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Canadian Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XVII. TORONTO AND MONTREAL, MARCH, 1900. No. 3.

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CONTENTS OF THIS NUBER

MODERN FLAX SPINNING.*

BY H. R. CARTER.

(Continued from last issue.)

It will be noticed from previous particulars of hackles that when the fineness of the tool exceeds 9 pins per inch it is considered unnecessary to group the pins in the manner described. Machines with such a long top sheet roller are best divided into three sections by two centre gables which provide support for and keep the sheet roller from sagging under the weight of the sheet. Such sagging is most objectionable, as it increases the distance from the nip of holder to the point where the pin points enter the flax, necessitating a longer shift. Support is often given to the top shaft by running a beam with bearers inside the sheet from gable to gable. Since the hackles cannot strike the flax effectively quite close to the nip of the holder, it is necessary in practice when changing the holders, after the root end has been hackled, to place the second clamp or holder at a distance from the first holder equal to ½ in., plus twice the distance from the nip of the holder to the point where the pins strike. If these measurements are accurately made, the centre of the piece will be hackled to the same degree as the ends. If a greater shift than absolutely necessary be allowed there is a tendency towards loss in yield. Poor yield may result from the holders being out of repair. The edges are apt to get burred, which prevents the top and bottom plates from coming properly together. The inside of the holder bottom should also be covered with a piece of corrugated india-rubber in which holes are punched for the reception of the screw and pins. The lid is best covered internally with a piece of fine close flannel stuck on with marine glue. The rubber best adapted for the holder must have a good gripping power without being so coarse as to mat the flax.

The machining of Baltic flaxes in Ireland has of late years been much improved in order to compete with the clean and level yarns of medium counts exported from the Continent. Not very long ago Baltic flaxes were not considered worth more than a quick run over a coarse 8 to 10 ded machine, or a very moderate degree of hackling upon the hand dresser tools. Now-a-days it is not unusual to hackle the better qualities upon a long machine of say 18 tools, finishing with 35 pins per inch, and even sorting and dressing it afterwards. The result has been that with properly adapted preparing machinery we are now producing ourselves that class of Baltic yarns which two or three years ago were imported into this country in much larger quantities than at present.

One of the latest improvements in hackling machines, rendering them more readily adaptable to various qualities of flax, is the dividing of long machines into two sections at the centre gable, so that each half of the machine may be run at a different and independent speed. Both halves of the top sheet shaft run in distinct bearings, enabling the intersection of the pins to be altered in either half without changing the other. Another improvement consists in making the stocks of the coarser hackles thinner than those of the fine hackles, thus providing a longer effective pin where most required owing to the bulk of the piece being greater at the cross end. A thicker stock at the fine end,

*Reprinted from the Textile Recorder.

besides giving support to the fine pins and rendering them stiffer, gives in the opinion of some people, a better "sort," on account of the "buffing" or beating action which they exercise on the flax confined between them.

The tendency of the age towards cheapening production through the substitution of machines for manual labor has led to the introduction of a piece of mechanism, called an "ending machine," which, by removing the impurities from the ends of the piece, effects more or less successfully the work of the hackler or sorter. These ending machines are of two kinds, effecting desired object in different ways, either by cutting off the impure ends or by removing the impurities by means of quick and fine hackles. Impurities in the ends of flax may be natural or they may have been produced during the process of hackling. Natural impurities usually take the form of coarse and flat root fibres, upon which the pins have little power of subdivision, or of small pieces of boon, forming portions of a branch, and consequently found in the top end. "Naps" are, perhaps, the commonest impurity, and the most difficult of removal. They are usually produced in the hackling of fine flaxes, more especially Courtrai, where the reed is already broken up small When the pins are passing through the piece, only those fibres with which they are in contact are rigidly held. Those which occupy the spaces between the pins are free, and occasionally run up and form little round balls of fibre, called "naps." This effect is particularly noticeable if the flax be not properly dry. Fine reeded flaxes have a tendency to form into strings towards the ends, an effect which many old hands still maintain is due to the flax being twisted in its growth, but which the writer believes to be due to excessive finishing on the "handles" and handling in the making up. Whatever be the cause, the flax which possesses this peculiarity shows the greatest tendency to form into naps.

Erskine's Ender is perhaps the most in use. Its construction has been much improved quite recently, and it is rapidly gaining in favor. It is a small machine placed under the projecting end of the "channel" at the fine end of an ordinary hackling machine. The apparatus for removing the end of the flax consists in a pair of rollers of dissimilar diameter, and running at different surface velocities in opposite directions. These rollers are pressed together by levers and weights, and are driven by a chain from the brush shaft, and can be adjusted as regards height or vertical distance from the channel at its lowest point. A pair of clamps actuated by the descending "head" grip the flax near the nip of the ending rollers, so that their action may not break away valuable fibre. When these machines are used, the flax in each parcel should be of as uniform lengths as possible. The boys should screw the root end to gauge, and the ending rollers be set, both as regards root and top, to take off the required quantity of the end. Since there is always a variation in the length of the flax even in the same parcel, and also in the quality of the ends, this mode of setting is not all that is required. An improvement consists in making the height of the ending rollers for the top end readily adjustable by means of a hand wheel which is manipulated by a boy who, a graduated scale being attached to the channel and another to the framing of the ending machine, is enabled to read off for each piece the length of pure flax from the holder downward, and to set the ending rollers to remove the remainder. The other type of ending machine referred to is placed in the same position as the last, and is just like an ordinary hackling machine in miniature, with one round of fine hackles. These sheets of hackles are adjustable as regards height and speed, and can be set in such a way as to remove any impurities from the ends alone without touching the pure and already sufficiently hackled portion of the piece.

After weighing the line and tow resulting from the hackling machines, we will follow the parcel into the hackling or sorting shop, where the finer and more valuable flaxes almost invariably undergo a further dressing and a careful classification by experienced men into their various qualities. The arrangement of the sorting shop corresponds with that of the roughing shop, both as regards size and ventilation. A good light is indispensable, but blinds should be provided to keep off the strong sun. The operation of dressing and sorting, briefly described, is as follows: Each workman has two tools—a "ten" and a "switch." The sorter, placing a machine room tipple to the left of his tools, with the root ends from him, loosens the ends and, taking a piece, spreads the root end flat upon his ten and grasps it firmly in his right hand, close to the "holder mark." Keeping it flat and well spread out in his hand, thumb uppermost and square across the piece, he draws it through the hackle, near but below the points of the pins, at the same time supporting the piece with his left hand. Besides bringing up the quality of the piece, the support of the left hand keeps the fibre from breaking and adds to the yield. After one or two "blows" on the ten, the sorter usually catches the extreme end of the piece in the fingers of his left hand and, placing it loosely round the touch-pin, breaks off any loose or irregular fibres. Straightening the fibres again by one or two more blows on the ten, he draws the piece once or twice through the switch, and then, after "nipping" off the loose fibres from the end upon the corner or front pins of his tool, he turns the piece in his hand and proceeds to repeat the operation upon the top end. In turning, the piece must be kept flat and well spread out. If gripped close to the holder mark in the first instance, when turned it must be caught an inch or so upon the other side of the mark, thus ensuring the proper opening of the centre of the piece. When the sorter has finished dressing the piece, he holds it in his left hand and laps a small portion or edge of the root end over the rest for the purpose of keeping the pieces separate when built in a bunch. While working the piece, the operator has had an opportunity of forming an opinion as to its quality, and can usually, without further examination, place it to form part of a bunch of similar fibre.

In Ireland and upon the Continent hackled flax is usually classified upon the warp basis—say, 30's, 35's, 40's, etc.- 30's being fibre which would make a fair warp yarn of 30 leas per lb., and so on. For coarser work the flax may be classified upon the Scotch dry-spun basis, and

called 6 lbs., 5 lbs., 4 lbs., etc., meaning that the fibre is suitable for yarns weighing 6 lbs., 5 lbs., or 4 lbs. per spindle respectively. In addition to the above classification for fineness, the strength of the flax may be denoted by the numbers 1, 2, and 3, or in any other suitable way. If the flax has an impure end, the hackler, instead of only squaring the piece, is often called upon to break off a considerable portion of the end. These broken-off ends are made into pieces by themselves, and go to make a low sort. There is a great knack in breaking the ends of the piece upon the touch-pin. If loosely wrapped round without twist, so that when tightened the end is caught underneath the lap, a straight jerk separates the end with comparative ease. If the top end be "nappy," it must be well worked upon the switch to extract the naps. For dressing the cut-off top ends of Courtrai flax, the sorter is often provided with a third tool, called a "nap-extractor," which is a fine single row of pins, about 13 in. long and 50 pins per inch. The pins in this tool being of strong wire and so closely set, it is necessary to solder their root ends between two strips of brass, since the usual method of driving them into a wooden stock would not stand. The coarser tools used by the sorter are called "tens" or "eighteens," the former having about 26 pins in the row of 7¼ in., and the latter 38. The breadth of the tool is about 2⅜ in., a "ten" having 17 or 18 rows in this breadth, and an "eighteen" 19 rows. In a "ten" the pins are usually 4½ in. long over all, and in an "eighteen" an inch shorter, their thickness at root being about 13 B.W.G. In the "switch" the area of stock set with pins is much the same. The pins are 1⅜ in. to 1½ in. long over all, protruding 1⅛ in. to ¾ in above the stock, and of thickness equal to 22 to 26 B.W.G. The fineness of the tool is gauged by the number of pins in the row of 7¼ in. Those commonly in use run from 180 to 280. The following table gives particulars.—

No. of pins in row of 7¼ in ..	180	200	230	250	280
Size of wire	22	23	24	25	26
Length of pin over all.....	1⅜in	1⅜in.	1⅜in.	1⅜in.	1⅜in
Pins per inch	25	27½	32	34½	38½

The sorter's tools are screwed to a wooden block which is bolted to the beam which runs along the top of the berths, and are usually set at an angle of about 30° to the horizontal. In sorting fine nappy flax, in order to extract the naps it is sometimes advantageous to set the switch at a larger angle than 30° in order that the front row of pins may be more used than the others, rendering it possible to put the fibre into the root of the pins where there is less room for the nap to pass. In the switch where a long pin is used, a guard is sometimes applied to strengthen the outer rows of pins. It is formed by two bands of steel about ¼ in. broad and rather longer than the tool. These bands are placed, one in front of the first row and the other behind the second or third row, and then tightened together by means of screws. The "nipping" which we referred to is very severe upon the corners of the switch, and in order that the pins may not be broken away, it is usual to put pins of stronger wire into the rows at the point where this strain comes on. Coarse flax for low numbers is often wrought as 'touch 'im," getting only one or two blows over the ten and switch and bunched without breaking the ends.

(To be continued.)

LONDON WOOL SALES.

The first series of the wool auction sales for this year opened Jan. 16th with a large attendance. Competition at the opening was rather quiet, but improved later in the session, especially with continental buyers, who secured the bulk of better greasy merinos. The bidding on scoureds was not so good, owing to the inactivity of the home buyers. There was a larger representation of American buyers than usual, and they operated in crossbreds quite freely, paying December rates for all grades suitable for their requirements. The home trade absorbed the bulk of the greasy, and slips ruled in buyers' favor, with lower qualities occasionally selling at five per cent. decline. Cape of Good Hope and Natal greasy was in large supply, and showed a decline of 5 per cent., although most of this class was withdrawn. The prices realized for scoureds showed little change. The number of bales offered to-day was 9,025. Following are the sales in detail. New South Wales, 1,400 bales; scoured, 6d. to 2s. 2½d., greasy, 10d. to 1s. 3d. Queensland, 1,100 bales, greasy, 11½d. to 1s. 4d. Victoria, 600 bales; scoured, 10½d. to 2s., greasy, 7½d. to 1s. 4½d. South Australia, 1,100 bales, scoured, 1s 10d. to 1s. 11d., greasy, 8d. to 1s. 2d. New Zealand, 1,600 bales, scoured, 6d. to 1s 4d.; greasy, 6½d. to 11d. Cape of Good Hope and Natal, 1,300 bales, scoured, 10d. to 2s.

On the 12th, the offerings were 9,495 bales, prices for good wools showed a small improvement, and a large quantity of Queensland merinos was in demand. The American buyers purchased the best Golong clipped. Crossbreds were fairly represented, the home trade taking the bulk. New clipped Puenta Reinas, in good condition, showed a small decline under the December rates. The catalogues offered were active and good. The French and German buyers purchased the most of the merinos.

—The bulletin of the National Association of Wool Manufacturers just published shows that Canada exported to the United States combing wools to the value of $147,030 in 1899 as against $2,728 in 1898; of carpet wools there was no export in 1899 and only $135 in 1898.

—The population of Toronto has greatly increased in the past five years and there is said to be a chance of a further very great addition taking place in the near future. C. T. Grantham, formerly manager of the Yarmouth Duck and Yarn Co. of Yarmouth, N. S. is negotiating with the Toronto City Council for the establishment of a cotton duck factory in Toronto to employ some four hundred hands. As these will be almost exclusively French Canadians, and their families are larger than the average, we can safely assume that three thousand of these industrious and economical people will be settled in Toronto, where at present there is no supply of labor suitable for a cotton mill.

SOUTH AFRICA, ITS PEOPLE AND TRADE.

(Continued from last issue).

To descend to a lower plane, Canada has a strong commercial reason for seeing British ideas prevail in South Africa. Our manufacturers are now beginning to seek foreign markets, and under the rational rule of Great Britain, a large trade development awaits Canada there. South Africa is the counterpart of Canada. We consume large quantities of goods she has to sell, such as merino wool, hides, and sub-tropical products, while she imports largely of manufactured goods, such as furniture, boots and shoes, textile fabrics, stoves, hardware, machinery, and other manufactures, which we wish to sell. South Africa is essentially a non-manufacturing country, and the United States, having studied the conditions there through its consular agents, has already built up a big and rapidly-increasing trade. Not many years ago the exports of the United States to all Africa amounted to but a few thousand dollars annually. In 1898, the shipment of United States goods to British and Portuguese South Africa alone, amounted to over $16,000,000, the increase over 1897 being a growth of over $1,480,000, or at the rate of nine per cent. These exports consisted of foodstuffs, books, cotton goods, leather goods, and a long list of manufactured articles, such as agricultural implements, bicycles, hardware, sewing machines, typewriters, carriages, furniture, canned goods, lumber, etc. In almost every one of these lines, Canada is able to compete with the United States. Here and there, it is true, some Canadian manufacturer has already entered the market, but, as a rule, the Canadian exporter is still asleep to the possibilities of that land. It is time we woke up to this, for the trade connections ought to be as close as the political fraternity, and the sending of the Canadian regiment will tend to strengthen the bonds, both in a commercial and political sense. Further reference to the trade of South Africa will be found in the section of "miscellaneous facts."

As for our duty to Great Britain, as citizens of Canada, when we reflect that in the past twenty years the Mother Country has spent over $55,000,000, according to J. Castell Hopkins, on the defences of Canada, we owe it to our own self-respect to see that at least some of this is repaid. As citizens of the Empire, does it not seem a duty to defend it when any vital part of that Empire is threatened?

What will be the outcome of the war? In all probability the union of the present colonies and states in a confederation, in principle like that of Canada, but differing in details, to accord with the varying conditions. *When the British and Dutch have got together,* after the present conflict, they will see, by a study of their past history, that the policy of mutual hate, distrust and intolerance, is a policy that must mark their land with ruin; but the policy of good-will among the white races will make South Africa what its climate and latent resources fit it to become—one of the most delightful in the world. This much is certain, that in the settlement to be made, the British Government will not revisit upon the Boers the injustice under which the Uitlander population has groaned for the past eighteen years, but will see that there shall be absolute equality of rights among the white races, and fair, just treatment of black and white from the Cape to the confines of British Central Africa.

(To be continued).

Foreign Textile Centres

MANCHESTER.—The fancy departments are not in all cases doing well, but one hears better reports in some quarters. The position as to laces is puzzling. There is a considerable amount of grumbling regarding the home demand, but in some of the principal foreign markets the sales of laces are undoubtedly very large, and there has been quite a run on some classes of all-overs, the prices of which have been advanced 30 per cent. Plauen makes many of these goods, and manufacturers there are refusing to accept new business for delivery before May. It is said that some buyers are feeling nervous as to the stocks of scarves they have coming in from Plauen and Nottingham. There is undoubtedly a good deal of anxiety as to the future of lace in the home trade, but in the New York market, where British ideas have now very little weight, lace is first favorite. The projected formation of the British Cotton and Wool Dyers' Association, Ltd., with two *millions of* ordinary shares and a million debentures is regarded as a step further towards the pit into which the combination movement will sink out of sight. The Draper's Record believes The causes which have influenced the formation of so many syndicates do not appear to be exactly understood by many persons First we have a syndicate amongst consumers of fine cotton yarns- the sewing cotton combination, to wit Then, after the establishment of other combinations, one sees a union of those who spin the fine yarns bought by the sewing cotton manufacturers After that, observing the splendid profits earned by the Fine Spinners' Association, speculators and others manipulated the Egyptian market, sending up prices to a very high level: and so, suggestive of Swift's references to the fleas which had lesser fleas to "bite 'em," we proceed *ad infinitum.* Now that the calico printers have combined, the busy company promoter in Manchester who has taken up most of these schemes will presumably get hold of the makers of Burnley and Cheshire "printers," in order that they may be enabled to protect themselves from the rapacity of those who buy their cloths. When the spinners, weavers, dyers, bleachers, printers and finishers in this country have united, there will be an opening for the professional promoter in the United States, where he can expend energy in trying to induce the cotton planters to combine so as to extort the maximum price from organizations on the other side of the Atlantic. And when the whole system of combinations collapses like a house of cards, it will not matter to the promoter.

BRADFORD.—There can be no doubt that in many ways the very high price of pure merino has directed increased attention to the better classes of crossbred colonial wools, and the tendency in both men's and ladies' wear in the direction of tweeds must have the effect of increasing the demand for crossbred wools. Just at the present time very large quantities of

colonial crossbred wools are being taken for the manufacture of khaki, and there seems a likelihood of this material being used for some time to come for army purposes, even long after the South African War is a thing of the past. English wools are in unchanged demand, but there is an unusually large consumption proceeding in such wools as Yorkshire, Lincolns and Irish, which possess bright, lustrous qualities. The prices of both mohair and alpaca are quite firm, and holders of the former are trying to form some estimate of the extent of the shortage which is likely to arise as the result of the war. Spinners of various kinds of worsted yarns are still well employed, although new business has not been plentiful lately, and orders from the Continent are apparently being kept back in hopes that better terms may be arranged later.

HALIFAX.—The following is the Chamber of Commerce trade report for February: Wool—The market for wool has been exceedingly quiet all through the month, with hardly sufficient business offering to fully test prices. The tendency, however, has been downward. Woolens—The prospects of the woolen branch of trade continue good, with chances for decidedly better prices for manufactured goods than for some years past. Worsted Yarn—Most spinners have been fairly busy during the month. Spinning instructions are not quite so plentiful and new contracts are scarce. Prices are a little easier, especially for yarns made from merino wools, which are already too low, and much out of proportion to that of the raw material Cotton—Twofolds continue in strong demand, and machinery is fully employed. Fustians and ready mades are still busy, the latter working overtime. Spun Silk—Spinners have been well employed during the month, mostly on old orders taken last year. There is an absence of new orders, as buyers are hoping to get in at lower prices. Carpets—The output of carpets has been very satisfactory this month.

KIDDERMINSTER.—Trade has been in a somewhat unsettled condition recently, says The Kidderminster Shuttle. The series of brilliant achievements by our soldiers in South Africa has sent a wave of enthusiasm throughout the land, and men have not been inclined for serious business. The wool and yarn trades are a shade quieter. Dealers and spinners are holding their hands pending the London Colonial sales and the British Wool Fair.

NOTTINGHAM.—Although the home demand for lace goods is much better than for some time past, by far the most activity is observable in the shipping departments, says The Draper's Record. Business with the United States is on the up grade, whilst Canada and Australia are both purchasing freely. The war, so far, does not seem to have affected Nottingham trade unfavorably. As regards the home trade, the unsettled weather has no doubt had a prejudicial effect, but still there is less grumbling than usual at this time of the year, which may be taken as a good sign. In lace, as in almost everything else, the influence of khaki is being felt, and if this craze continues much longer we shall soon become a brown-clothed nation. Some friction is still caused by the advanced prices, but manufacturers remain firm, and refuse orders at the old prices. There is a good amount of business doing in fancy millinery laces, although there is no striking departure in styles. Valenciennes, Torchon and other cotton and linen laces, edgings, insertions and nets are enquired for, both for home and export, to a large extent. Crochet, American, furniture and other heavy cotton laces and trimmings are more or less affected by the advance. There is less demand for point de Paris, Malines and Bretonne laces. The plain branches of the trade remain prosperous, especially in the qualities of goods for export. The prices of plain nets, fine tulles, and mosquito nets continue to harden, and there is a continuous demand for embroidery for millinery purposes, and altogether the outlook is very promising. The demand for heavy stiff foundation nets is not so active as formerly, the actual high prices having had a detrimental effect in the home markets for these goods. An extensive business is being done in lace curtains, window blinds, and toilets, and prices show a hardening tendency. The machinery here and at outside places is well engaged, and furnishers are busy Both the colonial and American demand for these goods is satisfactory

LEICESTER.—Elastic web fabrics, cords, braids and dress beltings are in good request. The wholesale clothing trade is brisk, with an unusually heavy output to meet contracts on hand, says The Textile Mercury. Yarn is active as far as deliveries are concerned, but the new business is checked by the quotations. Cashmere yarns are being used very freely, lambs wools are brisk, and there is a larger turnover in worsteds, while cottons are firm with a general dearth of stocks. Hosiery is active in every branch, with very large deliveries in fine spring fabrics. Specialties and fancy goods sell freely, and a large quantity of machinery is fully engaged on fabrics for army and navy purposes. Prices are firm, especially for all fabrics of choice quality.

SOUTH OF SCOTLAND.—Good reports are to hand from the South of Scotland tweed districts. The majority of the mills are working at full capacity. Confirmation orders, however, are not coming in very freely. Wool transactions are limited, buyers preferring to wait the result of the London sales.

KIRKCALDY.—Floorcloth and linoleum manufacturers are very active. In the linen trade there is a large amount of employment, but the repeated advances in yarn, and also the difficulty experienced in getting delivery, have considerably handicapped manufacturers, and are likely to have a prejudicial effect upon the industry.

DUNDEE.—The Dundee market remains very firm, and a considerable amount of business has been put through at gradually advancing prices. It is gratifying to report that local firms have been successful in securing a large Government order, for which tenders were invited some time ago. The contract in question is for a large quantity of duck, suitable for tents and such like. The market is stronger. Jute is quite 10s. a ton dearer. Good jute *R F C* is hard to buy even at the rise. For good firsts, also, there is a steady demand. Many spinners now come on the market to replenish their stocks, and constant buying, even of small parcels, stiffens the market.

BELFAST.—The Irish flax acreage is officially returned for last year at 34,989 acres, yielding 1,145,261 stones There is little change in the position of this linen market; prices continue to tend upward, and the turnover is only restricted by the disposition of sellers to book ahead. Russian flax appears to have reached the limit and prices are a shade easier. The spinning branch remains as last recorded; there is a fair average turnover at extreme rates, with many producers altogether out of the market The manufacturing end is steady, with a well-sustained demand, and sufficient new business coming forward to replace orders remaining off. The damask department is the only inactive one. White goods for home account are in quiet, regular request. The demand for export is fully sustained

LYONS.—There is little change in the Lyons raw silk market The demand is slow and the market is dragging along as best it can. Buyers are not interested and cannot be tempted to purchase. Prices are more or less nominal and show considerable weakness. There is a little buying done, but this is for strict requirements. In these few transactions sellers can keep their end fairly well up in regard to prices, and the figures at which the silk has changed hands do not show a heavy decline But this cannot be taken as an indication of the future says The Dry Goods Economist, New York There is little doubt but that prices cannot hold their ground if the demand continues

to be of the same small proportions as it has been since December On the other hand, there is enough backbone and a good enough undercurrent of strength to make prices firm and better as soon as anything like a fair demand shows itself

CHEMNITZ.—Prices in this market have again advanced. Yarns have gone up still higher, and lisles are exceedingly scarce and hard to procure even at prevailing high prices Spinning mills do not care to accept long contracts, and as manufacturers therefore have to buy the yarns in limited quantities, they cannot hold their prices any length of time, but have to figure with new cost of raw materials and advanced wages almost every week. Nearly all plants are short of help, and girls especially are very scarce, and most mills have large stocks on hand which they cannot get sewed up. Coal is still very scarce, owing to the strikes in the Boheman and Saxon mines, and manufacturers are inconvenienced very materially in consequence. Some of the large dyeworks are very short, and if the strike lasts any length of time many of these large establishments will have to close up until the coal famine ceases. Orders have been less plentiful during the past week, but this is not astonishing, as nearly all the regular consumers have large orders undelivered, and would like to see part of them shipped before placing new ones In women's hosiery black is still bought largely, although a considerable part of the orders called for extracted and printed goods. In these colored grounds are bought largely, especially navy blue, cadets and reds. The demand for low grades of embroideries in women's hose has fallen off, as the increased cost has put them out of the range of popular prices. Better goods, however, still find a ready sale. For men's wear embroidered styles are, however, very popular, and extensive assortments of new patterns are shown, mostly in small effects in one or two colors Large, loud patterns are in small request. The glove market is advancing just as rapidly as the hosiery, and prices change almost from day to day. Large orders have been placed, and knit gloves especially are having a run this season, so that several manufacturers of that line are already completely sold up for the year.

KNITTING INDUSTRY IN NOTTINGHAM.

The United States Consul at Nottingham, in one of his recent reports to the State Department, Washington, D.C., gives certain statistics showing the exports from Great Britain of hosiery and machinery for the manufacture of hosiery and lace, for the last twenty-two years. The value of exports of hosiery for 1898-99 was less than $300,000, being the smallest amount of any year during this period, except 1897-98, when it amounted to a little less than $200,000. The value of exports was the largest for the year 1882-83, when it amounted to over $1,600,000. Perhaps the most interesting statistics are those giving the value of English machinery that is exported to the United States, which amounted in 1898-99 to $165,000. The exports of this machinery to this country have been particularly large since 1890, amounting to $340,000 in value in 1891-2. The machinery item has had no separate record showing the relative value of lace and hosiery machinery exported, until since the first of January, 1899, when for the first six months 27 per cent of the value of these exports consisted of hosiery machinery, and 73 per cent. of lace machinery.

In speaking more particularly of the knitting industry of Nottingham, the consul writes that in a general way the greater proportion of employees consists of girls, their ages running from 13 to about 22 years. British law prohibits the employment of children under 13 years The trades unions in the manufacturing centres are compactly organized, but the exercise of good judgment and the cultivation of better relations between employers and employees, have largely eliminated the strife so conspicuously prevalent a few years ago

Some fourteen years ago, one prominent concern with a manufacturing existence of over a century removed its works to a village a few miles distant from Nottingham. It was not so stated, but can here be correctly asserted, that among the primary causes of removal was the constant friction with trades unionism at that time. In its new location, the firm largely created its own environment, and has since operated with perfect independence, with results satisfactory both to the management and to the employees.

The hours of labour in knitting mills are from 6 a.m. to 6 p.m., or from 7 a.m. to 7 p.m., with the usual lunch hours. In a talk with one of the managing directors, he stated that full operatives earned from $10 to $15 per week, and minor operatives from $1.25 to $6.25 per week This firm's output comprises plain and fancy cotton and merino underclothing for both sexes, women's hose, men's hose and half hose, and a great variety of textile goods. Besides the home trade, the exports go chiefly to Europe, Asia, India, the United States, and British colonies throughout the world Perhaps the smooth operation of this somewhat independent concern can be ascribed to its humane treatment of operatives. About 600 hands, mostly females, are employed. For the women and girls an iron building, seating two hundred, has been erected, with a view to comfort, recreation and instruction. Classes are under Government instruction and earn grants on results There is a similar institute for men on another site. Out of their wages these operatives voluntarily contribute to private sick clubs and hospitals. In this way, in the past year, over $1,000 were collected.

This instance is given as a somewhat interesting exception. In the average city factory, operating under the strictest of union rules, work is also done entirely by the piece. For females the hours are from 9 a.m. to 6 p.m.; for males, from 6.30 a.m. to 6 p.m., with one and one-half hours for lunch, or fifty-four hours for five and one-half days, Saturday being a half holiday.

Nottingham is the largest consumer of yarns, both cotton and woolen, in England, and Manchester is the greatest selling market. The Australian drought of last year, and the unusual disease there and in other colonies among the flocks, seem to be chiefly responsible for the rise in woolen yarns, still maintained, which has amounted to about 20 cents per pound since September last By far the greatest bulk of woolen and cotton yarns used is English spun, coming chiefly from Manchester; but the exact proportion is difficult to estimate. The German yarns are next in favor, costing, owing to cheaper German labor, approximately the same as similar grades of homespun.

In speaking of the use and comparative merit of English and German yarns and their cost, one manufacturer stated that he would price the best standard English cashmere at 72 9 cents per pound and a similar German yarn at 67 9 cents—a difference in American money of 5 cents per pound in favor of the German yarn In all respects, save one, he said, the yarns would be identical, the German having a peculiar soft finish that for some reason is not secured by the English spinners The varying taste of different markets, is, of course, consulted in the choice of yarns.

Nottingham exports almost every conceivable article in wool, cotton and silk classed under the expansive trade term of hosiery, which includes underwear of all descriptions, as well as golf, outing and sporting specialties. Each manufacturing concern seems to have its own peculiar export fields, and these it holds and extends by catering to local demands as to style, price, and quality, extreme care and pride being shown in main

taining its reputation and the reliability of its goods as well as the inflexibility of its quotations.

British exports to Central and South America show a serious decline and continue to be more or less spasmodic, being confined to firms possessing exceptional local advantages acquired perhaps by chance, and maintained apparently without the cultivation of the market so noticeable now in the far East, in Canada, Australia and India. For instance, the manager of one firm stated that some years ago there was a steady and active trade with South America, the demand, however, being for the cheaper grades of cut cotton; but that of late this trade had almost vanished, owing partly to the introduction and growth of local manufacture of the same class, notably at Buenos Ayres, Argentine Republic, but chiefly to the persistent competition of Spanish manufacturers located at Barcelona, Spain, who paid wages with which British competition was impossible, who possessed as a rule favored trade relations with the Spanish-speaking countries of Central and South America, and who were favored by better knowledge of local demands and the intricacies of commercial usage.

The manager of another house reports that his best success is with fancy goods, which the South Americans are unable to make themselves, and which are chiefly imported either from Spain, France or England They appear to want stripes and color, *the more the better, and this applies to cotton as well as* to the cheaper silks.

Great Britain, in hosiery as in other manufactures, maintains a characteristic and stubborn preference for home products, and furnishes, with her colonies, the greatest developed market for British manufactures. For several years her exporters have assiduously cultivated the opening Chinese field, and they view with especial alarm the growing success of American goods and methods in that territory. Said a manufacturer prominent in the Chinese trade: "As to German competition we have no fear. In my own experience I have lost at times a number of Chinese customers through German underbidding, but in each case they have returned voluntarily, giving pretty shrewd trade reasons for doing so. They have an acute trading instinct and must be satisfied that they are not only given bottom prices, but that the goods are exactly as represented. They are quick to detect any variation between samples and invoice, but once gain their confidence, and they are excellent customers in all respects."

The cheapness of German labor at one time resulted in the experiment of importing hosiery and textile bodies, finishing them in Nottingham and then marketing the finished product both at home and abroad as "goods made in England." That this practice was profitable may be assumed from the success of the trade unions in securing a law which requires that all goods so marketed or exported be stamped as manufactures of the country whence originally imported. This law, rigidly enforced, coupled with the antagonism of organized labor, seems to have brought the practice into disuse as well as disrepute While some individual profit may have accrued from such methods, the effect upon English trade as a whole was unhealthy. For eign purchasers of such goods through English finishers became inquisitive, and many reached the not unnatural decision to trade direct with Germany and save middlemen's profit. Thus the German market, through English effort, was exploited to the detriment of English manufacturers. There are agents, or commission houses, at London and the large trade centres who fill foreign market orders of any description, but if certain German or other goods are included, they are generally shipped direct from the place of production.

The A. R. Clarke Co., manufacturer of leather, Toronto, has been incorporated with a share capital of $100,000.

JUTE DYEING.

Following next in importance after cotton and linen in the textile industries, jute occupies a position equal with hemp, and for the purposes of the present article, the former of the two will receive our attention.

There was a time when the dyeing of jute did not receive any very great attention from dyers generally, but for a number of years the importance of the fibers from an industrial position has been recognized, with the result that manufacturers and others have been looking into the subject of applying colors to it that would increase its usefulness in many ways, which would not be possible if the art of dyeing it was not thoroughly understood. Jute belongs to the natural order Tiliaceae, and is obtained from two chief species, corchorus capsularis and corchorus olitorius, the former of which being the one most generally cultivated on account of its better yield of fibers, which are obtained from that part of the plant known as the bast. The plant is cultivated throughout India and Asia, and forms a remarkable part of the commerce of those countries, the major part of the plants being stripped of their leaves, etc., are tied up into bundles and shipped to manufacturing localities when it passes through the various processes of hackling, spinning, etc., in order to be made into yarn, while that part of the stalks of the plants nearest the roots, about 12 inches in length, is cut off, and with the waste from other processes forms a valuable source of raw material for paper makers.

Jute differs from the other vegetable fibers in that it contains no free cellulose, but is said by Cross and Bevan to be made up of two substances which is named corchoro-bastose, and which possesses properties of deep interest to dyers and others who treat jute chemically, but will not be dwelt upon here.

One of the most important preliminary operations to which the jute dyer resorts in order to prepare this fiber for subsequent treatment is the bleaching, and although not resorted to in every instance is well worthy of mention, as it is necessary before light or brilliant shades can be applied. Pass the yarn or goods through a ½ per cent. bath of silicate of soda, heated to about 160° F., wash and then immerse the goods in a bath containing about 1 per cent. of available chlorine, in the condition of sodium hypochlorite, and obtained by decomposing a solution of two pounds bleaching powder for every ten gallons of water, with the necessary quantity of sodium carbonate. The duration of the immersion varies considerably with the grade of jute to be bleached, the darker tints requiring a longer time, lifting out when the shade is reduced to the proper color, wash and pass through an acidulating bath of hydrochloric acid at ½° Tw., lift, and wash well, when they will be found to have a pale cream color, but if a still lighter tint is desired, they are passed through a further bath containing about 2 per cent. of sulphurous acid, either free or combined as bisulphite, when a final wash will cause the goods to be ready for dyeing.

It may not be out of place at this juncture to mention that jute can be dyed "white" by successively treating it with hydrochloric acid and bleaching powder, twice in separate baths, washing between each operation, finally work in a dilute bath of Methylene Blue. It must be noted, however, that jute is not able to withstand any vigorous acid treatment, as the fibers are much weakened thereby.

Jute is dyed by means of three general processes, each of which is based upon the chemical properties of the dye stuffs used, and we will take them up in the usual order as suggests itself to the dyer. The largest group of dyestuffs that commends itself is the Diamine, as by its use every conceivable shade may be readily obtained from the lightest tint of any color to black, while the method of application is simplicity itself, but due regard must be paid to the proper strength of the dye-bath, the more concentrated it is, the less color will be required in

proportion. For the usual run of shade, about 2 per cent. of color will be required, which, however, may be varied to meet individual necessities, together with a small proportion of soda ash or crystal soda, and the indispensable Glauber's salt, although common salt can be substituted, the formula being, ½ to 3½ per cent. dyestuff, 2 per cent. soda, 20 per cent. Glauber's salt.

The yarn is entered at a medium temperature, and gradually immersed to a boil, at which point it will be noticed that these Diammes will exhaust better than when cotton is dyed, which points to a wide difference between the two fibers. After being dyed, the yarn is lifted out and, preferably, allowed to cool before being finally washed; this has been found to mitigate against possible rubbing off of the color, although it is not infallible. The Diammes most generally used for the purpose are the following:

Blues.—Diamine Blues, Nos. 50 to 55, pat.; Diamine Deep blue R, and Dark Blue B, pat.; Diamine Sky Blue 2F, pat.

Browns.—Diamine Browns 30a to 37, pat.; Nitrazol Browns, pat.; Cotton Brown N and A, Diamine Brown M, pat.; Cotton Dark Brown BM, pat.; Diamine Brown 3G, pat.

Yellow and Orange.—Diamine Fast Yellow A, pat.; Oxy-Diamine Orange G and R.

Green.—Diamine Green G and B, pat.

Violet.—Oxy-Diamine Violet G and B.

Scarlet and Red.—Diamine Scarlet B and 3B, pat.; Diamine Red 4B, pat; Diamine Fast Red F, pat.

Black.—Diamine Black BH and HW, pat.; Oxy-Diamine Black A, D, AT, AM, 2R, pat.

There are many others that are available for the purpose, but the above list will place the jute dyer in a position to meet all the demands upon him for a general line of shades to be applied by a simple process.

Owing to the peculiar property of the jute fiber to take up almost any coloring matter from its solution, the dyer has choice of other dyes with which he is enabled to produce at will shades equal to those previously mentioned, but by an entirely different operation, that of substituting alum for the soda of the previous formula, and also to so modify the bath, that the first one should have at least double the quantity of dye required to produce a given shade, as only half the dye is removed in the process of dyeing. The dyes for this purpose are the well-known "acid colors" and may include: Naphthol Yellow S, Indian Yellow G and R, Tropaeoline G and OO, Orange R, Brilliant Croceines, pat., Water Blues B and R, etc.

The basic dyes, those which are well-known as the "cotton mordant colors," are of special importance to the jute dyer, because they are taken up with considerable avidity from the slightly acidified bath to such an extent that but little color remains behind, and for this reason this method is much preferred, where it is not convenient to maintain standing kettles. The acid to use is acetic, which has no action on the fibers, and is the only addition to the bath besides the proper quantity of dye stuff. Practice has pointed out that 3 per cent of the acid is sufficient, while the proportion of dye-stuff varies as the shade, and ranges usually from ¾ per cent. to 4 and even 5 per cent. Compound shades are not included in the above figures as they constantly vary. The basic dyes may include: Methyl Violets, Safranines, Methylene Blues, Solid Greens and Brilliant Greens, Magenta, etc.

The blacks for this purpose are of interest and include a line designated Jute Blacks, and produce elegant shades with from 1 per cent to 5 per cent in one bath. The most important point to note in the dyeing of jute, is that it should be free from oil. The fibers have a very strong tendency to hold any oil tenaciously, and to such an extent that it may show itself long after the yarn, etc., is dyed, hence the precaution. If the dyed jute is for the backs of carpets, this point is then of slight value.

TEXTILE TRADE WITH BRITAIN.

We give below a summary of fifteen years of textile exports from Great Britain to Canada, compiled from the British Board of Trade returns:

	1885 £	1886 £	1887 £	1888 £	1889 £
Raw wool	36,958	32,276	18,317	10,153	26,914
Cotton piece goods	629,195	634,158	620,378	499,230	494,752
Jute piece goods..	.....	.....	.....	.....	92,278
Linen piece goods	145,287	153,242	178,039	149,116	181,249
Silk broad-stuffs..	24,180	287,672	7,501	17,521	6,710
Silk ribbons	10,485	8,338	7,097	3,893	1,788
Silk mixed goods.	63,929	98,540	74,149	70,822	54,974
Woolen fabrics ...	642,347	703,306	630,424	539,691	497,132
Worsted fabrics ..	465,820	599,485	626,710	488,418	640,824
Carpets	185,979	216,329	240,910	186,993	221,291
Apparel and slops.	240,000	260,397	227,080	291,904	331,285
Haberdashery	*507,217	480,699	535,946	436,683	432,940
	2,959,403	3,222,417	3,212,551	2,694,424	2,982,037

(*Estimated).

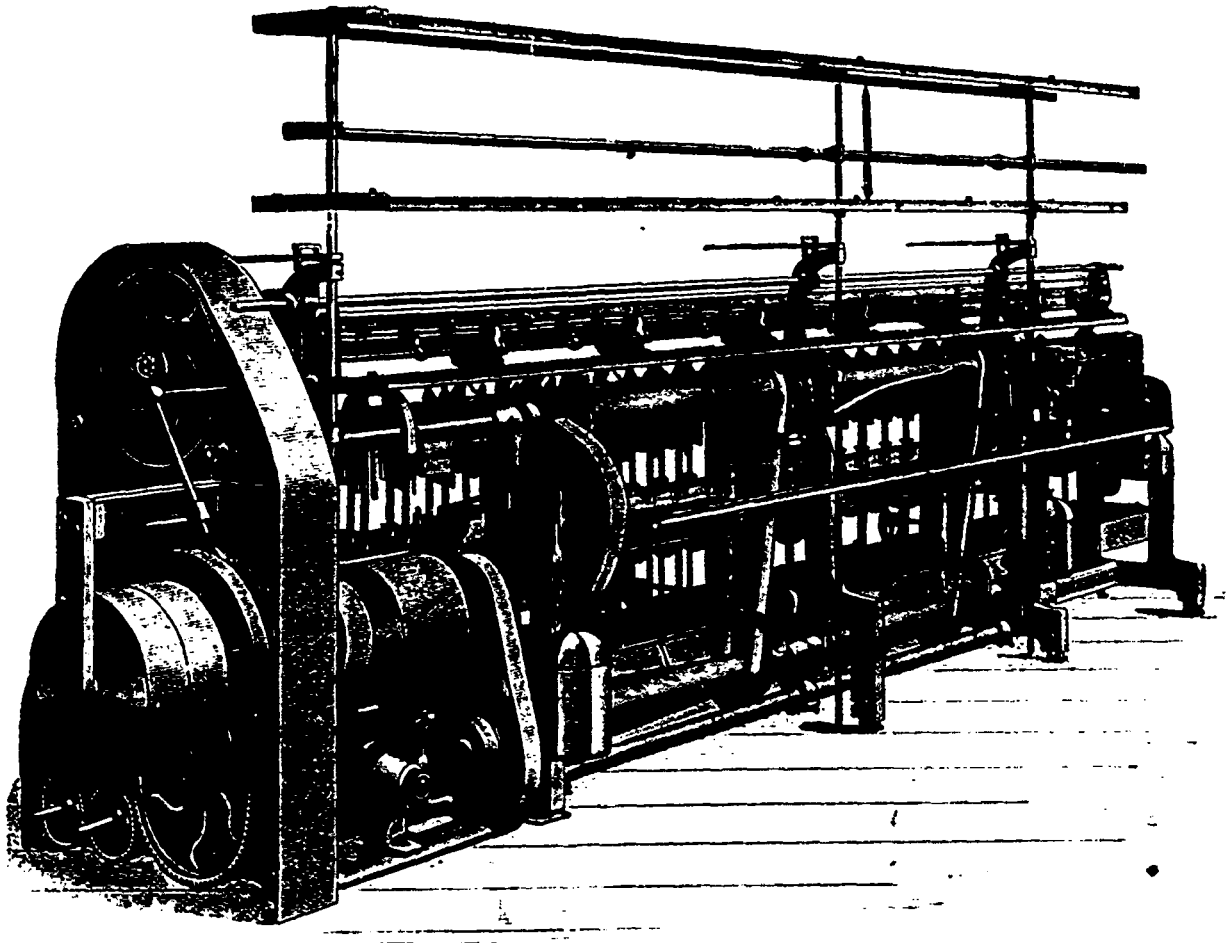
	1890 £	1891 £	1892 £	1893 £	1894 £
Raw wool	24,173	25,035	21,623	22,310	14,317
Cotton piece goods	404,417	420,005	453,017	515,711	431,259
Jute piece goods..	91,444	106,811	114,140	137,860	99,040
Linen piece goods	138,343	142,527	177,047	139,406	111,637
Silk broad-stuffs ..	3,433	3,876	.....	.....	.....
Silk ribbons	496	538	.....	.....	.....
Silk laces	.....	.. ...	53,381	41,080	32,023
Silk mixed goods.	34,985	44,136	60,438	70,990	41,788
Woolen fabrics ...	336,417	335,792	386,163	343,977	255,525
Worsted fabrics ..	518,354	588,581	637,042	661,949	463,873
Carpets	171,860	206,695	201,405	227,607	162,113
Apparel and slops.	346,568	377,408	395,676	338,091	298,305
Haberdashery	373,201	401,684	394,784	252,483	144,647
	2,443,691	2,653,088	2,900,716	2,751,464	2,054,527

	1895 £	1896 £	1897 £	1898 £	1899 £
Raw wool	16,312	13,210	48,018	39,317	31,090
Cotton piece goods	447,910	421,157	399,887	487,990	547,306
Jute piece goods.	98,057	151,808	120,189	133,894	112,404
Linen piece goods	142,597	135,252	120,768	148,859	171,250
Silk ribbons	21,842	7,638	26,017	.....	.....
Silk laces	.. ...	.....	.....	7,683	14,342
Silk mixed goods.	35,234	27,232	.....	32,219	51,870
Woolen fabrics ..	228,875	255,511	219,784	288,811	310,885
Worsted fabrics ..	551,454	519,445	579,248	582,811	567,507
Carpets	166,450	153,582	139,343	177,555	188,660
Apparel and slops	351,059	343,901	300,532	322,362	228,955
Haberdashery	148,370	150,911	138,101	141,677	154,078
	2,208,169	2,179,653	1,097,887	2,393,188	2,378,353

At the annual meeting of the Northrop Loom Co., held at Valleyfield, Que., the officers elected were: A. F. Gault, president; Louis Simpson, vice-president, and the following directors, S. H. Ewing, S. Finley, R. R. Stevenson and G. O. Draper; J. McIntosh was elected secretary-treasurer.

PLATT'S PATENT SLUBBING, INTERMEDIATE, ROVING, AND FINE ROVING FRAMES.

We will mention a few of the leading features in connection with Platt's frames As will be seen from the illustration, they are fitted with the patent duplex cones, which are claimed to give more regular and accurate driving to the bottom cones, and, consequently, to the winding motion, thus insuring greater regularity and a more perfectly wound bobbin. They also allow of narrow cone straps, which give a more accurate variation in speed than with the usual single wide cone strap. At the present time, when there is a growi endency to adopt long machines, thus increasing the amount of power to be transmitted through the cone strap, the advantage in the adoption of the patent duplex cones becomes more evident. Again, if a cone strap breaks, the machine is kept running, and the ends kept up by their use. An improved cone strap tightening apparatus tightens both straps at the same time. The differential motion consists of spur wheels only, and, as they run in the same direction as the pulley shaft, the wear and tear and friction are claimed to be minimized, thus reducing the power required to drive the apparatus, and consequently increasing the efficiency of the motion and the durability of the various parts. To reduce to a minimum the irregularity in the winding due to the motion of the lifting rail (in connection with the train of wheels between the winding motion and the bobbin shafts), the driving or pulley shaft is placed in the centre of the arc described by the swing lever in the motion from top to bottom of the chase or lift. Only one wheel of large diameter is used in the swing lever, consequently the friction and wear in this part of the machine will be considerably reduced The pulley shafts are case-hardened from end to end, the pedestals are of cast-iron, and the whole arrangement works with a minimum amount of friction and wear. Solid cast-iron bed plates are used between the frame end and the first spring piece, having fitting beds, to which the reversing motion and other details are bolted. Spur wheel gearing is used in every case between the bottom cones and the winding motion, instead of an upright shaft with bevel wheels, and in connection with this system of spur wheel gearing, there is a convenient arrangement for changing the wheels, if required, at any time The whole is well guarded, though the guards are shown removed in the illustration. Automatic locking doors are provided at the back of the machine, between the frame end and the first spring piece, thus covering effectually the main gearing of the frames. This automatic locking apparatus is applied to prevent the frame being set in motion until the doors are closed and fastened, and, once closed, and the strap having been put on the fast pulley, the doors cannot be opened again until the strap is moved on to the loose pulley and the machine is stopped, thus preventing the liability to accident from oiling and cleaning the machinery in motion. This apparatus adds greatly to the rigidity and firmness of the frames, minimizing the vibration caused by the train of wheels driving the top cones, lessening the wear and tear of wheels, brackets and shafts and reducing the risk of breakage to a minimum. Platt's also supply patent duplex traverse bars, which produce a more even and superior yarn, with a third less weighting on the rollers, many tons of metal being dispensed with in a moderate sized mill With the single bar arrangement the pressure on the rollers is ever varying.



PLATT'S PATENT SLUBBING, INTERMEDIATE, ROVING, AND FINE ROVING FRAME

When the roving guides are at the top of the traverse there is an enormous difference in the pressure. With the duplex traverse the pressure and draft, and the wear of the top rolls are said to be uniformly the same at every point of the traverse, thus insuring a perfectly drawn yarn, reducing to a minimum the rapid wear and the grooving and channeling of the top rollers which cause crimped and broken fibre and roller licking and lapping, and relieving all the working parts of the machine. We understand that the demand for these frames has been so great that Platt Bros. & Co., already the largest builders of frames in the world, have recently been obliged to considerably extend this department of their works. Not only have Platt's frames been supplied to more than half the mills in the Oldham district, where there are over 13,000,000 spindles, but a list is shown which states that most of the leading fine spinning mills in Bolton and district have put in these frames in recent years along with Platt's other machinery. E. A. Leigh, of Boston, Mass., Platt's sole representative in this country, informs us that he has sold several hundreds of these frames during the last five years, and in every case they are giving the greatest satisfaction.

NEW DYESTUFFS.

Alizarine Viridine D G in paste produces, with Acetate of Chrome, darker shades than the older F F mark, but its other properties closely approach those of the former quality. Alizarine Viridine D G can be dyed on chrome padded and discharged cloth. In combination with Alizarine Yellow, very useful Olives can be obtained, and, like the older F F brand, can be employed for slubbing printing.

Pluto Black A and 3B extra in properties closely approach Pluto Black B S extra, but their shades are of a more bloomy and violet tone. Pluto Black A is not quite so fast to acid as B S extra, but the 3B extra quality is equally as fast in this respect. The fastness to light, alkalies and washing of both marks is the same as that of the B S extra quality.

Fast Green C R is possessed of the same good fastness to washing as Fast Green extra, but faster to alkalies, and does not turn out so faint when milled. The fastness to light of this new brand is equally as good as that of the other fast greens. Fast Green C R dyes well on wool in a neutral bath with Glauber's Salt, and is especially valuable for the dyeing of half-wool in one bath. Fast Green C R is also well adapted for the printing of woolen fabrics and slubbing. The color can be easily discharged with zinc powder.

Benzo Rhodulme Red B and 3B dye in the usual manner on cotton, and produce fine shades similar to those of Brilliant Geramne B and 3B, but the color exhausts far better They are all extremely fast to washing, and do not bleed into white, and are sufficiently fast to meet most requirements Their fastness to light approaches that of Brilliant Geranine B, and they are very fast to acids and alkalies. Benzo Rhodulme Red B and 3B are equally as well adapted for the dyeing of loose cotton as for yarns and piece goods, and are specially suitable for fancy woven cottons and mercerized yarns. Both qualities can be discharged well with zinc powder, but the B mark alone discharges well with tin.

Benzo Fast Blue B dyed in the usual manner on cotton produces a navy blue of a similar shade to indigo, and in fastness to light is far superior to any of the well-known direct dyeing blues It possesses about the same fastness to light as indigo itself, which no other blue does, and its fastness to alkali and acid is good, while its fastness to washing is the same as that of most substantive blues. Benzo Fast Blue B dyes well on loose cotton, yarn and piece goods, and is equally suitable for half-wool and half-silk dyeing

Information about new colors, samples, dyed shades, etc., will be supplied promptly by writing to the Dominion Dyewood & Chemical Co., Toronto, sole agents in Canada for the Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany

THE RUBBER-REST SHEAR.

The grinding process of the rubber-rest shear calls for carefulness on other lines than those we have been used to on the old-style shears, not so much on account of the rubber tube on the rest as on account of the difference in construction. The first thing to be done is to remove the swab, which may be lifted from its position without the aid of a wrench, and, in passing, it is well to notice the position of the swab on these shears, for this is a source of much annoyance to the shearer, says a writer in The Boston Journal of Commerce. The addition to the usual complement of the shear of a flock conductor which, by means of a fan, takes the flocks from the blade into a barrel or bag off at one side away from the shear, has made it necessary to enclose the back part of the revolver with a tin casing, and this is carried to such a height that it is impossible to get the swab into a position to retain the oil and feed it to the revolver by small degrees. The swab has to be brought forward enough to make it hang almost straight down in front, and as soon as the oil is applied it finds its way to the lower end and there drops off on to the goods unless carefully watched. This makes it necessary to apply but very little oil at a time and apply it oftener, besides keeping a sharp lookout on the swab to prevent dropping. After the swab has been taken off we loosen the four screws holding the flock pan, take out the screws holding the conductor pipe and remove this first, and then take off the flock pan. We now take off the caps which hold the cylinder boxes in place and raise the cylinder. As said before, the cylinder boxes slip on the shaft and cannot be removed unless the pulley or collars are first taken off. But the center of these boxes has a square about 3 inches high and 2½ wide by 1 inch thick, and this slides in a groove so that the cylinder may be raised from two to three inches away from the ledger blade without taking it out altogether. However, it should be securely blocked, so as to keep it in its position and prevent it from slipping down again while working on the blade. When this has been done a general cleaning of the blades is in order, and after that we are ready to look to the position of the blades, for on this depends not alone the grinding but the whole successful running of the shear. We have found it of great convenience to have a special tool made to aid us in this part of the work. This is in the nature of a steel straight edge, about 18 inches long, one-quarter of an inch thick and about three-quarters of an inch wide at one end and tapering to a sharp point at the other end. One side of this is to be a perfect straight edge and is to be used as such, and therefore should be true. The frame holding the cylinder is centered at the lower side, giving us thus the true center of the revolver and consequently the highest point of same. We take the straight edge above described and place it on the front of the blade, and bring it out to the frame, and we are then enabled to see just where the point of the blade comes in relation to the cylinder. The point of the straight edge should come about 1-32-inch in front of the center mark, not any more, and above all things not less. If it does not show slightly ahead of this line the frame must be brought forward, which of course brings the cylinder with it. This is done by means of a screw found in back of the frame, and the whole is held firmly in place by two set-screws. After one side is thus attended to we repeat the same operation on the other side. The reason this is done first is because after the grinding is completed the cylinder may be brought forward, but if it has to go back the grinding will have to be done over again; therefore get

the blades in the proper position before starting to grind, and if the point of the ledger blade comes slightly ahead of the center it will be found when the grinding is completed and the blade honed up that it is just where it should be, at the exact center, thus giving us the very best position for good work. When this has been properly attended to we let down the cylinder on the blade in its proper place and secure the caps as they should be, and we will find that the cylinder binds pretty tight. To loosen it we turn back on the top screw a trifle and follow with the one found on the bottom of the cylinder box, until the cylinder runs free and easy. We then proceed to grind in the usual way taking care not to let the cylinder down on the blade too fast. On account of the large bevel found on the ledger blade of these shears, made necessary on account of the peculiar construction, it is advisable to use somewhat coarser emery than is generally used, else the grinding process is a very slow and extended operation.

We have found that No. 120 emery answers the purpose admirably for the first part of the grinding, and then finish up with flour of emery. As we have only the two side screws to work with, it is well to see to it that every time we move them it is done very lightly. These screws are of a coarse thread, and when they are moved at all it is liable to be more than what we expected. Therefore move them very lightly and grind until all noise is taken out before drawing on the screws again. In this way these shears may be ground to run very smooth and noiseless, which, of course, is quite a desirable end to attain. The blade must be watched carefully, and as soon as we get to the edge we stop using the coarse emery and smooth up with flour of emery, and after that with a generous allowance of oil. Many use crocus for polishing, but if good oil is used plentifully the blades will get as good a polish on them as we can wish for. Take things cool and easy, and do not try to rush things, and there is no reason why as good a job should not be done on these shears as on the old ones. Of course we realize that any one used to the older style shear is apt to make many mistakes at first, and most of them will be on the side of expediting the work, but it will soon be found that on this class of shear it will always be best to make haste slowly.

Again, we note that many have the idea that a shear must be ground until it will cut wet tissue paper clean, but this is a great mistake, and only tends to lengthen the time of grinding and the wasting away of the ledger blade. Grind until the shear will cut dry tissue paper all the way across, and after the shear is cleaned up and the ledger blade is honed it will be found to cut wet tissue paper all right. After the grinding is completed clean the blades well and hone the ledger blade carefully. In order to do this we have to disconnect the levers used for raising and lowering the blades so that the frame may be lifted high enough to allow us to get at the blade. Be sure that the frame is well blocked up, so that it will not come down on your hands when honing the blade. When this is done bring the frame forward one-quarter turn of the screw in back, which will lift the cylinder from the heel of the blade, and before putting the whole together we find it good policy to again put on the straight edge to see if everything is in the right position at this point. The straight edge should come just on the center line, and if this is the case there need be no fear but that the shear will do the work it is recommended to do in good shape. Now everything is in its proper position, and when all is put together we are ready to go ahead with the work. Although we have taken pains to touch upon all the points which our experience has led us to regard as essential, it may still be found that there are many points of which we do not dream.

—In writing of fans, says the Ontario Factory Inspectors' Annual Report, I would advise all proprietors of factories who contemplate putting in a fan, for any purpose, not to assume that they know all about it, but to communicate with some maker of fans for advice as to size, speed, style, piping, etc Some factory owners have undertaken themselves to do this, without having proper knowledge on the subject, and when the fan was given a trial, found to their disappointment that it would not do the work required and further expense would need be incurred.

SOFT SOAP.

BIGGAR, SAMUEL & CO.,

GENTLEMEN,—I receive your monthly editions of The Canadian Journal of Fabrics, and take much pleasure in reading them. I have been watching matters closely for quite a while, and I am satisfied the position you take in the premises is the correct one. I sincerely hope "Roberts of Kandahar" (whom I admire very much, will soon, probably before Easter), be in strong possession of the most valuable stratagetic points. Success to him.

I have just read your remarks on "Natural Grain Soap." Pure potash soap will be found preferable, owing to the softening effect of the potash. Better work can be had by using our granulated caustic potash in the making and boiling of soap, for the scouring and filling departments. Use our ammoniated carbonate of potash for strengthening the soap, perfect results will be obtained. Yours truly,

Aburndale, Mass. WM. P. WALLACE.
Feb. 24th, 1900.

THE WOOL MARKET.

Toronto.—There is no change in the wool market here, and the remarks made last month still apply. We quote: 19 to 20c for washed fleece. In pulled wools there is a moderate demand and prices are steady at 19 to 20c. for supers, and 21 to 22c. for extras.

Montreal.—There has been some improvement in sales since the opening of the London wool sales last week. These sales opened 7½ to 10 per cent. lower on some grades, but have again almost recovered to the closing of the January series Stocks of fine wools are not large in merchants' hands and prices are firm. Capes, 23 to 25, Natal, 24 to 27c.; B A pulled, 47½ to 55c.; California grease, 17 to 22c. There is no stock of Canadian wools in first hands.

VAPOR IN DYEHOUSES.

That the presence of vapor in the atmosphere is the greatest nuisance incident to the process of dyeing on a large scale goes without saying. The problem of its prevention has puzzled many able men. Naturally, recourse was first made to various means for allowing or compelling the steam to escape from the room. By natural means in the form of hoods, flues or ventilators, the attempt has been made to simply permit the same to flow outward to the atmosphere, but the rate of flow must *depend largely upon relative temperatures within and without* the building, and upon the height of the flues. As a rule, the conditions are not favorable to a rapid movement of the air. To overcome this, disk or propeller fans have been introduced to accelerate the expulsion. Neither of these arrangements takes into consideration the conditions under which vapor becomes visible and objectionable in a dyehouse.

If any attempt should be made to increase the moisture in the air, it would become visible, or if the air was holding 20 grains per cubic foot, and became cooled below 100 degrees, vapor would become visible. For this reason the temperature at the point of saturation is designated the dew point. Suppose

now the case of air at 70 degrees temperature and 70 per cent. humidity. That is, containing 70 per cent. of the moisture that it is capable of holding in suspension without the vapor becoming visible. Our curves show that under these conditions the air contains 5.5 grains of moisture per cubic foot. If it were saturated it could contain 8 grains of moisture. In other words it has capacity to take up only 2.5 grains of moisture per cubic foot. One pound of water is equivalent to 7,000 grains, therefore it would require $\frac{7,000}{2.5}$ or 2,800 cubic feet of air, under the above conditions, to absorb without rendering visible the vapor formed by the evaporation of one pound of water. It is therefore evident that a renewal of air is necessary to the prevention of visible vapor. Suppose that the external air be at a temperature of 30 degrees, and that a common exhaust fan be introduced to remove the air from the room at the rate of 2,800 cubic feet for each pound of water evaporated. The only source of air supply under ordinary conditions is that incident to leakage around windows and doors and through crevices. Generally air cannot enter a room without becoming heated to a certain degree, being dependent to a certain extent upon the heating surface within the room, but its ultimate effect is to cool the room and to produce certain spaces in which the temperature is below 70 degrees. Air at 50 degrees for instance, will take up only 4 grains of moisture per cubic foot before saturation. In other words it will not even take up as much as the air at 70 degrees actually holds when saturated to only 70 per cent. The result is that the temperature being below the dew point, the vapor becomes visible in the atmosphere, and the worse does this condition become as more air is removed by the fan.

It is evident from the foregoing that steam removal is not steam prevention, and that success can only be secured by the adoption of other means in the form of some device for supplying volumes of air at a temperature higher than that of the room.

To a material extent steam may be also prevented by maintaining a higher temperature within the room itself. Thus it will be noted from the curves that if the temperature is 80 degrees, and the air still contains 5.5 grains of moisture per cubic foot, and that its further capacity for moisture will be 11—5.5=5.5 grains, then $\frac{7,000}{5.5}$ equals 1,273 cubic feet of air which will be required to absorb the vapor caused by the evaporation of one pound of water. If, however, the air be heated up to, say, 130 or 140 degrees before delivery to the room, it will naturally contain less than 10 per cent. of its carrying capacity when heated to 130 degrees. Its avidity for moisture would, therefore, be great, and it will readily absorb all the vapor it comes in contact with. The B. F. Sturtevant Co., of Boston, Mass., to whom we are indebted for the foregoing statement of conditions, have made this subject one of careful study and investigation, and are building in conformity with these principles a type of their hot blast heating apparatus. This apparatus, which has been so extensively applied for the heating, ventilating and moistening of textile mills, consists primarily of a cased fan with proper means of driving the same, a steel pipe heater inclosed in a steel plate jacket, through which air passes in the process of heating, and a system of ducts through which it is delivered to its destination.

As ordinarily constructed, the fan is equipped with either a direct-connected engine or an electric motor, which renders the operation of the fan independent of any other source of power. The steel plate construction makes it possible to meet the exact requirements, while the sectional form of the heater renders it adaptable to all locations. The sections of the heater consist of either two or four rows of one-inch steel pipe through which the steam circulates. The cast-iron bases of these sections are bolted up together so as to form a common inlet for steam and outlet for the water of condensation.

The heater is designed to utilize either live or exhaust steam, and may be arranged so that any number of sections may be employed at a given time. By means of an apparatus of this type, as applied in a dyehouse or building devoted to similar uses, it is evident that large volumes of air, tempered to the proper degree, can be delivered and distributed so as to both heat and ventilate, while readily absorbing and rendering invisible all moisture which may be present in the atmosphere, or may be generated in the processes which are carried on within the building. Its general introduction and use as a substitute for crude and unscientific methods simply depends upon the realization of its adaptability and the principles upon which it operates.

LITERARY NOTES.

Though the Biography of a Grizzly and the Autobiography of a Quack have run their course in The Century, Dr. Weir Mitchell and Ernest Seton-Thompson are both contributors to the March number of that magazine. Mr. Seton-Thompson begins a study of the National "Zoo" at Washington, in which he shows wild animals to be as interesting in captivity as in their natural state of freedom. His text is, of course, fully illustrated. Dr. Mitchell, in Dr. North and his Friends, presents the opening chapters of the most important serial he has written since Hugh Wynne It is a novel embodying the results of a long life of observation, reflection, and experience. A study of Robert Herrick, by Thomas Bailey Aldrich, sketches the poet's life, and claims for him a unique position in English literature as a great little poet. The life of the laboring class is the special theme of Richard Whiteing's Paris article this month, the title being Paris of the Faubourgs, and Castaigne's pictures throw vivid sidelights on the subject. Frederick A. Cook, continuing his account of the Belgica Antarctic Expedition, writes of the Giant Indians of Tierra del Fuego. No one will be surprised to learn that even this race of remote and hardy aborigines is dying out before the advance of civilization and the rifle. King Charles' ill-starred reliance on the Scots, after Naseby, and his imprisonment by Parliament, are the topics considered by John Morley in his study of Oliver Cromwell. "Talks with Napoleon," from O'Meara's newly discovered and intimate St. Helena diaries, are continued, the possibility of escape being one of the most interesting questions considered. The composer Moszkowski writes of the composer Meyerbeer. Captain Slocum gives the lines and measurements of his famous sloop, the "Spray;" H. Phelps Whitmarsh describes a Midwinter Tramp in hot weather, from Santiago to Havana; Alexander Hume Ford writes of a matter of great timely interest, the Warfare of Railways in Asia; fiction is furnished by H. B. Fuller, Catharine Young Glen and Eva Wilder Brodhead; poetry by John Burroughs, R. H. Stoddard, J. V. Cheney, Arlo Bates, and others; and Cole's Old English Masters are Turner's Dido Building Carthage (frontispiece) and the Fighting Téméraire.

Rudyard Kipling's first piece of sustained work since his illness last year turns out to be a series of humorous animal stories which are said to show all the freshness and zest of a man who has had a long rest. Kipling loves to write an animal story better than anything else, and when his physicians allowed him to return to work he instinctively turned to this series, which he had had in mind for years. There are nine stories, and each one is supposed to tell the origin of the most con-

spicuous part of the animal portrayed. Thus, in the Elephant's Child he tells a most droll story of how the elephant happened to get a trunk, and in the Sing-Song of Old Man Kangaroo he gives the history of how the kangaroo got his long legs, for, Mr. Kipling says, there was a time when elephants had no trunks, and kangaroos' legs were not as long as they are now. The stories, it is said, show Mr. Kipling at his very best. They are expressively funny and have that rare quality of appealing to old as well as young. The author has sent the entire series to The Ladies' Home Journal.

L'Industria Tessile and Tintoria No. 8, vol. I., has reached us from Milan. There are some 30 pages of reading matter, and a number of textile designs.

Dronsfield Bros., Ltd., Atlas Works, Oldham, Eng., have sent us a copy of their 1900 catalogue of grinding machinery and apparatus used for grinding cards for cotton, woolen, etc., and also machines and apparatus used for covering rollers with leather.

We have the Bulletin of the National Association of Wool Manufacturers, a quarterly magazine devoted to the interests of the United States wool industry; edited by S. M. D. North, Boston.

"The Scot, at Home and Abroad," is a lecture by John Imrie, the Scottish Canadian poet, in which the characteristics of Scotchmen are entertainingly set forth in prose and verse. The lecture is now published in pamphlet form by Imrie, Graham & Co., Church street, Toronto.

It can no longer be said that Canadians ignore altogether the work of their own poets. Seven thousand copies of the poems of John Imrie, the well-known writer of Scottish verse, have been sold, and the book is still selling. A fourth edition in a striking plaid cover, is now published at 25 cents.

One of the curiosities of literature is "The Gospel of Matthew in broad Scotch," rendered by the Rev. William Wye Smith, and published by Imrie, Graham & Co., Toronto. The work is done reverently, and at the same time the graphic and telling idioms of the Scottish dialect render the version most striking and, in many places, poetical

The Transvaal Boers. By Africanus. Publishers, Horace Marshall & Son, Temple avenue, E.C. London. Price (with map), one shilling.

The Last Boer War. By H. Rider Haggard. Publishers, Kegan Paul, Trench, Trubner & Co., Charing Cross Road, London. Price one shilling.

Majuba, Bronkerspruit, Ingogo, Laing's Nek and Krugersdorp. By Hamish Hendry; with eight illustrations by Caton Woodville. Publisher, Grant Richards, London. Price, cloth, two shillings.

Story of Majuba Hill. By James Cromb. Publishers, David Bryce & Son, Glasgow. Price, sixpence.

My Escape from the Boers. By Dr. F. J. Livingston. Publisher, William Briggs, Toronto. Price, 20 cents.

The above are among the fresh contributions to the Boer war literature that have reached us since our last notices. Africanus gives a political history, and a very able one, of the relations of the British and Boers, and is not sparing of the faults of both the British and Colonial Governments as well as the Boers. The weight of evidence shows the ignorance, narrowness and tyranny of the Boers in their notions of government, and indicates the lines that should be taken by the Imperial Government to avoid the mistakes of the past. Rider Haggard, the well-known novelist, in the sober history he gives of the Transvaal from the date of the annexation of 1877, speaks as one with authority, for he was private secretary to Sir Henry Bulwer, then governor of Natal, and was sent by that governor to accompany Sir Theophilus Shepstone when the annexation was accomplished. He was in Natal and within sound of the guns when the battles of Ingogo and Majuba Hill were fought, and he was a witness to the amazement and consternation that prevailed when the Transvaal, with its large native population, was handed back to the tender mercies of the Boers. The pathetic appeals of the Kafir chiefs to the British commissioners against being handed back like so many cattle to the cruel rule of men from whom they had suffered so much must have occasioned some qualms of conscience to the members of the British Government, who were responsible for the abandonment. Some of our American pro-Boer friends should read this sketch of Boer piety exemplified. Mr. Hendry's book is a military history of the Boer war of 1880-1, and is written in such a clear and intelligent style, and withal, so honest, that all who wish to study the military aspects of that series of fights will find in it all they need. Mr. Cromb's story is also a very full and clear one, dealing with Majuba Hill only. It was taken from the accounts given by various officers, and vindicates the character of the Gordon Highlanders, if any vindication is needed after the achievements of that regiment in the present war. Dr. Livingston's pamphlet gives an interesting description of his escape from the Boers, who in the early part of the present war invaded Zululand and destroyed the mission station at which he was medical missionary. Dr. Livingston, who is by the way a native of Ontario, had befriended and treated free of charge, some of the very men who burned his house and destroyed his property, and their treatment of him recalls the case of his famous namesake, David Livingstone, whose house the Boers also burned, and whose books and furniture were destroyed in the same way.

The March number of The Canadian Magazine is appropriately called a "Military Number," and the articles and illustrations are of such interest that we are not surprised to learn that the edition was sold out at headquarters within a few days of publication.

We understand that a new and comparatively cheap Canadian edition of J. P. Fitzpatrick's "Transvaal from Within," which has had such a large sale in England, is being brought out by Wm. Briggs, publisher, Toronto.

DRYING TOWELS AND PIECE GOODS.

For drying towels and such piece goods as do not require tentering, a machine has recently been perfected by the Philadelphia Drying Machinery Co., 6721 Germantown ave., Philadelphia. The dryer consists essentially of an enclosure containing heater coils, fans to circulate hot air, also a series of rollers over which the wet material travels. Entering at one end of the machine, the goods usually travel in loops up and down over the rollers alternately, coming out finally at the other end of the machine dry. Each one of the rollers is driven independently, and their surface speeds are graded in proportion as the goods dry out and tend to shrink, and in this way, it is claimed, all undue strain is taken from the material during the process of drying. Those who have found the can drying system objectionable for many reasons, including the gloss which the cans impart to the goods, will find this system particularly interesting By recirculating the hot air alternately through the steam coils and the wet material, the goods are dried quickly and uniformly, and a large amount of drying is done in a small floor space, with the minimum amount of labor.

These machines are built in various widths and lengths, to meet any capacity required Being divided into compartments they are also well adapted for carbonizing cloth in the piece, for

while the atmosphere in the drying compartment will be more or less damp, on account of the moisture from the entering goods, the atmosphere of the carbonizing compartment can be kept at a high temperature and very dry, thus securing the conditions most essential for complete carbonizing. For further information, the Phila. Drying Machinery Co. will be pleased to send their catalogues to interested enquirers

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.

The enlargement of the Maple Leaf Woolen Mill at Markham, Ont., is spoken of.

The Almonte Knitting Co. and the Anchor Knitting Co., Almonte, Ont., are working over time.

The winders in the Dominion Cotton Co.'s mills at Kingston, Ont., struck March 12th for an advance of ten per cent.

It is understood that W. Antliff, accountant of the Winnipeg branch of the Canadian Rubber Co., has succeeded D. S. Johnston as manager

H. S Lewis, T. A Gorham, Port Arthur, Ont.; H. Halstead and J. O'Hagan, Fort William, Ont., have been incorporated as the Algoma Steam Laundry Co., Ltd.; capital, $20,000; chief place of business, Fort William.

Justice Henry filed on February 27th, in Halifax, judgment in five cases in the Union Bank vs Eureka Woolen Mills. In the first case judgment was for defendant company, and in the other four for plaintiff bank

The Norwich Folded Paper Carpet Lining Company et al., have taken an injunction against the Montreal Quilting Company for alleged infringement of patent rights, and also claim from the company defendant the sum of $10,000 damages.

The strike at the Montreal Cotton Co's mill in Valleyfield, Que., ended after a stoppage of fifteen days, the mills restarting March 5th A F Gault, president, and I. Simpson, general manager, met the strikers, and a compromise was made whereby they agreed to accept an advance of 5 per cent

The firm of James Ferguson & Co., merchant tailors and proprietors of the Brandon tent, mattress and overall factory, has been dissolved by the retirement of Ferguson. R. J. Molloy, the remaining member of the firm, will continue the business in his own name.

Louis Simpson has resigned his position as general manager of the Montreal Cotton Co., Valleyfield, Que. He will be succeeded by Fred. Lacey, the assistant manager. It is stated that Mr Simpson's resignation dates from the 1st of May.

At the annual meeting of the shareholders of the Cornwall Manufacturing Co., held on February 28th, at the office of H. and A Allan, Montreal, the old board was re-elected, viz., Andrew Allan, president, W M. Ramsay, vice-president; Robert Meighen, managing director; Lord Strathcona, A. T. Paterson, H Montague Allan and W A Hastings.

One day last week the Rosamond Woolen Co., Almonte, Ont., had a diminutive strike. Eight or ten female operatives in the combing department of the worsted mill demanded an increase of twenty per cent. in their wages, and went out because their demand was not acceded to A couple returned to work the next day; the balance are still out, and their places have been taken by new hands.—Carleton Place Herald.

Brown & Wigle, Ltd., Kingsville, Ont., has orders ahead for 10,000 pairs of blankets. This has recently been made a two set mill.

A. W. Brodie, Hespeler, Ont., has presented a large flag to the town, and the R. Forbes Co. has erected a flag staff from which to fly it.

J. Adam Teskey, of the Mississippi Woolen Mill, Appleton, is putting in a new pair of spinning mules, supplied by Robt. S. Fraser, Montreal. He is also putting in a new engine.

The employees of the Rosamond Woolen Co., Ltd., Almonte, Ont., recently subscribed $78 to enable F. Young, who recently lost an arm in an accident, to get an artificial arm.

The Dominion Woolen Co., Beauharnois, Que., has put in six fast running broad looms, and a 90-inch Dobeross loom, supplied through Robt. S. Fraser, Montreal.

To the great regret of his many friends R. A. Muldrew died recently in Toronto after a comparatively short illness. He had been for some time manager of the Toronto house of D. Morrice, Sons & Co., Montreal.

Leopold Casella & Co. have sent out a sample card of ladies' cloths dyed in two colors as described in their pamphlet No. 1983. These two colored effects have hitherto been obtained by mixing wool dyed different shades.

The Port Hope, Ont., Carpet Mnfg Co., S. Syer, manager, only lost its boiler and dyehouse in the fire reported last month. The mill intends to move to Milton, Ont., which town proposes to tax itself to the tune of $10,000 to secure this industry.

W. Sanford Alley, J. McLenaghen and S. K. Parsons will be directors of the Consolidated Cloak Co., which has taken over the business of the Cloak Mnfg. Co., insolvent, and also the business of the Empire Cloak Co. The capital will be $100,000. Ladies' and children's cloaks, suits and skirts will be manufactured.

The by-law to give a bonus to the Imperial Starch Co. to locate in Prescott, Ont., was carried, March 12th, there being only 7 votes against it. The starch works company proposes to put up buildings at once for the manufacture of all kinds of starch and glucose, and to employ 125 hands the first year and double that number afterwards

George Morreau, who has been employed in the Elmsdale Flannel Mills, Almonte, Ont., for about eleven years, resigned a short time ago. Before leaving he was presented by the employees of the spinning department, in which he was overseer, with an address expressive of the esteem in which he is held by them, and a handsome smoking set.

The Imperial Paper Co., Sturgeon Falls, Ont., it is announced has sold to Lloyds, London, Eng., the owners of The Daily Chronicle, part of its concession from the Ontario Government for three-quarters of a million dollars. The purchase of a part interest in the company by the Lloyds means that the bulk of the output of the mills will be used in The Chronicle office and that of the other newspapers controlled by Lloyds. It is known that other great English papers are negotiating for the production of their paper supply in Canada.

Robert S. Fraser, Montreal, is putting into his garnetting works on the canal bank, an additional 60-in. three-cylinder carding engine, and a new rag shaker. He is now running two 60-in. carding machines, three garnett machines, one worsted opener, two pickers, a carbonizer and dye works. He has also added a machine repair shop for the re-clothing of garnett machines and the repair of metallic rollers with garnett wire. He is prepared to do this work for other garnett machine owners, and as such work has hitherto been sent out to the United States the new establishment will be a great convenience to Canadian mills operating garnett machines.

James Lodge, Almonte, Ont., has taken a position in the Perth woolen mill.

Holt & Kitchen, carpet manufacturers, Dunnville, Ont., will, it is said, move to Strathroy, Ont., as a sufficient bonus is granted.

John McFarlane, a New York manufacturer of woolen goods, was in Hamilton, Ont., with a view to starting a woolen manufactory there.

David Cram, owing to failing health, has been obliged to sever his connection as bookkeeper with the Gillies woolen mill, Carleton Place, Ont., and will try some open-air occupation.

Wm. Fuller, Perth, Ont., for the past twenty-six years connected with the Gemmill woolen mills, first at Port Elmsley and latterly in Perth, has removed to Bolton, Ont., where he has obtained a situation.

The Khaki Serge Manufacturing Co., Ltd., has been registered in Leeds, Eng., with a capital of £5,000, to carry on the business of khaki serge manufacturers, etc. Office: Athenæum buildings, Park lane, Leeds.

At the annual meeting of the shareholders of the Paton Manufacturing Company, held recently, the old board of directors was re-elected. The business of the company for the past year is said to have been satisfactory.

One of our cotton speculators got a cheque the other day for his profits on that staple for the past month—just $42,336.93. A few of the lesser lights got some respectable cheques. It is said that the profits of the Almonte speculators for the past two months will total over $100,000.—Almonte, Ont., Gazette.

At the annual meeting of the Canadian Rubber Co., Montreal, the following gentlemen were elected directors: Andrew Allan, president; H. Montagu Allan, vice-president; J. B. Learmont, W. H. Benyon, And. A Allan, C. F. Smith, J. O. Gravel, H. M. Molson and John J. McGill, managing director.

John Flett, Henry Lowndes, J. M. Lowndes, C. B. Lowndes, George A. Baker and H. L. Mason, of Toronto, have been incorporated to manufacture clothing, as the Lowndes Company, Ltd., with a share capital of $50,000. Mr. Flett will be president of the new company, which will manufacture men's clothing of the better grades. This company is a separate corporation from the Flett, Lowndes Co., wholesale buttons and trimmings, though the principal shareholders have stock in both. The new factory will be operated by electricity, and will be situated in the upper flats of the Flett, Lowndes Co.'s building in Bay street.

The many friends of John Hope, late proprietor of the Lachute Shuttle and Bobbin Works, will have learned with sincere regret of his misfortunes brought about through the rascality of the officials of the Banque Ville Marie, of Montreal, through which his financial business was transacted. Mr. Hope not only lost by the direct consequences of the bank's failure, but also through the manœuvres of the heads of the bank, who induced him to purchase supplies of lumber as an accommodation and then repudiated the transactions. It is satisfactory to learn that the shuttle and bobbin works, which had always been very successful, have passed into most capable hands, and are now running to fullest capacity, having 37 hands employed. The new style of the business is the Lachute Shuttle Co., and the proprietor and manager is E. F. Avers, son of T. H. Avers, of the well-known woolen and pulp manufacturing firm of Hamelin & Avers. The works are now fitted up with the most modern machinery and are turning out a quality of goods which is finding general appreciation among the cotton and woolen mills of Canada

FABRIC ITEMS.

J. A. Cantin, dry goods dealer, Quebec, is offering 40 cents, cash.

Delage & Gauvreau, dry goods, Quebec, are offering 60 cents, on liabilities of $29,000.

The style of Wyld, Grasett, Darling Co., Ltd., wholesale dry goods, Toronto, has been changed to Wyld, Darling Co., Ltd.

Holt, Renfrew & Co., is the name by which the well-known firm of G. R. Renfrew & Co., furriers, will be known, the members being John H. Holt and Allan E. Renfrew.

W. J. O'Malley & Co., wholesale millinery, Montreal, have consented to assign on demand of T. Kinsella, beer bottler, a former partner, who retired last fall. The liabilities amount to $50,900, T. Kinsella being a creditor for $42,000.

The estate of T. Beland, dry goods, Quebec, shows $39,173 of liabilities and $50,000 of assets. Among the creditors are: Fitzgibbon, Schafheitlin & Co., $5,650; Gault Bros. & Co., $1,775; Wm. Agnew & Co., $1,466; Thomas May & Co., $1,356; Caverhill, Kissock, $1,058; Hermann H. Wolff & Co., $852; James Johnston & Co., $790.

The wholesale men's furnishing firm of Glover & Brais, Montreal, having been unable to arrange a settlement, the assets were sold at auction. The wholesale stock, amounting to $69,677, realized 67 cents on the dollar; the retail stock of $21,000 brought 47 cents on the dollar, and the book accounts 53¼ cents; the whole sum realized being about $70,000.

The following late instances of retail dry goods failures are reported from Montreal. C. P. Chagnon has fallen behind, owing, it is said, to business being affected by street improvements, and he is offering creditors 60 cents on liabilities of about $15,000. B. Charbonneau, lately reported failed, made an offer last week of 50 cents, which was not acceptable, and he has now increased his figure to 75 cents in the dollar, with a better chance of a settlement. He owes about $10,000. J. Aitken & Co., one of the oldest firms in the city, making a specialty of ladies' wear, are reported as assigned. The business had been steadily falling behind of late years, owing to the strong uptown movement in trade. A. F. Leblanc, who opened a men's furnishing shop in August last, has already made a voluntary assignment.

TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the textile imports from Great Britain for January, 1899 and 1900:

	Month of January.	
	1899.	1900.
Wool	£ 1,027	£ 2,007
Cotton piece-goods	84,669	93,206
Jute piece-goods	7,849	11,830
Linen piece-goods	23,345	23,736
Silk, lace	1,835	1,869
Silk articles, partly of	2,099	5,312
Woolen fabrics	25,799	38,168
Worsted fabrics	82,071	82,871
Carpets	12,797	24,778
Cutlery	4,765	4,558
Apparel and slops	1,254	1,609
Haberdashery	22,465	20,352
Writing-paper, etc	1,831	2,088
Other paper	829	709
Stationery, other than paper	763	1,092

EXPORTS OF TEXTILE MACHINERY FROM GREAT BRITAIN

The increase in the shipments of textile machinery from Great Britain has been frequently commented upon. The appearance of the figures for December, 1899, affords The American Wool and Cotton Reporter an opportunity to recur to this subject. We append the official figures for that month, showing the exports in full of textile machinery from Great Britain to all parts of the world.

	1897	1898.	1899.
To Russia ..... £	56,094	£118,161	£146,414
To Germany	55,310	98,301	64,744
To Holland	15,158	21,557	14,055
To France	39,472	65,116	42,789
Other countries in Europe	64,113	82,580	90,268
China (with Hong Kong).	1,118	18,859	11,069
To Japan	10,527	10,440	9,374
To United States	22,175	27,077	41,018
Countries in South America	8,263	18,598	11,141
Brit. possessions—S. Africa	1,071	41	3
To British East Indies.....	52,288	112,892	78,122
To Australasia	798	585	2,723
To other countries	16,211	36,108	52,077
Total ..... £	342,598	£610,315	£563,797

It will be noted that notwithstanding the considerable falling off in the total exports of textile machinery from Great Britain in December, 1899, as compared with 1898, the shipments to the United States were over 50 per cent. larger. And with the exception of Russia and China no country shows so large a percentage of increase over the corresponding period of 1897 as the United States. The figures for twelve months ended December 31, 1899, are as follows:

	1897.	1898.	1899.
To Russia ..... £	694,875	£1,268,281	£1,682,608
To Germany	913,270	1,019,714	907,439
To Holland	191,982	230,512	197,062
To France	688,424	681,059	542,326
To other countries in Europe	993,731	909,090	1,114,293
To China (with Hong Kong)	142,387	116,741	190,261
To Japan	607,705	287,245	95,815
To United States	224,083	280,998	305,424
To countries in S. America.	125,605	124,046	122,479
Brit possessions in S. Africa	12,571	1,165	21,926
To British East Indies.....	937,726	1,293,315	1,051,496
To Australasia	12,000	19,053	22,542
To other countries	157,764	322,993	505,327
Total ..... £	5,702,183	£6,628,012	£6,819,598

The above indicates that last year the United States imported from Great Britain over 27 per cent. more textile machinery than in 1898, and about 63 per cent. more than in 1897. So far as the particularized figures go only Russia equalled or surpassed the United States in the gain in imports of textile machinery from Great Britain for 1899 over 1897. The conclusion is that the textile manufacturing industry in the United States has received a great impetus The situation is unquestionably in part explainable on the ground of the immense increase in the demand for all kinds of commodities in the last two years, necessitating a high degree of activity on the part of textile mills, and possibly of larger orders for machinery than could be immediately filled by machine builders on this side of the Atlantic But there can be no doubt that other causes have operated, the tariff of 1897 among them

ARGENTINA'S CONTRIBUTION TO THE WORLD'S WOOL SUPPLY.*

BY H. GIBSON, BUENOS AYRES.

A statement made last year *before the British Association* sent a cry of consternation through the whole press of that country. The president, Sir William Crooke, said that by 1930 the world's demand for wheat would have overtaken the supply. Coming from a country which sends abroad to-day for the world's consumption 1,500,000 tons of wheat, after feeding its own people, and which has nevertheless made so small a call upon its resources that the area under grain in relation to the area available for cultivating that cereal bears the same proportion as the ground space covered by the Capitol in Washington to the majestic park in which it stands, I am unwilling to believe that the world's production of the common necessities of life is in any appreciable danger of failing to reach the world's requirements. Nevertheless we are facing at the present moment a shrinkage in the supply of a commodity as necessary to humanity as bread—namely, wool—and the decrease bears in its aspect so many features of a permanent character that a few considerations of the circumstances from which this decrease is derived are worthy of the attention of the industry associated with its production.

It has been the experience, both of the leading nations of Europe and of this country, that the subdivision of land and the advance of agriculture tend *to displace the sheep as a profitable* branch of the farming industry. If the small farmer finds that his agricultural produce can be best turned to account by feeding it to live stock, he selects cattle and swine as the medium for converting the fruits of his field into meat. The sheep divested of his fleece does not repay in meat alone for its food so generously as the ox or the hog. In the course of a sheep's life it will give its owner in wool two-thirds of the value of its carcass, but the farmer's business is not to gather the golden eggs, but to sell the goose. When the market price for agricultural produce is low, and the live stock of the farmer increases in consequence, that increase is found in cattle and swine, and not in sheep. To farmers who are buyers of store stock, cattle are more profitable than sheep as meat producers. A prime steer represents eight times as much foodstuffs as a prime wether, and gives ten times as much meat. The bullock is a less dainty feeder than the sheep; he will consume a greater variety of foods. Where the small farmer is also a stock-breeder, the dairy produce of the cow is regarded as a better source of revenue than the fleece of the sheep. Where land is handed over to small retail business, the shepherd must break his pipes and hang up his crook; the sheepfold is replaced by the cow-byre, with its accessories, the dairy, the piggery, and the poultry yard. Belgium may be taken as a country typical of small farms, where the subdivision of land and the relation of agricultural population to area has reached a very *high point. In Belgium*, for every sheep on the farm there are six head of cattle, five head of swine, and one goat.

If we take the three countries *which lead the world to-day* in every branch of agriculture and commerce—namely, Great Britain, Germany and the United States—we find that during the past quarter of a century they have been the scene of a most notable decrease in their sheep stock. Since 1874 the proportion of sheep in Great Britain to every thousand inhabitants has dropped from 1,130 to 750, a decrease of 33 per cent. During a similar period the proportion of sheep in Germany to every thousand inhabitants has decreased from 580 to 200, a decrease of 65 per cent. During a similar period the proportion of sheep in the United States to every thousand inhabitants has decreased from 795 to 500, a decrease of 37 per cent. In the last twenty-

*Paper read at the *International Commercial Congress*, Philadelphia.

five years the sheep stock of Germany has decreased from 25,000,000 to 10,500,000. During that period cattle have increased from 15,750,000 to 18,500,000. Pigs have increased from 7,000,000 to 14,000,000. Population has increased from 42,500,000 to 54,500,000.

Taking the whole continent of Europe, it is impossible to find one single country where the sheep stock has increased proportionately with the population. In most of them the decrease is as remarkable as in the countries already mentioned. In Austria-Hungary, for instance, the numbers of sheep have dropped down in the last third of a century from 20,000,000 to 11,000,000. In the United States, where the relation of population to area is one to thirty acres, the decrease in sheep stock is still more remarkable, because its explanation is much less apparent than in Europe. The sheep breeder is covered by a protective tariff, which adds 60 per cent. to the value of the fleece. He lives in a country where the demand for wool is in excess of the supply. His competitor, the cattle raiser, receives no similar bounty at the hands of his country. Beef and corn overflow the local demand and seek a foreign country. Nevertheless, the Treasury Statistical Bureau and the National Association of Wool Manufacturers bear witness that in the last fifteen years this country's sheep stock has diminished from 50,000,000 to 37,500,000, and the country's wool productions from 300,000,000 to 266,000,000 lbs. I confess that the decrease in sheep stock in this country is to me unintelligible. It would be presumptuous to suggest that the North American flock master is blind to his own advantage. I must content myself with the bare statement of facts

Throughout the whole world we have to-day only three geographical districts where the production of the wool textile is in excess of local requirements. These three divisions are Australasia, South Africa and the River Plate Republics of Argentina and Uruguay. There are, indeed, countries from which the raw material is exported, but only to be returned from the manufacturing nations in the shape of finished goods. From the East there comes to Europe a large parcel of wools and mohairs, but from Europe there returns to the east a still larger parcel of textile goods. There are left to us but three regions, all in the southern hemisphere, from whence to fill up that constantly-increasing deficit in our wool supplies. When we return to these three producing regions we are confronted with figures far from reassuring. During the past decade, in every portion of Australasia, with the exception of New Zealand, there is a decrease in the number of sheep. In New South Wales the shrinkage is appalling. In the younger colony of South Australia, where an increase might with reason be expected, we find the number has crept below 5,000,000 from 7,000,000 odd depastured there in 1890. Tasmania, Victoria, West Australia, have all suffered more or less a depletion in their sheep stock. The continent is carrying to-day 30,000,000 less sheep than it did in 1890.

It is a matter of satisfaction here at least to be able to attribute the cause to temporary circumstances, and to entertain with sincerity the hope and the belief that Australia will get back to her old figures and probably surpass them. Since 1894 Australia, particularly New South Wales, has been the scene of continued droughts and adverse seasons. The valuable merino stock of that country has been the chief sufferer; more than one year's lambings have been partially and in parts wholly lost. Such a period of misfortune cannot last for ever, and even their competitors must join in hoping that the Australian sheep breeders are going to round the corner and build up again their depleted sheep stock. In New Zealand the number of sheep has remained stationary for the last five years Since 1886 it has increased 18 per cent. During the same period the cattle have increased 53 per cent. During the same period the population

In the High Court of Justice.

Queen's Bench Division.

MR. JUSTICE BRUCE. WILSON BROTHERS BOBBIN CO., LTD., AND HERBERT WILLIAM WILSON v. WILSON & CO., BARNSLEY, LTD. SATURDAY, 27TH JANUARY, 1900.

A Perpetual Injunction was this day granted against the Defendants, restraining them, their servants and agents from infringing the Letters Patent No. 5559, of the year 1895, for "Improvements in means for strengthening and protecting tubes and bobbins used in the preparation and spinning of fibrous materials." And it was ordered that the Defendants should pay to the Plaintiffs damages, to be ascertained on enquiry, and costs. The Judges also certified to the validity of the Plaintiff's patent.

The above has reference to the Patent Cornholme Shield, with "beaded" or "rolled" edge for fastening. 3-3

has increased 30 per cent. New Zealand is becoming the home of the small farmer, and the small farmer will follow his European contemporary, he will increase the output of agricultural produce, of dairy produce, and of beef, he will crowd out the shepherd. South Africa presents a more discouraging picture to the wool consumer than Australia. Adverse seasons cannot be alleged in this case to explain away the decrease in sheep stock, which has dropped over 3,000,000 in nine years—from 18,000,000 in 1890 to less than 15,000,000 in 1898.

(To be continued).

—Now that the Boer war is practically over we hope generously disposed Canadians will help the people of our East Indian Empire in that far worse conflict with famine which they are now undergoing. Of the 50,000,000 people suffering the pangs of hunger for the next five months until the periodical rains set in, it is believed that 5 000,000—a number equal to the entire population of Canada—will perish, even if supplies are brought to a large extent So cheap is living under ordinary conditions that two or three cents a day will keep a man; and it is estimated that $10 will save the lives of five people for the whole five months of the famine period.

TEXTILE PUBLICATIONS.

In order to accommodate readers of The Canadian Journal of Fabrics, the publishers will be pleased to mail any book in the following list on receipt of the publisher's price, duty free. Books on technical and practical subjects, not in this list, can be obtained and mailed at publisher's prices. In ordering, please give full address, written plainly:

Worrall's Directory of Cotton Spinners, Manufacturers, Dyers, Calico-printers and Bleachers of Lancashire, giving the mills of the British cotton district, with number of looms and spindles, products of the mills, cable addresses, etc $2 00

Worrall's Directory of the Textile Trades of Yorkshire, comprising the woolen, worsted, cotton, silk, linen, hemp, carpet, and all other textile mills, giving looms and spindles, and the various lines of goods manufactured, etc $2 00

Worrall's Textile Directory of the Manufacturing Districts of Ireland, Scotland, Wales, and the counties of Chester, Derby, Gloucester, Leicester, Nottingham, Worcester, and other centres not included in preceding works, with capacity, products of mills, cable addresses 2 00

The Wool Carder's Vade-Mecum, by Bramwell; third edition, revised and enlarged; illustrated; 12mo..... 2 50

Technology of Textile Design, by Posselt..... 5 00

The Dyeing of Textile Fabrics, by Hummel..... 2 00

Textile Calculations, very complete; by E. A Posselt . . 2 00

CHEMICALS AND DYESTUFFS.

Prices all remain very firm, and any change is upwards Castor oil is scarce and dead, 9 to 10c. now being asked.

Bleaching powder	$ 2 75	to	$3 00
Bicarb soda	2 00	"	2 05
Sal soda	0 75	"	0 80
Carbolic acid, 1 lb bottles	0 50	"	0 60
Caustic soda, 60°	2 25	"	2 50
Caustic soda, 70°	2 50	"	2 75
Chlorate of potash	0 13	"	0 15
Alum	1 35	"	1 50
Copperas	0 65	"	0 70
Sulphur flour	2 00	"	2 50
Sulphur roll	2 00	"	3 00
Sulphate of copper	6 00	"	6 25
White sugar of lead	0 08	"	0 09
Bich. potash	0 11	"	0 12
Sumac, Sicily, per ton	75 00	"	80 00
Soda ash, 48° to 58°	1 30	"	1 40
Chip logwood	1 90	"	2 00
Castor oil	0 09	"	0 10
Cocoanut oil	0 10	"	0 11

—A financial agent in London, Eng., interested in wood pulp making, wants to hear of properties on the Atlantic coast.

—A manufacturer of rubber parts for bicycle tires in England wants to form business connections in Canada.

—The great advance in raw furs, as shown at the recent London sales, may cause some sharp changes in fur fashions, as there will be a tendency to seek cheaper lines or imitations. The next public raw fur sales in London, Eng., will be Hudson's Bay Co., March 19th to 22nd; C. M. Lampson & Co., March 19th to 30th.

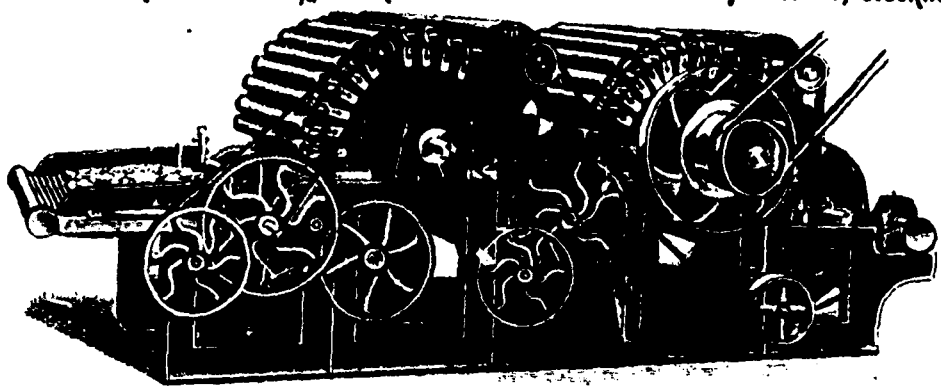
Joseph Merow, an employee of the Canadian Colored Cotton Co. at Cornwall, Ont., for the past eighteen years, took charge of the spool and twister room in the cotton mill at Montmorenci, Que., March 1st.

Wool Printing.—A French patent has been taken out, the subject-matter of which is printing the wool after mordanting, instead of printing on dye and mordant together. In this way faster shades are got than when dye and mordant are applied together. The wool is mordanted at the boil, and then printed, and steamed. The worst of the process is that the mordant shows its own color at the imprinted places.

Garnett's WASTE WOOLLEN & WORSTED OPENER MACHINES

WORLD WIDE REPUTATION

TELEGRAMS: Garnett, Cleckheaton. TELEPHONE No. 9, Cleckheaton Exchange, Under Dewsbury.



THESE MACHINES have a world-wide reputation. They are made in various widths up to 60 inches on the wire, and with one, two, or three swifts. They can be clothed as fine as 24 rows per inch so as effectually to open the finest threads.

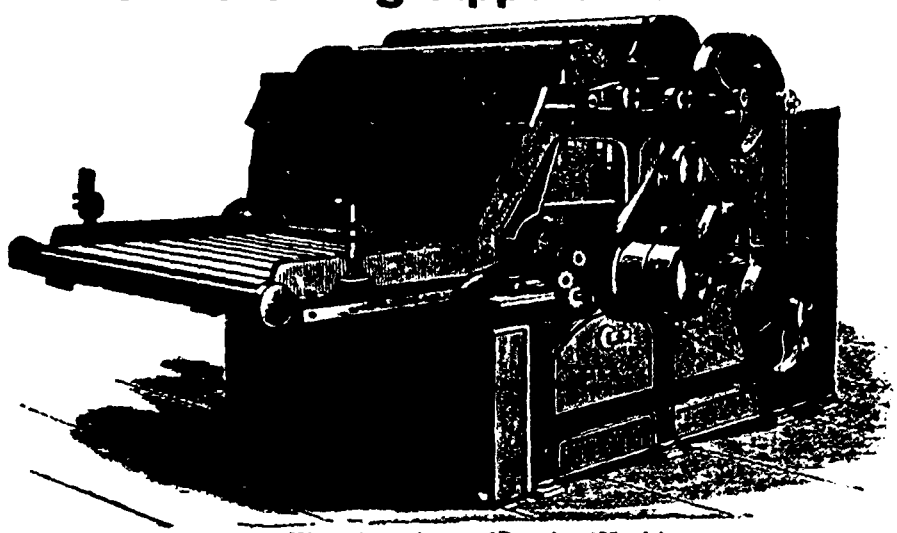
Waste Opener or Garnett Machine, for Opening Hard Twisted Woolen and Worsted Waste.

Garnett Wire. This Wire is used for covering iron rollers, breasts of woolen cards, lichersin of cotton cards, comber doffers, etc.

Garnet Wire, or Metallic Card, made with any form of tooth, in Swedish Charcoal Iron or Cast Steel, with points hardened by electricity.

Patent Carnett Clothing Apparatus

By means of this simple and inexpensive apparatus parties can reclothe the rollers of their waste-opening machines in their own mills —and so save an immense amount of trouble and expense in sending their rollers away to be done.

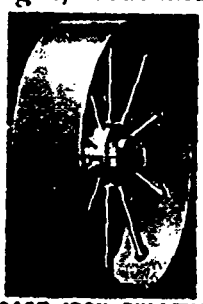


Improved Wool Cleaning or Burring Machine.

Capable of cleaning 1,500 pounds of wool per day. The very best and most economical machine made for the purpose.

Wrought Iron Pulleys

Light, True and Unbreakable



CAST IRON PULLEYS

Iron and Steel Shafting, Couplings,
Flummer Blocks, W. I. Collars,
Hangers, Wall Boxes, etc.

Bleaching Cotton and other Vegetable Fibres.—Koechlin recommends the bleaching of cotton by passing through a bath of 100 litres of water, 10 kilo. of lime, and 50 kilo. of bisulphite of soda. Then steam for an hour or two under a pressure of from one to two atmospheres, rinse, sour, rinse again and dry. The bisulphite can be replaced by hydrosulphite of lime. The stuff may be boiled in the bath for a few hours instead of steaming it. Another process (due to the same chemist) is to subject the goods for 6 hours under a pressure of two-thirds of an atmosphere to a liquid composed of 1,000 litres of water, 10 kilog. of dry caustic soda, 10 of soap, 1 of calcined magnesia, and 30 litres of peroxide of hydrogen. Then rinse, sour, rinse again, and dry. The white obtained is said to be much better than can be got with hypochlorites, and entails no damage to the fabric.

—It has been my privilege, says David Gessner, manufacturer of improved cloth finishing machinery, in a recent pamphlet, to replace with mine—at different times and places and on different classes of goods—every other known make of rotary press, including the nondescript masqueraded under the name of "Voelker," which the United States Courts decided—both in its original and in its changed form and under two separate suits—to be an infringement of my patents, and which I displaced also upon mere superiority of work alone, quite aside from any legal questions which might be involved. Any mill of good repute desirous of testing my machine alongside any other make can be accommodated, provided the question of price shall not enter as an element of contest, for as regards mere cheapness we are willing to yield the palm to our competitors. However, where strictly first-class work is desired, ours will be found by far the cheapest machine in the end he says.

Finishing of Half Wool.—An Austrian patent protects the passage of the material, laid between India rubber and linen, through rollers, so that the pressure against the elastic sheet gives a lustre

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—A wholesale dry goods firm in Toronto recently ran short, it is said, of a line of goods that had advanced in price in the British market The firm communicated with the important manufacturing concern in England by whom the first order was filled and asked them to repeat the order at the previous figure The answer "Yes" was cabled at once, and this was followed by a letter just received by the firm in Toronto, in the course of which it is said We cannot refuse Canadians anything just now in view of the splendid patriotism they are showing and the sacrifice they are making for the Empire Admiration and gratitude are universal here."

Discharges on Paranitraniline Red - An Austrian patent has been secured for white and parti-colored discharges with paranitraniline red and other azo dyes developed on the fibre The stuff dyed with, say, paranitraniline red, is soaked with a solution of glucose, printed with a strongly alkaline discharge color, together with alcohol, phenol, naphthol, etc., and then dried and steamed to reduce the dye

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The arrivals of wool for the first auction sale of 1900 closed January 18th, with the following schedule New South Wales, 42,779 bales, Queensland, 11,318; Victoria, 34,767; South Australia, 24,556, West Australia, 7,664 Tasmania, 124; New Zealand, 22,750, and Cape of Good Hope and Natal 51,322; total, 195,280 bales Deducting from this amount 25,500 Australasian, and 33,000 Cape of Good Hope and Natal, which were forwarded direct and adding 4,000 bales held over from last year, the total amount available for the next series is 140,780 bales