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NOTICE.

CHANGE OF ADDRESS.

The Editorial and Publishing departments of *The Textile Mercury* have been removed from Strutt-street, to larger premises in

CASH STREET, BLACKFRIARS, MANCHESTER,

where all communications should be addressed.

The Textile Mercury.

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LONDON OFFICE—121, NEWGATE STREET, E.C.

MR. THOMAS BIRTWISTLE'S APPOINTMENT.

As we stated last week, provided the 24th clause of the Factory Act of last year has to be enforced at all it is perhaps as well that its administration should be entrusted to one of its parents, in order that its absurdity may be fully brought home to him. This we hope will be speedily done by getting an authoritative construction of its wording from one of the higher Courts. Mr. Birtwistle, backed by the advice and legal assistance of Sir Henry James, who has accepted a permanent retainer on the behalf of the operatives, may then have an opportunity of explaining the meaning of the clause to judges who have no particular interest to serve in twisting its contorted features into some sort of resemblance to proper shape. In the meantime we may just as well disabuse the minds of the public of an erroneous impression set afloat by the London correspondent of the *Manchester Guardian*, who, in his letter published in that journal on Monday, referring to Mr. Birtwistle's appointment and the special functions he had to perform, says: "The practical knowledge which Mr. Birtwistle possesses of the weaving trade specially qualifies him for this appointment—which, I believe, will give very general satisfaction. Indeed it was recommended to Mr. Matthews, I understand, both by the employers' and operatives' associations in Lancashire." Undoubtedly Mr. Birtwistle possesses much practical knowledge of a section of the weaving trade—the grey cloth trade; less of some of the special branches; and very little probably of the woollen, worsted, silk, linen, and jute industries; but for those outside cotton he possesses no special qualification whatever. And for the cotton trade, as a correspondent whose letter appears in another column observes, many younger men, quite as well qualified, and who in other respects would not have required the regulations governing such appointments to be set aside, could have been found. We wonder, therefore, where the correspondent of our contemporary got his "understanding" from; it certainly is not accurate. We expect it arose—like the statement made by Sir Henry James to the House of Commons when the late Bill was being rushed through the House before the close of the session—in the mind of some person of strong imagination. The right hon. gentleman declared to the House that the manufacturers' associations had agreed to the Bill as it then stood; whilst at the very moment of his speaking there was within his view in the House a strong deputation of representatives from nearly all the textile industries, who were there solely with the purpose of opposing it, and Mr. Provand, M.P. for a Glasgow division, was waiting ready prepared to move an amendment to the Bill. There was not a single association of manufacturers, nor do we believe there was a single manufacturer who had so espressed his approval and was authorised to speak for another beyond himself. And yet such a declaration was made to the House, and greatly influenced the result! Outside Parliament such lively imaginings are spoken of in unparliamentary language.

THE DEPRESSED CONDITION OF BUSINESS: IS THE FANCY TRADE LEAVING MANCHESTER?

Events during the past few weeks have amply confirmed the views so frequently voiced of late regarding the depressed condition of trade in the textile manufacturing districts of the North. That such an old-established and respected concern as Hall, M'Kerrow, and Co., Limited, should find it necessary to call a meeting of creditors is, in a sense, indicative of the keenness of the struggle for existence which now prevails in the cotton trade. The liabilities in this case (exclusive of share capital) exceed £31,000, but the assets are larger still. Amongst the week's announcements of voluntary windings-up, the name of the well-known firm of Sharp, Murray and Co., occurs. We have before us also a list of the creditors of the well-known Flyde Rubber Co., the liabilities exceeding £55,000. Some of the creditors are manufacturers of tweed linings. It has been generally assumed that the waterproof trade is in an extremely flourishing condition throughout Lancashire, but it is evident from this that the statement is not susceptible of universal application. The strain upon the resources of home-trade, shipping, and manufacturing concerns has, during the past few months, been extremely severe, and a continuance of the depression for some time prevalent in the South American and Eastern markets can only be regarded with the utmost gravity. As a rule the opinion of good authorities concerning the results of the half year's operations amongst home traders is that dividends will be found smaller than those of last year. So far we have had declarations from J. F. and H. Roberts, Limited, Pawson and Co., Limited, and Devas, Routledge and Co., Limited, of 7½, 5, and 6¼ per cent. respectively. The London houses, it should be noted, had quite as bad a time of it as their opponents in the North. There is a widespread of opinion that much of the fancy business in this city has been lost owing to the competition of the Metropolis. The idea is so prevalent that it has been accepted as correct in many quarters. By the term "fancies" we include ribbons, straws, feathers, silks, laces, and other "light" goods, as distinguished from linens, flannels, blankets, and articles of a coarser or heavier description. No one has ever disputed the position of Manchester in regard to the latter: drapers in all parts of the Kingdom are unhesitatingly recognising the predominance of this city as a distributing centre. Of late years it is true that Bradford and Leeds, and, to a smaller extent, Nottingham, Birmingham, and Bristol, have increased their wholesale trade with retailers at the expense of the older and more widely-known centres. Bradford stuff houses now transact quite an extensive business, and the sale of woollen piece-goods in Manchester has fallen off greatly, owing to increased demand for ready-made clothing now largely supplied by the Barrans, Arthurs, and other mammoth Leeds concerns, and to a smaller extent by Bristol, where such firms as the Cookes have widely-extended connections. But withal the city has, on the whole, retained, if not extended, its "heavy" connection. And as to fancies, we commend the statement of a well-known London merchant the other day to the notice of our readers. Asked whether it was true that the fancy trade was gravitating to London, our informant replied in the negative:—"Whether the trade is leaving Manchester or not I cannot say," he said; "but," pointing, with a sigh, across an excellently stocked silk department, "it is not," he added, "coming here." Messrs. Reuben Spencer, Kendal, Ford, and other Manchester authorities, please note and take heart. The gentleman we have quoted is well-known and respected by all of you.

AUSTRO-HUNGARIAN EMBROIDERIES.

That finest of all textile arts, the art of embroidery, continues a somewhat lingering existence in places and amongst persons whose position places them above the necessity of considering the cost of the article produced. It is well that this should be so, otherwise the art would be likely to perish altogether, as the many excellences of results in embroidery can be wonderfully closely approached by mechanical productions, and at a tithe of the cost. Embroidery is, we hold, a pursuit that should render it exceedingly popular with ladies of ample means and refined tastes. The art is the parent of the modern art of painting, as most of the artists of early times worked to produce sketches for the embroiderers of their day. We have pleasure in drawing attention to an exhibition in London of some Austro-Hungarian embroideries of current production and of very high quality. They are hung for a short time at Mr. Martin Colnaghi's Marlborough Gallery in Pall-mall, and are perhaps the finest examples, so far as modern Europe is concerned, of what needlework can do in the decoration of a large room. They consist of a number of large panels, measuring some 12 ft. by 6 ft., on which are represented landscapes, views of the sea, architecture, peacocks, and what not, designed in needlework upon a painted foundation. This combined method is sometimes practised by Japanese artists, but not quite in the same way, so that the author may claim the credit of being almost the first to have attempted the kind of art, at all events on

such a scale. Mme. Manckiewicz (who is the wife of the Austrian Consul-General at Dresden) shews considerable power of design, and her rendering of the sea is powerful and fine. The peacocks, too, on the steps of a castle, are executed with much skill; their plumes shine as they do in nature, or in a picture by Weenix. The set of embroideries has been much admired in several exhibitions in Germany, and also in the Austro-Hungarian section of the Paris Exposition Universelle of 1889. It is now being shewn in London for the benefit of that very useful charity the Austro-Hungarian Association. Should such exhibits as these not stimulate some of our English ladies of this modern time to take up this charming pursuit?

The Continental Cotton Trade.

It would indeed have been remarkable had the Continental cotton trade not felt severely the great and long-continued depression from which the parent English trade is suffering. A circular issued at the close of the past month by Mr. Gustave Haac, of Bremen, slightly lifts the veil and shews us that it has not escaped our troubles. Mr. Haac says that according to a considerable number of advices from the most reliable sources, both spinners and manufacturers have been for a long time working without margin, and often making considerable losses. As a consequence he fears that the crisis will not pass away without serious failures, and declares that several firms are already in very strait circumstances. Having regard to the present supplies of the raw material, the dulness of trade, and the fact that the new crop is almost upon us, only a great disaster to it could justify any advance upon present rates; whilst with average conditions an important and considerable decline only can naturally be looked forward to in the early future. This simply confirms the views all along expressed in these columns.

The Position of Oldham Spinning Companies.

Our Oldham correspondent writes:—Almost all the results of the June stock-takings of Oldham spinning companies have been announced. These present a return, although far from encouraging to the investor, much more favourable than was anticipated. They have been described as 'good and bad.' For the most part, however, they are good, but here and there a bad loss has turned up. Such losses are declared by Astley, Hathershaw, New York, Ridgefield, and West End, each of which go into four figures. As to Albion loss, an explanation is required. The mill, it seems, was closed for five weeks of the half-year through a breakdown, during which period extensive repairs were undertaken, and the cost has been charged to revenue, which thus very materially swells the adverse balance. The Ridgefield directors state that 'the engines have been stopped about five weeks of the quarter,' which of course includes the three weeks' lock-out, and the loss has 'to a great extent been brought about by the series of stoppages.' The West End directors also intimate that their loss 'is accounted for by the three weeks' stoppage, £150 allowed for a bad debt, about £300 taken out of revenue for squaring-up mules and frames, and the generally unfavourable state of trade throughout the quarter.' In other instances the serious fall in values which has taken place has had to be 'bottomed,' and it is currently reported that a few, including some who have announced profits, have not yet seen the last of their higher-priced cotton. However, in spite of these drawbacks, there is every indication that the year's trade of Oldham spinning companies will come out much better than was anticipated a month ago, if we may take the results just declared as anything like a criterion of what may be expected during the remainder of the year. The following are the declared stock-takings for the end of June:—

Profits.

	Profit.	Dividend. Per Cent.	Credit. Balance.
Borough (six months)	£104	nil	(c)
Chadderton (half year)	800	5	—
Clough	84	nil	(a)
Guide Bridge	398	4	—
Harper Twist	160	nil	..
Haugh	467	5	£3,000
Hollinwood	16	nil	(d)
Ivy	197	nil	244
Mitchell Hey	1,310	8	5,440
Moss (six months)	1,068	nil	(c)
Mutual (six months)	1,415	7½	3,000
Neville	380	nil	—
Newbey	478	6½	4,203
New Ladyhouse	204	5	1,000
Oak	317	2½	54
Olive (six months)	971	nil	(d)
Parkside	570	10	2,731
Peel (six months)	1,409	10*	574
Perseverance, Milnrow	82	5	—
Rochdale	914	12½	9,635
Rose Mill	43	—	—
Royal	146	nil	348
Royton	542	6¾	4,220
Stanley	430	3½	42
Torrge Vale (six months)	970	5	30

Adverse balances: (a) £1,074. (b) £2,331. (c) £1,140. (d) £942. (e) £2,645.
* On Preference shares.

Losses.

	Loss.	Adverse Balance.
Albert	£755	£2,758
Albion (six months)	3,739	—
Astley (six months)	1,671	(b)
Cavendish	260	1,260
Dowry	212	(c)
Duke	195	(a)
Garfield	835	—
Grosvenor	39	1,802
Hathershaw	1,153	10,638
Hey	670	6,226
Honeywell	731	4,008
Hope	720	6,500
Leesbrook	488	433
Lees Union	267	2,343
Longfield	54	901
Melbourne	139	1,231
Moss Lane (six months)	989	764
Moorfield	498	3,072
New Earth	600	6,862
New York (six months)	1,170	3,335
Oldham Twist	277	7,580
Quickedge	144	3,847
Ridgefield	1,157	7,190
Sun Mill	812	12,157
West End	1,022	425
Westwood	300	—

(a) Credit balance £2,501, dividend 8 per cent. (b) Paying 8 per cent out of reserve fund. (c) Credit balance £514.

Insects and Silk.

It has generally been supposed that moths and other insects do not meddle with silk, but it was asserted some time ago by the Secretary of the Chinese Embassy at Berlin that in the Celestial Empire it was a well-known fact that moths did harm to silk as well as to other materials; and he alleged that a parcel of silk goods despatched from China to Berlin had been so badly packed that the moths had obtained access to the contents and destroyed them. A German *savant*, to whom this statement was made, was much surprised thereat, and made diligent search for corroborative evidence; but he could not discover in any work bearing on the subject the slightest scrap of information, and he has not in any way been able to clear up the mystery. Whether it is the sugar-insect, or the little creature *Lepisma saccharina*, or some insect, the larva of which finds an agreeable home in the fibres of the silk, it is at present, in his opinion, impossible to determine. Of more practical importance is the question how mischief of this kind, whatever be the exact nature of the destroyer, can be averted, or the silk be preserved from its devastations. Of course the most obvious precaution is extreme care when the silk is packed. Those concerned ought to see to it that the stuff does not contain any form of animal life which might feed upon it. The best way of ensuring this result, in the opinion of Dr. Karl Russ, the savant in question, is to iron the silk by means of an iron made as hot as is consistent with the preservation of the appearance of the fabric. Another precaution is the exposure of the silk in a suitable vessel to the action of bisulphide of carbon, care being of course taken to prevent injury to the colour. Vapour of ether and of benzine are also useful, provided the relation of either of these substances to the colouring has been ascertained previously by experiments. Then comes the packing, concerning which Dr. Russ gives the following hints. He recommends cases of zinc, or still better of tinned sheet-iron; of course they ought to be air-tight, and care ought to be taken that the stuff used in the packing paper, or any other material employed, is quite free from insect germs or the seeds of fungi. Parchment paper is pronounced especially good; the edges should be gummed down with gum to which corrosive sublimate or some other salt of quicksilver in an appropriate solution has been added. In the case of silk-stuffs that are so delicate as not to bear any of the methods mentioned for ridding them of insect germs, it is advisable to strike them for a considerable time with a flat object such as a fan. This expedient, if rightly employed, is likely to prove efficacious.

A New Source of Cotton Supply.

On Saturday last, according to a Reuter's telegram, there arrived at Marseilles, by the steamer conveying the mails from China and Japan, a cargo of 1,179 bales of cotton from Tonquin, being the first consignment of the article from that colony to France. This fact speaks very well for French enterprise, even if it has done nothing beyond collecting this material together and forwarding it to Europe. It also suggests a few important reflections. The colony-hunger in France is to some extent explained by this little fact: like Russia, France wants to make herself self-contained as far as regards providing everything she requires for her own consumption and for that of her manufacturers. This has been the constant bent of her policy as seen for ten years or more past: the steady elevation of her tariffs, the annexation of foreign lands, her sensitiveness regarding the division of Africa amongst the great powers, and her acquisition of Madagascar and Tonquin—all point in this direction. And so does the lynx-eyed manner in which she watches every movement of English policy. Like Russia and the United States, France exhibits her willingness to sell her surplus production and any specialities she can manufacture and dispose of in foreign markets, and would gladly take gold instead of goods in payment; though as yet she has not been able to gratify her wishes in this direction as fully as she desires. Whether she will ever succeed or not remains to be seen, and may be left to the future to reveal. A superficial glance at the conditions of cotton production would lead to the conclusion that opening up new cotton fields in the far East would not help her much. Such a conclusion would, however, very likely be erroneous. It is exceedingly probable that this cotton will be utilised in France in such a manner as to yield a handsome profit. Its capabilities are hardly yet known in Western countries; very likely it is closely kindred to the native cottons of China and Japan, which we venture to assert the West has not yet paid sufficient attention to. These cottons are very short-stapled, clean, and pearly white; and are also very harsh or wiry in the hand, much more so than the well-

known hard cottons of Brazil. They have hitherto been consumed at home in the domestic industries existing in the countries where they are grown. During the Cotton Famine in this country, caused by the American Civil War, when the world was ransacked to provide some material for the spindles and looms of Lancashire, some of the best qualities of these cottons from China found their way hither, and met with appreciation. When the American supply began to come again the import ceased. Treated in the native manner and by native appliances, these cottons make a loosely-compacted, bulky-looking yarn, and when woven give a thick, warm, yet, as far as weight goes, a light fabric. It is this kind of calico that is almost universally worn in China, and is the cloth that Lancashire manufacturers have hitherto quite failed to imitate. Lancashire shirtings of the better grades are articles of luxury in China; the poorer ones, heavily sized, are mainly devoted, as is well-known, to wrapping the bodies of the dead. The vast population go on weaving the native article, and with this it is not likely that we can ever compete, unless we could procure an abundant supply of this kind of cotton—which is an unlikely event. Neither do we anticipate that France will succeed any better in this respect; but we do expect that she will find other ways of utilising it in combination with other materials to produce a number of very novel effects not obtainable without it, and that these will yield a large profit for the time they may remain in fashion. France has always been noted for her readiness to experiment and adapt new textile materials to useful purposes in a far greater degree than we have ourselves. As observed some time ago in these columns, when speaking of China cotton, this crispy, short-stapled variety seems admirably adapted for mixing with wool, into which it might be worked very easily, and be made to yield remarkable effects; and it is in this or some similar guise that we anticipate it will be met with as it comes from the looms of France.

The Board of Trade Returns for June.

The Board of Trade returns for the past month again indicate a decline in the value of our foreign commerce. The total imports are valued at £32,811,854, a decrease of £4,038,270, or 10·9 per cent., and the exports of British and Irish articles at £18,070,318, a decrease of £3,364,681, or 15·6 per cent. It has to be borne in mind, however, that the past month had 25 working days, while June, 1892, contained 26, and, in addition to this, low prices have something to do with the decreased values. Among textile imports raw cotton, flax, hemp, jute, silk, and sheep's wool all shew a decline. Wool was much in excess in the earlier months, but now the figures of receipts for the year are coming back to those of 1891. This staple and cotton are both lower in price. A decrease is shewn not only in these textile raw materials, but it is apparent in the receipts of manufactured woollens. As regards the exports, all classes, except machinery and mill work, are lower in value than last year, while for the six months there is no exception. Yarns and textile fabrics shew a decreased value of £732,396, and raw materials a decrease of £250,098. Cotton yarn was not taken by the British East Indies so largely as last year; but Turkey took more. As to cotton piece-goods, generally speaking, the East has taken less, and the West Indies and countries in South America, except Venezuela, much more. France and Portugal are much below last year's level, while to Algeria the exports were only 95,400 yards compared with 2,572,300 yards. The decrease in jute piece-goods is caused by the United States having taken only 10,492,400 yards, compared with 16,668,500 yards. Linen yarn is swollen by Spain having taken 1,685,800 lb., compared with 352,700 lb. Of linen piece-goods the shipments to the West Indies account for nearly all the increase. As to machinery, the increase is due to the larger shipments to Spain, made in order to escape the heavier duties which came into force on the first of this month. Below we abstract particulars of the imports and exports of textiles, etc., for the month:—

I.—Imports of Foreign and Colonial Merchandise.

Principal Articles.		Quantities. 1892.	Quantities. 1891.
Cotton, raw	Cwt.	807,495	750,279
Flax	"	201,655	159,200
Hemp	"	160,471	151,263
Jute	Tons	30,336	9,020
Silk, raw	Lb.	180,963	53,471
Wool, sheep and lambs'	"	70,032,318	52,602,281
Woollen stuffs	Yds.	5,128,337	5,003,442

Principal Articles.	Value. 1892. £	Value. 1891. £	Increase or Decrease per cent. compared with June, 1891. Quantity.	Value.
Cotton, raw	2,235,074	1,768,200	†14·4	†25·1
" manufactures	188,408	111,449	—	*23·4
Flax	308,541	235,215	†22·0	†20·9
Hemp	315,058	196,345	*6·9	*12·6
Jute	334,160	169,138	†52·2	†49·3
Silk, raw	172,843	35,277	*68·2	*50·4
Wool, sheep and lambs'	2,355,404	2,861,859	*28·9	†21·0
Woollen stuffs	448,267	409,134	*2·4	*4·2

*Increase. †Decrease.

II.—Exports of British and Irish Produce and Manufactures.

Principal articles.		Quantities. 1892.	Quantities. 1891.
Cotton Yarn and Twist	Lb.	18,935,000	16,283,600
" Piece Goods	Yards	767,204,400	747,961,200
Jute Yarn	Lb.	3,034,400	3,073,000
" Piece Goods	Yards	24,489,100	18,125,000
Linen Yarn	Lb.	1,369,400	2,121,700
" Piece Goods	Yards	13,470,300	15,861,100
Wool, sheep and lambs'	Lb.	1,002,300	1,143,600
Woollen and Worsted Yarn	"	3,634,900	3,247,600
" Tissues, heavy and light, broad and narrow	Yards	4,609,900	4,814,800
Worsted Tissues, heavy and light, broad and narrow	"	11,905,700	11,396,200
Woollen Carpets	"	737,000	783,300
" Flannels	"	773,600	806,400
" Blankets	Pairs	92,864	70,018

Principal Articles.	Value. 1892. £	Value. 1891. £	Increase or Decrease per cent. compared with June, 1891. Quantity.	Value.
Cotton Yarn and Twist	803,889	686,609	†14·0	†20·7
" Piece Goods	3,699,803	3,499,970	†3·2	†12·3
" Other Manufactures	609,936	596,860	—	†2·7
Haberdashery	153,370	131,680	—	†14·1
Jute Yarn	30,687	36,734	*2·2	*23·9
" Piece Goods	206,256	181,839	†29·8	†11·8
Linen Yarn	83,492	111,246	*84·6	*33·3
" Piece Goods	300,018	360,330	*12·3	*16·8
Machinery and Millwork	1,400,312	1,492,814	—	*6·2
Silk Manufactures	106,836	118,160	—	*10·9
Wool, sheep and lambs'	41,321	45,603	*14·0	*10·3
Woollen and Worsted Yarn	346,964	341,610	*2·5	†1·5
Woollen Tissues, heavy, light, narrow, broad	498,307	451,683	†12·7	*9·1
Worsted Tissues, heavy, light, narrow, broad	731,932	730,788	†4·2	†1·6
Woollen Carpets	76,843	80,838	*6·2	*5·3
" Flannels	27,???	31,399	†19·0	*12·4
" Blankets	34,270	25,091	†27·4	†33·3

*Increase. †Decrease.

York Coverlets.

Of old-fashioned ordinances relating to textiles, we have already given numerous examples. They are of interest as indicating in a fairly accurate manner the methods adopted by our ancestors for the purpose of regulating trade abuses. Some of the old Acts of Parliament reveal many of the tricks of trade practised by our ancestors. There was the Act, for instance, relating to the penalties for stretching cloth—a practice which the weavers of old were very fond of, for, as we are informed in the quaint phraseology of the time, "they did unlawfully stretch the cloth upon a rack, whereby buyers were cheated." Another quaint Act is the 34 and 35 Henry VIII., chapter 10, entitled, "The Bill for the making of Coverlets at York." The preamble was as follows:—

Whereas the city of York, being one of the most ancient and greatest cities within the realm of England, afore this time hath been maintained and upholden by divers and sundry handicrafts there used, and most principally by making and weaving of coverlets and coverings for beds, and thereby a great number of the inhabitants and poor people of the said city, suburbs thereof, and other places within the county of York, have been daily set on work in spinning, carding, dyeing, weaving, and otherwise concerning the making of them, to the great commodity of the inhabitants and poor people of the said city, having thereby honest livings, and not made elsewhere in any part of the same county; (2) For the true, substantial, and perfect making whereof, many good and beneficial ordinances and orders have been devised and made, as well as for the good stuff, concerning the said coverlets and coverings, as also for the length and breadth of them, and otherwise; (3) Of the which coverings and coverlets, the best sort should and ought by the same ordinances to contain in length three yards, and in breadth two yards and a quarter at the least; (4) the second sort to contain in length three yards, and in breadth two yards; (5) and the lowest, or third, sort should contain in length two yards and a half, and in breadth one yard and three-quarters, under pain of forfeiture of the same, the one-half and moiety of the said forfeiture to be to the Mayor and Commonalty of the said city, and the other moiety to be to the wardens and company of the said handicraft of coverlet-makers.

So runs section 1. Section 2, the language of which is equally involved, we do not therefore propose re-producing here in its entirety. It appears, however, from the section, that "Sundry evil disposed persons—apprentices not expert in the same occupation," had withdrawn themselves from the city to other places in the county, and "did daily make coverlets and coverings neither of good stuff nor of good assize, length, or breadth, and for the utterance of the same use daily the craft and subtilty of hawking abroad in the country, to villages, and to men's houses, putting the same naughty ware to sale secretly, not only to the great deceit of the King's true and faithful subjects buying the said coverlets, and to the great defaming and slander of the said handicraft, but also to the impoverishing of the inhabitants of the said city, and utter decay of the same, if remedy the sooner herein be not provided." This "naughty" ware having had such a detrimental effect upon the trade of York, it was enacted that "no manner of person or persons dwelling and inhabiting within the said county of York, or nigh unto the same, should, after the feast of St. Michael the Archangel next coming, make any coverlets or coverings to be put to sale, unless such person or persons, after the said Feast, were inhabiting or dwelling within the city of York, or within the suburbs of the same, upon pain of forfeiture of every such coverlet or covering made, wrought, and put to sale contrary to the tenor of this statute, or the value thereof." Such an Act in these free and independent days would be an anachronism; and it is interesting and perhaps instructive to note the reasons which were considered sufficient in the days of good King Hal for the passing of such a prohibitive measure. The Act did not benefit the good citizens of York, which has now entirely collapsed as a textile centre owing to the competition of the "naughty" ware made by "evil disposed person" in other parts of the country.

Changes in the Lancashire Cotton Trade.

The ninth edition of Worrall's Cotton Spinners and Manufacturers' Directory—a publication which, though always excellent, seems to yearly increase in value—contains the usual tabular summaries shewing the approximate number of spindles and looms in the districts covered by the work, which, while principally embracing Lancashire, includes some towns, such as Stockport, that, though geographically in Cheshire, industrially belong to the County Palatine upon the staple industry of which they are so largely dependent. The total number of cotton mills dealt with is 1,818, containing 43,054,227 spindles, and 615,719 looms. We reproduce some of the details of which these totals are composed:—

	No. of Mills or Firms.	Spindles.	Looms.
Ashton District	37	1,984	9
Blackburn ,,	120	1,408	75
Bolton ,,	111	4,821	20
Burnley ,,	116	771	70
Bury ,,	51	792	21
Dukinfield ,,	15	683	1·3
Farnworth ,,	47	608	8.1
Leigh ,,	21	1,000	5.2
Manchester ,,	145	2,848	29·4
Middleton ,,	13	486	1·9
Mosley ,,	14	1,309	.9
Oldham ,,	241	11,280	18.7
Preston ,,	79	2,059	51·5
Rochdale ,,	97	2,014	24.6
Stalybridge ,,	21	1,224	6.9

The figures given above fully bear out the truth of our assertions made from time to time regarding the progress of Burnley as a weaving centre at the expense of Blackburn. The number of looms in the latter centre only exceeds by about 4 per cent. those at work in Burnley. These figures are sufficiently startling if heed be taken of the fact that a comparatively short time ago the disproportion was much greater in favour of Blackburn. This is one striking fact which the figures supplied by Mr. Worrall teach. But another and not less important matter is that since 1882 there have only been four additions to the number of firms in the cotton trade in the district indicated above. Further examination reveals the additional circumstance that while concerns have been practically stationary in this respect, there had been enormous additions to the productive capacity of the district, over 4,600,000 spindles and 130,400 looms having been set at work during the ten years over which this comparative survey extends. These facts can be explained by the statement that larger mills with more modern machinery have driven many old-established concerns from the field. It was only the other day that the stock and mill stores of Messrs. Ratcliffe and Sons, Ltd., Rochdale, were bought by Messrs. Rylands and Sons for £30,000. The business was established in 1840 by Mr. Joshua Ratcliffe, and until the death of the founder, which occurred fifteen years ago, it was recognised as the largest and most influential spinning company in the kingdom, the goods manufactured being only those for which the founder had half a century ago earned his reputation; and even in the present day many drapers will have none but Ratcliffe's brand. The main cause of the company's closing its mills and retiring from the trade is the depression in the cotton trade.

COMPETITION WITH THE LANCASHIRE COTTON TRADE.

A WARNING TO LANCASHIRE OPERATIVES.

The Textile Mercury, ever since its foundation, has repeatedly drawn attention to the rapidity with which the staple industry of Lancashire is being carried abroad and planted in other lands. Only those who make this subject a matter of special observation have more than a very vague impression of the degree to which this movement has already extended, and the accelerated rapidity with which it is being carried on. A full comprehension of its magnitude would satisfy the minds of many who are now puzzled as to the origin of the wretched trade that has prevailed for a long time past, and still continues to afflict the Lancashire industry. Tariffs to right of us, tariffs to left of us, behind and in front of us, account for a great deal in the way of exclusion from trade with nearly every country in Europe and North America; and in each of these steps have been taken to introduce the Lancashire system of cotton spinning and manufacturing. And in other lands with which we have trade, where protective tariffs have not been imposed against us, and which constitute our chief markets, such as India, China, and Japan, our industry has been successfully planted; and in two instances, India and Japan, has taken good root, and is flourishing luxuriantly. The industrial and economic conditions of these countries are highly suitable for its growth: the raw material required can be and is grown in considerable abundance at their doors, and in many instances water is available as a motive power. But the greatest advantage of all is that there is abundance of fine, intelligent, docile, and extremely suitable labour, which needs only comparatively little training, organisation, and special cultivation, to make it the equal of the best in Lancashire; for it should be borne in mind that the Lancashire operatives are in only a very equivocal sense skilled workpeople. Owing to the great improvements that our leading spinning machinists and loom makers have made in all machines during the past 20 or 25 years, the factor of personal skill in the attendants has been a diminishing requirement. Every machine has been so perfected that bad work cannot now be made from any one, unless it be deliberately put out of order—so perfectly automatic in their actions have they all been made. What is wanted is constant attention and quickness of movement. Putting a bobbin in a creel, or piecing up a dropped thread, requires very little skill indeed, and certainly could be performed with as much dexterity by a Hindoo, a Chinaman, or Japanese, as by a Lancashire man, and the task would be gladly undertaken by any of them at very greatly reduced cost compared to that of the Lancashire man. In view of the attitude assumed by the trades-unionists of Lancashire towards their employers and the industry by which they live, we don't see why it should not speedily become a matter of earnest and serious consideration with those who have invested their capital in Lancashire mills, whether it cannot be withdrawn therefrom and transferred to fresh fields and pastures new; or, as an alternative, whether Hindoos, Chinese, or Japanese cannot be imported hither to tend our machinery in place of the insubordinate and rebellious labour now employed. This is a question worth careful consideration, and both card-room hands, minders, and weavers may rely upon it that unless they quickly change their attitude towards the interests whence they derive their bread and butter, it will be considered. They have shut their eyes already far too long against the facts of the case, as shewn in the rapidly migrating trade by which they live. Those who own money will not continue to invest it under conditions where, as the best result, it will only return one per cent., and where it runs such enormously great chances of being lost altogether.

England possesses no natural or inherent property in the cotton or any other textile industry. In this country we neither grow the cotton nor consume the calico when it is made. The raw material is produced in foreign lands, and must be purchased from the growers and brought over to this country at considerable cost, and be handled several times before it can be laid down at the doors of our South Lancashire mills in its raw state. Much money must also be spent upon it before it is transformed into yarn and delivered to the weaving sheds of East Lancashire; and again, when it has arrived there, heavy wages must be paid for weaving it into cloth. Even then, very often a further large expenditure must be incurred in putting it through finishing processes before it can be transported abroad by the merchant at a further considerable expenditure. These are very obvious truths, and ought to have become familiar even to a trades-unionist leader But there are others, not quite so apparent, that we may be pardoned for bringing a little more fully to the notice of these gentry and the people they so frightfully mislead. It is hardly known to them that our merchants often export goods to the Eastern and other distant markets at no profit at all, and even occasionally at a small positive loss. They do this when they require to import the productions of those countries into these islands, and there is a little economy in paying for their purchases in Lancashire yarns and calicoes, rather than in sending out gold. The profit is made upon the return cargo. Transactions of this class, which are very numerous, are carefully reckoned out in the merchant's office and tabulated, and the small profit, the *nil*, or the loss, placed opposite each. When the profits have accumulated a little, the buyer will accept a small loss upon a transaction in cotton goods, which will enable him to get another through on the other side. When we speak of a loss, we mean about a halfpenny per piece on a shirting, or a farthing upon a jaconet, etc. Upon such small trifles does business often depend. For the operatives therefore to increase the cost of production by any means whatever, and especially by wastefulness in the handling of the material, say in weft, coloured beading yarn, gold plate; absenting themselves unnecessarily from work, causing the looms to remain idle when the engine is working; not attending at the proper times, or in any way whatever depreciating the value or increasing the cost of production by the amount of this halfpenny or farthing per piece, is to impose an insuperable obstacle to their employer obtaining an order that might keep his looms going for a month.

We have recently shewn, by detailed statements of the progress of the Bombay and Japanese cotton trades, that this great and prospectively severe competition in the cotton trade is no bogey of an alarmist's imagination, but is a stern fact. Further: more than one cotton mill is either near starting or projected in China; and a Lancashire man is just now nearing the shores of Australia, engaged to superintend its first plantation in Queensland—where he will grow his cotton in fields adjacent to the mill. To disregard these signs of the times can only be looked upon as an evidence of the densest fatuity on the part of those interested; whilst to go on harassing employer, by the petty persecutions in which the operatives have for several years past indulged, can but hasten the time when the further conduct of the trade will simply be impossible. And it will need very little more of the conduct to which we refer to bring this about. A trade that has already been reduced to making a return of only one per cent. per annum upon the hundred millions of capital invested, is already standing upon the very edge of destruction. The enormous losses recently revealed by the joint-stock companies, owing to the decline of cotton values, is a powerful illustration of the terrible contingencies under which the trade is conducted, and which no skill can eliminate. Under such losses, it would not take long to exhaust the floating capital necessary for working it, and when this is gone, that loss will not be a strong temptation to outsiders to bring in more. If more cannot be found, the fixed capital represented by mills, sheds, engines, boilers, and machinery becomes utterly valueless, a dead loss in fact. We may ask then what would Lancashire be without its cotton trade? And what would England be without Lancashire? We leave our readers to formulate their own replies to these questions. We would specially commend them to the consideration of the most intelligent of our working classes, in order that they may so impress their fellows as

to lead them to control in some degree the wild sentiments of ignorant hatred they are apt to indulge and express towards their employers, as such conduct is fraught with far more important and disastrous results than any of which they have as yet formed a conception.

Bleaching, Dyeing, Printing, etc.

ALIZARINE: A STUDY IN CHEMISTRY.—III.

(*Continued from Page 457, Vol. VI.*)

The next group of oxyanthraquinones to be considered are those which contain three groups of hydroxyl and therefore are called the trioxy, or, more accurately, the trihydroxy-anthraquinones. If the student will consider the possible ways in which these three hydroxyl groups may be arranged, with regard first to the two benzene rings, and then to the positions in the rings, he will find that a large number of isomers are possible, and that he can place them all in one ring and form two isomers in this way, not having regard to the idea that the two rings may have different functions in forming such isomers; then he can arrange them in the two rings, two in one and one in the other. In this way a number are possible exceeding those of the dihydroxy-anthraquinones. Of the large number of possible trioxy compounds that theory says are quite capable of existing, only a few are at present known, so that there is room for further research in this series of chemical compounds. Of those that are known some possess dyeing properties, and are very useful, while others have no such properties, and are of no use, from a technical point of view; still it may be possible that in the future they may be the source of dye-stuffs of no small amount of importance.

Anthragallol is the first to be noticed. In this body all the hydroxyl groups are in one benzene ring, one in the *alpha* position, the others in the *beta* position. Anthragallol possesses dyeing properties, forming the commercial dye-stuff known as anthracene brown, which dyes wool and silk that has been mordanted with chrome a fine brown of a red tone. On alumina-mordanted fibres it also dyes brown — a feature that distinguishes it from some of the other isomeric bodies. It is a most valuable dye-stuff, as the colours it yields are quite fast and very durable.

Purpurin is also a trihydroxy-anthraquinone, and, like the last, has all three hydroxyl groups in one benzene ring, two in the *alpha* and one in the *beta* position. Purpurin occurs naturally in the madder root along with alizarine, but not to the same extent. It is prepared from anthracene by a process similar to that used for alizarine, from which it can also be obtained by oxidation. Purpurin differs very much from anthragallol in appearance and dyeing properties. The first is a brown paste, dyeing browns. Purpurin is a reddish yellow paste, dyeing alumina-mordanted fibres fine scarlet to red shades, which have not the blue tone of the alizarin reds. Then it gives coloured lakes with lead acetate and alum, different from the lakes of either alizarine or its other allies.

Anthrapurpurin, an isomer of purpurin, has the three hydroxyl groups distributed between the two benzene rings, two in one and one in the other; the latter in the *beta* position, the others in both positions. In appearance anthrapurpurine is not unlike alizarin. Commercially it forms most of the "alizarine for reds," as it dyes alumina-mordanted fibres an almost neutral red without some of the blue tone of alizarin.

Flavopurpurine is also a trihydroxyanthraquinone, having the hydroxyl groups distributed as in anthrapurpurine, but in slightly different positions. Flavopurpurine forms the great bulk of the alizarine for scarlets of commerce, as it dyes alumina-mordanted fibres fiery red shades having a yellow tone. Both anthra- and flavo-purpurin are present in commercial alizarin of all shades: the alizarine blue shade contains but little, that for reds a fair proportion, while that for scarlets or yellow shade alizarine consists almost entirely of these two bodies; and as this brand is perhaps the most valuable commercially it is seen that these two dye-stuffs are of equal, if not more importance than alizarin itself, and very much more than purpurin.

Hydroxychrysazin is another trihydroxy-anthraquinone. This body possesses weak dyeing properties, dyeing reds rather deeper than purpurin; hitherto, however, it has not met with any application in the dyeing industry. Although not used as a dye, nevertheless it forms the source for producing the dye-stuff known as alizarin Bordeaux, into which it is converted by the action of sulphuric acid and manganese.

Oxyanthrarufin is the last of the trioxy-anthraquinones that are known to exist. It has at present no technical use, although it will dye mordanted fibres in the same way as alizarin; quite possibly it may become of use in the preparation of dye-stuffs, as the last compound has done; for by subjecting it to the action of oxidising agents it can be converted into compounds, some of which may prove of use in dyeing and calico-printing.

(*To be concluded.*)

TESTING OF INDIGO-DYED GOODS.

To learn whether a piece of blue-dyed goods has been dyed with a pure indigo blue, the following tests may be applied:—(1) Boil the goods with water, which should not become coloured in any way. (2) Boil with alcohol, which should not extract any colour; if any aniline dye-stuff has been used in the dyeing of the goods the alcohol will become coloured. (3) Boil the goods with a solution of borax; a pure indigo imparts no colour to it. If the borax solution be coloured red, then logwood has been used in the dyeing of the goods; while if it be coloured blue, then an aniline blue, an indigo extract, has been used. (4) Boiling with weak soda does not affect indigo-dyed goods, but Prussian blue is turned brown, and alkali blue is discharged. If the goods are subsequently passed into an acid bath, then the colour is restored in each case.

PREVENTION OF TENDERING IN DISCHARGE PRINTING ON INDIGO BLUES.

As is well known, the white discharge colour for vat-indigo-dyed cotton goods is made with potassium bichromate, soda, and dextrine. This is printed on the goods, which are then passed through a bath of five gallons water, 10lb. sulphuric acid, and 3lb. oxalic acid, for one minute, at a temperature of 120° F. They are next well washed in water, and then treated in a bath of soda ash for an half-hour, rinsed again, and dried. By this operation those parts on which the discharge colour has been printed are tendered to the extent of 50% of their strength. By the action of the chromic acid, formed by the action of the sulphuric acid on the chromate of potash, the cotton is converted into oxycellulose, which is more or less affected by the alkaline bath through which it is subsequently passed, and thus the fabric is tendered. Many remedies have been suggested for this trouble, says A. Kielmeyer in the *Leipzig Monatsschrift*: as, for instance, to pad the blue-dyed pieces before printing in a bath of silicate of soda 2°—4° Bé.

Albert Scheurer, however, has recently shewn that the only effect of the silicate is to prevent the discharge colour from penetrating so far into the substance of the cloth as it would otherwise do, and this same effect can be obtained by making the colour thicker. Scheurer proposes the addition of manganese chloride or tartar emetic to the acid bath. Koechlin proposes to add two parts of glycerine for every ten parts of the bath, the result being reported good. Brandt has for the last four years used an addition of 10% of alcohol, thereby preventing the formation of oxycellulose in the bath. To ascertain the effect of this addition, a piece of cloth was dyed and printed, and then divided into swatches; these were then passed through acid baths, containing various quantities (from 2 to 10%) of alcohol. They were then dyed in methylene blue, and soaped to set off the blue-dyed portions against the whites of the printed parts. A swatch was also passed through an acid bath containing no alcohol; this, on dyeing in methylene blue, shewed on the printed portions a deep blue, and the fabric was tendered; the other test swatches where alcohol was added to the bath did not come out so strongly dyed, and where 10% had been used the whites were scarcely tinted on dyeing with the methylene blue, while the strength of the fibre was scarcely affected. Either the pure or denatured alcohol or spirits of wine may be used, and the results are much better than when glycerine is employed. The only question is whether the extra cost compensates for the advantage gained in not affecting the strength of the cloth.

DOUBLE DYEING OF SILK GOODS.

By working in a particular manner some curious effects in the double dyeing of silk goods may be obtained. First—by preparing the warp yarns with mordants of tin, iron, alumina or chrome, and weaving this prepared yarn with a weft of unprepared material, then dyeing the piece with mordant dye-stuffs like alizarine, the warp is dyed but not the weft, which may either be left colourless or be dyed another colour in the ordinary way. By mordanting both warp and weft, but with different mordants, and dyeing with alizarine colours, a double dyeing is obtained. Thus, supposing the yarns have been mordanted with alumina and chrome and dyed in alizarine, then the one set of yarns will be dyed dark red and the other bright red; or if fustic is used, then the alumina-mordanted fibres will be dyed a bright yellow, while the chrome-mordanted fibre is dyed an olive yellow. In this way some fine shot effects can be obtained.

Again, if one set of yarns be mordanted for blacks and then woven with unmordanted yarn, and the piece be dyed in a logwood bath, the mordanted yarn is dyed black; while the untreated fibre is not dyed, and can be, if required, dyed in some other colour. Another mode of producing the same result is to prepare one set of the yarns with acetate of soda, aluminate of soda, chalk, and caustic soda, then dye with oxidation aniline black in the ordinary way. The treated yarn remains colourless, while the rest of the material is dyed black.

Mixed silk fabrics, made of wool and silk or cotton and silk, can be subjected to the same processes. For instance, if the wool be mordanted in the yarn with chrome, and then woven with unprepared silk, and the piece be dyed in a bath of alizarine, the wool is dyed red while the silk is not affected; or if the wool be prepared with chrome, and the silk with alumina, and the fabric dyed with alizarine, then the wool would be dyed a Bordeaux red and the silk a bright red. If fustic be used, shades of yellow are obtained as above noticed. With silk-cotton goods, the cotton could be mordanted with alumina, and the piece, after weaving, dyed in a bath of alizarine, when a red is obtained on the cotton; then the silk might be dyed in a bath, say of acid green, when a fabric dyed in red and green is obtained, shewing a fine shot effect.

The variety of effects obtainable on silk fabrics of all kinds, by working on the principle here laid down of mordanting one part of the yarns used in weaving the fabric, is very great, and any intelligent dyer can readily apply it. It is scarcely necessary to point out that other methods of dyeing mixed silk fabrics are available. Descriptions of such processes will be found in the text books on dyeing, particularly in the new work on Silk Dyeing by G. H. Hurst.

PREPARED cutch is made by taking 75 lb. cutch, 3 lb. alum, 1 lb. bluestone, and 3 pints of water, heating together for three hours, then pouring into a mould. By adding 3 to 4 lb. sanders wood a redder shade is obtained.

A SUBSTITUTE for gum arabic is prepared by taking 60 pints Irish moss and steeping in 1,200 pints of cold water until the moss has swollen. All insoluble particles are then filtered off, and the liquor is evaporated down after 6 parts of carbonate of potash have been added, until a little taken out adheres to a piece of cold glass. It is strained, and silicate of soda, sugar candy, and glycerine are added.

SOME NEW INDIGO COMPOUNDS. — When indigo is acted on with a mixture of zinc dust and acetic acid the indigo is converted into white indigo and rendered soluble, the solution being available, if necessary, for dyeing. If a mixture of zinc dust, sodium acetate, and acetic anhydride be used, a new compound is obtained, known as diacetyl indigo white—a product forming needle crystals; and if these be heated with acetic acid and a drop of nitric acid a fine red colour reaction is obtained, which, however, is but momentary, as oxidation soon occurs. As indigo white yields indigo on oxidation, so acetyl indigo white yields acetyl indigo in the form of crimson red scaly crystals. By the action of alkalis the acetyl indigo is decomposed into ordinary indigo. In strong sulphuric acid this new body dissolves with a green colour, turning blue on heating, and the ordinary indigo sulphonic acid (the indigo extract of commerce) is obtained. Acetyl indigo is at present of no technical use, but it is of scientific interest as likely to throw some light on the constitution of indigo.

MARKING-OFF IN ALIZARINE-PRINTED GOODS. This is a source of trouble to the calico printer, who very much dislikes the production of the red stains on the whites in printing alizarine colours on cloth. With a view to ascertain the cause and the conditions under which these stains are produced, M. E. Jacquet has made a number of experiments. He caused the printed goods to be sent through the steaming-box both horizontally and vertically, with the result that those sent through horizontally were more badly stained than those sent through vertically, the cause probably being that the alizarine was carried forward by the steam. Alizarine printed on oiled cloth marks off less than that printed on unoiled cloth. An acid condition of the printing colour, which may be caused by the use of the sulphates of alumina or chrome, also causes much marking-off, partly because of the slow fixation of the colour as a colour lake on the fibre. On the other hand, this is necessary if a fast colour is required, the fastness being in inverse ratio to the speed of formation of the colour lake. To obtain further information a pattern was printed from a heavy blotch roller with an alizarine red, and the printed material was then steamed in contact with (1) white cloth, (2) oiled cloth, (3) cloth mordanted with alumina, and (4) cloth oiled and mordanted with alumina. After being soaped there was no stain on the white cloth; there was a slight stain on the oiled cloth; and a very bad stain on the other cloth. A design having much white ground printed and steamed stained badly, but most on the alumina prepared cloth, from which the inference may be drawn that it is the alumina on the whites that causes the marking-off. The same colour printed by hand and roller on unprepared cloth shewed no stain on the former, but the latter was stained, the roller being sufficiently damp to give the cloth the small amount of alumina required to fix the alizarine, which sublimes more or less from the printed parts of the cloth. The stains, it should be remembered, are always on the face side of the cloth, and never on the back, which would be the case if they were caused by the steaming. The remedy is to add some citric acid to the oil used in preparing the cloth.

Letters from our Readers.

MR. BIRTWISTLE'S APPOINTMENT.

(TO THE EDITOR OF THE *The Textile Mercury.*)

SIR,—Perhaps it is hardly necessary to draw your attention to the appointment of Mr. Birtwistle as "Examiner of Particulars," ranking as a Factory Inspector under the Factory Act of 1891. Surely when the Act was passed it was never contemplated that the Government would take the position of the Trades' Unions, and help to force the hand of the manufacturer by giving a trade-union secretary an official appointment and a handsome salary to go from mill to mill taking particulars of the goods woven. Even the operatives themselves must feel some agreeable surprise. Had such an appointment been at all necessary, it might have been made from the overflowing ranks of applicants, hundreds in number, who would not enter the service with prejudice on one side or the other, and who moreover could comply with the regulations of age, examination, etc. One feels some curiosity as to whether Mr. Birtwistle has complied with all these. Certainly he is many years above the limit of age. It is certainly a surprise to his friends, both on the side of the masters and operatives, who have always admired his thoroughly "jannock" character, to find that he has lent himself to such an arrangement.—Yours, etc.

July 2nd, 1892. TEXTILE.

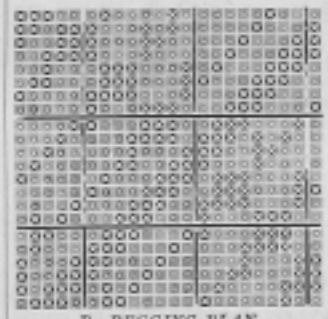
GERMAN manufacturers are complaining of the dishonesty of some firms in Holland. That country, once so sound commercially, is said now to harbour many doubtful elements, and the Fatherland is declared to be their favourite field of operations.

Designing.

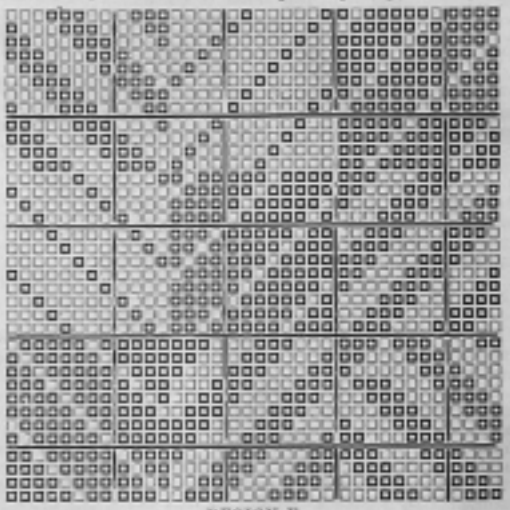
NEW DESIGNS.

FANCY COTTON GOODS.

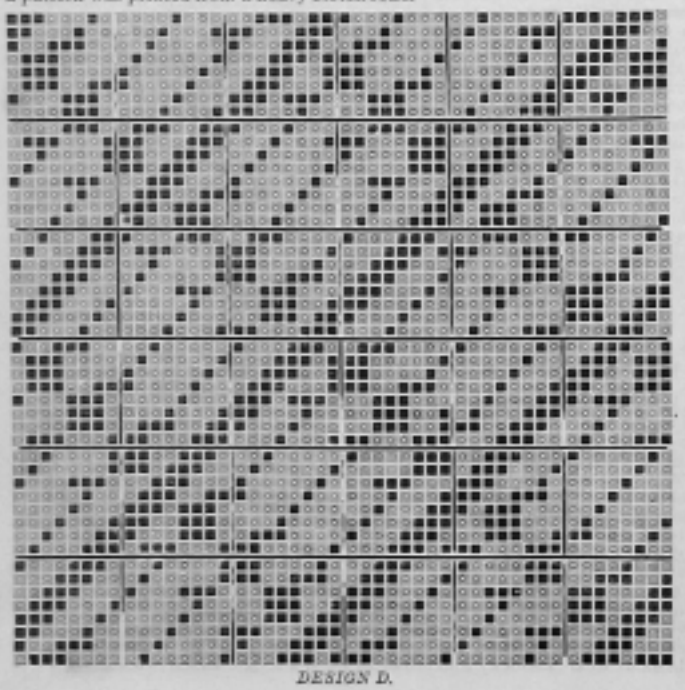
Designs D and *F* are given for the purpose of producing cotton suitings in solid woven colours or piece-dyed, presenting soft,



D: PEGGING PLAN.



DESIGN E.



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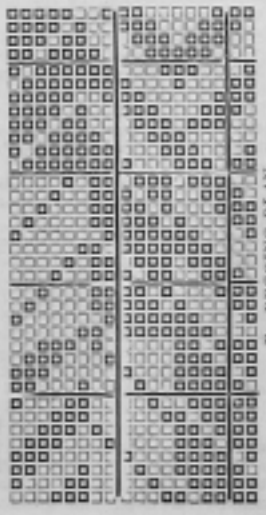

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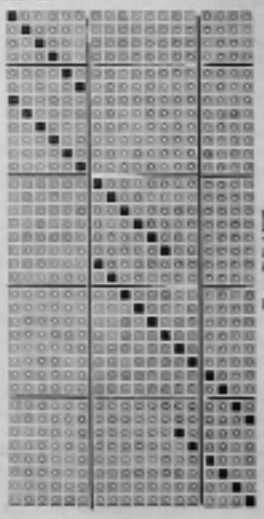


E: DRAFT.

pleasing and attractive fabrics in buffs, slates, drabs, deep blues, red fawn, mauve, terra-cotta, dark gas-green, myrtle, light and mid lilac, etc. Good cream tints, or white, well bleached, would be found very suitable for ladies' jackets, blouses, and vestings. The two designs, if properly constructed, will give a texture possessing capital features for out-door wear and exercise.

Design D has a straight-over draft on 22 shafts, 22 to the round. We have no desire to dictate to the manufacturer what amount of material shall be used in reproducing these designs, which are given simply as suggestive of what may be effected in the formation of a fabric. The hints which we offer are to set forth ideas concerning style. We consider, however, that the following particulars will go far in producing a good, serviceable cloth: 32 dents per inch, two in a dent, 20's cotton twist for warp and weft, drawn in two in a heald and two in a shed of weft, 90 picks per inch. To obviate a very extensive round, the bobbin weft might be wound on double. Of course heavier or lighter cloths may easily be obtained by altering the counts of weft and quantity of picks. There is a greater power of producing a fine compact texture than would be the case in ordinary weaves. Considering that no colour is employed by way of variation, the ornamentation depending principally upon the nature of the weaves, these designs will be found useful and the fabrications pleasing to the eye.

Design E, same particulars as *D*, so far as counts of warp, weft, and reed: on 18 shafts, 36 end draft, 36 to the round may be woven grey, then bleached and piece-dyed in any of the fashionable colours; good beetle finish would be desirable.

FIGURED WOOLLEN CLOTH.

Design 1 is an example of a type of woollen cloth capable of much development. Designers as a rule are afraid of using long flush weaves with anything like ordinary woollen setts, but a little experience in this direction will prove that, provided suitable yarns be selected, some really exquisite effects may be produced—mostly, however, suitable for mantles, fancy waistcoatings, and carriage rugs. Evidently a very open, loose fabric will be produced in the loom, but if a good quality of yarn be employed, and a large amount of shrinkage allowed for in the finishing, a well-covered, firm cloth results, in which the colours are beautifully blended. A twist warp as follows, with solid weft, will shew up the configuration without too strong a contrast:—

Warp.

All 22 sk. black and white twist woollen 10's reed 4's.

Weft.

All 22 sk. solid black soft spun woollen; 40 picks per inch.

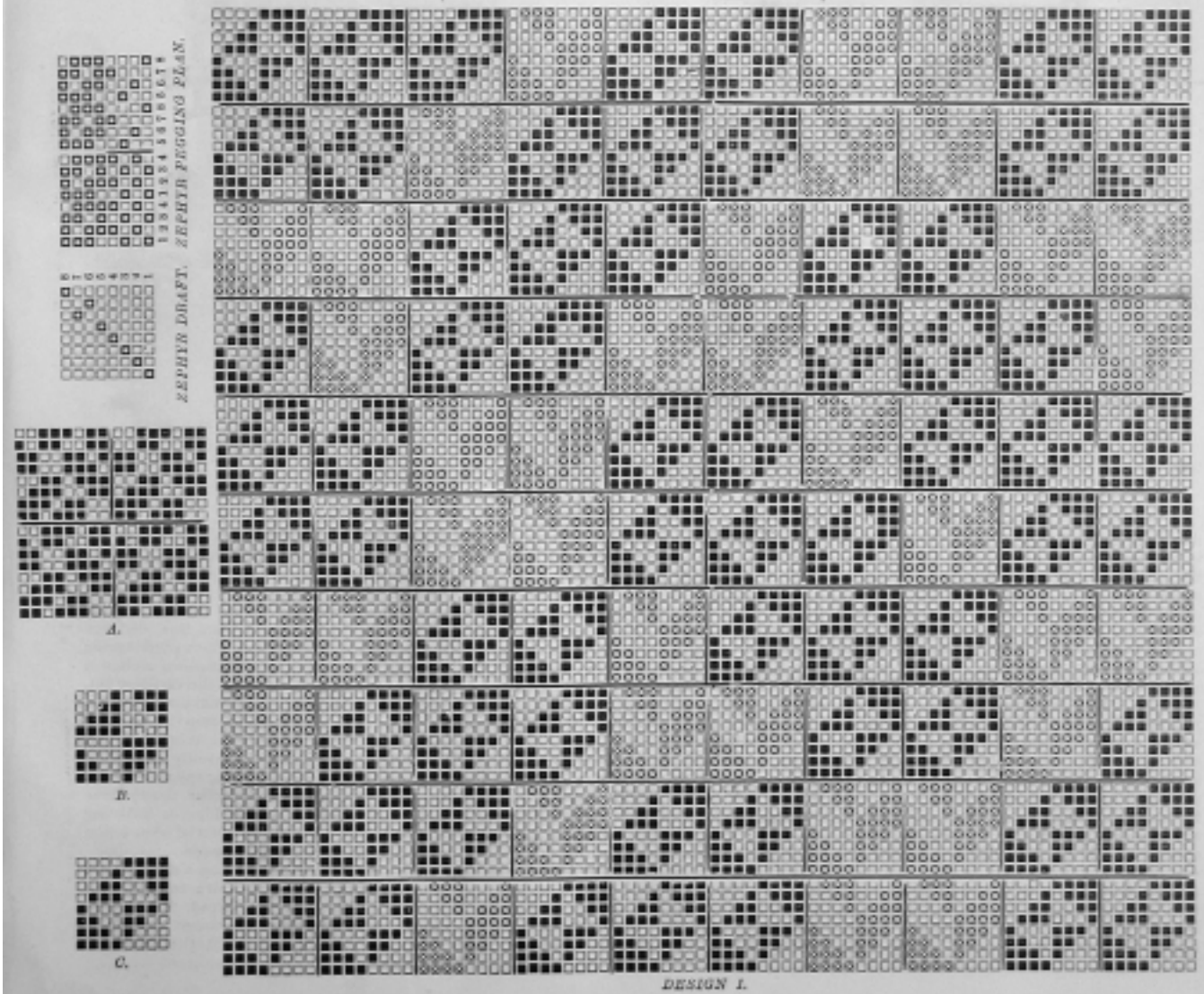
A striped warp may be used, but the best result is undoubtedly obtained with a distinct difference between warp and weft.

The full figure is constructed as shewn in *Design A*, repeating on 64 threads and 64 picks. The reversed portions may be considerably lengthened if desirable. It will further be observed that the weaves cut throughout, this, of course, depending on the weaves combined. For example, *Design B* was first tried as the fancy weave, but would not cut; thus *Design C*, (practically the same effect), was inserted and cut all round. Such little matters are of much importance.

Many effective drafted patterns may be constructed on a similar scheme, to the same setts.

ZEPHYR GINGHAM.

A gingham check, 40 dents per inch, 2 in a dent for the plain ground, 4 in a dent for satin stripe; 36's warp yarn; 80 picks per inch of 36's weft, 8 shafts (see the numbers on draft and pegging plan, by which the pattern given may easily be followed): 12 white, 4 dark blue, 12 white, 4 dark blue, 12 white, 4 dark blue, 36 white, 4 dark blue, 12 white, 4 dark blue, 12 white, 4 dark blue, 12 white=132 threads, all drawn on the shafts numbered 1, 2, 3, 4; then 48 dark blue on 1, 2, 3, 4 shafts; 8 white, 4 in a dent on 5, 6, 7, 8 shafts; 30 white, two in a dent on 1, 2, 3, 4 shafts; 8 white, 4 in a dent on 5, 6, 7, 8 shafts; 48 dark blue, two in a dent on 1, 2, 3, 4 shafts, and repeat from first 12 of white. The weft pattern is the same, only the 8's of white in the crossing must go on the treads in the pegging plan marked 5, 6, 7, 8. Good calender finish.



DESIGN 1.

Machinery and Appliances.

IMPORTANT IMPROVEMENTS IN THE MULE.

MAKERS: MESSRS. ASA LEES & CO., LIMITED, OLDHAM

It might be almost expected to strike every person not very intimately and perfectly acquainted with the construction of the cotton spinning mule, after the progress that has been recorded during the past fifteen or twenty years, that there could not be room for further great improvements in this machine. To conclude thus, however, would imply an imperfect knowledge of this, perhaps the most beautiful, ingenious, and complex piece of mechanism that the whole range of industrial mechanics offers to the consideration of the student. It is in the complexity of its structure, its numerous parts, the variety of their functions, and the necessity of their harmonious interaction, that the inventor finds scope for continued improvement. The mule of to-day, as turned out of our leading establishments, is a marvel of perfection when contrasted with what it was thirty years ago. And yet notwithstanding this, the greatest efforts continue to be made to carry what is approximately perfect nearer to absolute perfection. The mechanical anatomist and synthetist, as the inventor may be called, is privileged to watch how each part performs its function, and to take down and improve any one that may display the slightest shortcoming, to add anything that will amend and cast away any superfluous parts; whilst the spinner, impelled by ever increasing competition and the necessity of reducing the cost and increasing the amount of production, impels him on the path of improvement. Owing to the action of these influences, we are precluded from expecting that our task of recording further advances will soon come to an end.

We have much pleasure in drawing the attention of our readers to the large number of improvements, new or recent, that have been incorporated in the new or "1892" pattern of the mule as made by Messrs. Asa Lees & Co., Limited, Oldham, which we have had the pleasure of inspecting, and which in the samples already commercially working have proved highly advantageous. Most of these have been patented by the firm, and the following brief description of each will afford our practical readers an insight into their nature and value:—

1ST.—PATENT ROPE TIGHTENING MOTION: This is their well-known arrangement of a tightening pulley adjusted between the drawing-out and taking-in bands, that by one operation tightens both at the same time, and to an equal extent, thus ensuring uniform tension upon the rope. It consists of an intermediate adjustable carrier pulley which permits the taking-in band to be all in one length, instead of in two separate bands as in the ordinary arrangement; and it also, on account of the long distance through which the pulley may be moved, dispenses with removal of the bands for shortening for a much longer period, which has to be done so frequently in cases where only a small amount of adjustment can be obtained by a depressing pulley.

2ND.—STRAP-HASTENING MOTION: This is a lever connected to the sliding block on the copping rail, and as the rail drops the lever is correspondingly lifted: thus as the cop increases in length it gradually accelerates the movement of the strap to the fast pulley.

3RD.—PATENT SPRING CLIP ANTI-SNARLING MOTION: This is a click held in position by a weighted spring instead of in the usual manner by a weight. It slightly retards the locking of the front spindle catch-box, thus enabling the bottom rollers to be started a little later than the commencement of the outward draw of the carriage. The weighted spring grips the sliding half of the catch-box and turns it backward by gravity every draw. The troublesome laces and weights upon which dependence has hitherto been placed are thus dispensed with. The advantage of the new arrangement is that it obviates the possibility of the displacement or disconnection of the weight—a not infrequent occurrence—and the resultant defective work. It has a little frame attached, by means of which it can be accurately adjusted, so that the drag that is put upon the yarn can be accurately adjusted to requirement; or it can be arranged to act automatically from the copping rail, which is the preferable way.

4TH.—PATENT DRAG WHEEL AND DRAWBOX LOCKING MOTION: In this case the inventor has dispensed with the ordinary drag wheel, because of its liability to jump out of gear. It is substituted by a pair of catch boxes, which are locked in gear by a new patented locking motion, which operates during the first 3" of the outward traverse of the carriage. After the carriage has moved out this distance they unlock automatically. The weaker spring now used in connection with the drag motion is tightened sufficiently to draw the carriage out, but the occurrence of any obstruction would cause the boxes to open and so stop its outward movement, and prevent the breakages and accidents that otherwise frequently occur. In the event of an operative being caught between the outgoing carriage and a pillar, the machine would stop before killing him or inflicting serious injury. Any other material obstruction would similarly result in stoppage.

5TH.—NEW PATENT CLIP FOR CHECK BAND: Managers of spinning rooms are familiar with the great waste of checkband that occurs, owing to wear rendering them too short. The wear generally occurs at the knot, and

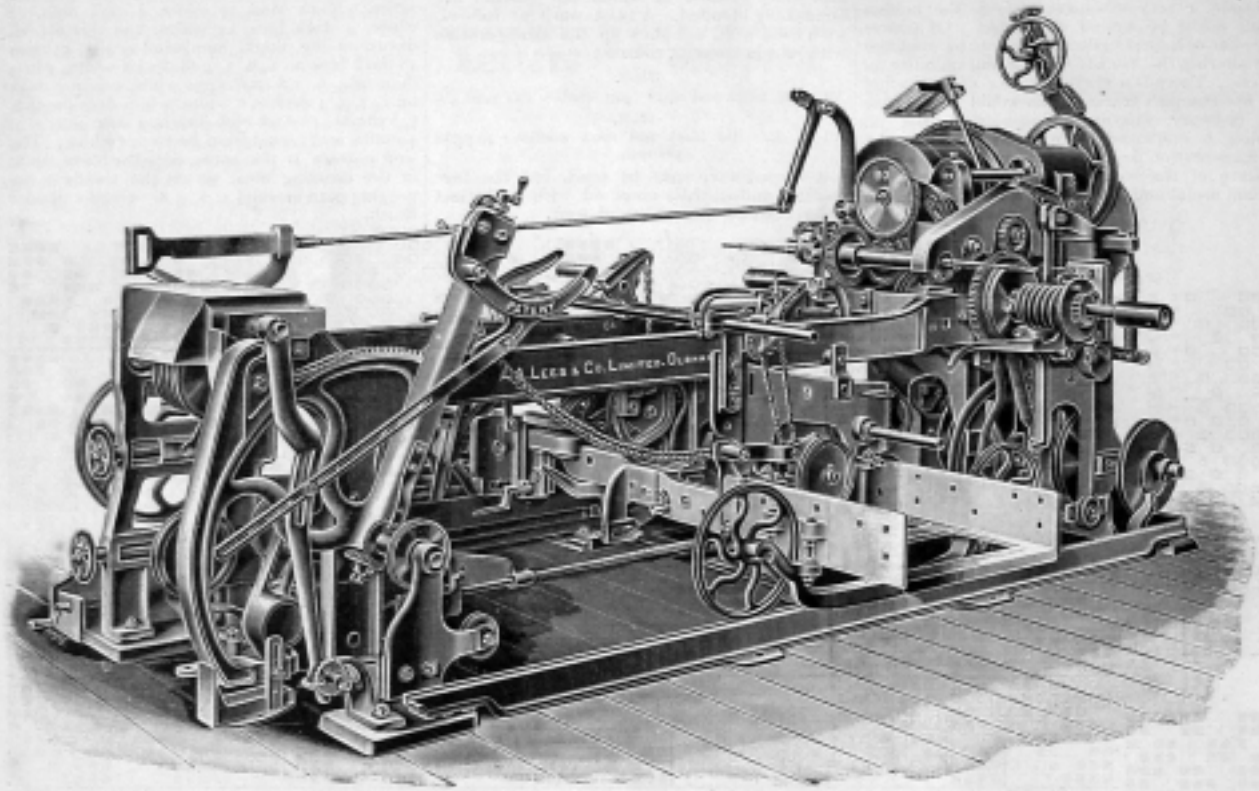


FIG. 1. FIRST FRONT VIEW OF IMPROVED HEAD-STOCK.—MESSRS. ASA LEES AND CO., LIMITED, OLDHAM.

breakage renders useless the remainder of the band, because knots in its length are not permissible. This improvement permits the provision of a yard or two of spare band, which practically secures to a single band a life of two years instead of the short one now so general. It consists of a clip constructed in halves and fitted into a frame, which, as well as the clip, is conical in form. The greater the pull upon it and the firmer is the hold. When the end attached to the scroll wears away it can be replaced by drawing upon the spare band through the patent clip. The value of the improvement in an economical sense will be obvious.

6TH.—TAYLOR'S PATENT OPEN BOLSTERS.—This is a simple yet valuable improvement, as with this form of bolster spindles will run a month without oiling, can be run at a very appreciably higher speed, and are more easily kept cool than the closed ones. They are kept constantly lubricated through the open spaces by means of a cloth saturated with oil. Result: Economy of oil and greater production.

7TH.—TAYLOR'S PATENT SPINDLE STEPS.—The spindle feet are placed and run in a trough of oil, which is covered to keep out the dust. The advantages of diminishing friction in economising power and reducing wear and tear will be obvious without comment.

8TH.—PATENT STRAP-RELIEVING MOTION.—This arrangement can be set to pull the strap from the fast pulley from ⅛th to 12" before the cam changes. Combined with it is a Treadle Strap Pulling-off Motion. This is a treadle independent of the one used for taking-in. Its function is to stop the mule when the carriage is coming out, which it does whilst the strap is on the fast pulley. It enables the attendants to clean and oil the loose pulleys on the counter-shaft while the shafting is working.

9TH.—INTERLOCKING OF THE DRAWING-OUT, BACKING-OFF, AND TAKING-IN MOTIONS: This is an improved method of connecting these important motions, so that only one can be in operation at a time.

10TH.—PATENT DUPLEX DRIVING MOTION: The advantages of this arrangement are that it affords two gripping edges of the straps, diminishes slipping, gives more uniform driving, and admits of the usual changes being made in half the ordinary time required to perform them, each strap having to travel only half the distance of one strap of double the width.

11TH.—STRAP-HASTENING MOTION: This appliance pushes the strap upon the fast pulley just before the cam makes its change. The spindles are thus started a little earlier, thereby sensibly increasing the production.

12TH.—IMPROVED CLICK-LOCKING MOTION: This is an arrangement that puts the click in gear a little in advance of the carriage commencing its outward run.

13TH.—IMPROVED AUTOMATIC BACKING-OFF CHAIN TIGHTENING MOTION: The backing-off chain tightening is automatic, being worked from the copping motion: the chain is only tight just previous to the backing-off, and as soon as the carriage moves in the chain is released to allow of the free rise of the fallers. This arrangement is actuated from the copping motion, and admits of more accurate adjustment and action than the usual arrangements.

14TH.—AN IMPROVED ARRANGEMENT FOR CHANGING SPEED WHEELS: In this new arrangement the pinion is made into a changing place, it being now placed outside the rim pedestal, and thus easy of access. The speed wheel is now placed quite in front of the gearing, and thus is much more quickly and easily changed.

15TH.—DRAWING-OUT CATCH BOXES, INSTEAD OF LIFTING THE DRAG-WHEEL: In the common arrangement the wheels involved in it, after disconnecting, always gear again at the same tooth. This causes such wear that after having been in service for a comparatively short time they produce snarls and frequently break. This improvement obviates all the difficulty.

16TH.—IMPROVED DOUBLE-ACTION TIGHTENING FRAME FOR SCROLL BANDS: This arrangement tightens the band for both scrolls at once. This is accomplished by employing one band connecting both scrolls, and passing over a tension pulley mounted inside the carriage square. By drawing this pulley to the front both bands are tightened at once.

17TH.—IMPROVED TIN ROLLER BEARINGS AND ARRANGEMENTS FOR OILING: The length of these bearings have been increased to double the diameter of the tin-roller shaft. This gives easier and steadier running than before, and diminishes wear and tear. There is an improved arrangement for oiling, which consists of a conductor extending from the front of the carriage to the bearing. The oiling is therefore done from the carriage front, the conductor delivering the oil to the bearing. The lubricating can therefore be done whilst the mule is at work, but as an additional safeguard the bearings are also supplied with tallow cups.

18TH.—IMPROVED ARRANGEMENT OF RIM-BAND: In this arrangement every band is level and parallel, and the bottom pulley is arranged to be self-adjusting, falling by gravitation every time the band becomes slack at the commencement of a stretch or draw, when the weight is first thrown upon it. More even working and less risk of bands flying off are the advantages gained.

19TH.—AUTOMATIC COP-BOTTOM GOVERNING MOTION: There is an ancient maxim, the truth of which is universally recognised, affirming that if you want a thing doing well you must do it yourself. This has long been transferred to the domain of mechanics, in which it stands

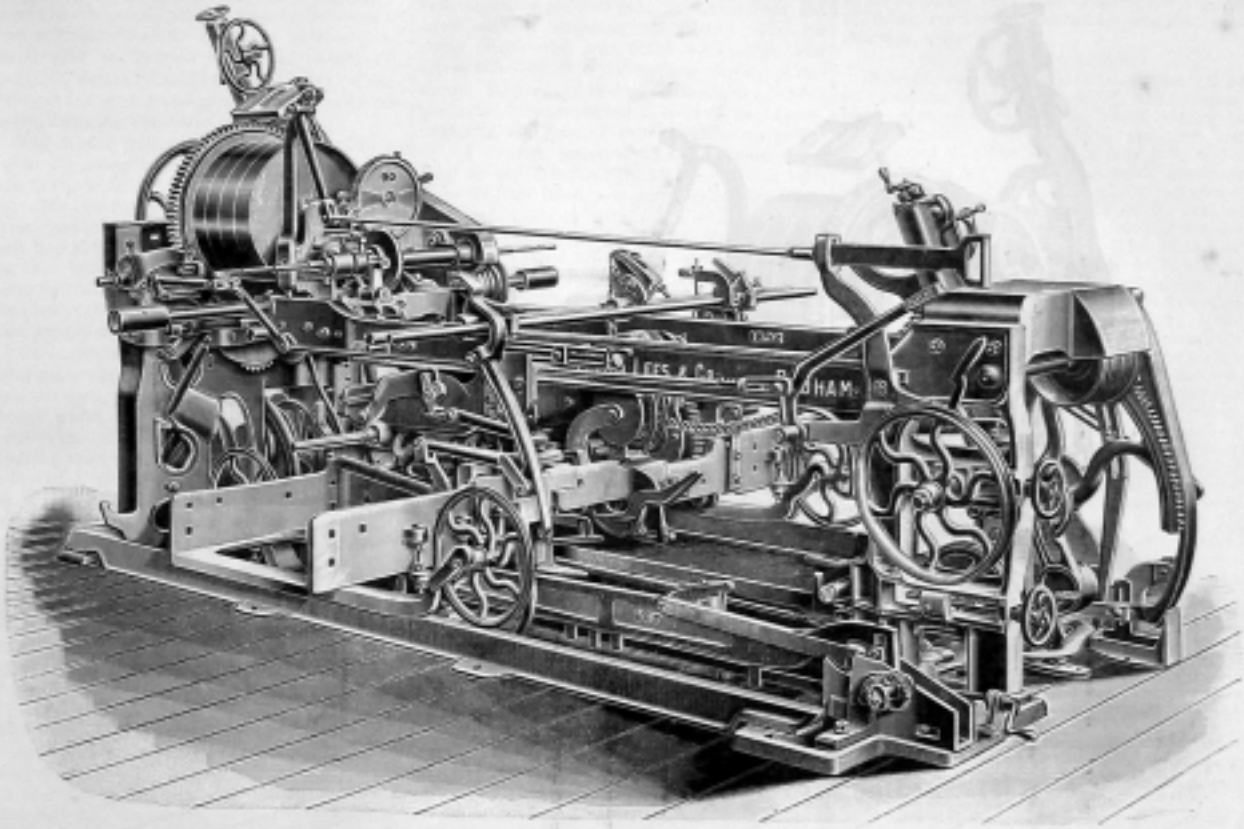


FIG. 2. SECOND FRONT VIEW OF IMPROVED HEAD STOCK.—MESSRS. ASA LEES AND CO., LIMITED, OLDHAM.

substantially as follows: that if you want good work from a machine, you must make it do everything automatically. As long as the formation of the cop bottom was left in charge of the minder, it was exceedingly liable to be faulty, thereby entailing great waste, especially in weft cops, where the bottoms could only rarely be woven down to a low point, and still more rarely could they be woven quite off. This improvement is to secure the automatic formation and government of the construction and size of the cop bottom, whereby the percentage of waste is reduced considerably. It is a simplification of all previous arrangements, and consists of a quadrant attached to the faller finger, which gears into a wheel driving a scroll, to the end of which the ordinary shortening motion chain is attached. The arrangement can be adjusted to make any size of cop bottom, after which it needs no further attention, performing its work in the same manner until some further alteration is required.

20TH.—YARN EASING MOTION: The practical observer, when watching the operations of mules, quickly notes the fact that the most breakages of the threads occur in the changes of the action of the mule, say at the end of the winding process, the commencement of the new stretch or draw, and the backing-off and the commencement of the winding. The breakages occur through the difficulty of maintaining a uniform tension of the threads under the considerable range of action of the various parts during these changes. This appliance is to ease the yarn, especially when backing-off, and so to prevent the frequent breakages that originate in this change. It has also another important advantage: it builds a firmer and harder cop, thereby enabling more yarn to be put upon it, and giving more weight in a doffing. These points will be appreciated.

21ST.—PATENT SELF-ACTING NOSING MOTION: This is the new and ingenious arrangement that we have already described in our issue of February 13th last. We may briefly repeat its salient points. These are that it adjusts the winding at the nose afresh every draw. As the cop is being formed, the shaper is advanced every draw, and pushes foeward one end of the horizontal lever which passes across the headstock. The opposite end is thus drawn backward. Upon its extremity is a crook in which is enclosed the bottom of a vertical lever, to which is attached an adjustable connecting rod from the nosing lever. Through this connection the revolution of the spindle is uniformly accelerated, and at such a rate as accurately to compensate for its diminishing diameter, thus building up a firm, sound nose throughout the length of the cop. This invention will be highly appreciated, especially amongst weft spinners, as it will tend very greatly to prevent the breakages of the cops in the shuttle during weaving, and the waste that frequently arises from entanglement of the yarn at the nose of the cop.

22ND.—THE PATENT FULL COP STOPPING MOTION: This arrangement can be set to stop the mule at doffing time when a given number of draws have been made, thus ensuring all cops having same length of yarn on, and checking the counts if the weights of each doffing are compared.

In briefly summarising the preceding we may say that the makers in constructing this mule have carefully considered the urgent requirements of the trade in the way of obtaining great production. This, of course, can only be obtained from high speeds and great length of mules, and to obtain these two requisites demands the highest perfection of construction in the headstock. The headstock we have described has been specially constructed to meet these requirements, and has been simplified and strengthened, permitting higher speeds with better spinning, fewer breakages, and, where the mules are made of increased length, diminishing cost of production. It is more conveniently arranged for making changes, and a greater range of counts can be spun with fewer change-wheels. The latter are increased in size, which renders them easier to drive and gives more accurate results, as the addition or diminution of a tooth makes a slighter alteration than when small ones are used. The liability to irregularity of twist arising from working with slack rim bands has been overcome, by which more regularity in the strength of the yarn is assured.

This mule can be made to work entirely automatically, the governing, nosing, and anti-smarling motions being made self-acting, so that they are not dependent upon the attention of the minder; and another stops it automatically at doffing time. By a patented arrangement it is made impossible for two motions to be in gear at the same time, thus reducing the liability to breakdowns. There is less risk of fire, because all bearings are of extra length, and are made of phosphor bronze. All pulleys are balanced. The tin rollers are specially arranged for oiling when at work, and all tin rollers are coupled together and balanced in complete sets before leaving the works. The tin roller bearings are fixed in self-adjusting steps, which are provided with stops and lock nuts. The special self-lubricating spindle steps and bolsters are introduced when desired. All the

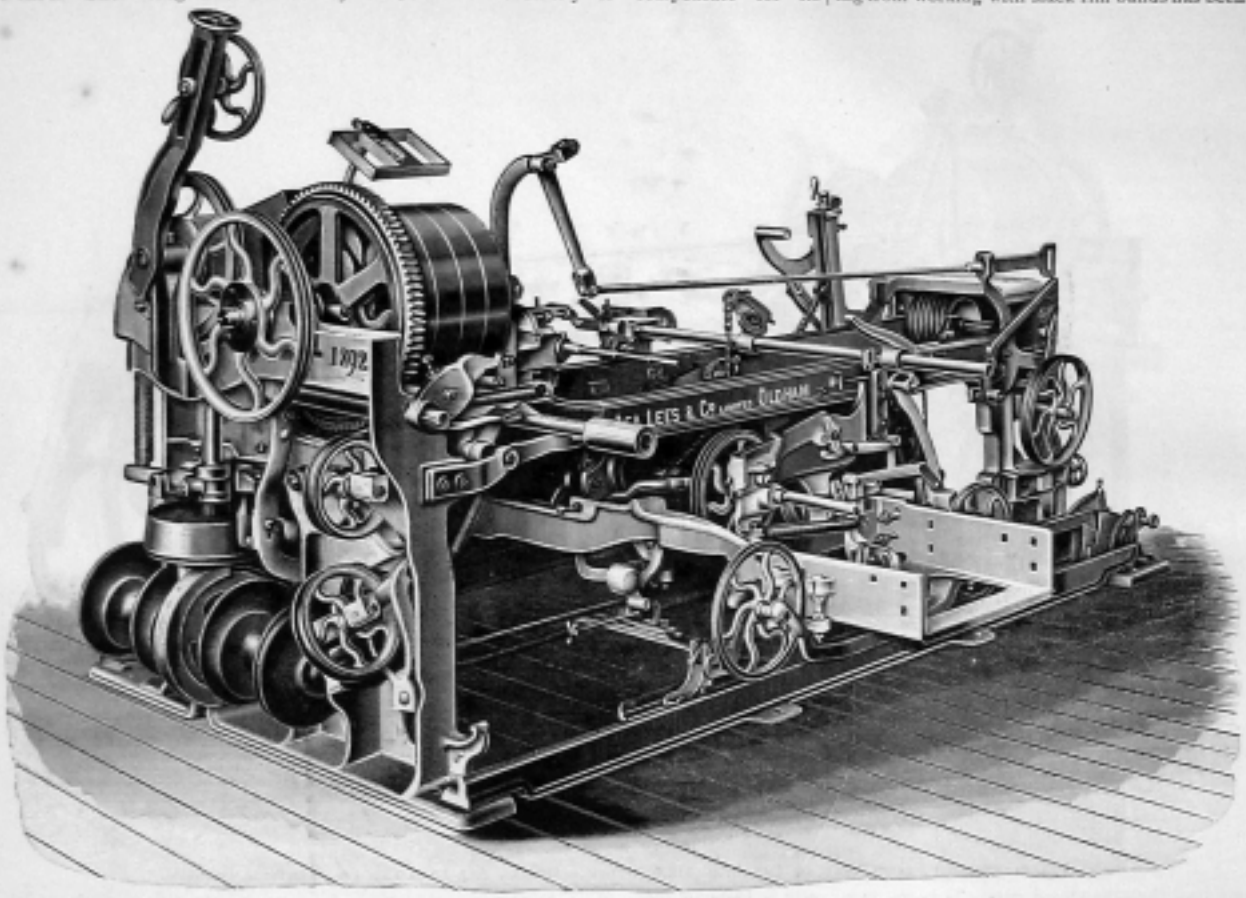


FIG. 3. BACK VIEW OF IMPROVED HEAD-STOCK.—MESSRS. ASA LEES AND CO., LIMITED, OLDHAM.

parts of this mule are made on the duplicate system, and are, consequently, interchangeable, and can be applied without filing or fitting. The carriages are made of very strong and carefully selected seasoned timber, fitted with diagonal rods of large diameter, and constructed on an improved system. The carriages of long mules are boarded underneath with 1 in. timber, fixed with screws instead of nails. The bottom fluted rollers are of the firm's special make, and can be case-hardened if desired, either all over or in necks only.

The headstock is built from entirely new models, but is similar in design to the mules made by the firm for the past ten years, the success of which has been abundantly proved. The framing has been strengthened throughout, and ensures freedom from vibration with mules of even 2,000 spindles each. The back part is made in one piece, all the planing is done at one setting, and all the boring at another; and each part is finished by special machinery, ensuring accuracy, and exact similarity. Every bracket is tongued and grooved into the framework, reducing the strain on the bolts.

The driving pulleys on rim shaft are 18 in. to 20 in. diameter, and 4 in. to 6 in. wide, according to the length of the mules. The rim shafts are 1¾ in. diameter and are case-hardened all over, and fitted with two lock nuts to prevent any lateral movement. A very important feature is that every shaft which requires a key is countersunk, so that one half of the key is embedded in the shaft, and the slipping of keys on the flat is impossible.

The improved arrangement of speed-wheel gearing, in which the change-wheel (speed wheel) is a driven spur wheel instead of being a driving bevel wheel, is retained, but the new speed wheel has a range of from 50 to 120 teeth, instead of 18 to 36 teeth as in the old plan, and the wheel increases in size as the counts go finer and the twist required is increased. This arrangement enables the twist to be more accurately regulated, as each tooth produces a smaller change. The rim pinion is now also a changeable wheel, and being placed outside the bearing it can be readily changed without disturbing the rim shaft. In mills where wide ranges of counts are spun this will be found a great advantage. The backing-off friction cone is 22 in. diameter. The taking-in friction is 12 in. in diameter and is firmly mounted on a case hardened shaft.

Any shaft in the headstock can be taken out without disturbing any other shaft. The scroll shaft has three bearings, all cast to the framing, and is so arranged that it cannot be strained even under sudden and excessive pressure. The "Mendoza" or drag lever has been dispensed with, on account of its liability after running some length of time to produce snarls, through the wheels always gearing in the same place. In lieu of the old arrangement, a catch box of large diameter is fixed on the back-shaft. Drag change wheels up to 150 teeth can now be used. The back shafts are 1¾in. diameter, faller shafts 1¾in. diameter, and counter faller shafts 1 in. diameter, and for fine spinning mules the latter are mounted on anti-friction bowls.

The shafts in the driving apparatus are 2in. diameter and run in long bearings. All bearings in connection with rim band also are bushed with phosphor bronze and provided with separate oil holes and tallow cups. All band pulleys in the headstock are balanced, and all pulleys on the rim shaft are turned inside and outside to ensure perfect running.

In this mule the cam-shaft, which is undoubtedly the best and safest method of making the changes, has been retained, as in any mule without cam-shaft the different changes can be easily upset, thereby causing bad spinning and inferior yarn. The particular pattern of cam used in this mule is the result of careful tests extending over a long period on counts from 4's to 140's. It is absolutely correct at all stages, and is so constructed that the wear and tear has been reduced to a minimum. Independent driving of bottom rollers, in middle of each half, can be applied to long mules. This arrangement enables the bottom rollers in long mules to be driven with as little torsion as in short mules.

The tin rollers are coupled together at the works the full length of the mule, and are perfectly balanced and tested by being run at a much quicker speed than will ever be required in actual work. The bearings run in self-adjusting steps, allowing the tin roller to be free. These bearings are fitted with oil holes and tallow cups, and can be oiled from the front without stopping the mule. The tin roller steps are also fitted with stops and adjustable screws to prevent any moving of the same. In place of two scroll bands only one is used, this being attached to both of the taking-in scrolls, and passing over a tightening pulley in the square, actuated by a tightening screw fixed to the front of the square, so that both sides of the band are exactly of the same tension.

The rim band pulleys are so arranged that the bands cannot rub or fray on the sides of the pulleys; the bottom pulley falls by gravity if the band is too slack, which prevents the band from slipping off. Two, three, or four grooved rims can be used with tin roller pulleys 10 in. to 14 in. diameter. If required the tin roller pulleys and click wheels can be made in halves to facilitate changing.

The treadle for stopping the mule when going in is fitted with a safety catch, a very important arrangement when the piecers are cleaning whilst the shafting and straps are going. The click locking motion is worked from the holding-out catch rod, and is put in gear before the carriage commences to move. An assistant taking-in scroll connected with a ratchet drum on back-shaft is usually applied, and is especially advantageous in long mules. Travelling scavengers can be applied if desired for cleaning both carriages and roller beams.

When required for fine spinning, these mules are supplied with all the requisite extras usually required.

This mule is also made with side driving if required to suit mills where the driving shaft runs parallel with the length of the room. A large number of mules with side driving have lately been made, for which this form offers special advantages for low rooms, on account of the extra length of down straps which can be used by placing the driving apparatus at a greater distance from the rim shaft and thus getting a larger down strap without coming in contact with the creel or any part of the headstock.

We need only further add that in its general construction this mule is everything that can be desired, and well calculated to sustain the high reputation that the firm long ago acquired and has steadily maintained. The makers are prepared to erect mules containing 1,600 spindles and upwards with the firmest assurance that in practical working they will give the highest satisfaction, at a spindle speed of more than 12,000 revolutions per minute.

Should any further information be desired, the firm will be pleased to afford it on application as above.

THE suspension of Messrs. William Bell and Co., merchants, of Bombay, is announced in the *Bombay Gazette*. Mr. Bell has been well and favourably known in Calcutta and Bombay for the last 25 years, and much sympathy is felt for him. The liabilities are roughly estimated at Rs. 2,50,000; the assets and outstandings being about Rs. 5,000.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

BOSTON, JUNE 29TH.

AN IMAGINARY STAMPEDE.

According to the *Textile Record*, there is a regular stampede on the part of linen mill owners in "England, Ireland, Scotland, and Wales," to this side of the Atlantic. The assertion is grotesquely untrue. In the first place, as your readers know, Wales does not possess any linen factories; and in the second place, outside of Barnsley and Leeds, there are practically none in England. In any case, there has been no exodus whatever to this side, and, as far as I have been able to trace, not a single manufacturer has transferred his machinery to this side of the Atlantic.

HOSIERY AND LACE NOTES.

Difficulties are said to have been experienced by Chemnitz houses in regard to the interpretation of those clauses of the Tariff relating to woollen goods. For instance, they do not understand whether wool hosiery falls under the provision for "knit fabrics made wholly or in part of wool," in paragraph 391, or "articles of wearing apparel made wholly or in part of wool," in paragraph 396, the rates under the two being widely different. The Board of General Appraisers has decided in favour of the knit fabrics classification, sustaining the importer; but appeal has been taken from this decision, and the matter is still pending. Until it is definitely settled by a judicial opinion from the United States Court of Appeals, the higher rate, under paragraph 396, is being collected, and both the importer and the foreign consignor are greatly embarrassed in their transactions. There is no such difficulty about imports of cotton hosiery, the duty upon which is definitely fixed. The situation is one which causes equal embarrassment to Nottingham and Leicester firms, and to those of other British hosiery centres.

Charles A. Brown and Co., Worth Street, New York, have added a foreign hosiery department, which is in charge of Mr. S. S. Carpenter who is well-known in the importing trade.

Lace curtains, comprising Nottinghams, Irish points, Swiss tambours and Brussels in new and handsome designs, are being turned out by Lawson Bros., Nottingham, N.Y.

IMPORTS OF FOREIGN SILKS AT NEW YORK.

The imports of foreign silk manufactures at the port of New York for the year ending December 31st, 1891, compared with the previous two years, according to official returns as furnished by the Silk Association of America, were as follows (thousands omitted):

Articles.	1891.	1890.	1889.
Silk piece goods	$12,126	$14,303	$11,318
Satins.....	371	391	475
Crapes	73	137	129
Pongees.....	158	22	27
Plushes	500	2,017	3,602
Velvets	3,257	2,946	1,744
Ribbons.....	1,579	1,991	1,671
Laces.....	2,746	3,064	3,382
Shawls	128	198	189
Gloves	246	408	344
Cravats	153	117	93
Handkerchiefs	879	199	101
Hose	190	375	336
Threads and yarns	858	713	380
Braids and bindings.....	1,209	1,214	2,479
Silk and worsted	618	1,620	1,577
Silk and cotton.....	5,491	8,756	6,007
Silk and linen	49	41	13
Totals	$30,599	$38,515	$33,897

The returns here presented shew a great decrease in nearly all articles of silk manufacture, except pongees, handkerchiefs, velvets, and threads and yarns, which have increased.

SHORT RATIONS HERE AND ABROAD.

The following curious letter has been addressed to the *World* of New York by Mr. Theodore J. Werner, of Newark, N.J.:—

Gen. Geo. A. Sheridan is quoted as saying in a letter written from Manchester, England, that he had "never

seen a darky family in Louisiana sit down to a meal so poor as he had discovered in some of the hovels of the working men in England."

He said "these poor people are glad to have a stew and dry bread with tea, coffee, or beer."

Gen. Sheridan need not have gone to England to see that, and if he had gone to any of the high protection countries on the Continent he could have seen worse. Not only that, he could have found thousands in New York and hundreds here in Newark among the tariff-protected factory workers that would be glad of plenty of stew, dry bread, tea, coffee, or beer every meal.

The protection papers, including, I am sorry to say, as clean and respectable a paper as the *Tribune*, continually give instances where the McKinley Bill has pauperised or thrown out of work our brothers across the sea, as, for instance, the button-makers of Austria and Birmingham, or the silk-weavers of Macclesfield. They gloat over the misery of their fellow-men, and infer from it that this infernal, unchristian system is a benefit to American working men in proportion to the misery it inflicts on others—that it benefits us to have our customers made poor or thrown out of work.

Thank God the American workmen are fast repudiating this miscalled "American" system.

The chief feature about this expression of opinion is its candour. One rarely finds so many frank admissions proceeding from Americans as those contained in this document.

PERSONAL ITEMS.

Mr. Marshall Field, of Marshall Field and Company, Chicago, sailed for Europe on Wednesday by the *Majestic*. He will travel with his family in Great Britain and Switzerland. Mr. W. Schramm sailed by the same steamer with Mr. Field, and Messrs. John and William Sloane were also conveyed eastwards by the White Star Liner. Mr. Robert Hoare, of John Pullman and Co., the well-known New York handkerchief importers, has returned to head-quarters.

THE WORLD'S FAIR.

Director General Davis has advised Chief Executive Officer McNaughton that the allotment of space will begin about July 1st.

Baron de Vialar, M. Dubuisson and M. Henri Matle, the three delegates from France to the Columbian Exposition, leaves for home to-day.

FALL RIVER.

In Fall River there are about 50,000 looms, which turn out about 300,000 pieces of cloth each week. Each cut is supposed to contain 45 yards. If cloth should advance in price one-eighth of a cent a yard, 13,500,000 yards, the product of 50,000 looms in a week, would fetch $16,875. The weekly wages in the city amount to $154,505. A 10 per cent. advance would be $15,450, or about equal to the price made if cloth went up one-eighth a yard. This virtually means that if cloth advanced, the manufacturers could afford to give a 10 per cent. advance and still go on making the same profit as they are doing now. At the present time and for the past four years weavers have made $1.05 a week off a print cloth loom. It is well known that no weaver can run over eight looms, and many find it difficult to run six. On fancy goods the pay is much more, but even then it is said that it is under $10 a week on an average. A strong argument, which the members of the Weavers' Association are using for an advance, is the fact that the employers wanted to cut them down last October when cloth was down so low. The help reason that if they thought of reducing wages in bad times they should give to the working class a little of the benefit of the prosperity they are now enjoying; that it would be better for all hands to have an advance given voluntarily and not compulsorily. The reports of the cloth market have been carefully looked over, and the following figures have been tabulated: In 1888 the highest cloth sold was for 4 cents, the lowest 3⅜. The highest price paid for cotton was 10¼, the lowest 9 11-16. In 1889: Highest for cloth, 4 1-16 cents; lowest 3¼; highest for cotton, 11⅛; lowest 9⅜. In 1890: Highest for cloth, 3 9-16; lowest, 3; highest for cotton, 12⅛; lowest, 9 3-16. In 1891: Highest for cloth, 3 1-16; lowest, 2 13-86; highest for cotton, 10 11-16; lowest, 7⅛. In 1892: Highest for cloth, 3⅛; lowest, 2-16; highest for cotton, 7 15-16; lowest, 6 11-16. The report for the year 1892, so far, gives a startling contrast to previous years. Cotton has been bought as low as 6 11-16, while the highest amount paid is 7 15-16.

A rumour is current to the effect that an English woollen manufacturer contemplates opening a factory in this country.

RE-APPRAISEMENTS.

The following re-appraisements have been made recently:—

Woollen cloth and wool flannel, from Tootal Broadhurst Lee Company, Limited, Manchester—55-6", jet-black coatings, all wool, entered at 2s. 6d., advanced to 2s. 10d. per yard; less 1-33; discount, 3 per cent.; 30", tennis flannel, "Lime," etc., entered at 8¾d., advanced to 9⅝d. per yard; 30", tennis flannel, Lime, entered at 8⅝d., advanced to 10d. per yard; 30", tennis flannel, Lard, etc., entered at 10d., advanced 11⅝d. per yard; discount, 3 per cent.; add cases, etc.

Cotton yarn, from Sir Jacob Behrens and Sons, Manchester, entered at Boston—20-pound warp x reel S H 60-2 W, Crest ticket, entered at 12⅛ per pound, advanced by addition of amount of 2 per cent. commission, deducted on entry.

Silk wearing apparel and wool wearing apparel, from E. Louvet and Co., Paris—539, costume silk and wool, entered at 80, advanced to 85 francs each; 457, costume silk and wool, entered at 70, advanced to 75 francs each; 23,513, costume silk and wool, entered at 100, advanced to 110 francs each; 430, costume silk and wool, entered at 100, advanced to 110 francs each; 550, costume silk and wool, entered at 75 francs, and 4,885, costume silk and wool, entered at 78 francs; no advance on either; discount, 5 per cent.

Worsted dress goods, from Chas. Dupont and Co., Paris—Cachmire ecosse noir, 96 C-M., qual. 16, entered at 1·24, advanced to 1·32 francs; do., 96 C-M., qual 17, entered at 1·32, advanced to 1·41 francs; do., 96 C-M., qual. 18, entered at 1·40, advanced to 1·50 francs; do., 97 C-M., qual. 19, entered at 1·48, advanced to 1·59 francs; do., 97 C-M., qual 20, entered at 1·56, advanced to 1·68 francs; do., 96 C-M., qual. 14, entered at 1·08, advanced to 1·12 francs; do., 116 C-M., qual 12 x, entered at 1·07, advanced to 1·11 francs; do., 116 C-M., qual. 11 x, entered at 99, advanced to 1·03½ francs; do., 116 C-M., qual. 15 x, entered at 1·31, advanced to 1·41 francs; do., 116 C-M., qual. 16 x, entered at 1·39, advanced to 1·51 francs; do., 116 C-M., qual 17 x, entered at 1·47, advanced to 1·61 francs; do., 116 C-M., qual. 18 x, entered at 1·55, advanced to 1·70 francs; do., 118 C-M., qual. 19 x, entered at 1·63, advanced to 1·79 francs; do., 118 C-M., qual. 20 x, entered at 1·71, advanced to 1·88 francs; do. and coul., 96 C-M., qual. 12, entered at ·92, advanced to ·94 francs; Cachmire ecosse coul., 96 C-M., qual. 10, entered at ·77, advanced to ·81 francs; do., 96 C-M., qual. 13, entered at 1, advanced to 1·04 francs; Cachmire ecosse noir, 96 C-M., qual 11, entered at ·82, advanced to ·85 francs—all per metre; discount, 5 per cent.; cases and packing included.

Judge Blodgett, of Chicago, has sustained the Collector in assessing a duty of 60 per cent. on hemstitched handkerchiefs, imported by Wilson Brothers. The importers claimed the goods should be entered as manufactures of flax at 35 per cent.

In an appeal taken by Schleishinger and Mayer, the Court sustained the Collector in assessing cotton d'oyleys, tidies, and pillow shams as laces dutiable at 60 per cent. instead of 40 per cent. as claimed by the importers. Crocheted tidies the Court decided were not laces and they were admitted at the lower rate of duty.

PLUSH.

A *Dry Goods Chronicle* reporter is informed by Mr. Dagner, of C. A. Auffmordt and Co.'s, New York, that they have plenty of plush orders, and are working full swing. Prices are rather unsatisfactory, but they expect that the more the season advances the better able they will be to raise them. The demand seems to be tending more and more to better goods. "That's just what we want, as we don't care to manufacture trashy plushes."

Questioned as to the ground for anticipating higher prices he added: "All those old English stocks of really high quality that were sent here in such quantities in anticipation of the provisions of the McKinley Bill, have at last been worked up; so buyers will have to come into the market and purchase goods of domestic manufacture so far as the finer grades are concerned."

"Our orders," he continued, "are at present exclusively confined to the seal branch of the business, as we don't propose to make upholstery plushes at the unremunerative prices now ruling. We shall be on hand for these also, however, as soon as ever the prices become such as will leave a margin of profit."

News in Brief.

ENGLAND.

Ashton-under-Lyne.

Good progress is being made in the erection of the new mill for the Rock Spinning Co. at Waterloo.

Birmingham.

Mr. J. A. Bright (U L), cotton spinner and carpet manufacturer, of Rochdale, has been re-elected M.P. for the Central Division.

Blackburn.

Mr. W. H. Hornby (C), cotton spinner and manufacturer, and Mr. W. Coddington (C), cotton spinner and manufacturer, have been elected M.P.'s for Blackburn. Mr. Eli Heyworth, manufacturer, and Mr. W. Taylor, spinner and manufacturer, were unsuccessful in the Liberal interest.

Bolton.

Mr. H. Shepherd-Cross (C), son of the late Mr. Thos. Cross, cotton spinner, has been elected M.P.

Messrs. J. and T. Garnett's Cox Green Mills have had to be enlarged to cope with increasing business. The workmen employed on the extension had a rousing dinner on Saturday, at the Volunteer Arms, Bromley Cross.

Bradford.

Mr. A. Illingworth (L), worsted spinner, has been re-elected M.P.

Bury.

Sir Henry James has been re-elected M.P. for Bury by a good majority.

Many of the mills in town on Wednesday were closed during the whole of the day, while others were closed only during the afternoon, the occasion being the day of election.

A dispute is on foot at the Bury and Elton Co.'s Mills, Elton, owing to the firm having adopted the wire principle, and in consequence of the reduced work discharging one of their carders. The hands resent this, and allege they are not paid up to the list, and consequently they demand the reinstatement of the discharged man. The firm considering that they are acting within their rights decline to take the man on again. The workpeople have placed the matter in the hands of their Association's secretary, but no settlement has been arrived at. The grinders and spinners held a meeting on Wednesday at noon, and agreed to tender their notices on Thursday morning, both to act under their federation rules and leave work on the following Wednesday night pending no agreement has been come to. The operatives now assert they will accept the Oldham list and conditions, and drop the demand for the reinstatement of the discharged grinder.

Dewsbury.

Mr. M. Oldroyd (L), woollen manufacturer, has been elected M.P.

Farnworth.

Mr. Richard Taberner, late of Manchester, who has had considerable experience abroad, has been appointed manager of the Bentinck-street Mill Co. The retiring manager, Mr. Thos. Fielding, was last week the recipient of a gold albert and medal subscribed for by the workpeople. Mr. Fielding had only held the position for a few months, having taken it on the resignation of his brother.

Keighley.

Mr. Isaac Holden (L), woollen manufacturer, has been re-elected M.P.

Leicester.

Sir Jas. Whitehead (L), Bart., a director of J. and P. Coats, Limited, thread manufacturers, Paisley, and of Pawson and Co., Limited, warehousemen, London, has been elected M.P.

Leeds.

The death took place yesterday week of Mr. Geo. Harrop, head of the well-known firm of George Harrop and Sons, woollen manufacturers, Horbury Bridge. The deceased was a native of Ossett, and subscribed liberally to the building fund of the Ossett Technical School. His eldest son, Mr. Wm. Harrop, is a cloth merchant at Huddersfield, and three others were associated with him in business at Horbury Bridge.

Liverpool.

By a fire in Messrs. Green and Taylor's warehouse, Glasgow-street, on Monday, 3,000 bales of cotton were destroyed.

Messrs. Isaac Cooke and Son, cotton brokers, Brown's Buildings, Liverpool, on Thursday announced that owing to the non-receipt of money due to them they were compelled to suspend payment. In connection with this failure the Cotton Association notify that "a syndicate has arranged to purchase at the struck price from the estate of Messrs. Isaac Cooke and Sons 110,000 bales of cotton, which will be sold at the rate of not more, or not less, than 2,500 bales per day. The above figures represent approximately Messrs.

Cooke's long interest in the market." Another report says: The firm is one of the oldest and most respected in the trade, its head, Mr. Bancroft Cooke, being the president of the Cotton Association. The failure has caused the greatest consternation on the 'Change, the firm being one of the oldest and most highly respected in the market, and general sympathy is expressed for the partners. The suspension is said to be due to a big "bull" account carried in a heavy falling market. The liabilities are heavy, but there is not expected to be any deficiency, and the stoppage may be only of a temporary nature.

London.

Mr. F. W. Isaacson (C), formerly in the silk trade, has been elected M.P. for Stepney.

The Right Hon. C. T. Ritchie (C), who is engaged in the jute trade, has failed to secure his election as M.P. for St. George's, Tower Hamlets.

Manchester.

Mr. C. E. Schwann (L), merchant, has been elected M.P. for North Manchester.

Sir W. H. Houldsworth, Bart. (C), cotton spinner, has been returned (unopposed) as M.P.

It has been decided to wind up voluntarily the cotton manufacturing firm of Messrs. Sharp, Murray, and Co., Limited, of this city.

Mr. Jacob Bright (G.L.), cotton spinner and carpet manufacturer, has been elected M.P. for one of the divisions of Manchester.

Nottingham.

We much regret to have to record the death of Mr. Edward Marlove, chairman of the board of directors of Messrs. Marlove, Alliott, and Co., Ltd. The funeral took place on Tuesday. Mr. Marlove, who was born in Nottingham in 1807, was in early life a draper, and afterwards a bleacher at Lenton Works. While there the present engineering business was established, in partnership with the late Mr. Alexander Alliott, principally for the introduction of the then newly-invented centrifugal machine or hydro-extractor. The business increasing necessitated the building of the now well-known Bloomgrove Works at Radford, about 40 years ago, when Messrs. Marlove and Alliott left Lenton, and retired from the bleaching business. Since then the engineering business at these works has greatly increased, and is now one of the largest and most important in the Midland Counties, giving constant employment to an average of 500 or 600 men. The funeral was of a semi-public character, the whole of the foremen and heads of departments being present, and also a deputation of about 100 of the oldest employés, most of whom have been in the service of the firm for periods of 20 years to upwards of 50 years. In business circles the late Mr. Marlove was known as a man of progressive ideas and of the strictest honour and integrity.

Oldham.

It seems that only three or four pairs of new mules have been got to work at the Smallbrook Spinning Co.

Mr. James Buckley has been appointed the secretary of the Beal Spinning Co., in place of Mr. Edward Milne, deceased.

Mr. D. G. Isherwood has resigned the managership of the Hathershaw Spinning Co. No successor has yet been appointed, though we understand there are several local aspirants for the office.

The Pearl Mill is fast approaching completion. Preparations are being made for the putting down of the engines, while two boilers are placed in position. Machinery will shortly be delivered by Messrs. Platt Bros.

A fire occurred on Monday morning at one of the woollen mills of Messrs. John Hurst and Sons, Dobcross, when damage was done to the extent of upwards of £2,000. Not many of the hands will be thrown idle, as the finishing will go on by water power, and the extensive premises at Rankfield will meet the requirements of the firm.

At the Oldham Police Court, on Saturday, several firms, millowners and others, were summoned for having emitted black smoke from their chimneys beyond the limit prescribed by the Corporation. In three cases fines of 20s. and costs were imposed, one of 20s. and costs, while one was dismissed—viz., that against Messrs. Platt Bros. and Co.

Mr. Harold Wrigley, son of Mr. E. W. Wrigley, of the firm of Messrs. Lees and Wrigley, cotton spinners, Glodwick-road, Oldham, and Miss Mary Hannah Whittaker, daughter of Mr. Councillor Robert Whittaker, cotton spinner, Werneth Mills, Oldham, have just been united in marriage. The wedding party was a large one, being conveyed to the church in 37 carriages, whilst the presents were numerous and costly.

Three of the four candidates who have contested the Oldham Parliamentary election are, in the local vernacular, "Owdham lads." These are the Right Hon. J. T. Hibbert, Mr. J. M. Cheetham, and Mr. Elliott Lees. The former is one of the sons of Mr. Elijah Hibbert, one of the founders of the eminent and well-known textile machine-making firm of Messrs. Platt Bros. and Co., Limited, which was formerly known as Hibbert and Platt. Mr. Cheetham is closely identified with the cotton industry. His grandfather, Mr. James Cheetham, was amongst the earliest cotton manufacturers in the county, and began business when the cotton trade was largely a cottage industry, and when the primitive water-wheel had to do in a slow fashion what the modern fly-wheel does so much more rapidly. The business so commenced continued to grow and develop, and has descended from father to son, even to the fourth generation, being now in the case of Mr. J. M. Cheetham, who, along with Mr. Hibbert, was on Wednesday elected one of the members for the borough. The business, it seems, has throughout been largely conducted through the same Manchester firms, which evidently shows it to have been established on a sound basis. The firm's premises, situate at Shaw, include spinning as well as weaving. Mr. Lees almost occupies a similar position to Mr. Cheetham. His grandfather also was one of the forerunners of the cotton industry of Oldham, and was head of the well-known cotton spinning firm of Messrs. Lees and Wrigley, Greenbank Mills, Glodwick-road, Oldham. His father was Colonel Lees, who on one occasion contested the borough as a Parliamentary candidate.

Pudsey.

On Monday morning a wall of the weaving-shed attached to Brick Mill, owned and occupied by Messrs. Robert Spencer and Sons, woollen manufacturers, suddenly fell inward upon the looms, carrying with it the first span of the roof. There were fifty persons working in the shed at the time, and the escapes were miraculous. Fortunately no one was injured. The owners of the mill think the wall, which was built twenty years ago, was weakened by Sunday's storm and rain, and then brought down by the shaking of the machinery. The owners of the mill have been singularly unfortunate for many years. Parts of the mill have been burnt down several times, and not long ago the tall chimney fell in the night, crashing upon the boiler-house and willey-house.

Ramsbottom.

The Ramsbottom Trades Council are seeking to obtain an expression of opinion in favour of, and that he will support a motion which it is intended shall be brought again forward in the Lancashire County Council in regard to the "fair contracts" question, from Mr. Cunliffe, C.C., who represents Ramsbottom district. A deputation was appointed on Wednesday evening to wait upon him. Mr. Cunliffe is a chemical manufacturer, and one of the largest shareholders in the Rose Manufacturing Co., Ramsbottom, and other concerns.

Radcliffe.

The Radcliffe Trades Committee are taking a somewhat singular course in regard to the dispute which we have reported as having taken place at the Clough Bleachworks. They have passed a resolution which stigmatises the employés whom Mr. J. Brierley has got to work in the place of the strikers as knobsticks, and pledges the Council not to support Mr. Brierley, who is a County Alderman, in any way either politically or otherwise, unless he give way to the exorbitant demands of the men, simply because they have taken upon themselves to consider that the claims of the men are fair ones. Many of these men have made a point of declaiming in public against coercion, and yet they lend themselves to one of the most arrogant pieces of coercion it is possible to conceive. Having failed to achieve their object by a fair combat as between employer and employed, they now enter a sphere which had nothing whatever to do with the question in dispute in the hope of coercing him by reason of whatever ambition he may have politically. This, combined with the manner in which another strike has been conducted on at the large bleachworks of Messrs. Hepburn and Co., at Ramsbottom, goes to prove that it is high time the bleachers consulted together with a view to mutual defence against the ever increasing encroachments of unscrupulous labour.

Rochdale.

Mr. T. B. Potter (L), formerly a Manchester merchant, has been elected M.P.

The committee of the Rochdale Co-operative Society have decided to fit up their corn mill with an installation of 1,200 new glass valve sprinklers, and have placed the order for these with Messrs. Dowson, Taylor and Co.

It will be remembered that three or four Rochdale spinning companies started their mills of their own accord during the lock-out, and that masters from all over South-East Lancashire hurriedly came to the Wellington to urge them to close at once, and not break up the Federation. This was done, and on Monday morning the workpeople found the mill doors closed. They had not received the notice to which they were entitled, and as test cases three or four of their number entered plaints in the County Court against their employers, claiming a week's wages instead of the notice they did not receive. The decisions in these cases would probably have applied also to the rest, and over a hundred workpeople were concerned. The masters and the men have, however, met in a friendly manner, and have settled the dispute without going into court. The Federation of Masters (who backed the employers concerned) offered to give £40 to charitable institutions in the town, and pay all expenses, on condition that the men would guarantee not to sue the employers for any further claim. This guarantee was given by both the Operative Spinners' Association and the Card and Blowing Room Association, and nothing more will be heard of the matter. The £40 will be divided equally (£10 each) between the Infirmary, the Buckley Hall Orphanage, the Poor Children's Aid Society, and the Good Samaritan Society.—*Rochdale Observer.*

Salford.

Mr. W. H. Holland (L.), cotton spinner, has been elected M.P. for Salford.

Stockport.

Mr. Joseph Leigh (L.), cotton spinner, has been elected M.P. for Stockport.

Stalybridge.

Mr. T. H. Sidebottom (C.), cotton spinner, manufacturer, and merchant, has been elected M.P. for Stalybridge.

SCOTLAND.

Arbroath.

About fifty hands employed by Messrs. Corsar Bros., at the Brothock Mill, were paid off last week-end owing to dull trade.

Dundee.

A general meeting of the creditors of Messrs. D. W. Baxter and Co., spinners and manufacturers, Temple Mill, was held on Monday, when the recommendation made at the recent meeting of the principal trade creditors to wind up the estate by trust deed was confirmed.

The business of Messrs. Watson, Robertson, and Co., Logie Works, Scouringburn, which we stated last week had been acquired by Mr. D. W. Wybrants for himself and Mr. Watson, has since been resold to Mr. Robertson. It is understood that the business will henceforth be carried on under the designation of Robertson and Co., Limited. It is stated that the price paid is a little over £18,000.

On Saturday afternoon upwards of 50 members of the Dundee Mechanical Society visited Monifieth Foundry, by permission of the proprietor, Mr. James F. Low. These works, which were established on a small scale by the father of the present proprietor nearly a century ago, now give employment to several hundreds of workmen, and turn out a great quantity of flax, tow, and jute carding and spinning machinery.

At a meeting of the partners of the Victoria-road Calendering Co. held on Tuesday, the recommendation by the directors that Mr. W. F. Arthur be appointed to the general managership of the Company was unanimously confirmed. Mr. Arthur leaves Messrs. Baxter Brothers and Co., Limited, where he has had the entire charge of their finishing department for some time, with very high credentials. Mr. Low, the former manager, who has been obliged to resign owing to failing eyesight, has been asked to join the Board of Directors of the Company.

The death is announced of Mr. G. B. Simpson, which took place at Leamington-terrace, Edinburgh, where he recently went to reside. Mr. Simpson, who was well known in literary and artistic circles, was born in Dundee in 1820. He was trained to the manufacturing business with Mr. Alexander Easson and Mr. Charles Clark at their factory in the Dens. Mr. Simpson commenced business in company with Mr. William Ritchie, under the firm of Messrs. Ritchie, Simpson, and Co., the works being situated in Ward-road, Nelson-street, and Lower Pleasance. When this partnership was dissolved in 1877 Mr. Simpson took over the Lower Pleasance Mill and Nelson-street factory, and resumed business in 1878. A succession of commercial misfortunes made it expedient for him to give up the manufacturing business in 1886, and after that time he lived in comparative retirement. He was in the 72nd year of his age.

Glasgow.

Mr. J. A. Campbell, LL.D. (Conservative), a grandson of the late Mr. Henry Bannerman, linen manufacturer and merchant, has been re-elected M.P. for the Glasgow and Aberdeen Universities.

Paisley.

Mr. Wm. Dunn (G.L.), of Messrs. William Dunn and Co., South African merchants, London, has been elected M.P. for Paisley.

Messrs. Clark, thread manufacturers, Paisley and Glasgow, have issued new price-lists, showing that the price of 6-cord thread has been reduced about 10 per cent. Their works in Mile End are not running full time.

IRELAND.

Belfast.

At Messrs. William Ewart and Sons' Glenbank Bleachworks on Monday evening a pot used for boiling cloth exploded with a terrific report, the result being that John Goudy, aged about 56 years, was almost instantaneously killed, whilst the roof of the building in which the boiling operation was being carried on was blown to matchwood.

Miscellaneous.

WEAVING AND EMBROIDERY IN CHINA AND JAPAN.

(By Professor Dr. Lessing.)

We have become accustomed in recent times, to a large extent on account of our close commercial and political relations with Japan, to prefer Japanese productions to Chinese. We have partly forgotten that China is the oldest centre of civilisation in Eastern Asia: we are disposed to regard the Chinese as an eccentric nation, and to allow to the Japanese that they can by means of their intellect and fancy rise above this dreary people. But if anyone compares in our museums the products of Chinese and Japanese weaving and embroidery—not to mention the manufacture of porcelain, in which also China achieves surprising results—he will, even if he is not familiar with historical traditions, have to concede that China is the native country of this art, the country in which its development has been richest and most complete. It is only one branch of Japanese art that makes it more enjoyable for us Europeans than that of the Chinese, namely, that which rises to a bold naturalism in an almost European sense. In other respects we have to turn in the first instance to China.

China is the old native land of silk. At a time when Europe, and even the greatest part of Western Asia, knew nothing of silk weaving, that art was fully developed in China. Not only was there a steady importation of silk to Europe when Roman culture was in full flower, but Greece centuries before had received silk in isolated cases, and always from the Chinese—the *Seres* as they are called by the ancient authors. I have already had occasion to discuss the question whether this silk consisted of the raw material, or of that material worked up; it is, however, very probable that both forms were imported, for we find a notice in a classical author which hints that silk was worked up in the island of Cos. It is there stated that the silk threads were twisted apart and made into transparent garments. That this importation of silk had any influence on the development of form in Greek or Roman weaving cannot be proved. At the time when the import of silk to Europe was large, a direct commercial relation no longer existed with China; Western Asia was then already the principal intermediary between China and Europe. This much is clear: that, for more than two thousand years, down to our own day, raw silk has been imported to Europe in considerable quantities. It also sometimes reached Europe worked up in Asiatic or Oriental forms, as can be clearly proved from the fabrics of the Middle Ages. It will be remembered that when I was discussing the Middle Ages in Europe I referred to stuffs from the 14th century which were adorned with Chinese patterns, with dragons, fanciful animals, and also with ornaments. I then shewed how this Chinese ornamentation was continued through the Middle Ages, which proves that the people must have seen Chinese fabrics. This assertion is proved by an ecclesiastical vestment which is now in Bielefeld. It is the robe of a a Catholic priest, the design of which, consisting of silk embroidery, is in Chinese taste. Just as they did not hesitate in the Middle Ages to put Arabic characters on church vestments, so in this instance they made use of the pagan representations of China. The import of Chinese articles to Europe was tolerably strong in the 17th century; but it was the 18th century when Chinese art was most highly esteemed. Great strips of carpet were imported, of which hangings for the walls were made. All sorts of curiosities got up in the Chinese taste were popular in the 18th century. The introduction of classical taste at the beginning of the present century effaced this preference for Chinese patterns, and only the import of a kind of embroidered shawl, which is generally known under the name of *Crepe de Chine*, has continued.

Now that China is in a measure open to European intercourse it is possible to study the subject more thoroughly: we are now able to buy articles in China itself and examine them. For purposes of study, small old-looking fragments, which exist in great quantities, are valuable, as well as the large splendid garments which attract attention at the first glance; for Chinese religion causes articles of ancient date to be most highly prized. So far as essentials are concerned, we may say that the *technique* of Chinese weaving is exceedingly well developed. I must observe at this point that in the products of Chinese weaving we have to do with fabrics made on hand-looms. We therefore cannot speak of the perfectly exact reproductions of patterns. Even if the pattern card remains fixed it is possible to change the colour each time. It remains in the warp, but in the weft variations in the colour can be made according to pleasure, whenever the same pattern repeats. Working on hand-looms has one necessary consequence—a single stuff which appears as a whole piece usually shews a far greater variety than is the case in Europe. Another remarkable circumstance is the extraordinary extravagance displayed in the use of silk. We are not speaking of woollen or cotton carpets; the warp, as well as the weft, are all of heavy silk.

Even in patterned silk-stuffs Chinese weaving is characterised by colossal extravagance. Europeans are painfully anxious to expend as little colour as possible; and this endeavour leads us to put the stripes of colour together in narrow strips. Not a trace of economy of that kind can be detected in Chinese weaving; the material is there far cheaper than amongst us, and therefore less importance is attached to a possible excess. If we look at a Chinese work on the reverse side, we see whole bundles of silk hanging down unused; and this undeniably makes the pieces more splendid and valuable. On the other hand, it must be carefully noticed that the pure *technique* of weaving is far more highly developed in Europe: refinements such as European weaving is able to produce by combination are entirely unknown to Chinese weaving, for the principal object of such a combination is to produce different shades, and this, as every one knows, is not at all aimed at by the weavers of China and Japan. Moreover, the character of the surface is completely preserved even in the most elaborate products of the textile art, so that the need for refined combinations does not exist. To this must be added the remarkably good use of gold embroidery—a department of technical industry in which the Chinese are masters.

The gold that the Chinese use for embroidery consists of paper gold, but of course we must not think of our paper. Both the Chinese and the Japanese know how to make out of silk waste a paper which is far more tenacious than leather, and is far more durable than the thin threads wrapped round with gold which were used for the European embroidery of the Middle Ages. This paper is covered with pure gold by means of a gum, then it is cut into very fine strips, and these strips are wrapped round a silken thread. The gold thus prepared is variously toned, having bluish, yellowish, and reddish shades, and this variety of gold contributes not a little to the effect obtained by Chinese colouring. Occasionally this gold is put on paper, which is strong enough to be cut into strips; the lustre is more dazzling, but the durability is not so great as in that which is wrapped over a thread.

So far as the designing of stuffs is concerned we must banish the notion that it is a question exclusively of dragons, monsters, winged beasts, etc., which we are accustomed to think of as special characteristics of Chinese textile art. If you examine collections of Chinese fabrics you find hundreds of patterns which exhibit precisely the type shewn by most European patterns. Whether this is owing to European influence is doubtful. The *technique* of weaving in China has also made it necessary to keep to small patterns which repeat in the same forms, so weavers are compelled to adopt regular designing in the square form. The large portion of Chinese work in fact rests on a quadratic or octangular basis, and has, therefore, the greatest similarity conceivable to the Romance patterns of Europe. You see amongst the Chinese patterns a whole series of articles which could be used in any European dwelling as furniture-stuffs, or even in many cases as dress-stuffs, without attracting special attention.

By the side of these square patterns there exists an extraordinary number of flower-patterns. These are strictly conventional flower-formations of a palmetto-like sort, similarly executed to those seen in the Arabian *technique*. The sketching, indeed, is rather different, but the arrangement is substantially the same. The meander border, which forms a rectangular crooked line, is represented in Chinese designing. Here, too, imitation cannot be thought of, but lines of this sort are developed naturally out of the *technique* of weaving. The Chinese patterns become quite striking as a special species only when it is a question of making large measured pieces, and it must be said that they have exhibited really wonderful skill in this respect. Splendid garments are often manufactured on the looms of China which are woven from the top to the bottom in one piece. If the article is meant to be worn, a round aperture is cut in the middle for the head, one sleeve is slit up and held together only at the shoulder, and the front part of the garment is cut open from the top to the bottom. It is clear that such a fabric is a remarkable achievement in textile art, for it has, reckoned from the top to the bottom, a length of from 1½ to 2 metres. If the garment is to be cut open in front the pattern is measured in such a way that if, for instance, a large circle is represented on each side of the garment, a broad stripe is found between the two halves, just where it is to be cut open, which stripe is afterwards laid round as a hem, so that the two circles exactly coincide. This is an arrangement which is not easily carried out in embroidery, not to say in weaving. The production is a luxury which *technique* has allowed itself in this case, and we must say that we have here to do with splendid articles of the very first rank. After these large pieces come embroidered carpets, on which are represented dragons, fanciful monsters, etc.—a great world, but entirely strange to us, and but partially understood.

China, like Western Asia, has not been able wholly to escape the influence of Europe; this influence, however, did not begin to assert itself before the end of the 17th century. The Jesuit missions had an extraordinary success in the time of Louis XIV.; they had gathered together large communities which, brought up in a mixture of heathenism and Christianity, were exceedingly receptive to European influence. Thus the famous Summer Palace in China was built according to European designs, and European influence can be distinctly recognised in the Chinese figures which adorn the landing places of the staircases in our Berlin Royal Art Commercial Museum, although we find on examination that every single line has been translated into Chinese.

Weaving was far surpassed in splendour of execution by embroidery. The latter does not suffer from the technical difficulties connected with weaving: it can expatiate as it pleases, and we see it developed amongst the Chinese in a really splendid manner. The Chinese work almost uniformly with the flat stitch, which they manage in a masterly manner. We have been for a short time in possession of a small Chinese model, which explains in the simplest manner the precision of Chinese work. If a Chinaman wishes to execute a piece of flat-stitch embroidery, he cuts every single leaf he wishes to embroider out of his good silk paper, sticks it on the spot to be embroidered, and then

embroiders over this leaf. This method has the advantage of perfectly clear drawing; the needle can be passed under the paper, the thread is laid round the edge of the paper, and in this way the leaf receives contours as sharp as a hair; whilst amongst us the difficulty consists in attaching one hole to the other with the needle so exactly that the right contours are formed. If the needle once reaches over the chalked-out line, which is mostly indistinct, that particular thread is marked in an unpleasant way, and an exact design is destroyed. This little artifice explains the precision of all Chinese work. If it is desired to work such a leaf in two halves, there is absolutely no difficulty in the way. A stroke is made in the middle of the paper leaf, and they embroider through it; at the same time this paper gives the whole embroidery a firmer consistency. I may observe in addition that in China embroidery is often executed on strips. If necessary, the strip is cut away from the length and applied to another fabric. In gold-embroidery we find that the gold in most cases is only sewed on, and is fastened with the over-catch stitch. This gold-embroidery is executed in China with extraordinary taste. If in Europe in the Middle Ages a whole figure was to be embroidered in gold, the gold thread was simply laid on the design from one end to the other and fastened by the over-catch stitch. This is not the case in Chinese embroidery. There, on the contrary, every detail is worked out most carefully in the drawing. Thus, for instance, in the embroidery of peacock feathers, which is very popular in China, the position of each feather in a different corner imparts a wealth of thought such as has never been even approximately attained in Europe.

The production of large wall-hangings also presents no difficulties to the Chinese, and these articles are frequently to be met with in excellent examples. Above all the embroidery of flowers amongst the Chinese must be mentioned as worthy of special notice. It is true that the Japanese method comes nearer to our taste, but nevertheless the productions of Chinese embroidery deserve our highest admiration. To these embroideries must be added the Gobelins embroidery, which is very richly cultivated. It has not indeed attained the high degree of artistic excellence which has been reached in Europe where, as everyone knows, complete pictures have been produced. In Chinese designs, on the other hand, we have only to deal with patterns which completely preserve the character of the surface. If in any spot more development of the pattern is needed, painting is resorted to: butterflies, for instance, are embroidered in white silk on the ground, and then painted over with blue paint. Mention must also be made of a large group of silk fabrics, on which some sort of painting was traced with water-colours, and which was exceedingly popular for the decoration of walls.

(To be continued.)

EMPLOYMENT IN IRELAND, AND CLERICAL DOMINATION.

The following letter appeared in *The Times* of Wednesday:

(To the Editor of *The Times*.)

Sir,—In making enquiries of practical men as to the reasons why, since the introduction of machinery, manufactures in Ireland, while declining in the south and west, had enormously increased in the Protestant counties, I had often heard mention made of the system of holy days as being one active cause of this remarkable development. A few years ago, at a company of about a dozen gentlemen, mostly merchants and manufacturers, I asked if this view of the case was well founded and if any one present could point out the manner in which the assigned cause came to work out the effect. At the same time I mentioned that the late Mr. Carlisle, of Belfast, the joint founder with Mr. Philip Johnston of the great Brookfield Linen Company, had related to me more than once a conversation between himself and Mr. John Francis Maguire, at the time member for Cork, in which conversation, to the surprise of Mr. Maguire, the prospects of profit or loss in a flax mill were made by Mr. Carlisle to turn on the question of whole time, or of the broken time occasioned by the system of holy days.

One gentleman, a respected son of a highly-respected father, said:—

"In illustration of Mr. Carlisle's point I shall give you a case. Mr.—" (mentioning a name evidently known to several of those present) "had two mills one at A., in the county of Armagh, another at B., in that of Monaghan. At a certain time he gave notice to his workpeople in Monaghan of a reduction of wages of 10 per cent. The parish priest came to him and requested that he would make it 5 per cent., at least until the winter should be over. The priest," said the speaker, "was a good old man and a friend of Mr.—, who told him that he would gladly meet his wishes if he could, but the truth was he had gone on too long losing money and could not continue so to do. The question arising how he should lose money in the county Monaghan and not in county Armagh, Mr.— said that it was all due to broken time in the county Monaghan mill. In Armagh the Catholics worked like the Protestants, week in and week out, but in Monaghan, where the Catholics were the majority, they would not work on holy days. Some weeks they could reckon upon them only for four days, some five; but scarcely any week passed without a day or more of broken time. He said, 'I would go on with a five per cent. reduction for the winter if you would engage that every weekday on which they have gone to mass, after they have performed their religious duties, they should come back to work, and not go to the public-house or to idle about.' The priest seeming willing to accept this proposal, Mr.— said that if the clergyman wished to satisfy himself of the real state of the case as to profit or loss the books should be placed under his eye for inspection as minute as he pleased. He replied that he was not conversant with bookkeeping, but his curate was, and Mr.— might rely upon it that the curate would keep the secrets as well as if they had been given him in the confessional.

When the curate had completed his examination he said that he was not surprised at the proposed reduction, but rather that, instead of 10, it was not 20 per cent.

"The parish priest then was quite willing to carry out the plan suggested by Mr.—, whereupon the latter added that he would give up a large apartment on the premises which the priest might arrange and use as he pleased, on condition that when he there had got the people on holy days to their 'religious duties' he would make them return to work. He cheerfully embraced the offer and took leave. Half-an-hour later he returned, saying that he feared he had spoken too hastily, for he must consult his Bishop. After having done so he came to say, with regret, that he could not act as he had thought of doing. 'What,' asked Mr.—, 'not even engage to send them back from the church to work after mass?'—'No.' So Mr.— went himself and called upon the Bishop, representing to him the benefit it would be to the people if the mill could be carried on, and pleading that at his place in Armagh the Catholics worked six days a week with the Protestants, and so the mill paid. 'In Armagh,' replied the Bishop, 'the Protestants are the majority; in Monaghan we are the majority, and when the Church has the power she must exert it; where she has it not she must bend the head till the storm passes over.' So eventually the mill was closed and the machinery sold or carried elsewhere."

This, as I have said, I heard related a few years ago. The other day, alluding to the case in conversation with a leading manufacturer he said:—

"I know that case and have had my memory refreshed about it very lately. A friend of mine, and a near relation of Mr.—, wrote to him and suggested that he should put the particulars in black and white, to which he replied that if all the particulars were made known they would give some light to such as would believe them, which some could not do. But he added, 'I am in a position in which it will not do for me to stir up certain feelings, and must wait; for me the thing is to get out.'"

I asked my friend if he could get me a sight of that letter. He did not know, but would try. The letter is now in my hand and is dated June 14, 1892.

Probably the poor people who were thus deprived of employment were sent about railing at the remorseless oppression of England, the tyranny of employers, and the persecuting spirit of Orangemen. Both intelligent working men and their employers can see how mills should flourish in one place when they fail in another, and how, consequently, in one place population increases while in another it thins away. They will also feel that the idleness with which the people of the south of Ireland are often reproached is not wholly to be laid to the charge either of any inferiority of nature or to choice, but is in part due to another influence.

I am, Sir, your obedient servant,

WM. ARTHUR.

Stranditown, Co. Down, July 1.

PARLIAMENTARY CANDIDATES INTERESTED IN TEXTILES.

Added to the names given last week, the following complete the list of gentlemen connected with the textile industries who are among the candidates in the General Election now in progress. "C" signifies Conservative; "L," Gladstonian Liberal; "U L.," Unionist Liberal; and "Lab.," Labour Candidate; "P," Parnellite; and "A P," Anti-Parnellite. "M.P." at the end of a paragraph signifies that the candidate was a member of Parliament at the recent dissolution. The Parliamentary divisions which the candidates are contesting follow (in brackets) the candidates' names.

SCOTLAND.

Beith, Gilbert (Inverness District) (L). An Eastern export merchant, senior partner in the firm of Beith, Stevenson, and Co., of Glasgow and Manchester.

Caldwell, J. (Glasgow, Tradeston) (L) Succeeded his father as partner in the firm of Caldwell and Ritchie, calico printers, Milton of Campsie; has since retired. M.P.

Campbell-Bannerman, Right Hon. Henry (Stirling District) (L). Son of the late Sir James Campbell, by Janet, daughter of the late Mr. Henry Bannerman, linen manufacturer and merchant, of Manchester. M.P.

Campbell, J. A. (Glasgow and Aberdeen Universities) (C). Son of the late Sir James Campbell, of Messrs J. and W. Campbell merchants, by Janet, daughter of the late Mr Henry Bannerman, of Manchester. A merchant in Glasgow until 1876. M.P. *Re-elected.*

Crombie, J. W. (Kincardineshire) (L), of Aberdeen, a. of Mr. John Crombie, formerly head of the firm of J. and J. Crombie, woollen manufacturers; and himself a director of J. and J. Crombie (Limited).

Dalgleish, W. O. (Dundee) (C). A merchant in Dundee, partner in Baxter Bros. and Co., flax and jute spinners and manufacturers.

Dunn, W. (Paisley) (L). Senior partner in the firm of William Dunn and Co., South African merchants, of Broad-street-avenue, London. *Elected.*

Provand, A. D. (Glasgow, Blackfriars and Hutchesontown) (L), of Manchester, son of Mr. Geo. Provand, merchant, of Glasgow. A merchant shipper of Manchester in the India and China trade; chairman of the Mutual Telephone Company, etc. M.P. *Re-elected.*

Tennant, E. P. (Lanarkshire, Partick) (L). Member of the firm of Charles Tennant and Co., merchants, St. Rollox, Glasgow.

Thorburn, W. (Peebles and Selkirk Shires) (U L). A woollen manufacturer at Peebles. M.P.

Watson, R. F. (Hawick Burghs) (U L), of Hawick. A tweed manufacturer.

White, James Martin (St Andrew's District) (L), of Balruddery, near Dundee. A merchant of the firm of J. F. White and Co., of New York; member of the Council of the Technical Institute; president of the Dundee and District Technical Association.

IRELAND.

Davitt, Michael (Meath, North) (A P). B 1846, at Straid, near Castlebar. As a child worked in a cotton mill at Haslingden, where his right arm got crushed by the mill machinery, necessitating amputation at the shoulder.

Dickson, T. A. (Tyrone, South) (A P). Son of the late Mr. James Dickson, merchant, of Dungannon, a linen manufacturer and merchant in Belfast and Dungannon. M.P.

Herdman, E. T. (Donegal, East) (U L). A flax spinner in partnership with his brother, Mr. John Herdman, in the firm of Herdman and Co., of Sion Mills and Belfast.

Lea, Thomas (Londonderry, South) (U L), of Kidderminster. A worsted spinner and manufacturer at Sliagfield Mills, Kidderminster. M.P.

Thomson, Henry (Newry) (C). Senior partner in the firm of Henry Thomson and Co., Newry. M.P.

Death of Sir W. H. Salt, Bart.—Sir William Henry Salt, Bart., died at his residence, Maplewell, near Loughborough, on Thursday. He was the eldest son of the late Sir Titus Salt, and was born in the year 1832. The opening of the works at Saltaire on September 20th, 1853, took place on the date of his coming of age, and on the jubilee birthday of the founder of Saltaire. In the following year he married the only child of Mr. J. D. Harris, of Ratcliffe Hall, Leicester. In 1876, on the death of the late Sir Titus Salt, he succeeded to the baronetcy. During his latter years he led the life of a country gentleman, farming on his Leicestershire estate. He was a Churchman and a Conservative. He leaves a widow, a married son, Shirley Harris Salt, who succeeds him in the baronetcy, and a daughter, who is also married. Three sons of the late Sir Titus Salt now survive, Mr. Edward Salt, Mr. George Salt, and Mr. Herbert Salt.

Textile Markets.

COTTON.

MANCHESTER, FRIDAY.

What with the dulness of trade and the distraction of attention to the observation of the elections in progress over the country, the week promises to make a record for the smallness of the business put through. There has been no improvement in the demand from our foreign markets, and such as has come to hand is often in the lowness of its limits quite out of the range of practicability. A small trade has been dribbled through in various directions, and to the bulk probably the largest contribution has been made by the home-trade houses in heavy goods. The remainder is made up of miscellaneous parcels of no magnitude in other varieties for the export trade and various finishing purposes. It is very probable that the abstention of buyers from business is also influenced by the anticipation that as soon as the new cotton crop begins to make its appearance prices will recede to at least their former low figure, if not below, and that, with this contingency in front of them, their wisest policy will be to act sparingly, and not be caught with weighty contracts on hand.

COTTON.—The week under notice opened on Saturday with a very quiet demand. Prices were adversely affected by the good crop reports, the slowness of trade, and the distraction of attention caused by the election. Most growths were the turn easier, but none were changed in the official quotations. Futures fluctuated slightly, and closed with a loss of two points. On Monday there was only a very small enquiry, and prices were again easier, though the official rates remained unchanged. All growths were alike dull. On the day futures declined $1\frac{1}{2}$ to 2 points. On Tuesday there was no improvement in any respect, and business was much neglected on account of the election. Prices were easier in every respect, whilst futures, after slight fluctuations, closed with a gain of $\frac{1}{2}$ to 1 point. On Wednesday, owing to the numerous elections in Lancashire, the attendance of the trade was very small and the business very little for a principal market day. American declined $\frac{1}{16}$d., bringing it once more below 4d. Egyptians were very irregular, and could be bought from $\frac{1}{16}$d. to $\frac{1}{8}$d. down from last week. East Indian in all grades, except Tinnivelly, was reduced $\frac{1}{16}$d. Futures were weak, and after several slight fluctuations closed with a loss of 4 to 5 points. Yesterday business, after opening well, was thrown into some confusion by an important failure. Prices eased off in spots, whilst futures tumbled down 8 to 10 points, but subsequently steadied, recovering about one-half of the loss. Brazilians were partially reduced $\frac{1}{16}$d., and Egyptians a like amount. Others quiet.

The following are the values of futures at mid-day on each day of the week—American deliveries—any port; bases of middling: low middling clause; (the fractions are in 64ths of a penny):—

PRICES OF FUTURES AT 1.30 P.M. EACH DAY.

	Saturday.	Monday.	Tuesday.	Wednesday.	Thursday	Friday
July	3·57 b	3·55 56	3·56 57	3·53 54	3·50 51	3·50 b
July-Aug.	3·57 b	3·55 56	3·56 57	3·53 54	3·50 51	3·50 b
Aug.-Sept.	3·60 b	3·58 59	3·59 s	3·55 56	3·52 s	3·51 52
September	3·63 b	3·61 62	3·61 62	3·58 59	3·55 s	3·54 55
Sept.-Oct.	3·63 b	3·61 62	3·61 62	3·58 59	3·55 s	3·54 55
Oct.-Nov.	4·1 s	3·63 4·0	4·0 s	3·61 s	3·57 58	3·57 s
Nov.-Dec.	4·4 s	4·2 s	4·2 b	3·63 b	3·60 s	3·59 60
Dec.-Jan.	4·6 s	4·4 b	4·4 5	4·2 s	3·62 63	3·62 b
Jan.-Feb.	4·8 9	4·6 7	4·7 s	4·4 s	4·1 s	4·1
Feb.-Mar.	4·11 s	4·9 s	4·9 10	4·6 7	4·3 4	4·3 s
April-May	—	—	—	—	—	—
May-June	—	—	—	—	—	—
Price of Mid American.	4	4	4	3 15-16	3 15-16	3 15-16
Estimated Sales including Spec. and Export.	5,000 200	6,000 500	5,000 500	7,000 500	8,000 1,000	7,000 1,000

The following particulars of the business of the week are from the official report issued by the Liverpool Cotton Association:—

	Import.	Forward.	Sales.	Stock.	Actual Export.
American..	24,819..	37,603	36,570	1,347,860..	6,871
Brazilian ..	1,614..	694	800	46,330..	60
Egyptian ..	1,299..	2,486	1,460	91,330..	334
West Indian	2,893..	312	810	40,390..	160
East Indian	6,760..	1,854	790	50,340..	648
Total ..	37,385..	42,949	40,430	1,576,250..	8,073

The following are the official quotations from the same source:—

	G.O.	L.M.	Mid.	G.M.	M.F.
American	$3\frac{5}{16}$	$3\frac{3}{4}$	$3\frac{15}{16}$	$4\frac{1}{8}$	$4\frac{3}{8}$

	M.F.	Fair.	G.F.
Pernam	$3\frac{15}{16}$	$4\frac{1}{8}$	$4\frac{3}{8}$
Ceara	$3\frac{15}{16}$	$4\frac{1}{16}$	$4\frac{5}{16}$
Paraiba	$3\frac{15}{16}$	$4\frac{1}{16}$	$4\frac{5}{16}$
Maranham	4	$4\frac{3}{16}$	$4\frac{3}{8}$

	Fr.	G.F.	F.G.F.	Gd.
Egyptian	$4\frac{1}{16}$	$4\frac{11}{16}$	$4\frac{13}{16}$	5
Ditto white	$4\frac{1}{2}$*	$4\frac{3}{4}$*	—	5*

	Fr.	F.F.	G.F.	F.G.F.	Gd.	F.G.	Fine.
M.G. Broach..	—	—	—	—	$3\frac{5}{8}$	$3\frac{3}{4}$	$3\frac{13}{16}$
Dhollerah	$2\frac{15}{16}$	$3\frac{1}{16}$	$3\frac{1}{16}$	$3\frac{5}{16}$	$3\frac{7}{16}$	$3\frac{9}{16}$	$3\frac{5}{8}$
Oomra	$2\frac{15}{16}$*	$3\frac{1}{16}$	$3\frac{3}{16}$	$3\frac{5}{16}$	$3\frac{7}{16}$	$3\frac{9}{16}$	$3\frac{5}{8}$*
Bengal	—	—	$2\frac{13}{16}$*	$2\frac{15}{16}$*	$3\frac{1}{8}$	$3\frac{5}{16}$	$3\frac{3}{8}$*
Tinnivelly	$3\frac{1}{2}$*	—	$3\frac{5}{8}$*	$3\frac{3}{4}$*	$3\frac{13}{16}$*	—	—

* Nominal.

YARNS.—The summing up of last week's business on Saturday last shewed it to have been very considerably less than either an average or the rate of production. Prices had also lost fully $\frac{1}{8}$d. per lb. without inducing any increase of business. Attempts to do business were even more markedly abstained from than usual. On Monday the attendance was very slack on 'Change, caused by many of the Lancashire towns being engaged in voting. There was only a very small enquiry for yarns, which were the turn easier to buy. On Tuesday hardly anything but politics was talked about, and only the smallest demand for yarns was anywhere discoverable. The different departments only varied in the greater or less intensity of the dulness pervading them. Prices almost all round were the turn easier. On Wednesday the attendance on 'Change was very thin, and only the most retail business was transacted, and this at easier rates. Yesterday brought no improvement in yarns, but rather the opposite.

CLOTH.—The demand for cloth, which had been slow for the whole of last week, remained without change on Saturday. Offers ruled too low to admit of much success in putting transactions through. Foreign advices brought nothing of importance. On Monday no change was discoverable in the enquiry for cloth, which continued very quiet in all departments. On Tuesday very few orders were forthcoming in the cloth departments, and the business put through was phenomenally small. Prices were the turn easier, but could hardly be said to have been tested. On Wednesday politics engrossed more attention than business, and few transactions in cloth were recorded. There was an increasing desire for orders on the part of producers. Yesterday, though there was, comparatively speaking, slightly more enquiry on Eastern account, there was little business seriously attempted, buyers being deterred mainly by the aspect of matters here and in Liverpool.

There is to-day again a very quiet market in every department and in lieu of business, attention continues to be given to politics.

WOOLLENS AND WORSTEDS.

BRADFORD.—There is so little business doing that prices can scarcely be said to be tested. The market is lifeless. Business is not done in anything but the finest wools, and best cross-breds without concessions; needy sellers, however, are few. Business in yarns shews no improvement, and until the elections are over none is expected. Orders are of a miscellaneous character, for small quantities, and immediate delivery. The home trade is quiet, and merchants have no better demands to make. In the piece trade more is doing for America in linings, but at very low rates, and a fair business is also being done in fancies. The condition of trade, however, is unsatisfactory.

HUDDERSFIELD.—There have been very few buyers in the market, business having been dull. Merchants and retailers buy only to suit immediate requirements, and many manufacturers are unable to keep machinery fully employed. This is not only the case in regard to medium and cheap goods, but also the fine goods which are usually sold in the West End of London and other centres of fashion.

ROCHDALE.—The election somewhat interfered with the business of the flannel trade, the attendance at the market being small. A few orders keep dropping in. Prices are without change. The Yorkshire goods trade was also quiet, but the makers were firm in their prices.

LEEDS.—Electioneering and the half-yearly stock-takings are keeping many influential buyers away from the market. The demand for worsteds and woollens keeps up fairly well, but there is a want of anything like adequate profits. Wool maintains its price, but growing competition prevents that being the case as regards the manufactured article. The orders already given out for new spring goods are large, and all high-class patterns may be quoted at about the prices of 12 months ago. The winter repeat trade is slow, and not up to expectation. Ladies' cloths of a high grade keep going into consumption freely, and the rates obtained are more satisfactory than in some other branches. Prints and meltons are dull and cheap. With respect to medium coatings in new and bright designs there is some improvement. The turnover of serges, vicunas, and fancy worsted trouserings might be better. The export trade remains quiet, and the Continental shipments shew a falling-off.

FLAX AND JUTE.

DUNDEE, WEDNESDAY.—The feature of the market is the continued fall in the value of jute. The Government returns give a large increase of sowings, and what is of much greater importance, private advices speak of an excellent season and an abundant crop. For best new marks, August-October sailing, business is done at £12 5s. This jute was done on the spot a few weeks ago at £21 10s. The fall has unfortunately affected the holders of stock seriously, but it would seem probable that the trade will now quickly recover its normal tone. Jute yarns in common cop are done in 8 lb. at 1s. 3d., and 8 lb. warp at 1s. 5d., a fall of $\frac{1}{4}$ per lb. on the week. New York advices are still adverse, and as this is a most important market, cloth refuses to move even at the reduced values. No doubt the merchants are largely interested in politics this week, but the trade seems even yet to refuse to act with confidence. Prices, however, now surely are rapidly approaching a safe limit. *Flax* is firm. The advices from Russia are not favourable regarding the growing crop, and fine tows are also decidedly stiffer. Flax yarns are without change in value, and all-tow yarns, except the best warps, are easier to buy. There is very little doing in linens this week, the home trade being disorganised with the political strife. The Dundee fancy jute trade remains inactive. The only branch in which there is any activity is twines and cords.

BELFAST.—Business is still small. Prices all round are fairly steady, though where stocks of cloth are heavy, some concessions would be made to clear. Yarns are unchanged, the demand being for current requirements rather than speculative. Prices are quite firm for lines and tows. Brown power-looms are slow, coarse setts having but little attention. Handlooms sell regularly at full rates. Handkerchiefs, if anything, are easier in price, the demand continuing weak.

SILK.

LONDON.—Messrs. Durant and Co., in their circular dated 6th July, say: We have to report a changed position in silk. For many weeks, extending to the middle of last month, the transactions had been upon the most limited scale, with a gradual shrinkage in prices, until we had reached the lowest point on record. Then came the first rumours of smaller production in both Italy and Japan, coupled with a reported increase in China, later news estimating the deficiency in the Italian crop as 20 per cent., and the Japan crop as 15 per cent., meaning a total reduced supply fully equivalent to about 20,000 bales China silk. With the continued large consumption on the Continent and America this reduction must be smartly felt later on, as we commence the campaign with unusually small stocks on the Continent; in fact, prices have already advanced in all producing markets from 5 to 10 per cent. So far our manufacturers seem unable to realise that there can ever again be any upward movement in values.

ARRIVALS IN JUNE.

Bengal	8	Bales.
China	284	,,
Japan	70	,,
Canton	—	,,
Tussah	71	,,

HOSIERY AND LACE.

NOTTINGHAM.—The lace trade has not recovered from the relapse which it suffered after Whitsuntide, and in most departments there is a lack of buoyancy. The demand for fancy silk laces is decidedly quiet, as it has been during the greater part of the year. The supply of cotton laces is now fully equal to the demand. The run upon Irish guipure and pearl laces has abated, although some firms are still well engaged in making these goods to order. The better qualities of Valenciennes laces are in steady request, but there is not much doing in cheap stiff Valenciennes edgings. Maltese and Torchon laces are only in small request, and there is no increase in the sale of Brabant and Bretonne laces. The production of these goods is curtailed, so that stocks are not heavy. A moderate business is being done in everlasting trimmings, cotton embroideries, and such like goods. In the plain net branch makers are not busily employed. Fine bobbin nets sell less freely than they did earlier in the year, and the demand for mosquito, Paisley, Mechlin, and Brussels nets is very different. Silk veil nets are selling to a middling extent. Orders for lace curtains, antimacassars, vitrage nets, etc., continue to be placed slowly, and manufacturers complain very much of the difficulty of making a profit. The local yarn market is quiet, and prices are about the same as heretofore. The hosiery trade is not very active, and to secure orders manufacturers have to accept prices

which are barely remunerative, competition being very severe.

LEICESTER.—A steady demand prevails for yarns, and more extensive deliveries are being made for present consumption. Cashmere and woollen yarns are in pretty good demand, but the market for cotton yarns is still dull. The boot and shoe trade has lately been much disturbed; manufacturers have some pretty good orders to complete. There is more activity apparent in the elastic-web trade.

Patents.

SPECIFICATIONS PUBLISHED.

Each of the following Specifications may be purchased at the Sale Branch, 38, Cursitor-street, London, for the price of 8d., or may be ordered on the Postal Request, price 8d., which is now on sale at all the principal Post Offices in the United Kingdom.

1891.

11,395 READ HOLLIDAY AND SONS, LTD. AND BROOKES (*Holliday*). Azo colours.
11,714 MANLOVE. Ironing machines.
13,277 GRIMSHAW, E. AND M. Hearth rugs; mats.
13,407 HOLLINGWORTH. Looms.
13,471 KENYON AND BLACKLEDGE. Ventilating and regulating temperature in weaving sheds.
15,801 MEWBURN (*Hunte*). Cleaning textile waste.
16,535 TAYLOR AND WARBURTON. Figured fabrics.
17,339 WILSON AND HUTCHINSON. Knitting machines.
19,605 CARR AND TAYLOR. Loom pattern bags.

1892.

4,817 DE LASKI. Circular looms.
8,539 LECAISNE. Circular knitting machines.

Amended Specification.

4,899 (1881) IMRAY (*Koechlin*). Colouring matters.

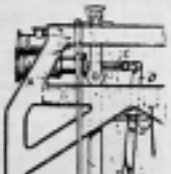
Second Edition.

3,956 JOHNSON (1886) (*Hermite*). Producing ozone and hydrogen for bleaching.

ABSTRACTS OF SPECIFICATIONS.

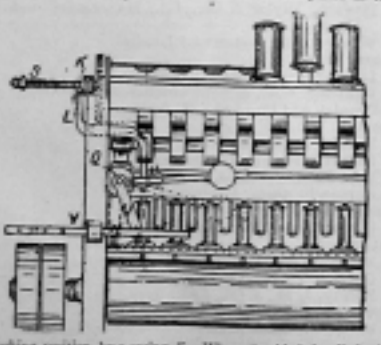
1,927. Feb. 3, 1891. **Looms.** W. BROG, 631, Springfield-road, Parkhead, Glasgow.

Boat-up motion.—In looms for weaving wire cloth the lay F is operated through links E and arms D by from a rock-shaft D1, the latter being worked by a lever D from the pin-wheel C of a motive-power engine A, which is mounted on the loom frame-work. The engine valve G is controlled by a hand-lever H.

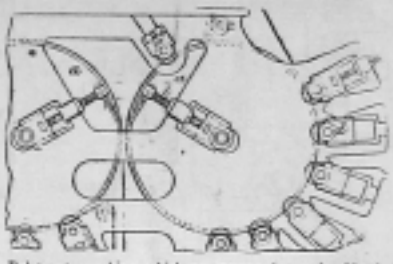


1,935. Feb. 3, 1891. **Spinning.** J. W. GAUNT, Summerfield, Bramley, Yorks.

Slubbing-motions.—The roving or yarn supports, between the delivery bobbins and the rollers, suitable detector wires which, when the roving breaks, etc., fall into the path of a rotating cylinder, having radiating blades or vanes and stop the same. The bladed cylinder is loose on its shaft and is connected therewith by a clutch box, the loose part K of which is normally held in its working position by a spring S. When the bladed cylinder is blocked the loose part of the clutch box is slid along its shaft and operates a lever L, the other end of which normally engages with a tongue projecting from a disc Q, thereby preventing a weighted lever S1 from operating a lever U connected with the belt-fork rod V by a pin and slot arrangement. When a thread breaks the lever L is moved into the position shewn in dotted lines, the weighted lever is released, and the driving strap is transferred to the loose pulley. The invention is specially applicable to slubbing, etc., frames.



1,996. Feb. 4, 1891. **Printing fabrics.** W. BUCKLEY, 51, George-street, Manchester.

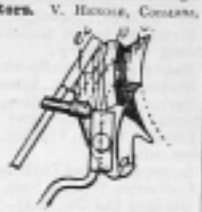


Relates to machines which are arranged to print identical patterns on both sides of calico or other fabric. The adjusting screws *c*, for the bearings of the bowls *a*, are arranged diagonally to allow the blankets to be readily adjusted, the bowls being brought close together when the machine is printing. The printing rollers *d* are radially adjustable in the ordinary way.

2,005. Feb. 4, 1891. **Spinning.** J. DIXON and J. LEE, both of Steeton, near Keighley.

Cop spindles.—The tube which carries the whorve and rotates on the dead spindle is provided with a number of recesses on its inner surface in order to reduce the friction between the tube and the spindle and to retain the lubricant between them. *Drawings.*

2,026. Feb. 4, 1891. **Doctors.** V. HEINZE, Cossebaude, Germany, and W. MIDDLETON, 75, Whitley-street, Rochdale-road, Manchester.



Flexible doctor blades *c*, for printing machines, are secured by screws between a bed plate *a* and covering plate *b*, the bearing faces of which form helical surfaces. The clamping plates *a*, *b* may be supported by end pivots *e1*, or in any other suitable manner, and the blade *c*, may be bent to a helical form before being placed between the plates.

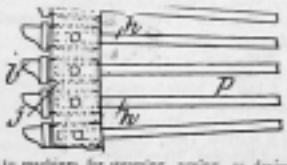
2,090. Feb. 5, 1891. **Spinning.** J. WALTERHAM, 3, JARRETT'S CRESCENT, Otley, Yorks.

Cop spindles.—Across the opening in the top of the cap A a strip of metal B is secured by means of a pin C, and the upper end of the spindle D is suitably grooved to accommodate the strip and pin.

2,171. Feb. 6, 1891. **Belts and bands, driving.** F. REDGRAVE, Cheltenham-street, Pendleton, Lancashire.

Woven belts are formed of two or more folds of fabric composed wholly or partly of animal fibre such as hair, wool, camel hair, etc.

2,183. Feb. 6, 1891. **Fabrics, dressing.** J. PLATT Salford Iron Works, Manchester.



Relates to machines for steaming, ageing, or drying textile fabrics, and is shewn applied to a machine in which folds of cloth are supported on a revolving frame. The outer ends of the supporting rods *h* are carried by the revolving ring *f*, the ends of the rods being secured to the pieces *i*, which are pivoted in the ring. The ring is driven round by a worm drum, which acts on the pieces *i*, and causes the rods *h* to move apart, having a parallel opening *g* into which the fabric is fed by rollers. A tray suspended from the frame prevents injury to the fabric if the folds should be too long. Suitable heating, etc., apparatus is provided.

2,218. Feb. 6, 1891. **Striped fabrics.** W. RAWLINGS, Church Bank, Bradford.

The warp stripes of sleeve linings are of china grass, alone or combined with cotton, in lieu of silk.

2,282. Feb. 7, 1891. **Embroidery.** N. FRANCONNOUX, 29, Boulevard Malesherbes, Paris.

Designs for plain embroidery are printed on the material as series of parallel lines, each of which indicates the size and position of a stitch; outlines of the designs may also be printed, but are not necessary.

2,287. Feb. 7, 1891. **Spinning.** H. W., C., and J. H. WHITEHEAD, all of Water-farm, Leeds.

Carrf rollers.—The roller is formed of a thin steel tube A, into which one of which is screwed a metal cap C having a short shaft D cast into it; E are set screws for further securing the cap.

2,388. Feb. 9, 1891. **Linoleum.** J. B. BARTON, 38, St. John's-road, Longsight, Manchester.

In manufacturing linoleum with a granite pattern the linoleum runs from the slab is pressed on to the ground fabric by passage between the usual rollers. To prevent longitudinal slipping of the granite particles a fabric or other appropriate material (passing around rollers) is made to press on the upper surface of the mass. The fabric may in some cases, pass around an extra roller. The linoleum may be further pressed by other rollers and wound on a roller. *Drawings.*

2,333. Feb. 8, 1891. **Loom Shuttle-eye machine.** H. R. HALLEN and A. ADAMS, both of Wellington-street Works, Burnley.

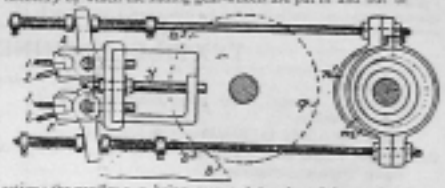
Relates to a machine for cutting rolled clay to the lengths required to form the tubular eyes or bushes. *Drawings.*

2,360. Feb. 7, 1891. **Cutting pile fabrics.** J. J. MASON, Ordsall-lane Mills, Salford.

When the point of the knife guide passes through the cloth, it comes into contact with a conductor, completing an electric circuit through a magnet or solenoid. This causes the armature to release a trigger from a stud, and allow the knife to be withdrawn by a spring or otherwise. *Drawings.*

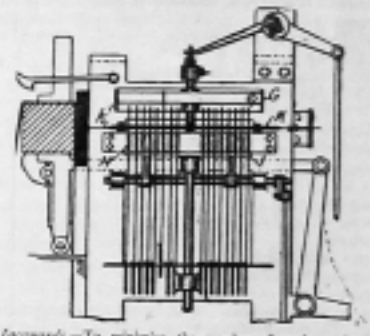
2,381. Feb. 5, 1891. **Looms.** W. H. HACKING, California Works, Bury.

Change-box motions.—Relates to the apparatus described in Specification No. 9,055, A.D. 1883, and to other shuttle-box motions. The sliding gear wheels which operate the compound eccentrics are operated from a wheel *b* on the tappet shaft, the cord cylinder frame being operated by a crank on the latter through a connecting rod and a spring which yields an obstruction. In order to facilitate the bringing of any box into position by the weaver, feeler levers, acted on (through needles) by the cards and each corresponding to a certain box, are provided, so that on operating one of such levers the corresponding box may be brought into position. These levers are provided with projections for acting, through intermediate needles, *t*, *s*, on the needles *p* by which the sliding gear-wheels are put in and out of



action; the needles *t*, *s* being mounted in pivoted levers A, B adjusted through rods *a3*, *b3* from eccentrics *a61*, *a6* which are carried by the respective parts of the compound eccentric. The needles *p* are provided with pusher heads, against which the needles *t*, *s* act. When the feeler levers are operated by the weaver a treadle or hand-wheel and disengaging clutch arrangement is employed for turning the gearing *b*, *g* from which the boxes are operated. The arrangements may be modified. For repeating cards, and thereby reducing the length of the card chain, the card barrel is driven one way or the other by a sliding clutch working on a key and arranged to engage with one of two oppositely revolving wheels which are loose on the card barrel and are geared together by a carrier wheel. The clutch is operated through a tappet chain, the barrel of which is turned through star and pin-wheel and bevel gearing put in and out of action by a needle acted on by the pattern cards. The tappet chain may be arranged to put the barrel out of action at times.

2,376. Feb. 10, 1891. **Looms.** G. MORTON, Darvel Ayrshire.



Jacquards.—To minimise the number of cards required in weaving chenille, and Brussels and other carpets, etc., the cards are made to act on the ends *h1* of sets of superposed notched spring slides **K**. The lifting hooks *e* are pressed by spring needles H against the slides, and, as the latter are operated singly or together, the notches coincide or not to allow the hooks to engage or not with the reciprocating griffe G. A reciprocating slapper board I pushes back the needles to free the hooks from the griffe as the latter descends. In place of notched slides, dented wires may be employed.

2,400. Feb. 10, 1891. **Driving and carrying belts.** R. KERR and T. JUBB, Square-road, Halifax, and F. REDGRAVE, Cheltenham-street, Pendleton, Manchester.

Woven driving and carrying belts are made with wires or other strengthening strips inserted within the layers of the belt and between the rows of stitching.

2,430. Feb. 10, 1891. **Looms.** H. WYMAN, Worcester, Mass., U.S.A.

Relates to improvements in the loom for tufted fabrics described in Specification No. 7,313, A.D. 1888. The tuft-yarn carrying needles have their eyes at different distances from their lower ends, and are made tubular at their lower parts to prevent the rubbing together of the yarns; back motion of the yarn is prevented by pawls within the needles. The needles have ribs at their upper ends which bear on the bars of a rib-board, attached to a swinging lifting frame, when the needles are selected or dropped. The series of needles are arranged in pockets or carriages, adapted to slide side by side on parallel tracks extending in the direction of the length of the warp. Positively-actuated evener bars, extending under the needles which are not selected, are employed; one evener is drawn towards the other by a spring. An automatic stop motion is provided, which operates when there is a failure in the selvage shuttle thread, or in the weft thread, or whenever two tuft-yarn carriers are dropped simultaneously from any one carriage.

In the jacquard are employed top and bottom hook boards and a hook locking board, the latter having bars to act upon the hooks, and keep them in engagement with the top board griffes when they are not to be selected. An independently actuated bar is employed to keep one row of hooks free from the top board when they are required to work independently to form a border. The hooks have eyes, for the tail cords, at their lower ends and shoulders above the eyes, and a guide portion working in pins in a lifting board, the tendency being for the upper ends of the hooks to be moved away from the griffes and against the bars of a controlling frame. A guide board prevents the hooks from turning. In the jacquard cylinder operating mechanism radius bars flocked

together, or disconnected, by hand, as required) are employed. For cutting the weft yarns adjustable oscillating blades are employed. A toothed nipper clamps the weft yarns whilst bent about the weft, and before the cutting takes place. The weft carrier (specially formed), is operated by a pivoted lever or rack and link, the combined lengths of which are equal to the distance between the pivot of the lever and the connection of the link with the carrier carriage when the latter is in its outward position, whereby rebound is prevented. A stop or cushion arrests the stick. The latter is operated through levers and links and spur gearing. Brake mechanism acts in conjunction with the stop motion. Arrangements for stopping and starting the loom by hand are described. The cloth is lifted preparatory to cutting the weft yarn. A special selvage thread lifter or heald is provided. The lay is operated through a rock-shaft and rods and levers from a cam. *Drawings.*

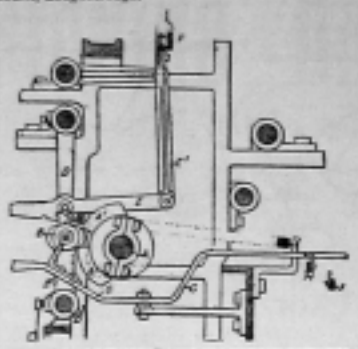
HOSIERY.

2,192. Feb. 3, 1891. **Knitting.** T. Barker, Pheasey Works, Bolton.

Parallel machines; driving mechanism.—The traverse of the carriage may be regulated by driving it by an endless chain and a sliding belt, which may be made to engage alternately with the two sides of the chain by adjustable stops; or, if it engages with one side only, the motion of the carriage may be reversed by a rocking shaft and belt fork, suitable belts and pulleys being provided. The same motion may be obtained by double bevel gearing and a clutch, or by spur gearing upon an oscillating lever. *A step-motion* is described.

Needle-beds.—Each end of the frame is formed with two inclines to receive the needle-beds, and a boss at each top corner is bored to receive the bars which tie the ends together and upon which the cam carriage slides. *Drawings.*

2,384. Feb. 10, 1891. **Knitting.** G. A. Cartwright Linehurst, Loughborough.



Straight-bar machines.—To facilitate the introduction of a splicing thread into the seats of quarter pores the needle-bar F is moved to slacken the loops during a portion of a draw or course corresponding to the width of the splicing. This is done by levers E1, E, D actuated by an arm on the shaft E3, which is rocked by an arm E2 and track B from two cams A1 on the shaft A. The track B is mounted upon a spindle, and is moved laterally as required by a lever G from two sliding bars H, I, moving in opposite directions. These bars are connected to the ordinary draw slide, and are raised by hand levers into a position to allow another cam on the shaft A to get them into working contact with the lever G.

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Howard and Bullough, Ltd., Accrington.
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Guest and Brookes, Manchester.
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McGowan and Hadwen, Manchester.
Platt, Brothers and Co., Limited, Oldham.
Stubbs, Joseph, Manchester.
Sykes, John, and Sons, Huddersfield.
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Dobson & Barlow, Ltd., Bolton.
Guest and Brookes, Manchester.
Hetherington, John, & Sons, Ltd., Manchester
Hall, Robert, & Sons, Bury.
Lees, Asa, and Co., Limited, Oldham.
Platt Brothers and Co., Limited, Oldham.
Stubbs, Joseph, Manchester.
Sykes, John, and Sons, Huddersfield.
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Hall, Robert, & Sons, Bury.
Livesey, Henry, Limited, Blackburn.
Stott, J. H., Rochdale.
Whiteley, Wm., & Sons, Huddersfield.

Waste (Cotton) Picking Machinery:
Brooks and Doxey, Manchester.

Wool Extractors:
Jarmain & Son, Huddersfield