afforded to thousands of persons, and the goods have secured a reputation which has rarely been equalled in their class. Fashion, however, has now affected the demand for tweeds, and this with certain other classes, has brought the trade into a very depressed condition. In short, the manufacturers to-day are face to face with one of the most serious problems which has ever been presented to them. And unfortunately, this depression does not act upon any single class. This large and beautiful district depends too much upon one industry. The consequence is that when that industry is flourishing, everything prospers, and when it is depressed, everything suffers apparently in sympathy.

The Scotch tweed industry seems to have been first mentioned as far back as 1581, when certain mills are recorded to have been situated in the Barony of Galashiels, which town has ever since continued to be the principal centre. In 1666, the weavers of Galashiels were incorporated, and this body lasted until 1835, when the introduction of power looms sounded the death-knell of hand-loom weaving. The industry in those days was not well developed, but the seeds of success were being sown. From shortly after the union until 1835, the board of trustees offered premiums for woolen goods manufactured in Scotland, and the weavers of Galashiels demonstrated that they thoroughly understood their business. It was about 1780 that they entered the competition. Previous to that most of the premiums had been awarded to Edinburgh, Musselburgh, Dalkeith, and Montrose manufacturers, but shortly afterwards the Galashiels weavers began to carry off the prizes. Then in 1834 the trustees decided that all goods must be made of Scotch-grown wool. This was a severe blow to the skillful workers on the borders. They found that they could not manufacture cloth from this staple at a profit, and accordingly withdrew from the competition. But they had shown that if allowed to choose their own material, they could turn out a highly-finished

and serviceable article. During this period, also, the manufacturers received grants to assist in the purchasing of machinery, and in this they were supported by such men as the Earl of Buchan, Sir Walter Scott, the great poet, Dr. Douglas, the parish minister of Galashiels, and other men in the district.

The total number of weavers in Galashiels in 1776 was 30, while in 1791 this number had risen to 50, employed by 13 persons. At this latter date the wage of a weaver was 1s. 7d (38c.) per day, and a "journeyman clothier" received 4s. a week and his board. About this time also were introduced carding machines. So much for the old woolen trade. Galashiels has done its duty in fostering the industry, and in fitting and sending young men to other border towns to carry on the Scotch tweed trade. The introduction of the real tweed industry dates from 1830. The old Galashiels grays, blues, and drabs were ruled out of fashion by the public taste, and fancy colors and shades became the rage. The first departure from the conventional fabrics is attributed to various persons—Sir Walter Scott among the rest. Galashiels again rose to the occasion, and soon supplied the demand for the newer cloth. The early custom was to weave the fabric in black and white, while if black and blue, or black and green, or black and brown were wanted, the cloth was put in the dye vat until the white took on the desired color. The manufacture of soft tartans also became popular, no fewer than three-fourths of the looms, which at this period numbered 175, being kept running half the year on that class of cloth. The number of manufacturers had increased by that time to 34, their turnover being estimated at £26,000 annually. Steam power was brought into use in 1836, but it was not generally adopted until some time afterwards, and it was then that the era of great prosperity began. The Border villages soon extended into towns. Galashiels, which was still leading the way, made rapid progress. From 844 in 1801, the population had risen to 6,497 in 1861, and last year it was upwards of 18,000 inhabitants. After 1860 mills were built in all quarters of the borders, although Hawick, Galashiels and Selkirk still remained the chief seats of industry. But Walkerburn, Innerleithen, Jedburgh and Langholm, successfully laid claim to their share of good things. The trade had its seasons of depression, but these were merely temporary, and the active and energetic manufacturers never lost heart. Labor was in demand, wages were fairly high, and there was agreement between employer and employed, and everything pointed to a long period of prosperity and contentment. But to-day a radical change has come over the scene. Work is scarce, and labor is plentiful, and the inevitable result has followed. The border country is to-day suffering generally from great depression, and no one can tell when the burden will be removed.

There are different theories brought forward to explain why the famous Scotch tweeds have lost their popularity. The truth seems to be, however, that wool merchants, spinners and manufacturers cannot discover, or, at least will not acknowledge the true cause. The typical Scotchman considers himself as "cock o' the North," and naturally as a body they are slow to admit that Britishers will prefer the "shoddies" of Yorkshire to the beautiful and everlasting cloths of the south of Scotland; but it has to be kept in view that the probabilities are in favor of the manufacturer of what is termed shoddy, still being improved by the successful blending of it with wool and cotton, and as these improvements are effected, it will become more and more difficult for the better and dearer classes of fabrics to make for themselves ready markets. Then foreign competition and over-production may have something to do with the present depression in Scotland, but the greatest blow has been dealt by the fancy makers of Huddersfield, who to-day are turning out splendid imitation Scotch tweeds at from 3 to 6d. a yard cheaper than the Scotch tweeds. Whether or not the border manufacturers will alter their past line of action and adopt what the

trade demands, remains to be seen, but certain it is that the day has gone by for the demand for the old all-wool Scotch tweeds. To-day some very nice tasty effects are being turned out in Scotland at 1s. 9d. a yard, 27 inches, but our wholesale clothiers here want fabrics at from that price in 50 inches, and this Huddersfield and Dewsbury manufacturers are to-day producing.

### THE ART OF CARDING.

In connection with the Yorkshire (England) College Textile Society, the following lecture was delivered in the College Textile Lecture Hall by D. Dixon Marshall, of Leeds. Professor Beaumont presided, and the subject of the lecture was "The Carding Machine and the Art of Carding." During the last fifty years, the lecturer said, great improvements had been introduced into the process of carding, and they could now card any material capable of being made into cloth. He first illustrated with lantern-slides the distinction between combing and carding. In combing the fibers were brought together in regular order, in carding they were not. In the carding process they had to work and strip, and in combing, to comb and draw. In carding they required, first of all, good machinery, consisting of large cylinders and small rollers, capable of taking the material the whole length of the machine. Good carding required suitable knowledge applied to carding machines. They required careful adjustment of the rollers. The rollers must be as close set together as possible (though not too close), so as to cause each fiber to lose itself in the whole. Suitable machinery was necessary, adjusted to proper speeds, well-educated and skilled foremen, the soundest theory, the best material, and then they would get good results. He felt most strongly the necessity of these requirements. He had seen, in his own experience, much good material spoiled, bad cloth made, and masters ruined through bad carding. Good carding would enable them to compete successfully with foreign rivals. In this respect at least the English manufacturers were in advance of their foreign competitors, and they must go on doing their best to turn out cloth both good and cheap. A carding machine was not a mixing and blending machine. All the various materials to be made into cloth should be well mixed and blended separately in a blending-room, before coming to the carding machine. He feared there was not always the painstaking attention given to this matter that was necessary to make good cloth afterwards. One point upon which he desired to lay stress was that neither theory nor opinion could take the place of practical experience. It was a custom of some manufacturers to card on the same machine all qualities of wool. That was not the way to obtain the best results. In his opinion, three machines (which he explained in elaborate detail) were necessary. One was required for coarse English wool, cross-bred wool, and anything of a coarse, strong nature; one for medium quality, and a third for the fine work. The difference between the last two was only one of speed. Speed was a relative term; it must be left to the engineer. Speed must be regulated according to the quality of the material. The lecturer insisted that regularity of the cards was necessary; irregular cards, which were supposed by some to leave a place for the dirt to fall into, were a great mistake. Notwithstanding the variations of the materials with which they had to deal, a scientific standard in ordering cards might be devised. There should always be an even number of points. He urged strongly the necessity of technical education for carding engineers, and thought the Yorkshire College should arrange classes in these subjects. Large sums of money were spent in order to teach weaving, designing, dyeing, and cloth finishing—everything except carding, which was of equal, if not of greater importance than any of the other processes, in enabling them to successfully compete with foreign rivals.

## INFLUENCES WHICH ACT UPON COLOR DURING WEAR.\*

These influences are either of a mechanical or of a chemical nature, the latter being the more important.

1. *Friction.*—This is a purely mechanical influence, and causes what is known as rubbing off. No textile fabric can be prevented from coming into constant contact with its own folds, or with other bodies, whilst it is being manufactured. Some which do not penetrate well into the body of the textile fabric are strongly attacked by this influence. Thus vat-indigo, which is a perfect color in every other respect, is never free from the defect of "rubbing off." Friction is more dangerous to printed than to dyed goods. It is therefore necessary for the printer to use colors which penetrate as deeply as possible into the interior of the fiber. Acetic acid considerably facilitates the penetration of dyes, and this is one of the reasons why acetic acid is so largely used in printing. Some fabrics, as, for instance, felt, offer unusual resistance to the penetration of colors by being thick and closely woven. They tend to remain on the surface, and are quickly removed by the friction of daily use.

2. *Solution.*—This is another mechanical influence of great importance. There are only a few textile fabrics for which an occasional wetting need not be taken into account. The majority of cotton goods are made with the intention of being washed, and the same applies to most woolen fabrics. But even those which are not intended to be washed, an occasional wetting by rain or other influences often occurs, and should be taken into account. Printed cotton goods have been produced, the colors of which were completely removed by simple immersion into clean cold well water. The silk dyer most frequently forgets to pay due attention to this point. Although a silk, of all textile fibers, has the greatest affinity for dyes, it is still not unfrequently so overcharged with color that cold water will take off a considerable part of it. Again, the practice of weighing silks with sugar has spoiled many a valuable silk dress. Every drop of water dissolved the sugar, and on drying deposited it again in the shape of a ring, leaving an indestructible spot on the fiber.

3. *Heat.*—This is a mechanical influence, which may result in either mechanical or chemical action. It should always be taken into account, for many are the occasions when it may come into action. The glare of the tropical sun, the radiation from a fire, the contact of a hot stove, are instances of the action of heat on textile fabrics. Again, housewives often insist upon ironing everything that enters the sphere of action: there are men who will drop the hot ashes of their cigars on their own and everybody else's clothes—all this must be taken into account by the dyer. There exist some dyewares which are tolerably fast to other influences, but very susceptible to the action of heat. Some of these are entirely decomposed so that not a vestige of the old shade remains; others are volatilized, they sublime off the dyed fabric, and are deposited on adjoining cooler objects. Such colors cannot be considered as fast.

4. *Light.*—This is, perhaps, the most important influence which acts upon textile fabrics; it may safely be said that there is not a color in existence which is absolutely fast to the action of the sun's rays. And this is very natural. All colors are substances which are acted upon by light and react on it. Their reaction consists in a decomposition of the white light, emitting the rest, the result being that the substance becomes colored. It is quite natural that this action cannot go on forever, and that the power of decomposing light which is continually absorbed by the colored body should be transformed into a chemical action which results in the destruction of the body itself. The rapidity, however, with which this secondary process takes place is very different in different colored substances. Some of these are decomposed very rapidly by the action of light; in others the decomposition takes place much

more gradually. As, however, all colors without exception are ultimately acted upon by light, there might be some uncertainty as to the term "fast to the action of light." Practically there is no such uncertainty; a dye which will stand the action of light with no material alteration as long as the fabric on which it is produced will stand regular wear, may be termed as a fast dye; a dye which is entirely discharged by the sun's rays whilst the material which bears it is still in good condition, should be considered as fugitive. The fastness of dyes to light depends, to some extent, on the material which carries the dye. Thus many colors, natural as well as artificial, are rather fugitive if dyed on silk, whilst they stand much better on wool. On cotton, again, much depends on the mordant used for combining the dye with the fiber.

5. *Acids and Alkalies.*—These are chemical reagents, the action of which should always be considered. No dye need be expected to stand the action of strong mineral acids, which would attack the fiber of the fabric itself. But a really fast dye should resist, without material alteration, the action of weak mineral and organic acids, such as vinegar and the juice of many fruits and plants. It should also resist, without material alteration, the action of the weak alkalies, such as ammonia, bicarbonate of soda, and other alkaline chemicals in daily use in every household. The human perspiration, again, is frequently alkaline, and should therefore be taken into account.

6. *Soap.*—This might have been included among the alkalies, because it is generally alkaline. The action of soap, however, is so peculiar that it cannot be confounded with the action of the other alkaline reagents. Soap shows a powerful solvent action on most dyes. Of all the dyes used for silk there are but few capable of resisting the action of boiling soap water. Fortunately, it is not so with wool and cotton, for which only the action of soap need be considered. Most cotton goods are intended to be regularly washed with soap, but if they are to be milled, the shades dyed on them should resist boiling soap, because the process of milling acts like a very strong treatment with boiling soapsuds.

Fastness to soap is, therefore, a very important item in the dyeing and printing of woolen and cotton goods, and great attention should be given to it. From this enumeration of the various influences which may act on textile fabrics which, in the course of their use, are exposed to all these influences, the dyer or printer should, therefore, in all cases know and consider the purpose for which his goods are intended, and he should select his colors accordingly. For curtains or carpets for instance, fastness to light would be the most important consideration, whilst for hosiery goods fastness to soap would be the principal item. And to exercise this judgment he should always be provided with the means for testing his shades and the knowledge how to use them.

## TRADE WITH SOUTH WESTERN CHINA.

Now that the firm attitude of Great Britain in the recent alarm about German aggression in China has assured British traders of the permanency of any markets they might secure in the far East, there may be considerable profit to Canadian manufacturers of cottons and woolens in studying the conditions in that quarter of the world. The following interesting facts about the trade of South western China are taken from a recent issue of the *Textile Recorder*, Manchester:

The Hoang-Ho, or Yellow River, in the north, the Yangtse-Kiang in the centre, and the Si-Kiang, or West River, in the south, are the three great natural arteries traversing China from west to east. The West River is the chief branch of the Pearl or Canton River, and with the remaining tributaries the East and North Rivers, forms one of the most important river systems of China, draining a territory of not less than 200,000 square miles. By a recent treaty between Great Britain and China, this water highway was opened to foreign trade on 4th

\*From the Dyer and Calico Printer.

June last, and Wuchow-fu, Samshui, and Kongkun are established as treaty ports and consular stations, while Kongmoon, Komelchuk, Shinking, and Takling are to be made ports of call for goods and passengers of all nations in the same way as other Chinese treaty ports. The East and North Rivers furnish water communications with a great part of the Province of Kwantung, while the West River, with its many affluents, penetrates to every quarter of Kwangsi, to the eastern portion of Yunnan and to the southern part of Kweichow. The principal stream is said to be navigable for 700 miles. At Wuchow-fu it is joined by the Cassia River, which communicates with Kweiling, or Cassia Grove, the capital of the province. Still further up, the Hsiun Yung enters, at Hsiunchow, and 310 miles above Wuchow, at the important city of Nanning, the river loses its own name and divides again, the Tso Kiang coming from the south-west and the Yu Kiang from the north-west.

These south-western provinces of China—via Kwang-Si, Yunnan and Kweichow, rich in minerals and natural products of all kinds, and with a large population requiring manufactured goods, especially woollens, that can only be supplied from European markets, have hitherto been practically inaccessible to foreign trade. Canton, the natural gateway for commercial dealings with this part of the Empire, and the first Chinese port opened to foreign traders, has had its business greatly restricted owing to the barriers placed by the authorities on all inland transit. Under the new arrangement, however, the important towns of Wuchow, Sunchow, and Nanning, will now be made directly accessible, and the large inland settlements of the south-western provinces indirectly so.

The United States Consul-General at Shanghai, in a report to his Government, states that, on the evening of the 4th June last, the steamship "Wing Tong," of the China Navigation Company (Messrs. Butterfield and Swire, agents), left Hong Kong for Wuchow—the first steamer to disturb the primitive quiet of those regions. The distance from the mouth of the river at Macao to Wuchow is probably 250 miles. The water is shallow, and is said to be unsafe for vessels drawing more than eight feet. The channel is as yet unsurveyed, and there are many rocks, but preparations are no doubt already made for placing the lights and buoys that will be needed.

Wuchow is a city of 50,000 or 60,000 inhabitants, situated just within the eastern border of Kwang-si Province, 200 miles west of Canton.

At present this port is the limit of steamer traffic, and the Commissioner of Customs at Lungchow has expressed the opinion that it will not be found practicable for steamers to ascend above Wuchow, owing to the numerous rapids and rocks. Native boats, however, ply regularly to Pehsel, on the borders of Yunnan, some 700 miles from the confluence of the West and Pearl Rivers, and the smaller craft, indeed, ascend a hundred miles further.

The opening of this important artery of trade has been under discussion for some years past, and is the result of persistent application by the British authorities. It is hoped that it will result in developing a profitable trade with many parts of Kwangsi and the neighboring provinces, a region which has so far been all but untouched by foreign commerce. Heretofore this natural channel of trade has been almost wholly closed by the prohibitive exactions of the numerous likin stations, of which there were, in 1890, no less than fifteen or sixteen between Canton and Nanning, a distance of about 510 miles. As a result, what little trade there was with the outside world was carried on by unnatural and circuitous routes, much coming from Hankow, some 1,200 miles distant, on the Upper Yangtse. In 1890, 95,000 taels' worth of goods were received at Kweiling by this route. In 1877, the port of Pakhoi, on the south-west coast of Kwantung, was opened. A large trade has since grown up with that port, from which goods are conveyed a portion of the way by water and the remainder, at a considerable cost, overland to Nanning. Kwangsi

itself has no line. From Nanning the goods are distributed through Western Kwangsi and Eastern Yunnan. The trade of Pakhoi, in 1895, amounted to 3,813,063 taels. As trade suffered in 1895, the figures for 1893 are fairer, i.e., 4,275,707 taels. Of this trade, the greater part must, perhaps, be credited to the region under survey. In 1889 Lung-chow, in Western Kwangsi, on the border of Tonkin, was opened, as a result of French diplomacy, with the hope of diverting a part of the trade to French Indo-China.

The American Consul at Shanghai goes on to say: "It may appear strange that, with a treaty provision existing since 1858, permitting the shipment of goods inland on transit passes by the payment of a small extra tax (2½ per cent.) at the port of entry, the likin stations should have been able to so seriously interfere with the river traffic. Provincial officials in China, however, exercise great authority, and as they depend very largely upon the likin dues for the support of the local government, they could not consent to give way, even where the treaty demanded it, unless some compensation were offered. That this has been the chief obstacle to commerce is shown by the fact that when an arrangement was effected in 1891, by which the granting of transit passes was allowed, the sudden development of trade was startling. This was especially seen in greatly increased imports of American flour and kerosene, and foreign cotton goods. After a few months the granting of passes was again forbidden, and trade immediately declined to insignificant dimensions until 1895, when the privilege was restored and the demand for foreign goods once more assumed phenomenal proportions."

Kwangsi is one of the most sparsely-populated provinces of China. It ranks next to Kansuh in this respect. It contains some 78,250 square miles, and a population estimated in 1890 at 7,500,000: but only a small proportion of the province is capable of cultivation, the country being rugged and mountainous. It is not a wealthy province, though the people must not be considered as extremely poor. By the devastation of the Taiping rebellion, which had its origin in this province, it was largely depopulated, and many of its industries destroyed. The three provinces—Yunnan, Kwangsi, and Kweichow, lying together in the south-western corner of China—are alike in this respect, that they are rich in natural resources, inhabited largely by aboriginal tribes, and have been laid waste by rebellion (Yunnan by the Mohammedan rebellion in 1855-1873), from which they have not yet recovered. The mountains of Kwangsi are reported rich in minerals—gold, silver, copper, iron, and coal—while Kweichow, in addition to these, has the richest quicksilver deposits known to the world; and Yunnan furnishes copper and salt. As yet, however, the mines are but little worked. The other products of Kwangsi are rice, maize, sugar, cassia, lignia, aniseed, aniseed oil, vegetable oil, and valuable timber. An attempt has been made recently to revive the silk industry, but without much success. Aniseed trees are cultivated and the oil drawn off by distillation—a trade which is steadily growing, and which promises to attain very large proportions. In 1894 the trade in aniseed and aniseed oil amounted to £85,600.

The Lyons Commercial Mission do not appear to have been favorably impressed with the prospect of opening up trade in South-western China via the West River, and a member of the mission, writing to the *Debats*, states that there is no doubt of the superiority of the Red River route, and this in spite of the difficulties of navigation, some of which he is of opinion could be easily remedied. The whole of the south of Yunnan, as far as the capital, has been hitherto furnished from Mengtz, but some of the traffic is by land, via Pehser, and not by the Red River route, though much should be turned to the advantage of the latter.

The same writer further states that the West River traverses a poor region, the aspect of the towns does not impress one, and at Wuchow there is not a single shop or warehouse of any

importance, and no European goods in evidence. As far as Nanning, up the Yu-kiang, only two towns of importance are passed, Sun-chow-fu and Hwai-yuen. The plain of Yu-kiang is fairly well cultivated, but the land, which is poor and dry, cannot produce much besides rice and sugar, which are not exported. European goods are rare, petroleum and cotton yarn making the best show. From Yunnan the merchants of Nanning receive opium, tin, copper, mercury; and Tonquin furnishes aniseed.

Nanning, referred to above, is an important market town, with an estimated population of 40,000, a little below the confluence of the Yu-kiang and the Tso-kiang, about 9 miles in a direct line from Pakhoi, with which port it carries on an important export trade in leather hides, essential oils, and star aniseed. The export of aniseed oil, according to a report of her Majesty's Consul at Pakhoi, was some 80 per cent. more in 1896 than in any previous year; but the essential oils trade has been entirely in the hands of Chinese merchants established at Pakhoi, and it is imaginable that the opening of the West River, while directing this trade from that port, may afford foreigners an opportunity of cutting into it. The same report states that a considerable quantity of leather, apart from hides, produced in Kwangsi, now comes to Pakhoi for shipment, instead of going, as formerly, by Wuchow and Canton, the likin on this route being less than that on the West River. Its export represented rather over £4,500 for the past year, but in the future it will presumably lapse back to the West River, whence it came.

From various reports of the Lyons Commercial Mission, which have been published from time to time in the *Debats*, the French appear also to have hope of attracting a considerable portion of the Yunnan and Szechuan trade via Mengtz and Lakai, down the Red River to Tonkinese ports.

Under the provisions of the supplementary convention between China and France of the 20th June, 1895, a French Consulate was opened at Szumao, on the borders of Tonkin and Yunnan, early in August, 1896, and a Vice-consulate subordinate to the Mengtz Consulate, was established in the same month at Hokow, a small village in Yunnan, opposite Laokai, on the left bank of the Red River, at its junction with Nan-hsi River.

The French, in their endeavor to divert the trade of the South-western Provinces of China down the Red River and through Tonkin to their own port of Haiphong on the delta of that stream, are likewise attempting to obtain some of the Kwang-Si trade through Lungchow by the construction of a narrow-gauge railway to the border.

The Acting Commissioner of Customs at Lungchow as long ago as 1895 wrote in his report for that year as follows:

"The native merchant of that part of China, not knowing French and ignorant of the proper Customs' procedure in Tonkin, is not likely to make the trial of getting goods via that country.

"Should the projected railway line to Lungchow be completed, the difference in the cost of transport by carrier and by rail will be great; in fact, the cost of carrying a picul of cotton yarn by rail from Langson to Lungchow would not exceed 40 cents, while by carrier it is two dollars. In 1896 the line was completed to Langson, within thirteen miles of Nacham, from which place there is water communication with Lungchow, and last year by convention with the Chinese Government, it was agreed to carry the road over the border into Kwangsi."

With reference to this line, the Commissioner at Lungchow, in his report for 1896, just issued, states that a contract was signed at Peking on the 5th June, 1896, giving to the Compagnie Fives-Lille of France the privilege of constructing a railway from Lungchow to the Tonkinese frontier, a distance by road of about 35 miles, the Tonkin authorities on their side, at the same time continuing their line from Langson to the Chinese frontier (about 11 miles), and widening the existing

tract from 60 centimetres to a metre gauge. The engineers of the company arrived on the spot on the 1st November, 1896, and the preliminary surveys were begun. Under the contract the work is to be completed in three years. The Commissioner says: "For over half its length the line will run, in valley or on plain, over ground presenting no difficulties, and for the rest of the distance, though the country is rough, it is probable that there are no such obstacles as to call for great engineering works. For the time being the line will stop on the river bank, and there will be no bridging required, but the present terminus is situated in direct relation to a future bridge over the river at Lungchow.

"It is not the Kwangsi-Tonkin trade which the railway is built to carry. This direct traffic is of no great importance, and no encouragement could probably make it amount to more than a few hundred thousand taels in value yearly. The raison d'être of the line is to capture the trade—now amounting to about three million taels annually—which enters China by the gate of Pakhoi, and thence passes for consumption into the Provinces of Kwangsi and Yunnan. The die is cast, the work is taken in hand, and it would be useless to forecast the probabilities of actual commercial success or non-success; but it may be permitted to indicate briefly the conditions which will promote or retard a favorable issue.

"(1) Time is not important in China, and other things being equal, water transport will always be preferred for its cheapness, and the magnificent waterway of the West River, extending navigably to the extreme western limit of Kwangsi, will ever be a formidable competitor to the railway. (2) With a short line of railway, such as was advocated in the Pakhoi Trade Report for 1889, Pakhoi would have an even chance of retaining its transit trade. (3) Lungchow has a slight advantage in the fact that imports there pay only seven-tenths of the full tariff duty, and exports pay six-tenths of the full duty. (4) The cost of transport by the Lungchow railway must be reduced to its lowest figure. The present terminus of the line is at Phulangthuong, 12 miles north-east of the trading town of Bacninh, on the Red River, and the rate for first-class merchandise from that point to Langson, a distance of 63 miles, is \$11 per ton, a rate which would not be exceeded by the cost of land transport by coolies on the plain in a populous part of China; these rates must be considerably reduced if the railway is to compete with the alternative routes. (5) The carriers must issue through bills of lading, must attend to all handling, and conform to all legal requirements by the way, and must deliver his goods at Lungchow without trouble to the consignee. (6) The right of free traffic through Tonkin must be accorded. The agent of the merchant in, say Yunnan, will go to that mart in which he can best and most cheaply fill the whole of his indent, and for the present he will continue to go to Hong Kong. In time, after he has become accustomed to accompanying his goods through Tonkin, he may be persuaded that he can do better and buy cheaper in Haiphong; but he will be influenced by these considerations only, and will not ask if the goods are French, English, or German manufacture. If then, buying elsewhere, he is shut out from Tonkin by a hostile tariff, he will select, or resume, another route to reach his market, and the route by Haiphong and Lungchow will be for him as if it did not exist."

Since the above report was written, the ports on the West River has been opened to trade, a fact which, as previously shown, while probably exerting an unfavorable influence on the trade of Pakhoi, must also compete in a marked manner with the French projects for trade along the Red River route.

According to the *Temps*, European merchants have decided to make their vessels enter the West River at the Na-tao mouth and go to Wuchow without passing either by Canton or Samsui. The Customs at Wuchow, opened since June 4th, and its annexe at Nanning, are, therefore, placed in different conditions to Shanghai and the Yangtze, since the Maritime Customs at

Canton will not be able to supervise goods imported or exported direct through the Na-tao mouth.

It may be noted that the Hong Kong, Canton, and Macao Company are now running boats regularly between Canton and Wuchow, calling at Komchuk, Samsui, Shihing, and Takhing. The vessels make the trip in about 23 to 30 hours, according to tides and current. The passage money is \$10 for the trip either way.

The American Vice-Consul at Canton states that the people at Wuchow are friendly, and that the utmost goodwill prevails.

### WOOL MARKET.

TORONTO.—The market is practically in the same condition as in December. The mills are still taking wool and trade conditions generally are very favorable. We quote: Fleece, nominal, 20 to 21c.; pulled wools, somewhat easier, 20 to 21c., extra, 21 to 22c.

MONTREAL.—The latest reports from Boston show that prices in the wool market are stronger than for some weeks past, while there appears to be considerable consumption of domestic wools. Western territory wools have sold well on the basis of 50c. scoured for fine wools. The Philadelphia market also shows an improved condition. Antwerp sales on the 11th went off rather higher; London will open on the 18th, and is expected to show some advance, especially for good wools. All markets have been stronger since the new year.

### PERSONAL.

G. A. Irwin, assistant secretary to the Montreal Board of Trade, has resigned that post to join the staff of the MacLean Publishing Co. The company is to be congratulated upon having on its staff a young man so bright and energetic, and we welcome Mr. Irwin to the ranks of trade journalism. His sphere of work will be in the business department, Montreal, and he takes charge on the 1st of February.

We hear with regret of the death of S. C. Stevenson, of Montreal. His death was sudden, and entirely unexpected. Mr. Stevenson was for a quarter century secretary of the Board of Arts and Manufactures of the Province of Quebec, in which capacity he did loyal service. But he was probably best known as manager and secretary of the Montreal Exposition Company, whose directors passed the following resolution: "Resolved, that this meeting desire to place on record their appreciation of the great loss suffered by this company in the death of their esteemed manager and secretary, S. C. Stevenson, to whose efforts was due not only the organization of the company, but its management during its entire existence. The position which he held brought him into close contact, not only with the members and directors of the company, but also with the general agricultural population of the Dominion, with whom his personal affability and obliging disposition made him a great favorite. In the death of Mr. Stevenson the Province of Quebec has lost one of its most zealous citizens, and the agricultural community especially will miss his genial and constant efforts on their behalf."

### FABRIC ITEMS.

The Canadian Fiber Chamois Co., Limited, is being wound up.

R. Weir, dry goods, Walkerville, Ont., has obtained an extension of time.

Kerr & Tarrant, tailors, Calgary, N.W.T., have put in an acetylene lighting plant.

The liabilities of McKenzie & Campbell, dry goods, Kirkfield, Ont., are about \$8,000.

From Quebec city we hear of the failure of A. L. G. Dugal, furrier, some twenty years in business; liabilities about \$10,000.

At the annual meeting of the Dominion Commercial Travelers' Association, the Hon. J. D. Rolland was re-elected president by acclamation.

There was a small blaze on the top floor of the T. Eaton Company departmental store building, January 3rd. Some blankets, which were piled against the wall, became ignited, but the automatic sprinklers quickly extinguished the blaze.

J. H. Carnegie, who has been in the employ of James Johnston & Co., wholesale dry goods, Montreal, for some twenty years, was made the recipient of a very handsome presentation recently on the occasion of his leaving for Halifax, where he will enter the firm of Murdoch's nephews as buyer.

The Belfast *Telegraph* announces that a combination of linen thread manufacturers has been effected, including such firms as Barbour & Sons, of Belfast; Marshall & Company, of Paisley and New York, and Finlayson & Company, of Paisley. The capital of the new combination is equal to that of the Coates combination in cotton thread.

Assignee Langley has declared a second and closing dividend of  $3\frac{1}{2}$  cents on the dollar in the estate of R. J. Hunter, tailor, who assigned some time ago. The first dividend was 25 cents on the dollar, and there are still a few parcels of land in the North-West awaiting disposal, and when sold the amount will be divided among the creditors. The liabilities of the estate were \$24,000, and the assets realized \$15,000.

Terry & Culver, general dry goods, Simcoe, Ont., have assigned to H. P. Inness. About two years ago they purchased the business from S. M. Sovereign for \$5,000, and their store is one of the largest in the county. They carry a \$12,000 stock. Assets are about \$12,000 and liabilities about the same. S. M. Sovereign is the principal creditor, having a chattel mortgage on the stock to the extent of about \$8,000.

A dispute has arisen between the customs authorities and the firm of Fitzgibbon, Schapheitlin & Company, Montreal, importers of European fancy dry goods, etc. Mr. Fitzgibbon states that the custom authorities are acting on the affidavit of a discharged employee, who stated that the firm entered goods valued at about \$7,500 under their proper value, but Mr. Fitzgibbon strongly denies that there was any undervaluation. He says that he has deposited \$7,500 with the Government as a guarantee and proposes to resist the claims.

The death of John Burnham, Peterboro, Ont., and the uncertainty connected with his estate, has caused trouble to one or two firms. The firm of Fairweather & Co., of Peterboro and Toronto, furriers and hatters, had the assistance of endorsements by Mr. Burnham. This paper it is now found necessary to protest in order to hold the Burnham estate. Mr. Fairweather is meanwhile carrying on his business, depositing in trust the moneys taken in, and taking stock with a view to future developments.

The election of officers at the annual meeting of the Fredericton Board of Trade, held in that city, resulted in the choice of the following: President, A. H. F. Randolph; vice-president, C. F. Chestnut; secretary, J. W. McCreedy; treasurer, M. Tennant. Council of the Board—The president, vice-president, Wm. Lemont, J. H. Barry, F. B. Coleman, F. B. Edgecomb, J. S. Neill, M. Tennant, J. Palmer, J. D. McKay, J. J. Weddall, Geo. Hodge, J. M. Wiley, P. A. Estey.

A compromise has been offered by E. E. W. McGaffey, dry goods dealer, Lindsay, Ont. He wants creditors to write 30 per cent. off their claims. McGaffey was formerly in the employ of Fairweather & Co., Peterboro, in which firm John Burnham was a silent partner. In order to withdraw his capital, he was obliged to accept considerable stock, which was moved to Lindsay and placed in charge of McGaffey, who succeeded in building up a good trade. Owing to the sudden death of Mr. Burnham a short time ago and the unsatisfactory state of his affairs, the firm have suspended payment.

An interesting judgment in the Divisional Court was given at Osgoode Hall, Toronto, last month, in favor of F. A. Clarry, now a commercial traveler, and formerly a wool dealer and textile manufacturers' agent in Toronto. The defendant was the Grand Trunk Railway. The suit arose in this way: Clarry had a ticket to go from Harrisburg to Stratford via Galt. At the latter place he had to change cars, and the stations were three-quarters of a mile apart, connected by a 'bus. In order to make his connections, Clarry had to pay 10 cents omnibus fare. He sued the company for this amount, claiming that his ticket called for one "continuous passage" between Harrisburg and Stratford. His claim was sustained by the court, who held that he was entitled to conveyance over the 'bus route free of expense.

Zeigler, Hinch & Co., Guelph, one of the largest dry goods houses in the West, have been obliged to hand over their estate to an assignee. E. J. Henderson will wind up the business. A rough statement of affairs shows liabilities of \$25,000 and assets of \$30,000.

The wholesale fancy dry goods firm of Fitzgibbon, Schapheitlin & Co., Montreal, who were reported by the *Shareholder* and the *Undas Sun*, of Montreal, to have become involved in difficulties with the Government by undervaluing imports, have taken an action for libel against both papers, claiming damages to the amount of \$700,000.

We hear of a partnership formed at the first of the year to do a wholesale dry goods business in Halifax between Andrew B Boak, formerly of the firm of Anderson Billings & Co., and latterly buyer for the firm of Murdoch's Nephews, and his son, Stanley D. Boak, late manager of the Union Bank at North Sydney. The firm name will be A. B. Boak & Co.

Cloves St. Louis, retail dry goods merchant, Montreal, has assigned for \$22,000. There are many foreign creditors. Toronto firms interested are: John Macdonald & Co., \$2,000; Gowans, Kent & Co., \$1,500; Bryce & Co., Ivey & Co., Menzie, Turner & Co., Alexander & Anderson, Dingman & Co., and others for smaller sums.

The Army and Navy Clothing Company, Toronto, has made an assignment to E. J. Henderson. There are about 100 creditors and liabilities are some \$125,000. Among the principal creditors are the following houses: Stewart, McDonald & Co., Glasgow, \$1,153; Boyd, Caldwell & Co., Lanark, \$1,264; Rylands & Sons, \$1,117; Bradbury, Greatrix & Co., \$2,194; W. Fraser & Co., \$3,291; Thibaudeau & Co., Montreal, \$2,000; Gault Bros. & Co., Montreal, \$3,000; Mandelburg & Co., Montreal, \$266; Dowell & Gibson, Montreal, \$1,900; J. A. McCarville, Montreal, \$282; Joseph Poirier, Montreal, \$297; Montreal Corset Company, Montreal, \$108; Eagle Brand, Montreal, \$328; Ducas, Switzer, Montreal, \$536; Thompson Shoe Co., Montreal, \$310; Edgar, Swift & Co., Montreal, \$904; Matthews, Towers & Co., Montreal, \$1,018; John Calder & Co., Hamilton, \$426; F. F. Dalley & Co., Hamilton, \$194; Bradshaw & Son, Toronto, \$460; Canadian Rubber Company, Toronto, \$180; Messrs. John Macdonald & Co., are also interested in the estate. The Bank of Toronto is on the statement for \$20,000 secured, and members of the Thompson family have claims against the company amounting to \$20,000. The Army and Navy Company was composed of W. A. Thompson, president and manager, R. Barber, vice-president, and Elizabeth Thompson, wife of W. A. Thompson. The company was incorporated in 1894 with a capital of \$95,000, succeeding the business carried on by W. A. Thompson, the new members paying in \$25,000. The last statement issued by the company in September, 1897, shows assets of \$72,000 and liabilities of \$35,000. Of the assets \$69,000 consists of stock. W. A. Thompson was president of the John Eaton Company. The creditors were surprised to learn that a large quantity of goods purchased by the company had been hypothecated. These goods are now in the possession of Robert Currie, warehouseman, Toronto. They are valued at \$24,000, and 60 per cent. of this valuation was advanced on them by Currie to the Army and Navy Company. The firm, it is understood, purchased goods right up to a few days before the failure.

—The examination of the members of the late firm of John Eaton & Co., which has been going on for some time in Toronto, has brought to light some interesting facts; as when the advertising methods were gone into, Mr. Osler quoted advertisements and obtained the admission from Mr. Thompson that the real reduction from the "regular selling price" to the bargain price did not correspond always with the advertised reduction, because in some cases the "regular price" quoted was fictitious. "Our advertising man drew upon his imagination," said the witness. The "regular price" quoted was not one but that might be charged in some country store. Mr. Osler commented sharply upon this method of doing business, and Mr. Blake cut in with the remark. "My learned friend would do the same thing were he in the business." "Don't judge me by your own measure," retorted Mr. Osler, who then asked who was night watchman at the time of the fire. The witness replied that one Rogers held the position. He had previously been discharged, but was taken on again, by whom Mr. Thompson did not know.

## Among the Mills

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

Peru has a cotton mill run by electricity which is transmitted five miles.

H. M. Bustacher is running his woolen mill, at Baden, Ont. overtime.

Harding & Co., Simcoe, Ont., shoddy and wool stock, are working day and night.

The Globe Woolen Mills, Montreal, are still idle. No company has yet been organized.

Wm. Parks & Son, Limited, St John, N B., are running their extensive cotton mills overtime.

Wylie & Shaw, Almonte, Ont., are running their mill day and night, chiefly on Klondyke blankets.

Sarah E. Hartle was married to S. Cairns, of the Stormont Cotton Mill, Cornwall, Ont., a short time ago.

The washing out of the dam at Jas Cumming's woolen mill, Norwood, Ont., did considerable damage December 15.

There are rumors in Markham, Ont., as to the establishment of a boot and shoe factory in the carpet factory building.

Jas. H. Wylie, of the Elmsdale Flannel Mills, Almonte, Ont., will open the Baird mill, Almonte, in a few weeks, where he will manufacture tweeds.

Wm. Thoburn, woolen manufacturer, Almonte, Ont., slipped on the ice recently and sustained injuries which confined him to the house for some days.

It is rumored that A. W. Brodie, the Hespeler manufacturer, recently took out an insurance policy for \$75,000, the annual premium upon which is \$2,500.

In making some changes at the Dominion Cotton Co's Mill, Brantford, Ont., the company has retired a number of young men in favor of older men who had families.

James Ferrie, of the Canada Cotton Mill, Cornwall, Ont., and Mary M. Grant, daughter of Geo. A. Grant, of the Toronto Paper Co.'s mill, were married recently in Cornwall.

The Dominion Dyewood and Chemical Co. has sent us another of their handsome desk calendar memorandum tablets which are so convenient a reminder of this enterprising firm.

Letters patent have been issued to D. Pike, J. Stewart, A. Coyell, Ellen Pike and Laila Pike, Toronto, as the D. Pike Manufacturing Company, Limited, to manufacture and sell tents, awnings, etc.

John Brennan, lately superintendent of the Fraser knitting mill, Almonte, Ont., has removed to Kingston, Ont., where he has secured a lucrative position. His family will remain in Almonte until spring.

Perine & Co., of Door, Ont., cordage and twine manufacturers, have given the Preston council \$100 for services which the fire brigade rendered at their fire. The council handed the money over to the firemen.

S. S. Stratton and R. Ronan, Ottawa, have been awarded the contract for supplying the Post Office Department with mail bags. Their contract, which will extend over a period of four years, went into effect on January 1st.

Robert Marshall, a 15-year old lad employed at the Hamilton Cotton Co.'s mill, Hamilton, was instantly killed in the mill last month. He leaned over the guard rail of the elevator shaft to see if the elevator was coming up. At that moment the lift descended and broke his neck.

Ernest Walsh, manager of the Dominion Cotton Mills Company's mill at Windsor, N.S., has severed his connection with the company. H. D. Martin, who has charge of the eastern mills of the company at Moncton, Halifax and Windsor, will manage the Windsor mill himself for the present.

Jos O'Neil and Wm Bucholtz, Hespeler, Ont., have secured good positions in Sherbrooke, Que.

G Fveritt has secured judgment against Talbot, Calcroft & Hanly, carpet manufacturers, Flora, Ont., for \$1,500.

The woolen and knitting mill at Hanover, Ont., carried on for many years by Jacob Messinger, is being converted into a joint stock company.

D W. Shirreffs, of Carleton Place, has secured a patent for an improved shuttle check for power looms, which we describe in another column.

Peter McDougall, proprietor of the Rosebank wooler mills is completing arrangements for renewing manufacturing, and will shortly be running full time once more.

The Cornwall manufacturing Co is putting into its woolen mill two new fulling mills, made by Young Bros., Almonte, and a new napping machine imported from abroad.

J. E. Molleur, manufacturer, St. Johns, Que., is endeavoring to organize a local joint stock company for the manufacture of underwear in St. Johns, with a capital of \$50,000.

Jno. L. Harris, president of the Moncton Street Railway, and formerly president of the Moncton Cotton Co. before its absorption by the syndicate, died in that city of heart disease on the 10th inst., at the age of 65.

The friends of Jno. J. Bickley, late with the Dominion Cotton Mills Co. at Kingston, will be glad to hear that he has recovered from his recent illness and has entered on an engagement as overseer of spinning in the Merritt Mill.

The Manitoba flax crop has all been marketed, and prices were satisfactory. Stocks at Duluth, Chicago and Minneapolis are about half those of same time last year, and everything points towards advanced prices for next year's crop.

Notice has been given in the *Canada Gazette* of an application for an act to incorporate the Montmorency Cotton Mills Co., Limited. The object of the act is to amalgamate the business of the Riverside cotton mill with that of the Montmorency mill.

A large building 40x50 feet, is in course of erection at Hartville, Hants Co., N.S., in connection with the St. Croix Paper Mills, for the reception of machinery to be used in the manufacture of tar paper. In the spring, a large stock house, about 150 feet long is to be erected.

The C. Turnbull Co., of Galt, Limited, have issued a very dainty calendar for 1898. The illustration is a color lithograph of the face of a maiden, and the execution is highly creditable to the printers, Rolph, Smith & Co. Visitors to our office pronounce the lass emphatically a peach.

The *Pall Mall Gazette*, commenting upon the increase of American cotton shipments to Japan, says: "The special interest for us lies in injury to Indian cotton growers. If the American staple continues cheap, and the American take increases, it is more than possible that ere long America will also send to China. Canada, of course, as our readers know, ships to China."

A new engine is being put into the mills of the Rosamond Woolen Company, Almonte, Ont., by the Goldie & McCulloch Co., Galt. Its fly wheel is 18 feet in diameter and of 30 inch face. The new engine is of 350 horse power, and replaces one of 150 horse-power put up in the year 1872, and in active use ever since. The mill has been running overtime, and is still fully employed.

The *Ontario Gazette* recently contained notice of the incorporation of the Perth Woolen Company, Limited, with a capital stock of \$75,000, and the directors G. D. Ross, Montreal; T. A. Code, Hon. John Haggart, Mrs. J. M. Millar, and Mrs. Jennie L. Code, of Perth. T. Hope, formerly with the Paton Mfg. Co., Sherbrooke, Que., has been engaged as manager. A large number of broad looms are being put in the mill.

C. R. Whitehead, manager of the Dominion Cotton Co., stated recently to the *Brantford Courier* that the Brantford mills had not been paying for some time. To make them do so would necessitate a very large outlay in repairs, additional buildings and equipment. The buildings are far from suitable, and are very ancient in their design. Three Rivers, Que., had been offering them great inducements in the shape of water power to locate in that city.

Letters patent have been issued to R. N. Tombyll, St. Henri, W. H. Turner, G. H. Labbe, Montreal, T. Tombyll, A. A. Bernard M. D., St. Henri, for the purpose of carrying on a manufacturing and importing business in upholstery, to be known as The Tombyll Upholstering and Frame Manufacturing Company, with a capital stock of \$75,000. To carry on, on an enlarged scale, the upholstering business of R. N. Tombyll, Montreal, and to build additions to his factory.

Prizes are now given by the managing directors of the Paton Manufacturing Co., Sherbrooke, Que., to encourage good work in the weave room. The winners of the prizes for the weaving competition for month ending Dec. 24th, are as follows:—Broad Looms—1st, Jos. Barriault, \$8; 2nd, Vilbon Couture, \$5; 3rd, Paul Decoteau, \$4; 4th, N. Barriault, \$3; 5th, Malvina Falardeau, \$2; 6th, Geo. Auger, \$2; 7th, Odile Harton, \$2; 8th, J. B. Hamel, \$2; 9th, Alice Bedard, \$2. Narrow Looms:—1st, Ninnie Lefebvre, \$4; 2nd, Rosana Croteau, \$2; 3rd, Eva Bipon, \$2.

Horn Bros., proprietors of the Lindsay, Ont., woolen mills, have recently added some new knitting machines for knitting underwear, and hosiery machines as well. There is a brisk demand for heavy pure wool underwear, and this is the class of goods they will make a specialty of. They have also purchased and thoroughly tested a Gilbert loom—made in Worcester, Mass.—farcy, open shade, which has given them splendid satisfaction, and they contemplate adding more of the same pattern, as they make a great many heavy blankets for the North-West trade.

We are pleased to be able to state that the loss of M. B. Perine & Co., twine manufacturers, Doon, Ont., is not nearly as serious as at first reported. There was only one of the factories partly destroyed. They have started to rebuild, and intend to bring the manufacturing plant to the highest point of efficiency. They will be able to keep their customers supplied, as they have a large stock of manufactured goods in the storehouses, and have put machinery in one of the other buildings to manufacture such lines as they may run out of. They expect to have their factories in perfect running order again by the first of February.

The Lake Bouchette Pulp Company has applied to the Quebec Legislature for incorporation to make and sell pulp and paper in all its branches; to deal in timber limits and timber, and to erect sawmills and make lumber, to build and navigate vessels on the Lakes. Commissaires, Bouchette, Quiatchouan, and their tributaries, to keep hotels; to manufacture, sell and distribute electricity for lighting, heating and motive power. Head office, Quebec, capital, \$200,000. The petitioners are Victor Chateauvert, Gaspard Lemoine, Rodolphe Audet, George Elie Amyot, Alphonse Lestellier, Octave Jacques, Joseph Vermette, Narcisse Rioux, A. B. Dupuis, Jean Elie Martineau, merchants; Joseph Isaac Lavery, advocate, all of Quebec, and Damase Jalbert, trader, of Lake Bouchette.

The Publishers of the "Canadian Journal of Fabrics" will give one year's subscription FREE to the first three subscribers who forward to the Toronto office, 62 Church Street, perfect copies of the issue of January, 1897.

# Wool Washers

## Dryers and Carbonizers

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## MACHINE CO.

LOWELL, MASS.

The estate of the late Donald M. Fraser, knit goods manufacturer, Almonte, has turned out a disappointment for the creditors. The meeting of creditors was held on the 5th January, upon the call of Rebecca A. Fraser, T. B. Caldwell and Herbert W. Lundy, executrix and executors respectively, but no disposition of the estate was made. A proposition was made by L. H. Lemoine, of L. H. & Charles Lemoine, Pembroke, and others, to organize a joint-stock company, and we learn that a large part of the stock has already been subscribed. The late Mr. Fraser had given a lien to the Bank of Montreal on his stock to the extent of \$15,000, while a mortgage for \$16,000 was held on the plant by J. Armour, Perth. It appeared that Mr. Fraser had expended altogether, \$31,000 in the business, including purchases of new machinery, but as no such amount could be realized for the plant, the outlook for the ordinary creditors is not very bright. The proposed new company would have a paid-up capital of \$25,000, in which it is said Mr. Armour would take \$5,000, thus reducing his claim by that amount. The Standard Hosiery Mills, Pembroke, will be closed down, and Messrs. Lemoine will devote their whole time to running the Almonte mill.

The Court of Appeal for Ontario has handed down judgment dismissing the appeal of the Canadian Colored Cotton Mills Company from the order of a Divisional Court, affirming the judgment of Chief Justice Armour and a jury given at the assizes held here in the autumn of 1895, when a verdict was entered for Margaret Kervin and her children against the company for \$3,500 damages, caused by the death of James Kervin, an employee in the Canada Cotton Mill, Cornwall. Kervin's body was found near the big pulley, which it was part of his duty to keep cleaned and oiled. The plaintiff claimed that the company failed to comply with the statute in regard to the fencing of dangerous machinery, and that this negligence caused the death of Kervin. The jury thought so too, and awarded \$3,500 damages and costs. The company appealed to a Divisional Court, but their motion was refused. They then appealed to the Court of Appeal, which was equally divided, Justices Osler and Falconbridge being against, and Chief Justice Burton and Justice Macleuan for the appeal. It was therefore dismissed. The company rely on the want of evidence to prove the exact cause of Kervin's death, no person having seen it. Their strongest Canadian authority is a Montreal case, *Corcoran vs. the Montreal Rolling Mills Company*. The case may go to the Supreme Court.

The four large woolen concerns located in Sherbrooke, Que., are now in a most prosperous condition. They are the Paton Mfg. Company, whose woolen and worsted mills are among the most extensive and best equipped in the Dominion; A. Lomas & Son, who turn out the finest of dress goods and flannels, rivalling in texture and workmanship those of the best known foreign make; A. L. Grindrod & Co., tweeds, flannels, blankets, etc.; the Sherbrooke yarn mills, yarns, hosiery and knitted underwear. Three of these mills have orders enough on hand to keep them busy until February or March, and one of the three has more orders than it will be able to turn out by the time the next season's trade begins. Two of these mills are putting in more spindles in order to cope with the increasing demand, and all four, for the first time in years, are running a full force of operatives. Of the above named concerns the Paton Manufacturing Company, in

view of its large output in the past and of the management a firm and unswerving stand in favor of high protection, attracts the most attention. On the morrow of the last general election, statements were made by men prominently identified with the management of the company that the Tory overthrow had sounded the death-knell of the Paton Manufacturing Company. And again when the new tariff law was talked of these same officers publicly stated that the mills, so far, had been kept open only at a heavy financial loss annually, and that any tampering with the old tariff would result in the directors closing their mill doors. Notwithstanding these emphatic statements, not only were the mills kept open, but for the first time in many years they are to-day running overtime, with a much larger staff of employees than formerly, and still more help is required. What is said here about the present condition of affairs at the mills of the Paton Manufacturing Company, applies equally well to the three other woolen concerns, says a local contemporary. The same activity reigns in all the other mills.

#### ELECTRICITY IN MILLS.

At the annual meeting of the American Society of Mechanical Engineers, held recently in New York, W. B. T. Whaley, of Columbia, S.C., read an interesting paper on "Electricity in Cotton Mills." Mr. Whaley told of some comparative tests which were made of two mills of nearly equal size, in one of which the spindles and looms were run by steam and the other equipped with 150 horse-power electric motors. One notable advantage which the latter mill had because of its electric equipment was that it required only about 122,000 pounds of shafting to make its connections, as against about 136,000 pounds for the steam mill. The steam mill required more oil and other items of running cost, while in six months the other mill did not require a cent for repairs to the motor. The electric mill could be operated in parts also without running all the shafting. The test showed that there was a saving in friction in the electric mill of 77 horse-power. It would seem that there is a text for experiment in this for progressive makers of woolen machinery.



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—The difference between the cotton manufacturing situation in this country and that in Canada is striking. Our own mills are in anything but a desirable condition, whereas cotton manufacturing establishments of Canada are actively employed, with stocks in a healthy condition. Prices have shown but little fluctuation, and are on about the same level as a year ago. Duplicate orders for the spring trade have been numerous, so much so that on many lines the mills will agree to make no deliveries before the middle of next March.—*American Wool and Cotton Reporter.*

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Sal soda .....	0 75	" 0 80
Carbolic acid, 1 lb. bottles .....	0 35	" 0 37
Caustic soda, 60° .....	1 80	" 1 90
Caustic soda, 70° .....	2 25	" 2 35
Chlorate of potash .....	0 12	" 0 15
Alum .....	1 35	" 1 50
Copperas .....	0 70	" 0 75
Sulphur flour .....	1 75	" 2 00
Sulphur roll .....	1 75	" 2 00
Sulphate of copper .....	5 00	" 6 00
White sugar of lead .....	0 07	" 0 08
Bich potash .....	0 10	" 0 11
Sumac, Sicily, per ton .....	50 00	" 55 00
Soda ash, 48° to 53° .....	1 25	" 1 50
Chip logwood .....	1 90	" 2 10
Castor oil .....	0 10	" 0 12
Cocconut oil .....	0 06½	" 0 07

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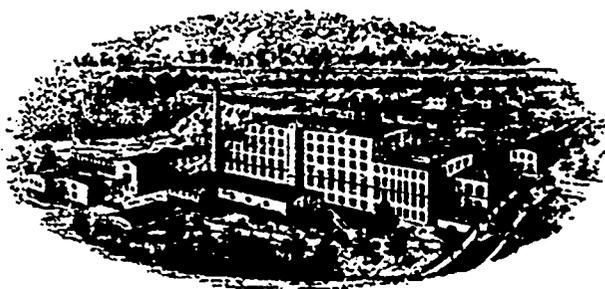
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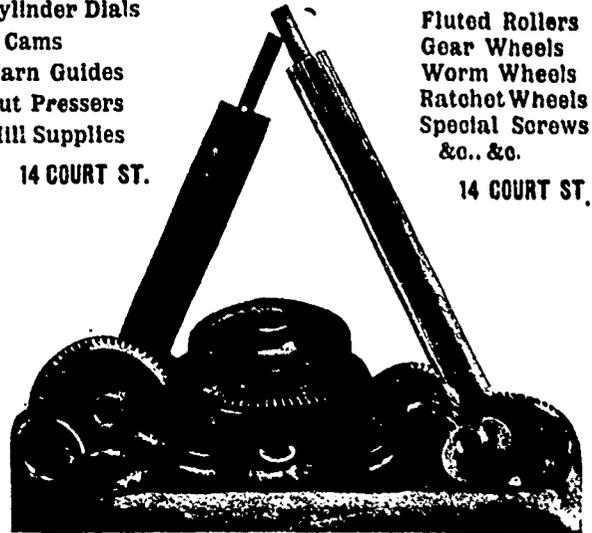
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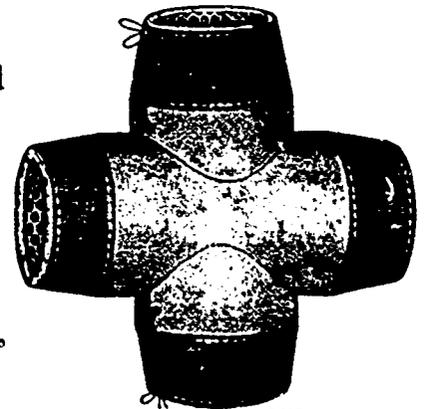


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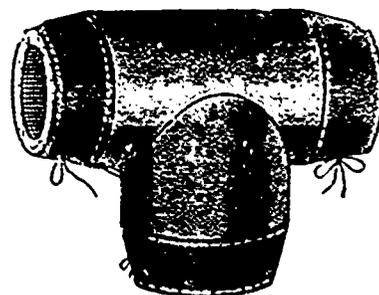
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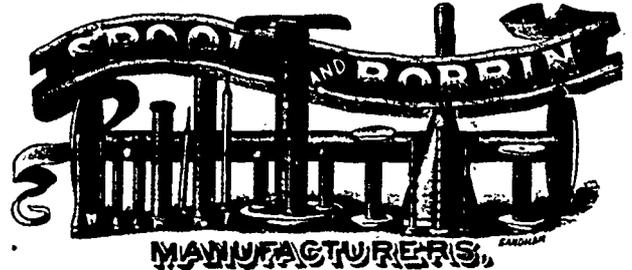
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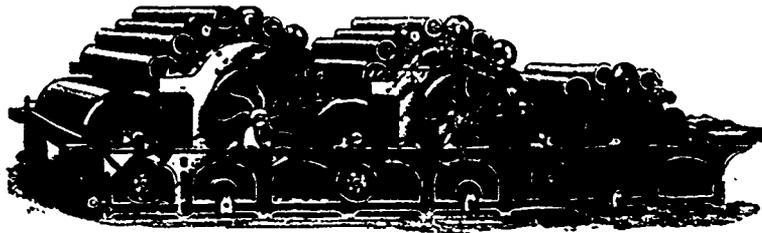
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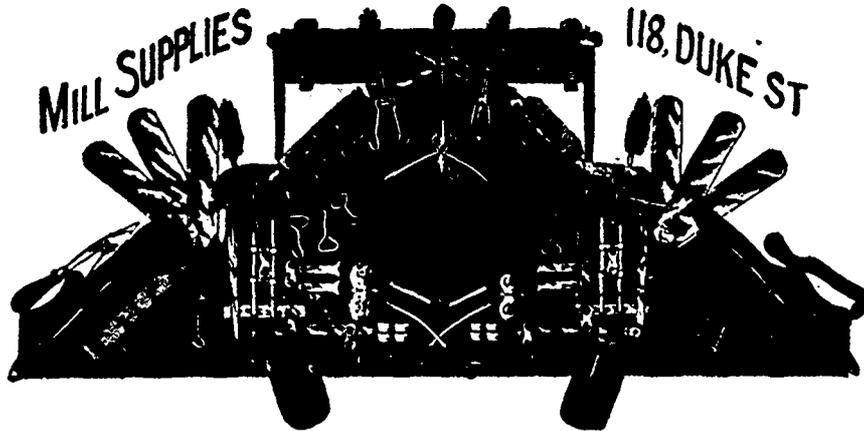
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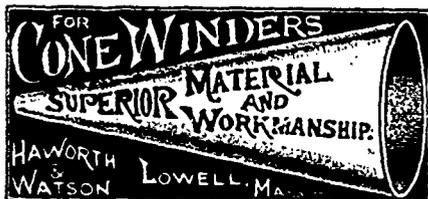
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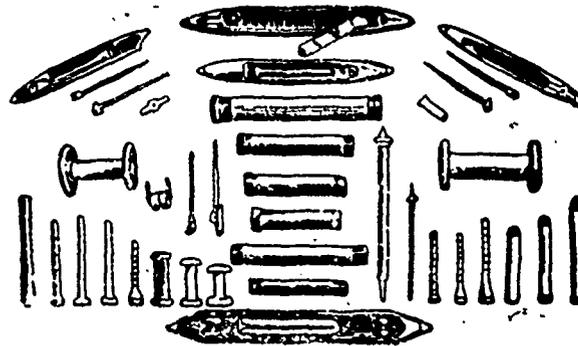
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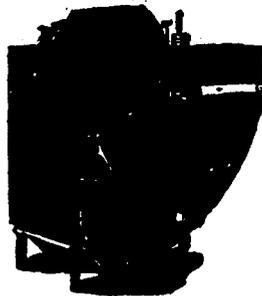
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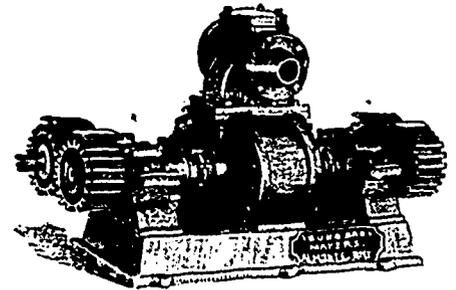
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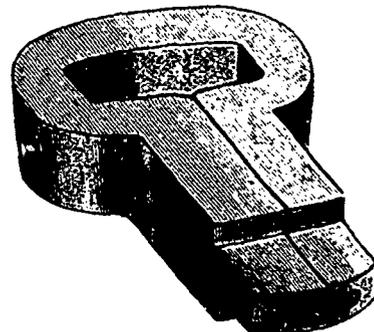
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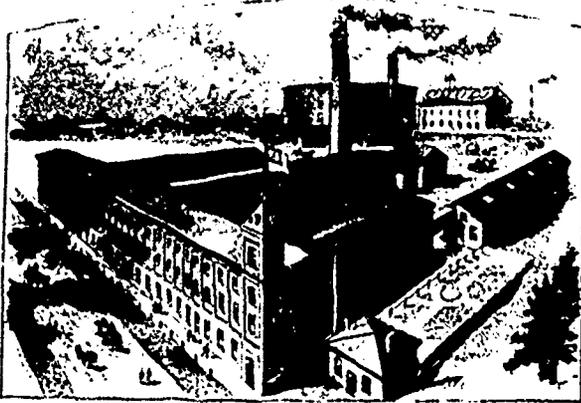


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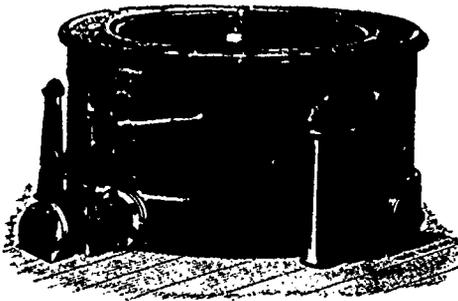
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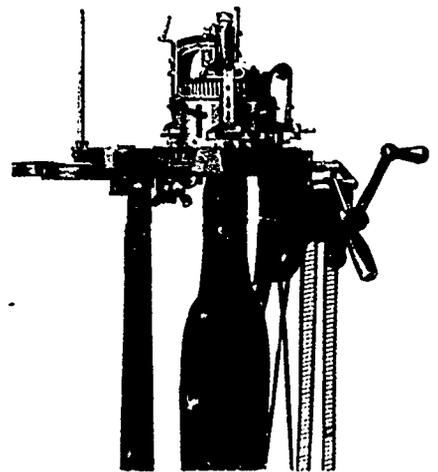
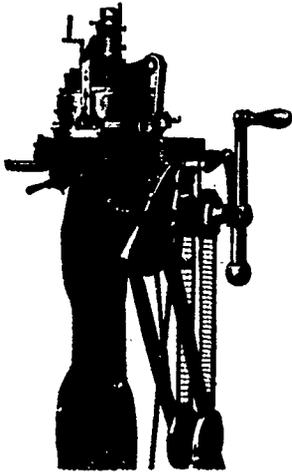
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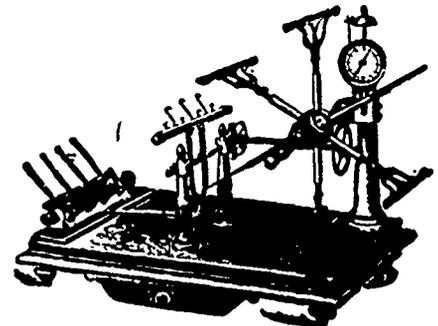
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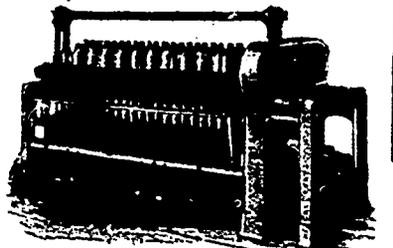
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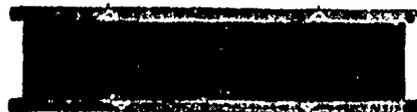


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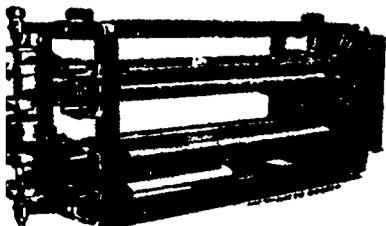
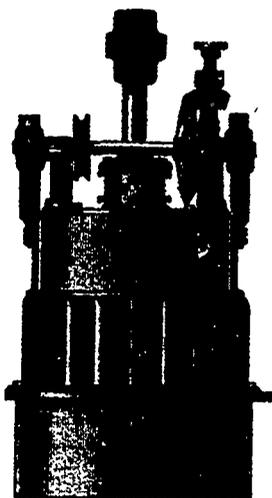
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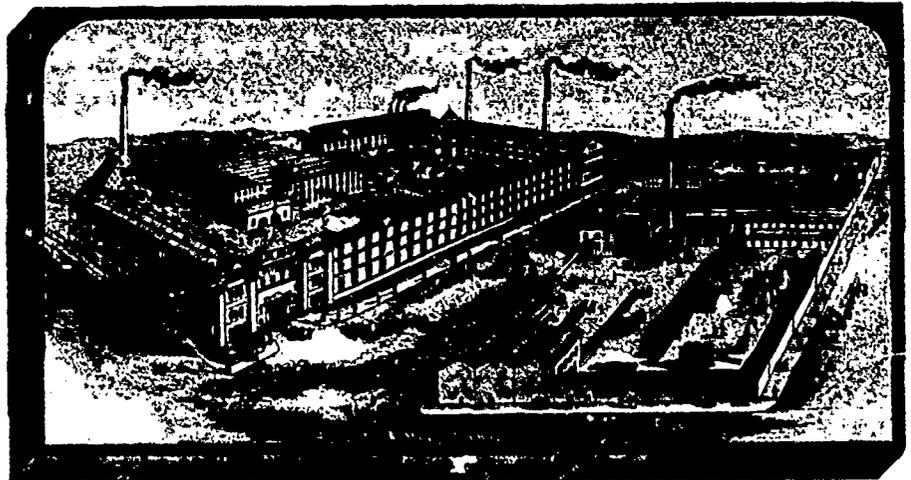
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