

# The Textile Mercury:

A Representative Weekly Journal for

Spinners, Manufacturers, Machinists, Bleachers, Colourists, and Merchants,

In all Branches of the Textile Industries.

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## The Textile Mercury.

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Articles, Correspondence, Reports, Items of News, on all matters of novelty and interest bearing upon the Textile Industries, home or foreign, are solicited. Correspondents should write as briefly as possible, on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication, but as a guarantee of good faith. When payment is expected, an intimation to that effect should be sent with the contribution. The Editor will do his best to return ineliable MSS., if accompanied by the requisite postage stamps, but will not guarantee their safe return.

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All communications to the Editorial department should reach the office, 23, Strutt Street, Manchester, early in the week in order to receive attention in the next issue.

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## Current Topics.

### WOOLLEN MANUFACTURING IN INDIA.

Our Bombay correspondent called attention, in August of last year, to the fact that two woollen mills were being erected in the Bombay Presidency. This extension was attributable to the belief that the few woollen concerns already existing in India were doing a profitable business; the raw material also was easily obtainable, and further, the climate was well adapted for the manufacture. In a more recent communication our correspondent, it will be remembered, alluded to some of the difficulties against which such enterprises had to contend, referring more particularly to the lack of experienced operatives. Nevertheless, undeterred by difficulties in prospect, the two concerns above-mentioned have been steadily proceeded with, until now they are at work. The first was that of the Bombay Woollen Manufacturing Company. This company had no sooner begun to erect its mill, at Dadur, Bombay, than a piece of adjoining ground was obtained by some other parties, who built thereon a second woollen factory, which is now also in full swing, under the name of the Sorab Mill. Thus even in India the early bird finds another bird eager to share at the toothsome worm. These two establishments are the first of their kind in the Bombay Presidency, and of them the Bombay Woollen Manufacturing Company claims to be the first. A few particulars regarding it, which we gather from a Bombay newspaper, will therefore no doubt prove of interest to our readers. The agents for the mill are Messrs. Ewart Latham and Co., and they have secured the services of three experts from England to superintend the different departments—one for the spinning, another for the weaving, and a third for the dyeing and finishing. The raw wool used is brought from Busreh, Kurrachee, Madras, and the Punjab, and other parts of India. The Kurachee wool is said to be very dirty and troublesome, adulteration being largely practised by the traders. The yarns are spun at the mill from wools of various degrees of fineness and length and of different colours, white, black, and various shades of grey and brown. Blankets, woollen cloths, and serges are made. Some difficulty has been experienced in creating a market for the goods in India. The native dealer having been in the habit of importing all his woollens from England, was slow, if not unwilling, to recognise the merit of the Indian-made goods, which, as might be expected, are coarser than the English. The company had accordingly to open a shop in the bazaar themselves and put a native manager in it. Business was very slack at first, but it suddenly took a turn for the better. It is stated that on the reason being inquired

into, it was found the tradesman had been selling the goods as of real English manufacture, and their merit being recognised, the new company carried on a brisk trade in blankets. The trade is now increasing, the venture is declared to be a success, and the mill is kept busy manufacturing woollen cloths of all kinds for firms all over India. *The Bombay Gazette* winds up a eulogistic article on the subject as follows:—"All that is now wanted is that Government, who promised many years ago to encourage local industries, should assist by sending orders for supplies of goods for the Commissariat to Indian mills, and then the manufacturers will be prepared to import finer wools than can be obtained in India from Australia, which could be done and manufactured as cheaply as the goods Government at present bring from England. It is not unlikely that this new industry in Bombay will ere long offer strong competition to the English mills." Our Yorkshire friends are not likely to be much perturbed in respect of this matter at present. Nevertheless, following as it does the account we published a few weeks ago of the opening of the first woollen mill in Japan, the subject is certainly worthy of their attention.

### THE SPINNERS' SECRETARY AT MOSSLEY.

Our Oldham correspondent writes: "Mr. J. Mawdsley's address at Mossley on the eight hours question and more particularly his references to the Oldham Spinning Companies, have been freely commented upon in this district. Strong objection has been taken to his statement that 5½ per cent. 'was a little too much' of a return on the capital employed in the cotton trade. He himself proved the uncertainty of anything like a regular return and also the riskiness of the business, and stated that the working classes—the operative spinners—preferred 2½ per cent. in the savings bank. Mr. Bradlaugh, M.P., has also dealt with the same phase of the question, and has asked 'why, if manufacturing goods (not necessarily cotton) was such a profitable thing as many working people said it was, did they not put their own money into it?' There is now some talk of asking for an advance of wages in the cotton trade, but upon Mr. Mawdsley's facts and figures surely this is not warranted. He showed that the profits of 65 companies in the Oldham district for the past four years only averaged a return of 3½ per cent. on the share capital. Dealing with the present year, which he said was the most prosperous since 1880, he stated that with a margin of 3d., 'an average mill would pay 7 or 8 per cent. on the whole of the capital, or reckoning that loans could be got at 4 or 4½ per cent., 10 per cent. to the shareholders.' But he cannot deny—nay, he admits—that a large proportion of the companies had 'covered themselves with cotton,' and by this means it is well

known they have been enabled to obtain better returns than they otherwise would have done. Therefore, even taking the five years, there is not sufficient ground to warrant such a demand. But Mr. Mawdsley says, 'The question with them was whether the present margin was likely to continue. If it was likely to continue for ten, fifteen, or twenty years, he held that they would be justified in going in either for an advance of wages or for a reduction in the hours of labour; but then they had to look at the competition which was going on all over the world.' Mr. Mawdsley may rest himself assured that the margin will not continue twenty months, let alone twenty years; a look at the manufacturing branch of the trade should satisfy him of this. Then, even on his own shewing, how can the operatives put forth a claim for increased wages as they seem to be doing at present?

#### DESTRUCTION OF ARKWRIGHT'S MILL AT CROMFORD.

Yesterday week Arkwright's old mill at Cromford was destroyed by fire. As the scene of most of the inventor's labours, it was a building of exceptional interest, but the incident of its burning has led to many statements being made regarding it that are not correct. It was not the first mill in which he set up his machinery. When Arkwright, with the aid of John Smalley, of Preston, had brought his invention to a condition in which he thought it might be used with success, they both started south, to Nottingham, having a lively apprehension that their fate would be no better than that of Hargreaves, of Blackburn, if they ventured to set up, use, or sell their new machinery in Lancashire. Accordingly they made their way to the hosiery town—it had not become a lace town then—and secured a small old building in Woolpack-lane, in Nottingham, where they did the best they could—which was not much—to get their machinery adopted in the hosiery trade. Their comparatively slender resources, all provided by Smalley, were soon exhausted, and had the interests of Jedediah Strutt not been enlisted in the matter, the whole might have collapsed. What a fine field for speculation opens at this point! How different this country and the world might have been to-day had the adventurers not secured the cash of the stocking manufacturer to aid them in their efforts; or rather we should say to aid Arkwright, for Smalley mysteriously sinks into the background from the moment that Strutt comes into view. Whether Arkwright gave him the cold shoulder when he had found a man with a longer purse, or whether Strutt was the cause of the separation of the friends, is not known, and it is now useless to enquire. As Carlyle would have phrased it, he went into the darkness and neither his place nor the historian knew him any more. It was, however, the fortune of the present writer to discover traces of his settlement at Holywell, in Flintshire, where he commenced a successful career as a cotton manufacturer himself about 1775, building a very small mill, and afterwards two larger ones as the outcome of a successful business. In course of time he died and was buried at Whitford, near Holywell. His memory deserves preserving as a valuable, though not a conspicuous, pioneer worker in the foundation of the cotton trade and of England's commercial prosperity. The business he founded was continued by his sons until the hard times of 1842, when the Holywell cotton mills were finally closed, bringing great distress upon the town. They have now for some years been occupied by the Holywell Flannel Manufacturing Company, who have in-

duced the manufacture of flannel into the town, and have conducted it very successfully. The third mill, the first built by Smalley, has been taken down. It is sometimes asserted that Arkwright's mill at Cromford was the foundation of our factory system, but this is not correct. There was the small mill in Woolpack-lane, of which mention has been made, and also the larger one founded by Hargreaves, the Blackburn inventor, in Mill-street—now called Bow-street—Chapel Bar, Nottingham. This is still standing, transformed into dwelling-houses, yet bearing the marks of its early origin. But a much more important mill structure, and one that can much more truly claim to be the first "factory" in the sense in which the term is used in the manufacturing districts, is Lombe's old silk mill at Derby, built 40 years before the Cromford mill. The greater portion of the latter has of late been occupied by Messrs. Hollins and Co., hosiery manufacturers, and at the time of the fire they had a large stock of the raw and finished material there. The structure was completely destroyed, the damage being estimated at £10,000. Nottingham ought to be proud of the fact that it sheltered the genius and enterprise of Lancashire when driven from home.

#### THE BLACKBURN TECHNICAL SCHOOL : A PROPOSED EXHIBITION.

The success of this institution is not yet so well assured as it ought to be. What is, under the circumstances, a goodly sum of money has been raised, but there still remains an absolute necessity for raising a further sum of £8,000, if the institution is not to commence its career in a state of semi-starvation, instead of being well nourished and equipped so as to command the respect of those to whom it will appeal to make use of the advantages it offers them. For want of this money these advantages may be largely diminished, or shorn of their attractiveness to such an extent as to fail altogether to draw. The two or three persons to whom the town might naturally look to "do a pretty thing" on account of the benefits it has conferred upon them have altogether failed to respond, and the Council of the School have now to do the best they can without such help. The scheme of an exhibition has been devised for next year in the hope that it will yield the necessary funds in profits. This is an exceedingly risky project, and in view of the numerous failures that have taken place recently will require the most careful consideration. The proposal which the Council met to discuss on Monday last and which was adjourned on account of the sparse attendance was the following:—"To take into consideration the desirability of holding an exhibition of arts and manufactures in the new building during the summer months of 1891." "Arts and manufactures!" What displays of the arts and manufactures could be got together that would prove so attractive as to make a successful exhibition? A careful examination of Blackburn's circumstances will be necessary before a reliable answer can be given to this query. It may be affirmed without serious reflection upon the taste of the people of Blackburn, and even of East Lancashire, that of the fine arts very little will be found within its boundaries. Probably a fair proportion of fine art products might be discovered and obtained on loan to decorate the building, and, of course, there is no necessity to confine solicitations for such help to this area, as all the country is open to be asked. A fair degree of success might attend a movement in this direction. Next there are the industrial arts; the town itself possesses none of these,

if we exclude what are ordinarily called manufactures, unless, perhaps, it may be brick-making. The chemical arts are to be found about Church and Accrington, but in such a form as will not readily lend themselves to attractive exhibition. Darwen might afford a practical illustration perhaps of the art of paper staining. But beyond these we fail to see what can be obtained. There remain the manufactures. Again the town is disadvantageously situated, for practically it has only one manufacture, that of cotton, and certainly the introduction of a few Blackburn looms weaving shirtings, jaconets, and dhooties would not prove very attractive. Unfortunately no help can be obtained from the surrounding towns and districts. Preston shirtings, Chorley cambrics, the light goods of Harwood and Accrington, and Burnley printing cloths, would not prove an attractive variation, and the T cloths and 'domestics' of the Rossendale Valley would be equally ineffective. Bury might send a fastian loom, Radcliffe a check loom weaving a coloured fabric, and Bolton a quilting loom, which would be a slight variation and might for a moment or two engage the attention of a few of the Blackburn lads and lasses familiar with the loom. It seems conclusive from these observations that the arts and manufactures of Blackburn and East Lancashire would not be likely to prove so attractive to their populations as to ensure a successful exhibition. And yet it is upon pleasing the people of the town and neighbouring districts that reliance must be placed for raising the money.

#### WHERE TO OBTAIN INSTRUCTIVE AND PLEASING EXHIBITS.

If the people of the East Lancashire districts are to be pleased by an exhibition of manufactures, the Council of the Blackburn Technical School must go farther afield than their immediate surroundings. We would suggest the introduction therein of a Halifax carpet loom, a plush loom, a Macclesfield silk loom, a lace machine, a stockinette and hosiery frame, a Coventry ribbon loom, and a Denton felt-hat-making plant. These would afford both instruction and entertainment, and would shew the Blackburn weavers that they are the merest children at their art. The difficulty would be to offer such inducements to exhibitors as would get them to attend. Such exhibits would undoubtedly interest the great population of both the town and surrounding districts, but would probably fail to draw visitors from anywhere beyond the locality. This, however, would be the case with any display that could easily be brought together. There still remain industries of a widely different nature, which must be fetched from districts still further away. The most attractive would be the glass and china manufactures, if working exhibits could be arranged otherwise they would form no better a show than a good glass and china shop. Space will not permit us to enumerate any more suitable industries of an attractive character, of which indeed there are not very many, but such as there are will suggest themselves. We do not wish by these observations to damp the ardour of the promoters of this movement; our sole purpose is to secure the thorough consideration of the proposal, and, if it be decided to carry it out, the adoption of such steps as shall ensure its success as far as human foresight can accomplish it. An exhibition means a vast amount of labour and a large outlay. This is certain, whilst the return in the shape of a good surplus is always problematical, and in this case would perhaps be more so than usual. It might be worth



while considering as an alternative whether something as different as possible to any recent exhibition might not stand a better chance of proving a success. This would have to be an exhibition of the fine arts alone. Much might be said in favour of this idea. In the first place it would cost the least to get together, and would be the most cheaply maintained. Industries in motion are very expensive, on account of the driving power consumed and the skilled attendance required. A fine art exhibition would be in the main free from such draw-backs, and being so completely novel would probably exert a more attractive influence that anything in the mechanical line. The only doubt that could be felt in relation to it would be as to whether the taste of the East Lancashire operatives is sufficiently cultured to induce them to pay repeated visits to such an exhibition. On this point we have our own doubts. Perhaps a football match played by marionettes on a billiard table would take better. But whatever form this effort may assume, the Council will have to keep their eyes on the main chance, and that is the realisation of a surplus. A good, honest, all-round effort in the mills and workshops in the way of subscribing, and this supplemented by employers and the middle classes, would, we hold, be the safest course, and if not absolutely free from risk of disappointment would certainly be free from loss. No doubt these and other views will receive due consideration at the adjourned meeting of the Council on Monday next. Of one thing we trust to receive early assurance: that is, that the Council and public of Blackburn do not intend to leave their handsome structure stranded on Blakey Moor. If they do not provide the funds it will be as if they had built a stately ship at Little Harwood and launched it upon the Blakewater, expecting the vessel to make its way down by Cob Wall, along Brookhouse Fields, past the Church of St. Mary, through the town to Wensley Fold, and out at Witton Park into the Darwen, thence to the Ribble and the sea. Such a feat might be accomplished, but the Blakewater would first have to be transformed into a ship canal. And this is the case with the technical school: it must be provided with the necessary funds if it is to be of any use in promoting the welfare of the town.

THE BOARD OF TRADE RETURNS FOR OCTOBER.

The Board of Trade Returns for the past month shew that the total value of imports of all descriptions amounted to £37,746,236, a decrease of £484,378, or about 1.3 per cent., and the exports to £23,673,090, an increase of £592,234, or about 2.5 per cent. These totals compare with those of October of last year, when the shipping business was overtaking the arrears left by the dock strike, and they are therefore satisfactory, inasmuch as they represent a normal month's trade. As regards the imports of textiles, decreases are to be found in hemp, silk, and wool, amongst the raw materials, and also a very considerable decrease, both in quantity and value, in woollen stuffs; this is also accompanied by a decline of nearly 14 per cent. in the imports of cotton manufactures. Of raw cotton, the United States sent 1,391,000 cwt., against 1,208,000 cwt. last year, and the total imports of this staple have increased by about 12 per cent., both in quantity and value. Very little evidence of a check to the flow of exports to the United States can be gathered from this month's return, partly, no doubt, because many shipments made in the last week of September fell into the accounts for the past month, the

exports being thus somewhat unduly swollen. Our exports of cotton yarns and fabrics shew a satisfactory increase, as also do those of linen yarn and piece goods. On the other hand jute yarn and piece goods have declined, the former very considerably. Woollens and worsteds must, unfortunately, be included in the same category, the export of woollen tissues especially shewing a very marked falling-off. The exports of blankets, although somewhat less in quantity, have gone up more than 25 per cent. in value. In the following abstract we give particulars of the imports and exports of textiles, etc., for the month:—

I.—IMPORTS OF FOREIGN AND COLONIAL MERCHANDISE.

Principal Articles.	Quantities.		
	1889.	1890.	
Cotton, raw .. .. .	Cwt. 1,549,684	1,741,283	
Flax .. .. .	61,948	67,123	
Hemp .. .. .	303,421	92,243	
Jute .. .. .	22,539	81,869	
Silk, raw .. .. .	Lb. 313,419	291,873	
Wool, sheep and lambs' .. .. .	19,491,258	27,415,117	
Woollen Stuffs .. .. .	Yds. 5,724,217	4,029,474	
		Increase or Decrease per cent. compared with Oct., 1889.	
	1889.	1890.	
Cotton, raw .. .. .	4,267,284	4,763,913	+12.3
" manufactures .. .. .	198,791	166,773	-13.9
Flax .. .. .	112,855	104,360	-8.0
Hemp .. .. .	356,066	191,633	-46.6
Jute .. .. .	329,239	427,912	+13.1
Silk, raw .. .. .	222,044	160,639	-27.9
Wool, sheep & lambs' .. .. .	1,129,731	1,107,807	-1.9
Woollen Stuffs .. .. .	494,698	343,186	-30.9

II.—EXPORTS OF BRITISH AND IRISH PRODUCE AND MANUFACTURES.

Principal Articles.	Quantities.		
	1889.	1890.	
Cotton Yarn and Twist .. .. .	Lb. 21,745,490	22,955,500	
" Piece Goods .. .. .	Yards 423,415,900	449,489,600	
Jute Yarn .. .. .	Lb. 3,627,900	2,564,900	
" Piece Goods .. .. .	Yards 24,356,300	23,945,000	
Linen Yarn .. .. .	Lb. 1,169,900	1,338,800	
" Piece Goods .. .. .	Yards 12,570,700	13,189,000	
Wool, sheep and lambs' .. .. .	Lb. 1,961,000	2,296,000	
Woollen and Worsted Yarn .. .. .	4,451,900	4,186,300	
" Tissues, heavy and light, broad and narrow .. .. .	Yards 5,777,200	4,161,500	
Worsted Tissues, heavy and light, broad and narrow .. .. .	12,271,700	12,069,400	
Woollen Carpets .. .. .	867,400	810,100	
" Flannels .. .. .	1,278,000	1,157,000	
Blankets .. .. .	Pairs 169,551	166,108	
		Increase or Decrease per cent. compared with Oct., 1889.	
	1889.	1890.	
Cotton Yarn and Twist .. .. .	1,042,600	1,116,179	+7.0
" Piece Goods .. .. .	4,340,870	4,700,298	+8.1
" Other Manufactures .. .. .	691,169	682,271	-1.3
Haberdashery .. .. .	193,857	191,890	-1.0
Jute Yarn .. .. .	41,979	27,404	-34.7
" Piece Goods .. .. .	214,346	220,135	+2.7
Linen Yarn .. .. .	70,823	76,091	+7.3
" Piece Goods .. .. .	814,075	338,764	-58.9
Machinery and Millwork .. .. .	1,531,798	1,506,245	-1.6
Silk Manufactures .. .. .	191,038	168,855	-11.5
Wool, sheep and lambs' .. .. .	89,460	82,907	-7.3
Woollen and Worsted Yarn .. .. .	422,647	414,308	-1.9
Wool'n Tissues, heavy & light, narrow & broad .. .. .	461,965	375,590	-19.2
Worsted Tissues, heavy & light, narrow & broad .. .. .	728,368	674,964	-7.3
Woollen Carpets .. .. .	94,223	86,816	-8.4
" Flannels .. .. .	47,123	42,297	-10.0
Blankets .. .. .	51,857	55,281	+6.5

DAMP IN COTTON AND YARN.

Mr. Albert Simpson, of Preston, is a well-known cotton spinner who always keeps a keen eye upon the condition of his cotton purchases when the bales are being unpacked. But more than that, he keeps pens that never grow rusty, because he takes care to use them when the opportunity calls for it; and he writes with a very caustic ink. Hence there is no need to be surprised at the fact that he is regarded by cotton importers, merchants, brokers, and others of like ilk as a sort of *enfant terrible*, with whom they have to be very careful in their dealings. A letter from him, which speaks for itself, appears in another column. We content ourselves therefore with directing attention to it. If spinners would only act as Mr. Simpson does, or, better still, would all unite in pre-

senting claims for losses from undue damp and sand in cotton, a change would very speedily be made in its condition. Why cannot a committee of the Cotton Spinners' Association be appointed to receive all such complaints and details of claims and to press them upon sellers for redress? It would be easy enough to place those dealers who refused justice upon an *index expurgatorius*, and so clear them out of the market. But whilst doing this, spinners must be prepared to shew that their hands are clean in this respect. Some strong complaints have been urged by manufacturers during the past few weeks about the presence of excessive damp in yarn. "Fair play is a jewel," says the old proverb, therefore let us have it all round.

SERICULTURE IN TURKEY, AND IMPORT DUTIES.

Some six years ago the silk-worms of Turkey were almost entirely destroyed by disease, and it consequently became necessary to import eggs from abroad. The government of the Sultan therefore suspended the import duty of 8 per cent., and since then eggs have been imported into Turkey from France and elsewhere to the extent of 330,000 oz. annually, exclusive of 150,000 oz. imported into Syria. Lately, however, the Sublime Porte began to think that this foreign supply could be dispensed with, and accordingly the duty was re-imposed. But our lively French friends, who are even now hatching a drastic little French McKinley Bill, quite failed to see eye to eye with the unspeakable Turk in his appreciation of the beauty of re-imposing this particular import duty. The French Ambassador protested, and, wonderful to relate, his protest has induced the Turkish authorities to suspend the operation of the new regulations for two months. The text of the official document declaring this runs as follows:—"From tomorrow (Oct. 30th), and during a space of time extending over two months, silk-worm eggs imported from abroad shall be exempted from custom duties on their entrance into the Empire. Importers who shall produce authentic contracts signed before the date of the present notice shall enjoy this exemption until March 12th, 1891." There was at first some doubt as to whether the duties actually received before the granting of this exemption would be refunded. They amounted to a considerable sum, the greater part of the eggs imported from France being introduced during the two months intervening between Aug. 26th and Oct. 30th. Had this not been the case the concession would have been to a very large extent illusory. It has, however, been announced by the Turkish authorities that these duties will be returned, and no doubt the French Ambassador is regarding the result of his diplomatic efforts with much complacency.

ISLAM V. GAUL.

Anent the matters referred to in the preceding note, the *Bulletin* of the French Chamber of Commerce at Constantinople relates a curious story as to how the sons of the Prophet fleece the infidel. A French merchant of Constantinople had received 1,000 boxes of silk-worm eggs from France, and had paid duty on them. Desiring to forward 100 of them to Eastern Roumelia he presented the customs import note to the customs officer at Sirkedji. He could have legally claimed the return of 7 per cent. of the 8 per cent. which he had paid, but as it was a small matter he avoided making the claim in order to save time. To his surprise the officer demanded 1 per cent. more duty. In vain did the merchant urge the evidence of his import paper. "I don't know that document,"

said the official coolly; "pay 1 per cent. or I will not allow the parcel to be dispatched." The sum was paid and the matter reported at Galata. The officials there declared that their brother at Sirkedji was a fool, but the unjustly levied duty has not been refunded. The sum was very small, amounting only to 18 to 20 piastres, but the incident affords an example of the spirit of chicanery with which some of the custom-house officers are animated. Unfortunately these persons are not few in number, and their influence does much to retard the efforts at commercial progress which are set on foot with the approval of the Sultan.

#### THE SEAL QUESTION.

As was anticipated some time ago by shrewd business men, manufacturing furriers have been compelled to raise the prices of seals, and buyers are now paying an advance of sixty per cent. Some who foresaw that a change was imminent made preparations accordingly. Others find themselves without stock, and compelled to pay through the nose for their supplies. It will be interesting to watch the future course of the sealskin trade, if only for the purpose of noting the effect of the decline in the Behring Sea catches upon the demand for silk seals. The Yorkshire manufacturers are now producing most elegant goods of this class in pure and lasting dye. Their appearance in the eyes of many is as good as that of the natural seal, and there should now be a more favourable opportunity for increasing their sale.

#### THE NEW WAGES MOVEMENT.

Our Oldham correspondent writes: "The equanimity of the Oldham cotton trade has this week been somewhat disturbed by the move on the part of the operative spinners and the workers in the card and blowing room departments in the direction of an advance of wages. This is really what the communication to Mr. S. Andrew, the secretary of the Oldham Cotton Spinners' Association, actually means, although so much is not said in precise language. They simply ask for a conference with the employers' committee to discuss the present state of trade, yet at the same time they intimate that they consider the improved margin warrants them in a reconsideration of the wages question. This is the *modus operandi* agreed upon previously in respect to wage matters, but in commercial circles it is understood to mean that the spinners will put in a claim for an advance of five per cent., or half of the amount they are working at below full list prices. As regards those engaged in the card and blowing room departments, it is likely that they may endeavour to obtain more favourable terms, which on the last occasion the employers willingly granted, whilst previously they were exempted from a reduction along with the spinners. This generous treatment on the part of the employers arose from the fact that it was felt this class of labour had hitherto been inadequately remunerated for the services which have to be performed, and also from the desire to obtain a better class of workpeople. For years there has been a steadily-growing idea of the greater importance of the preparatory departments in comparison with spinning, hence the handsome treatment these employés have met with. Then there is the fact that no list has as yet been arranged to regulate the labour and earnings of card and blowing-room workers, and therefore the more difficulty there is in arriving at a proper solution of their case. Already the

questions which have been raised have been extensively discussed this week. Indeed at the meeting of the Committee of the United Cotton Spinners' Association, on Tuesday, the wages question was under consideration, while the Committee of the Oldham Employers' Association met on Tuesday evening to take the operatives' letters into consideration, and it was decided by the latter body to meet the representatives of the operatives on Tuesday next to discuss the points raised as to whether the state of trade warrants an advance of wages. There are murmurs amongst the workpeople at what they regard as the putting off of the question, seeing that their notices were forwarded last week end, and that some twelve days will elapse before their representatives meet the employers. It may be taken for granted that the operatives did not come to their conclusions at one meeting. Nay, it cannot be denied that the question has more or less been under their consideration for several months. How, then, can they expect the employers to be post haste on a question fraught with such vast interests? But, for all that, there is an undercurrent of feeling amongst those connected with the trade that the advance of 5 per cent. to the spinners will have to be conceded, nothing being said as to the cardroom workers. The ground laid down for this bowing to the operatives' demand is that spinners will decline to fight them. So far as can be gleaned the solution of the question will lie more in the matter of agreement as to when the advance shall come into operation than anything else. And what Oldham says to-day, operative spinners of American yarns in the four counties of Lancashire, Cheshire, Derbyshire, and Yorkshire will say to-morrow."

#### "KNEIPP LINEN."

The Jaeger theory of woollen clothing—woollen everything, from boots to pocket-handkerchiefs and collars—has set other theorists and faddists a-preaching. Dr. Lahmann is as enthusiastic and dogmatic over cotton as is the other doctor over wool, and now a simple village priest—not a doctor, and not exactly a German, but certainly an Austrian, which is almost the same thing—forsakes theology for medicine, and the subject of the primitive fig-leaf garb for the more elaborate linen fabric. Herr Sebastian Kneipp, the name of the latest benefactor of mankind, is priest of the hamlet of Vörihofen, near Augsburg, which little place he has made famous throughout the Austrian Empire. Thither flock patients of high and low degree eager to be put through the "course." The course is founded on a theory, and the theory is—let man return to a state of nature, and he shall be blessed with health and strength. And the state of nature, according to Kneipp, is: to eat what one feels inclined to, in moderation; to inure oneself to cold, by constant plunging in cold water; then to dress without drying the body, and to run barefoot for a mile or two, through the snow by preference, and falling snow, then through cold water or wet grass. But the dress that is worn is to be light and summy, and its material must be of linen—from socks to shirt. "Kneipp linen," of course, is now manufactured in Munich and Stuttgart. The peculiar merit thereof consists in its coarseness; a coarseness that "scratches the skin mildly and keeps it aglow." Years ago, the great Sir Erasmus Wilson eulogised linen—fine Irish linen—for the very opposite quality; it did not scratch the skin. So between the old authority and the new, linen ought to be in the ascendant, and our friends engaged in

its manufacture can rest under the comfortable conviction that, whether they make it coarse or fine, it is still a fabric of amazing hygienic virtues.

## Articles.

### THE DEMAND FOR AN ADVANCE OF WAGES IN THE SPINNING TRADE: A SUGGESTION.

The cotton trade in its various branches is one of the most changeable businesses in which any person could venture to invest his capital. It is subject to long and severe depressions, in which the spinner and manufacturer have all their work cut out for them if they are to prevent their capital being frittered away in small losses owing to the balance between production and demand inclining the wrong way. Or, when trade is fairly good and the prospect pleases, a band of freebooters in the shape of cotton speculators rig the market and compel the spinner to pay blackmail to such an extent that all the anticipated profits, to which he had been looking forward with the zest derived from their rarity, vanish into thin air. Once again things look bright, at least statistically, and the weight of the crop promises an abundant supply at low prices; but alas! once more "things are not what they seem" and a large percentage of the spinner's profits evaporate into the atmosphere, or pass away through the dust cages of his openers and scutchers in the shape of sand and dirt—too often, it is to be feared, surreptitiously introduced into the bales in the fields of growth. Still, by steady persistent effort, great endurance, and rigid economy, he lives through the long depression resulting from the injudicious multiplication of spindles; after a few sharp and severe fights he beats the speculators, and by his loud and warning outcries he shames the adulterators of his raw material into approximately fair dealing. The days of bliss seem before him: his order-books are fairly well filled with contracts at moderate prices, Providence is smiling upon him with a bountiful cotton harvest in every field in which the article is grown; and a mild autumn prolongs the life and fruitfulness of the plant. As a result there is a steady, continuous, and large decline in the prices of his raw material. It looks as if he was in for a good time. He can see a margin between the cost of the production and the selling price, or rather the price he is quoting, larger than he has seen for 15 years past. Could he have this for three, two, nay even one year, he would be grateful. Such are his circumstances to-day. But prosperity to him is like the fabled cup of Tantalus, the contents of which when put to the thirsty would-be drinker's lips flow away. Already it seems as if the memory of having seen a prospect of good times before him is to be all that he will get of them. Merchants want goods and yarns at lower prices; manufacturers cannot sell their cloth at current rates; they are stopping looms, and in some cases, as at Haslingden, are meeting to organise short time. These causes bid fair soon to effect a redistribution of the profits which it is generally assumed the spinner is—but really is not—making. And last, but not least, there come up the leaders of the operatives in the two principal spinning centres, Oldham and Bolton—which practically means the whole trade—offering congratulations to their employers on the prosperous times that have fallen to their lot, and trusting that they may



be permitted to share therein. These felicitations have in them a strong smack of ironical satire, as the persons who offer them know very well that the prosperity on which they are founded is as yet nothing more than a shadow, which may or may not become more concrete than at present, but is much more likely *not* to do.

In this new movement Mr. Thomas Ashton, secretary of the Oldham Operative Cotton Spinners' Association, leads the van. We intimated last week the probability of such a demand being immediately made. As a fact we believe Mr. Ashton's communication reached the Employers' Association on the day we wrote our remarks. Mr. Ashton's request is reasonable enough in itself, being simply the expression of a desire for a conference between the Wages Committee of his and the Employers' Associations, to ascertain if the trade is in such a state as would admit of the employers advancing wages 5 per cent. We say this suggestion is reasonable enough providing there is not behind it a determination to enforce the request it veils whether circumstances justify it or not. We shall be glad indeed, as it would be an augury of better times for both masters and men, could we think that this was an instance of the sweet reasonableness that may in the future govern the relations of the employers and employed in the cotton trade. And why should it not? We hold that both masters and men are partners in a great industry, and should mutually share in the advantages of good times and in the disadvantages of bad ones, and should agree upon these without damaging one another's interests to the extent of thousands of pounds in order to ascertain it. Mr. J. Fielding, the secretary of the Bolton Spinners' Association, is a man more of the your-money-or-your-life type, and in his communication, dated the 11th inst., he practically bids the employers "stand and deliver" their purses over to the operatives. After congratulating them on their prosperous condition during the past twelve months, the following are his words:—"Feeling that we can with justice ask to participate in such improvement, I am directed to hereby give you notice that on and after the 17th, 18th, and 19th December next, according to the making-up day, we shall require to be paid upon" such terms as, we suppose, imply an advance of 5 per cent. We miss Mr. Ashton's diplomatic tact in this case, but perhaps it really matters very little, as both communications may be construed as demands. It goes without saying that, emanating from Oldham and Bolton, the chief coarse and fine spinning centres, they practically represent the whole of the English cotton-spinning trade.

The question now arises—how they should be treated? We answer—with every possible consideration. We affirm again that employers and employed are mutually interested in the welfare of the trades in which they are engaged, and should share in both prosperity and adversity. Further, it is quite time that the struggles that have disgraced their connection in the past should for ever cease. In the spinning section of the trade, which is a very simple one, it would be easy to elaborate a self-acting governing principle that would be equitable to both sides and secure to each substantial justice. Suppose that a standard margin be adopted to represent an average condition of trade, and that an advance of say  $\frac{1}{4}$ d. above the figure fixed upon should represent good trade, and a decline of like amount below the standard figure should indicate poor trade. This range should be regarded as a normal one, and should neither entitle the employé to ask for an advance, nor

on the other hand should the decline below it to the same extent entitle the employer to ask for a reduction. As however it would be quite impracticable to make the wages list reflect the fluctuations of the market every week or even to register the short periods of buoyancy or depression, we would propose that no demand should be made for advances of wages unless the ground on which it was made had been steady for six months. This would prove that the period of prosperity was sound and fairly permanent. On the other hand a period of depression should endure for a like length of time before it would entitle employers to ask for a reduction. This plan seems to us to afford a means of securing the automatic adjustment of wages in the spinning branch of the trade, and of abolishing for ever the arbitrary resort to strikes, which in the past have proved so injurious to the best interests of both parties. Of course details would require a little care in elaborating.

Suppose we apply this principle to the present application. It is affirmed, and truthfully so, that the margin between the cost of production and the present quoted prices of yarns is owing to the sudden and great drop in the prices of cotton, and as yet is an unrealised benefit. It is like Jonah's gourd, which grew up in a night, and like that ill-starred plant it may wither in as short a time. It is possible that there may be a rebound in cotton, and to some extent this is probable; it is much more probable that yarns will decline, as on the present basis of prices manufacturers cannot go on, and merchants seem as if they were determined to give no more. We pointed out last week that an equitable division of the fall in the value of cotton would be for the spinner, the manufacturer, and the distributor to have equal shares. In the open market these parties generally contrive to give effect to this rule, and though spinners by the fortuitous concurrence of circumstances have hitherto retained the whole, it is exceedingly doubtful whether they will continue to do so. If they do so for six months we should say the demands of their employés ought to be conceded.

## Reviews of Books.

All books reviewed in this column may be obtained post free at the published prices from Marsden and Co., "The Textile Mercury," 23, Strutt Street, Manchester.

"COLOUR IN WOVEN DESIGN."—By ROBERTS BEAUMONT, Professor and Director of the Textile Department, Yorkshire College, Leeds. London: Whittaker and Co., Paternoster-square; and George Bell and Sons, York-street, Covent Garden. Price 21s.

The above forms the subject of an effective treatise by the Professor of the Textile Industries Department of the Yorkshire College, Leeds.

Recognising the futility of attempting to reduce colour to anything approaching a pure science, Professor Beaumont has very wisely confined himself almost entirely to the consideration of the phenomena of colour as applied to textiles, for, as stated in the preface, "The object of this book is to supply as far as possible a complete scheme of textile colouring, and to demonstrate the methods of applying fancy shades to all descriptions of woven manufactures." Our space will only avail us to indicate in a general way the manner in which the writer handles his topic.

The first chapter is devoted to the consideration of the theories of colouring, useful comparison being made between the science of colour as demonstrated up to date and artistic colouring, or, to put it more clearly, between the mixture, etc., of coloured lights

and of pigments. Several very interesting and instructive experiments are indicated, which textile colourists will do well to investigate for themselves. Having demonstrated the inefficiency of the theory of Helmholtz and others as applied to the palette, colours are classified as simple and compound: the simple colours being red, blue, and yellow, and the compound including first the secondaries—green, orange, and purple; and second, the tertiaries—russet, citrine, and olive. The purity or saturation, luminosity or intensity, and the characteristic tone of individual colours are then dealt with, and the chapter is concluded with reference to the temperature of the visible and the invisible rays of the spectrum. Chapter II. deals with the "Attributes of Colour." The properties of the three primaries, red, blue, and yellow, are fully demonstrated, including the allotment of their portion for utility in textile designs. Modifications of the primaries are then dealt with, followed by the secondaries treated in like manner, many useful hints being given and mention being also made of the special qualification needful in the textile designer. The production of tints and shades and the alteration in hue of various colours is dealt with and illustrated by coloured examples. Chapter III. is devoted to "Contrast and Harmony." The change of colours when placed in juxtaposition is clearly indicated by a table, which should prove useful for reference. Contrast is then dealt with; helpful and harmful contrast being very clearly demonstrated, and useful hints given respecting its application to textiles. Lastly, harmony is dealt with.

Passing from theoretical to practical matters, the author devotes Chapter IV. to "Mixtures." Three ways of producing these are indicated—viz., by carding several colours of materials together; by fancy twist yarns; and by mixing two or more classes of threads in the weaving process. This chapter is then devoted practically to blending and the means of representing blends effectively by pigments. Some very good ideas are given, which if followed out would save a lot of trouble in the works.

The "Elements of Textile Colouring" forms the subject of Chapter V., the whole matter being first reduced to system as indicated in the following table:—

TABLE ILLUSTRATING THE TYPES OF WOVEN COLOURINGS.

### I. COLOUR IN SIMPLE AND FANCY WEAVES.

(A) *Single-make Cloths.*—These comprise woollen, worsted, cotton, linen, and silk textures for suitings, trouserings, dresses, flannels, shawls, wraps, etc., in plain, twilled, mat, sateen, corkscrew, leno-diaper, and other weaves.

(B) *Backed and Double Weave Cloths.*—These comprise effects produced principally for gentlemen's wear, in both woollen and worsted yarns; also rugs, travelling modes, winter mantlings, etc.

### II. COLOUR IN FANCY AND FIGURED PATTERNS.

(A) *Single Fabrics.*—These comprise stripes, checks, and drafted patterns for dresses, mantlings, ulsterings, shirtings, etc.

(B) *Backed and Double Weave Combination Patterns.*—These comprise woollen and worsted patterns, chiefly for gentlemen's garments; also shawls, mantlings, rugs, "Kidder" or Scotch carpets and damasks.

(C) *Figured Patterns Coloured in the Weft.*—These comprise vestings, dresses, matelasses, and cords.

(D) *Figured Patterns Coloured in the Warp.*—These comprise spotted cloths of various descriptions in simple and complex makes, fancy dress patterns, mantles, plushes, velvets, astrachans, and carpets.

(E) *Patterns in which the Figure is developed by both Warp and Weft Colouring.*—These comprise silk and worsted robes, and elaborately ornamented patterns in an endless diversity of textures and materials.

A concise survey of the whole ground then follows, and the final and larger part of the chapter is devoted to the consideration of stripes, which are treated as follows:—"I. Regular Stripes: (a) Hairlines; (b) stripes of two colours; (c) stripes of three or more colours. II. Irregular stripes: (d) Patterns of two colours; (e) patterns of three or more colours; (f) shaded patterns composed of several colours." The special attributes of each class are clearly demonstrated by means of coloured plates, diagrams, suitable sets, etc.

"Check Patterns" constitutes the subject of Chapter VI, the three broad classes as follows forming the basis of treatment: "I. Checks composed of two colours; II. Checks composed of three or more colours; III. Shaded and irregular checks." The form of check, allotment of space to colours according to intensity, and variety of tints and shades produced by the crossings, etc., are fully treated, and further illustrations of the use of weave in the same principles are given, the coloured plates considerably enhancing the practical value of the chapter.

In Chapter VII the division of colourings into two classes—viz., simple and compound, each of which is further divided into regulars and irregulars—is first considered and typical examples are adduced. Simple colourings, both regular and irregular, are then fully treated, the following extract demonstrating the principle of the division:—

#### REGULAR SIMPLE COLOURINGS.

Class A.—Composed of two shades.

I. Scheme.		II. Scheme.	
1 thread black,	2 threads black,	1 thread black,	2 threads black,
1 " white,	2 " white,	1 " white,	2 " white.

Class B and C are composed of three and four shades respectively.

#### IRREGULAR SIMPLE COLOURINGS.

Class A.—Composed of two shades.

I. Scheme.		II. Scheme.	
2 threads black,	4 threads black,	1 thread black,	4 threads black,
1 " white,	1 " white,	1 " white,	1 " white.

Classes B and C are composed of three and four shades respectively. The use of the various classes with the ordinary makes—such as plain, 2-and-2 twill, hopsack, Mayo or Campbell twill, and also with some more uncommon weaves—is very fully treated of, this chapter being one of the longest in the book, and profusely illustrated.

Chapter VIII is devoted to "Compound Colouring," the general principles being first indicated and stress laid on the utility of a practical acquaintance with the woven effects of simple colourings. The following extract illustrates the system of division adopted:—

#### REGULAR COMPOUNDS.

Class A.—Compounds composed of two simple types.

I. Scheme.		II. Scheme.	
1 thread black } A	2 threads black } A	1 thread black } B	2 threads black } B
1 " white } A	2 " white } A	1 " white } B	2 " white } B
2 " black } B	4 " black } B	2 " black } B	4 " black } B
2 " white } B	4 " white } B	2 " white } B	4 " white } B

Styles in three and four shades are also indicated, and Class B—Compounds composed of three simple types, etc.

#### IRREGULAR COMPOUNDS.

I. Scheme.		II. Scheme.	
2 threads black } A	1 thread black } A	1 thread black } B	3 " black } B
1 " white } A	1 " white } A	1 " white } B	1 " white } B
4 " black } B	3 " black } B	1 " white } B	1 " white } B
2 " white } B	1 " white } B	1 " white } B	1 " white } B

Groups A and B may be repeated to any number of threads of which they form a multiple. The application of each type of colouring to the various kinds of cloths, such as mantlings, dress goods, etc., is clearly indicated, use being made of the preceding coloured plates of shades, tints, etc.

"Fancy Shades applied to Special Designs" are dealt with in an interesting and instructive manner in Chapter IX. The application of colour to corkscrews, fancy woollen weaves, diagonals, etc.; also to gauze, imitation gauze, and finally ribs, should prove very useful both to students and experienced designers, the illustrations given being very attractive.

In Chapter X the "Colouring of Combination Designs," including drafted patterns and a great variety of weaves combined in a variety of ways, is effectively demonstrated, many of the combinations being of great practical value.

Chapter XI treats on "Spotted Effects," the character of spot most suited to the various kinds of cloths, such as woollens, worsteds, cottons, etc., being first indicated; the method of obtaining the desired result is then explained very fully, typical examples being given. The following classification is adopted:—

- I. Spots developed by ordinary warp and weft of the cloth.
- II. Spots obtained by using an extra series of warp yarns.

III. Spots obtained by using an extra series of weft yarns.

IV. Spots obtained by using both an extra series warp and weft yarns.

A plate of fancy coloured yarns is supplied.

The "Colouring of Double Weaves and Reversibles" is very practically and usefully demonstrated in Chapter XII. The double plain here, of course, takes precedence, being treated in the following order:—

- I. Patterns in two shades.
- II. Patterns in three shades.
- III. Patterns in four shades.
- IV. Patterns in two, three, or four shades, comprising double plain and other weaves.

The treatment of reversibles follows, and finally the consideration of double twills, etc., concludes a chapter which is one of the most interesting and instructive in the book, its value being enhanced by typical coloured examples.

Chapter XIII is devoted to "Figured Textiles Coloured in the Warp," this being the first chapter where figured cloths attain prominence. Under this head come quiltings, dress goods, plushes, velvets, carpets, etc., in all cases elaborate styles being dealt with, and some exceedingly beautiful coloured examples being given.

Chapter XIV, which is the longest in the book, treats on "Weft-coloured Figured Fabrics" and "Curl textures." The following divisions are separately considered:—

- I. Design in which the figure is a product of the ground weft.
- II. Designs requiring one extra weft.
- III. " " two " wefts.
- IV. " " three " " "
- V. " " four or five extra wefts.
- VI. " " composed of two wefts and reversible.

No pains have been spared to demonstrate not only the means of effectively colouring, but also the principles of cloth construction, which obtain a prominence that materially adds to the practical value of the treatment.

Having given this broad, general, outline of the main features of the book, our remaining duty is to find fault and to praise. Happily for us there is little of the former needed, while much of the latter is deserved. The system of classification adopted is exceedingly good, and adds very materially to the value of the work as a text book for students, but a table at the commencement, indicating the system of treatment adopted throughout, would have materially cleared the way for any student not very conversant with the various types of textile design. The writer's style is pleasing, and as a literary production the work will rank higher than the author's previous efforts, yet despite this commendation there is room for further improvement. We need scarcely mention the enhancement of the value of the book arising from its numerous and beautiful illustrations. They are the finest of their kind which we have as yet come across, and the publishers are to be congratulated on the general excellence of the work, and particularly on the illustrations, both coloured and otherwise, which are of great practical value. Professor Beaumont's literary works in one form or another are already widely known and appreciated by those engaged in the textile trades, but it is not too much to say that he has surpassed himself in this, his last, endeavour.

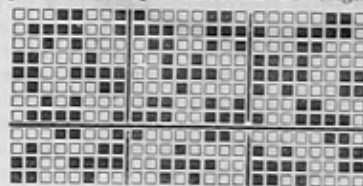
**LINEN EXPORTS.**—The Flax Supply Association, in their circular on October trade, say:—The exports of yarn exhibit a fair increase this October, being in excess of October, 1889, by 14.4%; the countries contributing chiefly to this increase are:—Italy 107.7%, Belgium 83.9%, Spain 15.8%, and Holland 15.1%. On the other hand the United States are decreased by 37.5%, but taking the large shipments of the previous months, especially June and August, into account, the shipments for present year are in excess of those of last year by 84.1%—the total exports for same period, viz., ten months, are better by 11.9% and 4.1% in quantity and value. Threads are also better than in corresponding ten months in 1889 by 4.6% and 4.0%. In the exports of piece goods for October the balance is on the right side, the month just closed being in excess of corresponding month in 1889 by 4.8% in yards, and 7.8% in value. The following countries exhibit large increases:—Brazil 67.6%, British N. America 59.6%, U. S. of Columbia 41.6%, British W. Indies 38.0%, Germany 21.0%, and the United States 9.5%. Amongst the decreases are:—Spain and Canaries, 35.6%, and France 16.6%.

## Designing.

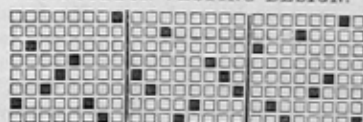
### NEW DESIGNS.

#### NO. 1 COTTON VESTING.

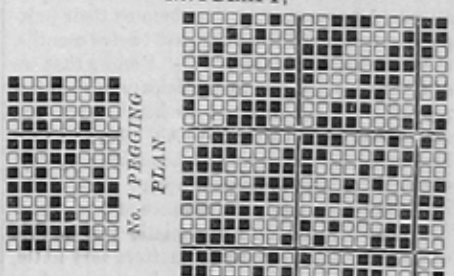
There will always exist a demand for novelties in pattern and style regardless of their special combinations in figure or their absurdity of texture. They are a product, however, that command a ready sale, so whatever may be said in defence of suitability, proper materials, or well-balanced makes of cloth, the never-ceasing mutations of fashion govern the disposition and tastes of its votaries. The design given herewith is in a 72-reed, 3 in a dent, or 108 ends per inch of 60's two-fold cotton twist for warp; weft: single 30's soft spun cop; 108 picks per inch; warp threads all red fawn, dark buff, light indigo blue, napoleon, dark marone, light brown, drab, and dark dahlia; the weft grey cop. Variety of pattern may be obtained by using two shuttles; the warp pattern two of cream, 1 of mid-coral; weft, 2 of grey cop, 2 of night green; which would have to be two in a shed by using a catcher on the opposite side from the shuttle boxes. The warp may be all cream, light pink, mid-pink, rose, cerise, sky, dark sky, light giraffe, and mid-seal brown; details of warp counts, and picks the same as for above. We have suggested this variety believing it would have a very taking effect and being a decided improvement on the original.



NO. 1 COTTON VESTING DESIGN.



NO. 1 DRAFT.



NO. 2 COTTON VESTING DESIGN.

#### NO. 2. COTTON VESTING DESIGN.

We appear to have glided comfortably into early winter. November is the month when people don their winter attire, and select the smartest trifles which will relieve the sombreness of their garb, especially during the few weeks which must elapse before the festive season. We will therefore "take time by the forelock" and endeavour to give vesting manufacturers an original design, which will be found seasonable, useful, and novel, and well suited for ladies' under-vests. The details may be varied according to circumstances. We suggest a 72 reed, two in a dent, or 72 ends on the inch, of 30's two-fold twist for warp; and 72 picks per inch of 30's two-fold weft. Polished or glazed cotton would be of great effect in warp and weft on account of its brilliancy. The design is on 18 shafts, 18 to the round, straight over draft. Warp pattern: 12 of dove, 6 light blue-green, 12 dove, 6 light blue-green, 12 dove, 6 dark rose, 12 dove, 6 dark rose; total 72 ends. Weft pattern: 12 dove, 6 dark rose, 12 dove, 6 dark rose, 12 dove, 6 light blue-green, 12 dove, 6 light blue green; total 72 picks. The warp and weft colours may be cream and red brown, light mauve and dark buff, red fawn and white, dark cream, and very dark orange; checking colours the same



CHEVIOTS, ETC.

The revival, or more correctly the development of the woollen mantle and dress trade, which has been previously noted in these columns, has not been without its effect on woollens and the rougher styles of worsteds for men's wear. Manufacturers of these goods must be on the alert or the strides which will probably be made towards more perfect

ornamentation may leave them in the rear. Colour and finish have so long been to the fore in these goods that designers have well-nigh forgotten that there is such a thing as weave, holding it of little or no importance in comparison with the two first-mentioned means. We on no account wish to decry the use of colour and finish; these in unison must ever maintain their preëminence for certain classes of goods, but neither can we close our eyes to the fact that weave, and more particularly weave in unison with colour, will in the near future gain a prominence that it has never as yet attained. By weave is not meant 2 and 2 twill or hopsack, 3 and 3 twill or hopsack, etc., but rather such weaves as will be found in our designs for this week, which admit of colour being applied in both novel and effective ways. These effects must nevertheless only be regarded as mediocre compared with what can be done.

In the first place then we must impress upon designers the need for bold weave effect and large

but delicate colour combinations. Designers are often afraid of branching out into untrodden paths, and we cannot but feel that the advice just given is needed. The designer has now at command ranges of blends that are almost perfect, but the beauty which may be added to the ultimate fabric by using weaves to distribute the colours combined can hardly be realised save by experiment. Designs 199 and 200 indicate the type of weave to which we refer, though these weaves have been originated for pure fine worsteds. Two simpler makes, Designs 197 and 198, are given as suitable for utilising either for combed cheviots or pure woollens.

Design 197 is simply a modification of the 2 and 2 twill on 24 threads and 24 picks, the modification consisting of joining together two twills (weft way), thus producing a weft flush of 6. If, however, this design be wefted 1 pick black, 1 pick white, then one of the modified twills will shew a preponderance of black and the other of white, since the modification is introduced on alternate picks. Rather more picks than threads per inch should be inserted to develop the two ribs to the fullest extent, and we would recommend the trial of this effect in coarse yarns, say

*Warp.*  
All 2/12's black combed cheviot.  
10's reed 3's.

*Weft.*  
1 pick 3's black,  
1 " 3's grey mixture.  
36-40 picks per inch.  
Rough finish.

Black and white mixture and red and white mixture will also give an effective colouring, and many others will undoubtedly be suggested.

Design 198 will give a very nice check, the hopsack giving a fine depressed effect, while the double twill effect surrounding the hopsack gives a more raised effect owing to the greater length of the flush. The following will prove effective for a woollen:—

*Warp.*  
8 threads 18 sk. black,  
16 " 18 sk. black,  
and dark blue mixture (neutral).  
10's reed 4's.

*Weft.*  
Same as warp.  
40 picks per inch,  
or

*2nd Warp.*  
8 threads 2/6's black,  
4 " 2/6's dark grey,  
8 " 2/6's black,  
4 " 2/6's dark grey,  
11's reed 2's.

*Weft.*  
All black or same as warp.  
22 picks per inch.  
Rough finish.

WORSTED COATINGS, ETC.

Design 199 is supplied as an effective example of applying weave for use in combination with colour. The following is a suggestion for colouring, sett, etc.:—

*Warp.*  
1 thread 2/44's black worsted,  
1 " " dark green and black mixture worsted,  
1 thread 2/44's black worsted,  
1 " " dark red and black mixture,  
1 thread 2/44's black worsted,  
1 " " dark green and black mixture worsted,  
8 threads 2/44's black worsted.  
18's reeds 6's.

For 8 threads.  
For 8 threads.  
For 8 threads.

*Weft.*  
Same as warp (22's) only blue mixture in the place of the green mixture.  
100 picks per inch.

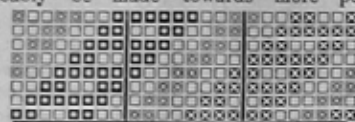
Bolder colourings may, without fear, be resorted to in this case, since an all-over effect is obtained from the construction of the design.

Design 200 is an illustration of a species of very effective design suitable for jacquard work, or, in the smaller types, for shafts. In this case also the idea of applying weave to develop a certain colour effect has been observed. The following sett will prove useful:—

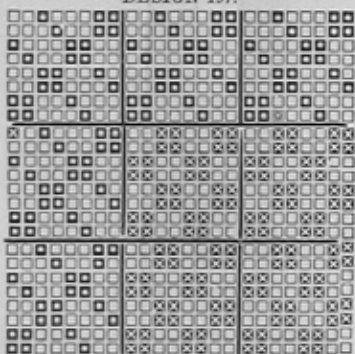
*Warp.*  
1 thread 2/48's black worsted,  
1 " " " twisted with 60's silk.  
20's reed 4's.

*Weft.*  
All 24's black, dark green mixture, or black worsted twisted with dark silk.  
80 picks per inch.

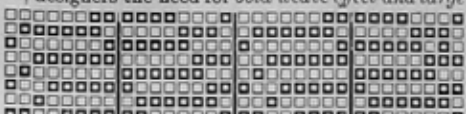
The two designs given for woollens will also prove effective for worsteds, and all the designs given may be extended as required by drafting. No difficulty will be experienced in backing these designs with warp if requisite.



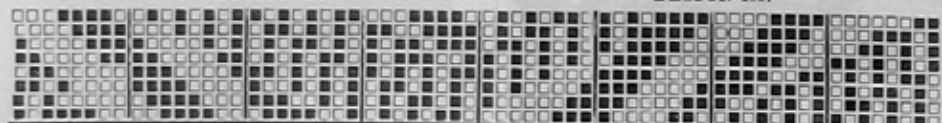
DESIGN 197.



DESIGN 198.



DESIGN 199.



DESIGN 200.

## Machinery and Appliances.

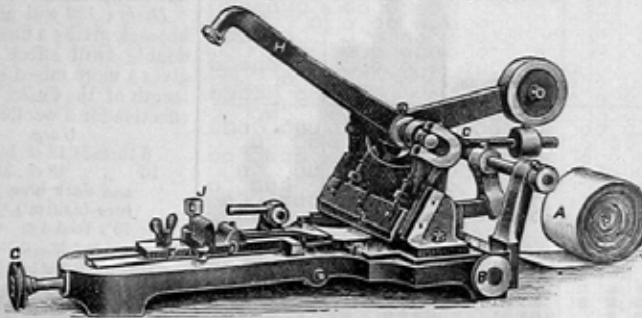
### NEW PATENT MACHINE FOR PASTING, MEASURING, AND CUTTING ROLLER CLOTHS.

MESSRS. DRONSFIELD BROTHERS, ATLAS WORKS, OLDHAM.

Very few people not intimately connected with the practical work of our textile mills have the faintest conception of the importance of paying proper attention to the smallest details in each process, or of how much the neglect to give such attention deteriorates the results. These details are to be found in every section of the work and in connection with every machine. Amongst them none can be deemed more important than that of covering the various series of rollers, beginning with the drawing frame and ending with the ring, mule, or doubling machines. The fluted rollers of the drawing, slubbing, intermediate, roving, and jack frames, and rings, and mule, have superimposed upon them leather-covered rollers, the covering being necessary to give them a softer surface than a metallic one affords, and one that will permit itself to bed very slightly into the flutes of the lower roller, thereby enabling it to hold the material passing between with a proper degree of firmness. Leather alone, however, would be too stiff and hard for this purpose, though its smooth surface provides everything requisite in that respect. To obviate this defect a fine, thick, closely-milled woollen cloth, manufactured expressly for the purpose, and termed roller flannel or roller cloth, is used as a first covering or foundation for the leather one, which is put upon it. This gives the requisite elasticity to the surface, and the roller when properly covered in this manner is everything that can be desired. But covering with both cloth and leather required by the old hand process great experience, care, and skill, so great indeed that few ever became really expert in the work. The best men commanded very high wages, and their services were not always reliable. Under such circumstances it is no wonder that employers turned to where they had in similar circumstances so often before found relief: this was to the inventor.

A few years ago Messrs. Dronsfeld Bros., who had displayed so much skill and ingenuity in designing and elaborating a series of machines pertaining to the clothing and grinding of carding engines, took this matter in hand, and very speedily turned out one machine after another each designed to do the work required, and this with more speed and accuracy than could be attained in the hand process by the most skilful worker. These have all, as might be expected, received the cordial approval of the trade. Of the appliances connected with roller covering, we have much pleasure in illustrating and describing the last of the series, which completes it. This is a machine for spreading the paste upon the cloth, measuring it, and cutting it off the piece in the most accurate lengths according to requirement. The cloth used is finished to the most perfectly uniform thickness,

and this must not be destroyed by the unequal application of the paste by which it is fixed upon the roller boss. The cloth A is therefore first passed through a pasting arrangement, which forms the first part of the machine. This consists of a box for holding the paste, the sides of which are adjusted to the width of the cloth by the finger wheel B, which actuates a right-and-left hand-screw for opening or closing the sides of the box according to requirement. A weighted lever is used for pressing the paste into the cloth, and the thickness of the layer of paste is regulated by a gauge governed by the wheel C. The cloth passes through the machine from back to front as shewn, when it is laid hold of by a pair of nippers or a clip, as seen in the illustration. These are mounted upon a sliding carriage D, which has a traverse from the stop E to the stop F, the latter being adjustable by the screw carrying the finger wheel G. A pointer is fitted upon the stop F, which shews the length upon a measuring scale behind it. This admits of the most accurate measurements being made of the cloth, according to requirement. When all the points have been accurately adjusted, and it is desired to commence work, the cloth is put through in the manner described, the edge is slightly raised by a finger lever, the carriage advanced, the clip lays hold of the



PATENT MACHINE FOR PASTING, MEASURING AND CUTTING ROLLER CLOTHS.—MESSRS. DRONSFIELD BROTHERS, OLDHAM.

cloth, the carriage retires to the back stop, and the lever H is brought down upon the adjustable stop J; this actuates the knife L, which cuts the cloth quite clean at an angle of 60°, giving to the edges when joined upon the roller boss a very slight lap, so as to make an invisible joint. The knife cuts upon a piece of hard wood so that the edge is always protected.

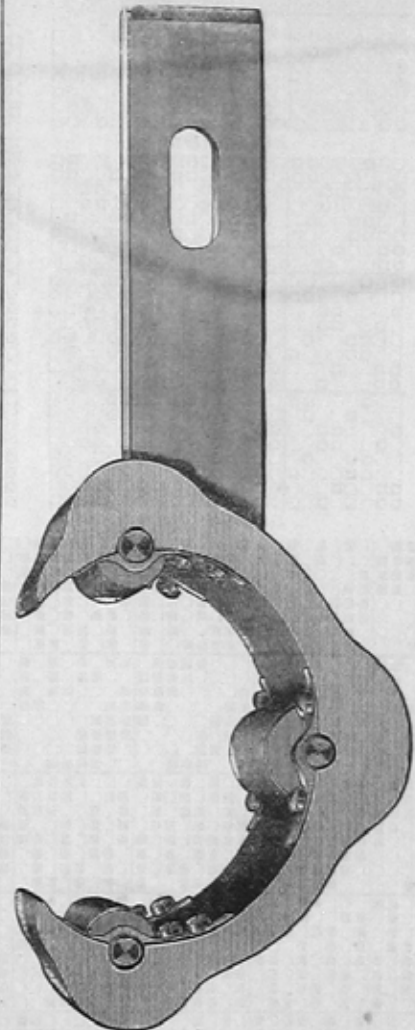
It will be obvious that by the use of this machine, so perfect in its details, the very best results can be attained, and a greater quantity of work be performed by an unskilled person than can be obtained from the best manual worker at the task. With the use of the series of machines, of which this forms one, no employer need ever fear the slightest difficulty in getting his rollers covered in the most perfect manner. The makers will be pleased to answer any enquiries addressed to them, and to shew the machine in operation.

**SPRINKLERS.**—Seeing the interest which is being taken in the fitting up of fireproof mills with sprinklers, we subjoin a list of mills which have lately been so protected:—Messrs. J. Musgrave and Sons, Bolton; Messrs. J. Harwood and Son, Farnworth; Messrs. Barlow and Jones, Bolton; the Glasgow Spinning Company, Limited, Glasgow; Messrs. Clark and Company, Paisley; Messrs. Coates and Company, Limited, Paisley; the Star Spinning Company, Royton; Lyon Spinning Company, and Beal Spinning Company, Shaw. These mills are fitted throughout with the "Grinnell" sprinkler, whilst the following fireproof mills are now being fitted up with sprinklers:—Summervale Mill Company, Oldham (Grinnell); Stamford Mill Company, Lees (Witter); Neville Mill Company, Oldham (Grinnell); Ruby Spinning Company, Oldham (Titan); Elm Spinning Company, Shaw (Grinnell); Oldham twist (two mills) (Grinnell); and Ash Spinning Company, Shaw (Witter).

### PATENT ANTI-FRICTION PRESSER BOWL HOLDER FOR SECTIONAL WARPING MACHINES.

MESSRS. ROBERT HALL AND SONS, BURY.

In the sectional warping machine it is usual to apply considerable pressure to the section warp during the process of making. This is done in order that it may turn out in a sound, solid form, and not liable to fray or fall at the edges. Pressure, of course, also enables a greater length to be put upon the section than could be done without it, which is an additional advantage. Another is found in the fact that the yarn runs off at a very even tension on all the threads in the section. The usual method of doing this has been by the application of an



ANTI-FRICTION PRESSER BOWL HOLDER FOR SECTIONAL WARPING MACHINES.—MESSRS. ROBERT HALL AND SONS, BURY.

ordinary presser bowl having the whole of its surface in contact with the holder. Disadvantages, it is alleged, have however been found in the use of this plan, owing mainly to the friction to which it subjects the yarn. The result is that attempts have been made to overcome them by substituting a rolling surface, and so dispensing with all friction.

The manner in which this has been accomplished is shewn in the patented invention illustrated herewith. It is termed an anti-friction presser bowl holder, and of course is simply for application to the sectional warping machine. The rolling surface which comes into contact with the section is obtained by the introduction of presser bowls, which, when in work, uniformly revolve at the same surface velocity as that of the periphery of the section being made, thus obviating the risk of rubbing out the size or glazing the dyed yarn, which cannot be avoided



when the ordinary bowl, as sometimes happens, fails to revolve, owing to the large amount of the surface of the section in contact with the presser holder. As seen in the illustration there are three bowls of small dimensions, and these being in close contact with the larger periphery of the section their revolution is ensured, thus obviating the defects alluded to.

The new holder is made with any kind of arms to fit any description of machine. They are attached in a very simple manner by nut and bolt. No new bowls are required, as the holder can be arranged for any diameter that may be in use. The patentee is Mr. W. A. Booth, Walkden, near Bolton, and the sole licensees to make the appliance are the firm of Messrs. Robert Hall and Sons, Hope Foundry, Bury, whose name is a guarantee that the work will be turned out in the best possible style. Any communications respecting it may be made to them at their address as above.

traversed so recently in shewing the advantages of grinding flats from their working surfaces. We may, therefore, proceed at once to a description of the new arrangement.

The accompanying illustrations delineate with sufficient accuracy all the details that it is necessary to enlarge upon. Fig. 1 shows a side elevation of the invention attached to the engine frame A; Figs. 2 and 3 shew a hollow box with the cover removed, containing an essential piece of the mechanism—the "tilter" in different positions.

The engine frame A is represented carrying the flexible bend B, over which the flats C, connected by the usual endless chain, are made to travel. To the frame A the adjustable bracket G is securely attached. This bracket is provided with guides H, over which the flats pass in their traverse. It also carries an adjustable bracket or arm, I, on the extremity of which are pivoted the levers J, with its weighted

their extremities pressing upon the rear edge of the flat, by which means it is steadily held during its passage under the grinding roller. This is one of the chief advantages claimed by the inventor. When the grinding of each flat is completed, the tilter assumes the position shewn in Fig. 2, which permits the next advancing flat to take up its correct position. The under surface of the tilting piece Z, it will be observed, has two planes, one slightly lower than the other, which it will be seen originates a projection marked j, and with which, on the advancing edge of the flat coming in contact, the tilter being pivoted on its apex, its front part f is depressed and brought down upon the rear edge of the flat so as to hold firmly in the manner described. The points j and f of the tilter, while the flat is being ground, bear upon the working surface of the flat D, and so secure its being ground from that position. The pressure of the tilters upon the flats is effected by the

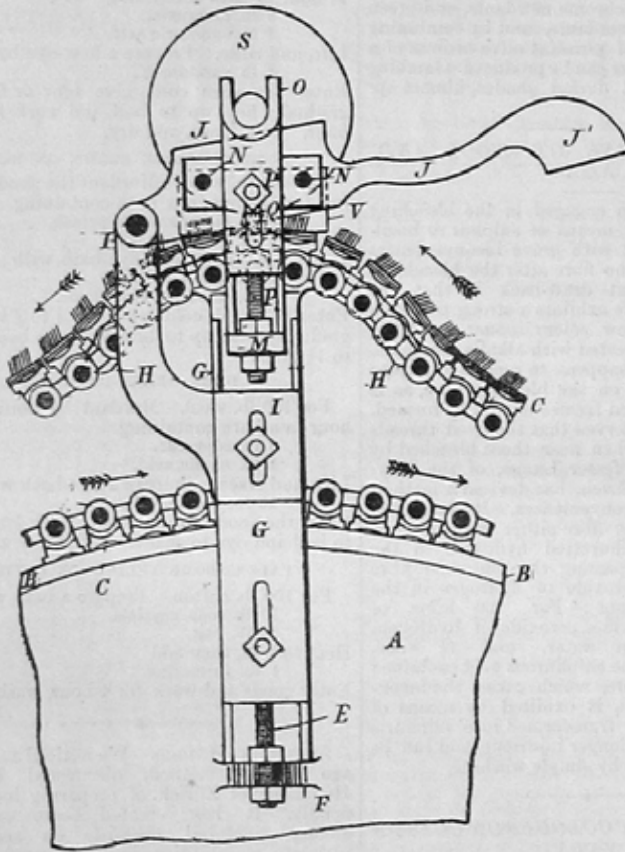


FIG. 1.

PATENT IMPROVED CARD GRINDING APPARATUS—MESSRS. GUEST AND BROOKES, MANCHESTER.

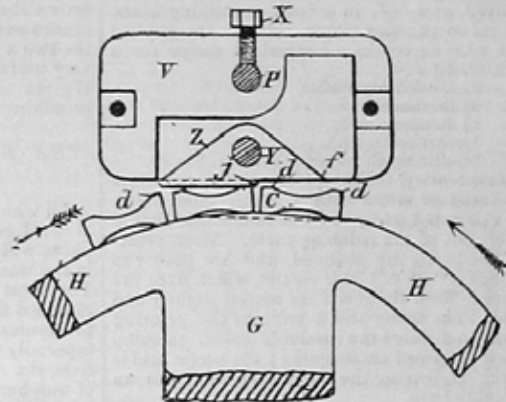


FIG. 2.

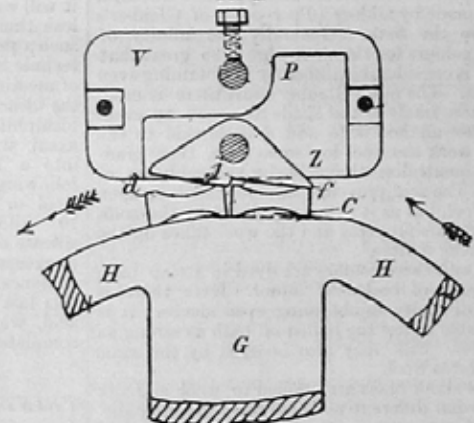


FIG. 3.

**ANOTHER IMPROVED CARD GRINDING APPARATUS.**

MESSRS. GUEST AND BROOKES, POLAND STREET, OLDHAM ROAD, MANCHESTER.

Inventing may be compared to hunting; when once a good idea is started there will soon be a field in full cry upon its track, and it will go hard indeed if every particle of value contained therein is not soon secured. Card grinding arrangements afford a conspicuous illustration of this truth. Since the idea was first broached that it was best to grind cards from their working surfaces, at least half-a-dozen patents have been obtained for as many various ways of accomplishing it. Most of these have already been described in *The Textile Mercury*, and now we beg to draw the attention of our readers to the last claimant for their notice. It is quite unnecessary to go over the ground that we have

extremity J'. To these levers the parts M are attached by these screws N, and to M are secured the open bearings O by the bolts P. The parts M are provided with slots to allow of proper adjustment. These bearings are, of course, for the reception of the grinding roller S, which is driven in the usual manner. The bolts R carry the pivoted hollow boxes V, and these, with the triangular tilting piece Z, which they contain constitute the essence of the invention.

In operation the flats travel in the direction shewn by the arrows, and in their course come into contact with the guides H, up which they pass and are conducted into the position in which they have to be ground. This position is the flat surface upon the top of the guides H, which is shewn in Figs. 2 and 3. When the flat presenting itself to be ground has attained the proper position, the tilters Z, are in the position shewn in Fig. 3, with

levers J. The weight of the grinding roller upon the flats, which it might naturally be expected would cause some deflection, is carefully regulated by a counter-weight carried upon a lever not shewn in the drawings.

The inventors affirm that they obtain by this appliance exceedingly accurate grinding of the flats, and consequently the very best work. We had the opportunity of examining several flats and carefully testing them after they were ground, and the result so far as we could judge gave countenance to the claim. The work in the engine, as shewn by the evenness of the strips, was good, every part of the wire all across the flats evidently doing its fair share of work. The makers, Messrs. Guest and Brookes, on being communicated with at the above address will be pleased to provide applicants with an opportunity of making their own investigation into the merits of the new service.

## Bleaching, Dyeing, Printing, etc.

### THE COAL-TAR COLOURING MATTERS.

(Continued from page 323.)

#### BASIC COLOURING MATTERS (continued.)

The Rosaniline colours, magenta, methyl, and Paris violets, and brilliant methyl greens, are applied in dyeing and printing in the following manner:—Cotton is mordanted with tannin and tartar emetic; for pale shades 1 per cent. of tannin, for dark shades 3 per cent.; of the tartar emetic, or any of its substitutes from  $\frac{1}{2}$  to  $\frac{2}{3}$  per cent. is used. These colouring matters are usually very strong, 1 to 1½ per cent. being quite sufficient to give deep shades, and from  $\frac{1}{3}$  to  $\frac{1}{4}$  per cent. light shades.

The alkali blues are not adapted for cotton; but the soluble or cotton blues can either be applied as above, or they can, for light shades, be dyed, *à la boil*, in a bath containing alum. In calico printing these colours are applied with a tannic colour. A standard recipe for a dark shade is:—

6 oz. colouring matter,  
4½ lb. starch,  
1½ lb. tannic acid,  
1 quart acetic acid,  
3 gallons gum tragacanth liquor, 1 in 20.

It is customary, for the paler shades, to dilute this standard down with a tannic gum paste, but this is not advisable; the tannic acid should be left out of the reducing paste. After printing, the goods are steamed, and are then run through a bath of tartar emetic, which fixes the colour. Then the goods are soaped slightly and dried. The acetic acid is put into the printing colour to dissolve the insoluble colour tannate, which is formed on steaming; the acetic acid is driven off, leaving the colour lake behind in an insoluble form.

On wool these colours are applied in a neutral bath made by adding 10 per cent. of Glauber's salt to the bath. Generally the affinity of these colours for the wool fibre is so great that there is considerable difficulty in obtaining even shades. The more Glauber's salt there is used, the more likely is the shade to come up even. Another method is to add a little acid to the bath, work the wool for some time, then gradually neutralise the acid by the addition of soda. The acid prevents the colour striking upon the wool, but as it gets neutralised by the soda it loses this property and the wool takes up the colouring matter.

On silk these colours are dyed in a soap bath or a bath of boiled-off liquor. Here there is some difficulty in obtaining even shades; it is advisable to use the boiled-off bath as strong as possible. Silk may also be dyed by the same method as wool.

The alkali blues are applied to wool and silk somewhat differently; these blues are first dissolved in borax or carbonate of soda; the wool and silk are immersed in this bath and kept in for some time, then the fabrics are passed into a weak bath of sulphuric acid which develops the colour; if the shade is not right it is returned to the first bath for a longer period, until the shade on being developed comes up right.

For the temperature of dyeing cotton—deep shades are best dyed about 170° to 180° F.; pale shades may be dyed at from 140° to 150° F.; wool is best dyed at the boil, although good results for pale shades can be got at 160° to 170° F. Silk is best dyed at from 170° F. to 180° F.

(To be Continued.)

### DIOXYNAPHTHALENE COLOURS.

Dioxy-naphthalene  $C_{10}H_8O_2$  promises to be a fruitful source of a series of adjective colouring matters, but one that will at the same time be a cause of confusion to many dyers. This body is one of that numerous class of bodies capable of forming isomers compounds derived from the same source, having the same chemical composition, but differing somewhat in their physical

and often in their chemical properties. Thus there are about thirteen different dioxy-naphthalenes, varying in their colour, melting points, solubilities, etc. What is of more importance, however, to the tinctorial chemist is that they vary in their power of forming fast colour lakes with metallic salts. Dioxy-naphthalene is not of itself a colouring matter, but by nitrosating it can be converted into nitroso-dioxy-naphthalenes, which have the property of forming colour lakes and can be used along with mordants for dyeing and printing. They vary, however, in their relative power and in the shades that can be produced with them. Generally speaking, with iron mordants they give greens, with chrome mordants brown. It is of interest to note that with some of these bodies the greens are the fastest to light and washing; with others, the browns are the fastest.

At the present moment only a few of these nitroso-dioxy-naphthalenes are offered to dyers, but patents have been taken out for others, and doubtless these will soon be placed on the market. Dioxine and Gambine B are two of the bodies in question. Dioxine gives reddish brown shades with chrome mordants, and green shades with iron mordants, and by combining the two a variety of pleasant olive browns of a very useful character can be produced. Gambine B gives similar but darker shades, almost approaching a black.

### THE BLEACHING OF WOOL AND SILK.

All who have been engaged in the bleaching of wool or silk by means of sulphur or bisulphite, will have met with grave inconveniences in the washing of the fibre after the bleaching. The most important draw-back is that the bleached fibre always exhibits a strong tendency to resume its yellow colour sooner or later, especially if it be treated with alkalis, ammonia, soda, etc. If there happens to remain any trace of sulphurous acid on the bleached fibre, as is inevitable, and mixed tissues should be formed, it will easily be observed that the dyed threads lose their colour when near those bleached by such a process. Professor Lunge, of the Polytechnic School of Zürich, has devised a method of meeting these inconveniences. It consists in the bleaching of the fibre either with sulphur, bisulphite, or sulphuretted hydrogen in the usual way, then passing the bleached fibre into a bath of peroxide of hydrogen in the following proportions:—For 100 kilos. of wool or silk—15 kilos. peroxide of hydrogen, 70 kilos. common water, and 1½ kilos. silicate of soda. The sulphurous acid contained in excess by the fibre, which causes the inconvenience mentioned, is oxidised by means of this last bath, and transformed into sulphuric acid, which is no longer injurious, and can be completely removed by simple washing.

### PRINTING FAST COLOURS ON COTTON YARN.

#### 1. WITH BASIC COLOURING MATTERS.

The yarn is impregnated with a 6 per cent. solution of tartar emetic or antimony salt and dried.

*Green.*—The printing colour is made with

80 grms. solid green,  
280 „ acetic acid,  
6 litres of water,  
400 grms. farina,  
400 „ dextrine,  
800 „ gall extract (decoloured.)

*Yellow.*—Make the colour as for green, but use auramine.

*Violet.*—Make the colour as before, using methyl violet.

*Red.*—Make the colour as before, using a mixture of safranine and auramine.

*Blue.*—Make the colour as before, using a methylene blue. The printed goods are steamed for half an hour at 1½ atmosphere pressure.

#### 2. FOR DIRECT COTTON COLOURS.

The yarn is previously steeped in a 12 per cent. solution of crystal carbonate and dried.

*Orange.*—Prepare the printing colour with

80 grms. tolylene orange,  
6 litres water,  
400 grms. farina,  
400 „ dextrine.

*Red.*—Prepare the colour as above, but use benzopurpurine.

*Brown.*—As before, but use benzo brown. Print and steam for half-hour at 1½ atmosphere pressure.

These printed yarns are fast to washing. Dye-stuffs similar to those named may be printed on to the yarns by the same means.—*Farb. Must Zeit.*

### RECIPES FOR DYERS.

The following are mostly translations from foreign sources. We do not guarantee the results from these recipes, but give them for the purpose of showing our readers what their foreign competitors are doing:—

#### MODE YELLOW ON CARPET YARN.

For 100 lb. of wool. Mordant by boiling for 1½ hour in bath containing

3 lb. bichrome,  
1 lb. sulphuric acid,

Lift, and rinse. Prepare a new dye-bath with

1 lb. gambine Y.

Enter the yarn cold, give four or five turns, gradually heat up to boil and work for 1 to 1½ hour. Lift, rinse, and dry.

#### FAST BISMARCK BROWN ON WOOL.

For 100 lb. wool. Mordant the goods by boiling for 1½ hour in a bath containing

3 lb. bichromate of potash,  
1 lb. sulphuric acid.

Lift, rinse. Prepare a dye-bath with

10 lb. gambine B,  
2 lb. alizarine blue shade.

Enter the goods cold, work for ½ to ¾ hour, then gradually heat up to boil and dye boiling for 1 to 1½ hour.

#### DARK GREEN ON WOOL.

For 100 lb. wool. Mordant by boiling for 1½ hour in a bath containing

3 lb. coppers,  
1 lb. oxalic acid.

Lift, and rinse. Prepare a dye-bath with

10 lb. gambine Y.

Enter the goods at the cold, work ½ hour, heat to boil and dye to shade. Lift, rinse and dry.

#### PALE CHROME YELLOW ON COTTON.

For 100 lb. cotton. Prepare a bath with

10 lb. soda crystals,  
20 lb. salt.

Heat to boil, then add

1 lb. turmerine.

Enter goods and work for 1 hour, wash and dry.

**ARTIFICIAL INDIGO.**—We noticed a short time ago a new method, discovered by Prof. Heumann, of Zürich, of preparing indigo artificially. It has created some excitement among tinctorial chemists on account of ultimate possibilities in the direction of its replacing the natural indigo, and as usual in such cases there has been a good deal of far reaching speculation on the part of newspaper writers as to the new process causing the displacement of indigo. We think, however, from information just to hand, that indigo dealers and planters need not stand much in fear of the new process. In all such cases there is one supremely important element to be considered—viz., the question of the relative cost of the new artificial as compared with the old natural indigo; if the former can be made cheaper the latter will be displaced, but not otherwise. Now the fault so far with all processes of preparing artificial indigo is that the cost of the material is much greater than that of natural indigo; this was the case with Baeyer's process discovered ten years ago, which proved commercially a failure. We think that such, too, will be the case with Heumann's process, as the quantity of indigo obtained from the materials used is very small, and the cost is too great to enable it to compete with natural indigo. This is only what might have been expected; the chemistry of the laboratory is very costly compared with that of the sunshine and the rain.



ACCORDING to a patent just taken out, when flavopurpurin,  $C_6H_3OH(CO):C_6H_3(OH)_2$ , is treated with nitric acid in the presence of sulphuric or glacial acetic acids, it is converted into nitro compounds known respectively as the *alpha* and *beta*. The latter is a valuable colouring matter, preferable to the corresponding *beta* nitro alizarine, on account of its being much yellower in shade. It is made by mixing 1 lb. of flavopurpurin, with 4-5 lb. of glacial acetic acid, heating to 30°-35° C., and then adding 0.45 lb. nitric acid. The temperature is raised to 40°-45° C., and kept at this for one hour, after which the *beta* nitro flavopurpurin that is formed is filtered off and washed. It is insoluble in water and alcohol, but is soluble in glacial acetic acid, from which it can be obtained in brownish-yellow needle-shaped crystals, melting at 265° C. It dyes alumina or chrome-mordanted fibres yellow to orange shades, tolerably fast to acids, etc.

## Foreign Correspondence.

### TEXTILE MATTERS IN THE UNITED STATES.

THE TARIFF AND THE ELECTIONS.—INCREASE OF PRICES.—LINEN MANUFACTURING IN THE STATES.

NEW YORK, NOV. 1ST.

The approaching elections absorb the attention of business men and politicians alike, the former taking a greater interest in the contest than is usual. "Dyed in the wool" Republicans here are praying that their party will receive such a castigation at the polls as to leave no room for doubting that the nation disapproves of the legislation which has recently been forced upon the country. Such circulars as the following have been issued broadcast, and the Democrats are making all the use they can of them. To put the matter candidly, both sides are lying with all their might as to the real effect the McKinley Bill will have upon the trade of the Republic. Those who have assisted in the passing of the measure try to make out that prices have not really been affected at all, but that it is the wicked Democratic politicians and traders who have been at the bottom of this scheme for issuing circulars announcing an advance. The Democrats have likewise exaggerated the effect of the tariff, which, though felt just now, will certainly be followed by lower prices later on if only on account of the competition amongst native manufacturers. The Democratic position was well put by Governor Hill, when speaking recently at Hartford. He said:—

We favour a tariff for revenue limited to the necessities of the Government, economically administered, and so adjusted as to make equal the burden, encouraging production and higher wages to labour, but not encouraging and fostering monopolies. These are the cardinal principles on which all tariff legislation should be based. We favour protection for the masses rather than classes and no governmental partnership with private interests. The interests of the manufacturer, farmer, labourer, and professional man, should all be taken into consideration. The Government should do no injustice to any class—create no fictitious prosperity to be followed by depression and panic, and it should create no Chinese wall around our industries. We believe in a tariff which shall favour reasonable competition in business but not a prohibitory tariff.

This explains the position exactly from the point of view of the Democrats—protection, but not prohibition—and not free trade either. This last fact is one which apparently English politicians are ignorant of, judging from the cablegrams received from Europe this week. The man who thinks that this country is going to throw open its ports to the free admission of goods from the Old World knows nothing of the national sentiment of the American people.

The following circular speaks for itself:—

NEW YORK, October 29th.

DEAR SIR,—Referring to our circular of October 4th, we have since found it necessary to advance

some of the prices established at that time, also to charge higher figures for domestic yarns, which so far we had not advanced.

We again reserve the privilege, therefore, to fill orders received after October 31st, on the basis of our new lists.

We can assure you that we shall make our prices as low as it is possible under the existing conditions. Respectfully yours, BERNHARD, ULLMAN & Co., 109 to 113, Grand-street.

The Belfast gentleman who has succeeded in forming a company for the manufacture of linen at Minneapolis, sailed for Europe on Saturday. His mission it is understood refers to the purchasing of machinery.

## News in Brief,

FROM LOCAL CORRESPONDENTS AND CONTEMPORARIES.

### ENGLAND AND WALES.

#### Ashton.

There has been some talk of a new manufacturing concern being floated in the town, but the general impression is that only a mill for spinning could be successfully floated, and this will probably be done. The manufacturing or weaving trade is only moderately good.

#### Batley.

Yesterday week a meeting of manufacturers and others, convened by the Batley Chamber of Commerce, was held in the Board-room of the Chamber, when it was resolved to erect a technical school, to cost about £7,000. Mr. James Stubble made an offer of £1,000 towards it on behalf of the firm of G. and J. Stubble, woollen and worsted manufacturers, on condition that a sum of £6,000 could be raised.

#### Blackburn.

Mr. James Nuttall Boothman, cotton manufacturer, has been elected mayor of this town for the next twelve months.

#### Bolton.

A fire occurred on Monday evening at Messrs. Hampson, Lord, and Hampson's No. 2 Mill, Gaskell-street. The mill is of modern construction and fireproof, and to this is to be attributed the fact that more damage was not done. The flames broke out in the upper storey, where there were eight pairs of mules, and is supposed to have been caused by friction. The workpeople escaped without injury; about 130 are thrown idle. The damage is estimated at £15,000, and is covered by insurance. The Borough brigade attended, and was assisted by the brigades of the mill and of other mills; as much damage was done by water as by fire. The mill contained 22 pairs of mules, or 14,000 spindles.

#### Burnley.

Trade is so bad in this town and immediate district, owing to the high prices of yarn and the small demand for printing cloths, that a movement to promote an organised resort to short time working was started on 'Change yesterday, the proposal being to dispense with the use of gas until the end of the year. If adopted, the trade will meet again to consider the question during the closing week of December. The proposition has already received a fair number of signatures of adherence, and at the first blush looks exceedingly like being adopted.

#### Cromford.

The historic old cotton mill here, where Arkwright first set up his cotton spinning machinery, caught fire on Friday, the 7th inst., and though six engines played upon it, nothing could be saved. A large portion of the mill has long been standing empty, as the motive power (water) was inadequate, but for the last seven years Mr. Charles Hill, of Bridge House, Cromford, has used one portion of it for finishing and storing the goods made at his factories at Via Gellia and Milford. The fire was discovered about five o'clock, when flames were seen issuing from the warehousing department. The portion of the mill belonging to Messrs. Hollins and Co. is fully insured, but the loss of employment to the workpeople will be a great hardship during the coming winter. The loss will be fully £10,000.

#### Cullingworth.

Messrs. Craven and Craven have got their plans passed by the Bingley Local Board for the erection of new mills at Cullingworth.

#### Haslingden.

The Hargreaves-street Manufacturing Company's weavers, to the number of 250, went out on strike on Friday, the 7th inst., on account of alleged bad

work, but an arrangement was speedily come to, and they returned to their looms on Tuesday last.

#### Kendal.

Mr. Councillor George T. McKay, woollen spinner and manufacturer, has been elected Mayor for the ensuing year.

#### Kidderminster.

An interim dividend of 7s. 1d. in the £ has this week been declared by the trustees in the matter of W. B. Purdey and Co., Limited, in liquidation. The estate has realised well, and a further dividend is expected about January.

Mr. William Clement Green, of the firm of Wm. Green and Sons, Brussels and tapestry carpet manufacturers, was elected Mayor of Kidderminster on Monday, and his selection is a popular one with all classes. Mr. Green has sat in the local council many years, and has attended to the duties of his office with assiduity.

#### Manchester.

Mr. Lloyd Higginbottom, senior partner in the firm of Messrs. Higginbottom and Mannoek, engineers, of Gorton, has been elected an alderman of Manchester.

Mr. John Fletcher Hill, sole member of the firm of J. F. Hill and Co., calico printers, Bowker Bank, Crumpsall, has been elected to an aldermanship in the City Council (for Crumpsall Ward) without the trouble of a contest. For many years he was manager for Messrs. S. Schwabe and Co., of Rhodes, near Middleton. Eight years ago he established a business on his own account at Crumpsall. Mr. Hill is an ardent Conservative.

Mr. William Henry Holland, alderman for the Miles Plating Ward, enters the Manchester City Council for the first time. Though an active partner in the firm of W. Holland and Sons, cotton and worsted spinners, Victoria Mills, Miles Plating, he manages to discharge the duties of Gladstonian candidate for North Salford, magistrate of the city of Manchester, director of the Manchester Chamber of Commerce, and president of the North-east Manchester Gladstonian Liberal Association. For six years he has been a member of the Newton Heath Local Board, and for a year and a half has been its chairman. In recognition of his services he has been elected to the aldermanic bench without a contest.

#### Middleton.

Mr. Alderman Thomas Broadbent Wood, cotton spinner, has been elected Mayor for the ensuing year.

#### Oldham.

Spindles are about to be placed in the Sett Mill. Mr. Joseph Whitehead has resigned his position as managing carder at the Park and Woodend Mills, Shaw.

The extensions to be carried out in connection with the Neville Mill have been contracted for by Messrs. E. Whittaker and Co., Oldham.

Mr. Oliver Isherwood, late manager at the Harper Twist Company, Ashton, is going out, under Messrs. Asa Lees and Company, Oldham, as manager of a cotton mill at Falkenau, Saxony.

Mr. J. W. Broadbent, the secretary of the Hatherhaw Spinning Company, has received the appointment of salesman to the Bridgewater Spinning Company, Patricroft.

Mr. Tootil, manager of the cardroom and spinning departments at the Glebe Mills, Hollinwood, has also had placed under his care the weaving and slashing departments at the same firm.

Mr. Benjamin Mills has been appointed chief engineer at the Empire Spinning Company, and will have the "turning" of the five mills under his supervision.

Mr. Samuel Buckley, J.P., (head of the firm of Messrs. Buckley and Taylor, engineers, Castle Ironworks, Oldham) was on Monday re-appointed mayor of the borough.

It is stated to be the intention of the directors of the Green Lane Spinning Company to promote one of their own servants to the managership, which is being vacated by Mr. Alfred Barlow.

Messrs. J. and S. Smethurst, of Oldham, have obtained the contract for the erection of the mill required by the Holly Spinning Company, at Royton. Messrs. Wild, Collins, and Wild, are the architects.

The extension to the premises of the Ivy Mill Company have not made much progress lately. However, the fourth storey has been reached, and favoured with good circumstances the mill should not now be long before it is closed in.

Mr. J. Mitton (manager of the Anchor Mill Company, Oldham, and director of the Garfield Spinning Company, Milnrow) is a provisional director of the Ellen-road Spinning Company, Milnrow. The new mill is to be capable of holding 90,000 spindles.

Mr. Philemon Shaw, of Albany Mills, who has gone out to Portugal as weaving manager at a mill near Oporto, has been presented with a silver-mounted pipe and a match box, as a token of respect and esteem by his fellow-workpeople and friends.

At a largely-attended meeting of the Werneth Spinning Company, held on Tuesday evening, at Oldham, a resolution was unanimously passed giving the directors power to extend No. 2 mill, by providing accommodation for 40,000 additional spindles.

A new £5 company, under the title of the Hall-street Spinning Company, is being formed to take over the premises owned by Messrs. Whittaker, at Royton. The directors are: Messrs. Cooper Kershaw (manager Hope Mill Company), Hamlet Cocker (manager Woodstock Mill Company), Abraham Baron (yarn agent), Levi Lord, and Charles Whittaker. The purchase price of the mill is at the rate of 7s. per spindle, the gross amount being £17,000.

Several local gentlemen are promoters of the Hazel Mill Company, Haslingden. The persons in question are Messrs. R. Harrison, (chairman United Spinning Company), N. Ackroyd (director of the Broadway and United Spinning Companies), F. Hamer (manager of the Coldhurst Mill Company and director of the United Spinning Company), T. L. Ormerod, cotton manufacturer, and L. Barlow, engineer.

It is anticipated that the project for building a mill at Moston will for the present be allowed to stand in abeyance. Still, it is stated, it is sure to go forward. Opinions differ as to the wisdom of erecting a mill in the district named, but the promoters believe that sufficient workpeople can be obtained in the neighbourhood, and that employment will be found for the wives and daughters of the miners employed at the several collieries in the district.

There are disputes pending settlement at several of the Oldham cotton mills, but it is hoped they will be arranged amicably. Efforts are being put forth with this object. In one instance—a spinning company—representatives from the firm and the operatives met to discuss the matter, some of the company's own employes being present to state their case. This is rather a new feature, but the result has justified the means by an arrangement being come to.

Mr. James Scholfield, mill manager, Oldham, and Mr. Henry Scholfield, late manager of the Middleton and Tonge Mill Company, are assisting in the promotion of the Plodder Lane Mill Company, Limited, Bury. The prospectus sets forth that the land obtained for the site of the mill is freehold, and contains 36,465 square yards or thereabouts, and has been purchased on exceptionally reasonable terms—viz., for the price of £2,758, which includes all the old buildings, chimney stack, ruins, and materials at present standing thereon, which are said to be valuable to the company. The site is within a short distance of the Moses Gate Station, on the L. and Y. Railway, and Plodder Lane Station, on the L. and N. W. Railway.

A rather unique circumstance took place at the annual gathering of the workpeople of the Star Spinning Company, in the fact of Mr. S. Andrew, the employers' secretary, and Mr. T. Ashton, secretary of the Operative Spinners' Association, being present on the same platform and addressing the meeting. Several of the directors of the company were formerly active workers in the trades-union cause, and the manager (Mr. Luke Butterworth) was also one of the same ilk. Indeed, at a similar gathering last year, he openly advised the hands to join the associations connected with their various departments, as he believed disputes were better and sooner settled by reference to the secretaries of the Employers' and Operatives' Associations. This advice was a surprise to many, and this year he succeeded in bringing the representatives of capital and labour together. This can but have one effect, and that is the creation of good feeling all round.

#### Rochdale.

The Ellenroad Spinning Company, Limited, New Hey, near Rochdale, have appointed Messrs. Stott and Sons, of Manchester and Oldham, as architects for their new mill. The mill, when completed, will contain between 90,000 and 100,000 spindles, all mule, and the necessary preparation. It will be fireproof throughout, and built on the most approved principles.

During last week two meetings have been held of the promoters of the new spinning company for Milnrow, and the project may now be said to be fairly launched. The site agreed upon is one belonging to Messrs. E. and E. Clegg, at Ellenroad, but nearer to Milnrow than the Garfield, and the name of "Ellenroad" is already decided on for the new

company. The nominal capital is to be £90,000 in 18,000 shares of £5 each, and the mill is to be one of 90,000 spindles, or nearly half as large again as the Garfield. The following are the first directors:—Mr. Emanuel Clegg, flannel manufacturer; Mr. James Parker, cotton manufacturer; Mr. James Barnes, cotton manufacturer; Mr. John Whitehead, wool merchant; Mr. George Mitton, Oldham; Mr. Thomas Ashworth, flannel manufacturer; and Mr. James Franklin, mill manager. Already 12,000 shares are applied for.

#### Royton.

The directors of the Parkside Spinning Company, Limited, at their meeting on Monday evening last, appointed Messrs. Stott and Sons, of Manchester and Oldham, as architects and consulting engineers for their new mill. The mill is to contain about 100,000 spindles and preparation, and will be a fireproof one throughout, and built on the latest principle.

#### Shaw.

Messrs. Taylor, Lang, and Co., Limited, Stalybridge, are putting in the web mules for Messrs. John Clegg and Sons, Limited, High Crompton Mills, Shaw.

#### SCOTLAND.

##### Barrhead.

While a number of the industrial trades and workshops keep fairly well employed, the outlook from other places is rather gloomy at the present time. Within the last two weeks about 150 out of the 200 hands employed in the Perenze Print-works have got paid off, and a full stoppage of the works is contemplated within the next week. With the stoppage lately of the West Arthurie Bleachworks, and the rather depressed trade in one or two places, the unemployed in the district is larger at the present than has been for some considerable time.

##### Beith.

On Wednesday morning a fire broke out on the premises of Messrs. Matthew Wylie and Sons, rope and twine manufacturers. A new compound tandem condensing engine which had only been set going the previous day was damaged, and a patent polishing machine, costing upwards of £3,000, was wholly destroyed.

##### Blaigowrie.

By a fire at Ash Grove Mill, (Messrs. D. Proctor and Sons, jute spinners and manufacturers), which occurred on Tuesday night, about 300 people will be out of employment. The mill will no doubt be rebuilt and filled with flax, tow, and jute machines.

On Saturday night the employes of Messrs. M'Intyre and Co., flax and jute spinners and manufacturers, Ericthside Works, were entertained to tea in the Public Hall, by Mr. W. A. M'Intyre, on the occasion of the marriage of his eldest son, Mr. D. W. M'Intyre, to Miss Batchelor, of Finavon, Forfar.

##### Brechin.

The East Mill Company, Limited, announce a dividend of 7½ per cent. They put £100 to Reserve Fund, pay alterations out of revenue, and put £1,500 aside to renew boilers.

##### Galashiels.

Mr. A. L. Cochrane, of Messrs. A. L. Cochrane Bros., Netherdale Mill, has presented a bank deposit receipt for £5 to each of his employes who have been with the firm for 20 years. They number 58.

##### Glasgow.

The following table gives the value and destination of the exports of cotton and linen goods from the Clyde for last week, and also the totals of the previous week. The first line refers to cotton goods and the second to linen:—

India, China, and Canada.	United W. Indies			Continent.	Totals previous week.
	South America.	Anstralia.	Antara.		
£ 66,110	£ 10,230	£ 3,812	£ 3,304	£ —	£ 78,356 134,569
144	9,843	8,174	216	—	8,334 10,334

##### Greenock.

Early on Sunday morning a fire broke out in the old flax mill, situate in Lynedoch-street. The flames were subdued, however, before much damage was done. The buildings have been standing empty for years, no work is carried on in their vicinity, and no one is about the premises. The origin of the fire is therefore a mystery, which will be enquired into by the police.

##### Paisley.

The long-talked-of Technical College for Paisley is now, in all probability, about to be an accomplished fact, Colonel Thomas Glen Coats of Fergushie Park having intimated to the Paisley Peter

Brough Trustees, on behalf of the old firm of Messrs. J. and P. Coats, the intention to gift £3,000 and the site of the old dye-works in George-street, Paisley, towards the erection of a technical college. The erection of this college has been for long under the consideration of the Borough Trustees, who have set aside for the purpose a considerable sum of money. In consequence, however, of the great expense attached to the scheme it has hitherto been delayed, in the hopes that the two great commercial firms of the town would see their way to give their practical support and encouragement to the movement. Now, however, that the old firm of Messrs. J. and P. Coats, which means the members of Sir Peter and Mr. Thomas Coats's families, have offered a site of a few acres of valuable ground for the proposed college, together with a sum of £3,000, there can be no doubt that the erection of the new technical college for Paisley will soon be proceeded with.

#### IRELAND.

##### Ballymena.

The Braid River here, during the storm of last week, was flooded to such an extent that the Braid Water Spinning Mill and other works contiguous suspended operations for some time.

##### Co. Antrim.

The extensive flax mill of Mr. Roger Convery was discovered to be on fire on Friday night, (the 7th inst.). A large number of people assembled, and used every effort to subdue the flames, which, however, proved unavailing, and the mill was completely gutted. The damage done is very considerable.

## Miscellaneous.

### SWEATING IN INDIAN MILLS.

Mr. Alderman Henry Harrison, J.P., chairman of the Blackburn Chamber of Commerce, has recently been appointed President of the Grimshaw Park Conservative Club, Blackburn, and in that capacity delivered an address to the members on Tuesday evening last, taking for his theme "Sweating in Indian Mills." Amongst others Mr. Harrison was supported by Mr. Alderman T. E. Thompson, Messrs. Councillors Oddie and Walsh, and Messrs. W. Thompson, J. H. Hartley, and L. Redmayne. After some introductory remarks, Mr. Harrison said:—

Some time ago he (Alderman Harrison), as chairman of the Blackburn Chamber of Commerce, had addressed two letters to Lord Cross, Chief Secretary of State for India, calling his attention to the anomaly and the iniquity of the Indian Factory Act. He did not think those letters had received sufficient attention from the Government, and he had written that lecture in order to shew the existing iniquity in the Factory Acts of India. There were two reasons for the application of the factory legislation to the Indian Empire, the first being humanity, and the second fairness to British manufacturers and purchasers. If the principles admitted in our factory and workshop legislation were acknowledged to be sound by the remaining civilised powers of the world, could there be any reason to presume that such legislation was not required for India? Were Indian employers more self-denying than the employers in other countries where factory legislation was being improved? The climate of India was more enervating than that of England, the people could not compare in physique with Lancashire operatives, they were wretchedly housed and clothed, and poorly fed; could they be expected to work without harm to their frame and injury to their health for longer hours than the better fed and housed operatives in this country? What plea could there be for allowing sweating to be continued in India, and what objection to apply the Factory Acts to that country which were enforced in England? Mr. Meade King, one of Her Majesty's inspectors of factories in India, said:—"The only answer I ever hear from the dissentients is that the workpeople do not want any relaxation, and the question is asked—why needlessly strangle the manufacturing industry still in its infancy?" Mr. Meade King thought that the first part of the answer was possibly true. The unwillingness of the natives of India to sacrifice a few annas demonstrated more than anything else the necessity of doing something for their comfort—to elevate them from the effects of monotonous labour to a higher and more educated view of life. The Indian Factory Acts mentioned no time for the commencement and conclusion of even a child's labour, and, as was well known, it was the omission of such a clause in the English Factory Acts passed previous to 1814 which rendered those Acts utterly useless; and it was the omission of



such a clause in the Indian Factory Acts that still enabled manufacturers in that country to work little children between 7 and 12 years of age for 14 hours a day in close, badly-ventilated factories in the sweltering heat of the Indian summer. ("Shame.") That such an omission in the Indian Factory Acts was generally taken advantage of by Bombay manufacturers was laid special stress upon by factory inspectors. Even a commission largely composed of the Bombay Millowners' Association, in 1884, said, "We may, however, conscientiously say we fear that children may have worked full time." It is hardly credible, but it is a fact nevertheless, that in face of that report, the Legislative Council of the Viceroy of India, in the projected amendment of the Indian Factory Act under the consideration of the Council early this year, omitted the clause for fixing the intervals of rest from the bill. The Medical Commission appointed in 1884 gave their opinion as to the necessity of fixing a period for work. They said, "We think it very desirable that the daily working hours of these mills should, both in the interests of the general health of the operatives and with the view of preventing accidents in working in rooms insufficiently lighted, be defined by law. It should be compulsory to allow certain periods of rest in the day, and at least four holidays a month." (Hear, hear.) Alderman Harrison then described the number of working hours in India, which were co-extensive with daylight, and reached the total of ninety-eight hours in the summer and seventy-seven in the winter. No weekly day of rest, but every day a work day; children lying outside the mill for an hour in the chilly morning waiting to commence their work at dawn, women and children toiling in the cotton gins until they fell down completely exhausted; the rapacity of mill owners, paying their hands by the month, or leaving them sometimes a month in arrears, all to save interest; and many other subjects were touched upon in turn. In conclusion, Alderman Harrison dwelt upon the necessity of English operatives having a fair field and no favour—they must not be handicapped by the abnormal hours, which was robbing their Indian fellow subject of health and life, and they must force the importance of the question upon the attention of Parliament.

On the motion of Alderman THOMPSON, seconded by Mr. W. THOMPSON, and supported by Councillors ODDIE and WALSH and Mr. HARTLEY, a vote of thanks was passed to Alderman Harrison.

Letters from Readers.

DAMP IN AMERICAN COTTON.

(To the Editor of The Textile Mercury.)

SIR,—The recent conference in Liverpool between merchants, spinners, and brokers to discuss difficulties which have arisen through the false packing of East Indian cotton must have convinced those present how desirable it is when differences arise in a large market between buyer and seller that meetings of all concerned should take place, and an honest attempt be made to cure the evils complained of. Each side then becomes acquainted with the position of the other, and a much better appreciation of each other's difficulties is the natural result. But the loss and trouble caused by the false packing of Surat cotton are as nothing compared with the losses arising from damp and sand in American cotton. In the former case the spinner does get cotton of some value for his money, but in the latter he gets an addition to the weight of his cotton which has no value, which spoils his machinery, and adds to his expenses of carriage. I know that the common excuse in Liverpool is to ascribe damp and sand to stormy seasons, the blame being laid upon nature. A little consideration will shew the fallacy of this excuse. I contend that any damp or sand which may be in the cotton when taken from the plant will, if the cotton is fairly treated after ginning, never trouble the spinner. If the cotton passes through the gin damp, the lint will come out cut and curled, and tell its own tale to the buyer; and if the cotton is actually wet, it will simply clog and choke the gin and stop its working. As regards the sand, I say that the same process which separates the seed from the lint is more than sufficient to shake out the sand also. It is the damp and sand put into, or allowed to get into, the cotton after ginning which inflicts loss upon the spinner. I admit that a stormy season increases manifold the cases of damp and sandy cotton, because in such seasons there are two kinds of transgressors instead of one. First we have the transgressor who in both dry and stormy seasons alike increases the

weight of cotton at the press by steam or water, and secondly we have the careless planter or dealer, who habitually stores the cotton in the open air, and conveys it from place to place without covering. In dry seasons such exposure to sun and wind improves its condition, but in wet seasons every shower of rain adds to its weight and destroys its bloom.

The merchant who buys this cotton before pressing knows perfectly well what he is doing, and claims large allowances for condition, but I never heard of such allowances being handed forward to the spinner. The exporter has also a chance of examination before shipment, because the damp will generally be discernible on the outsides of the bale more or less; but by the time the bales have arrived in the warehouse at Liverpool much of their exterior (from which the buying samples are taken) has dried up, and thus it is impossible for the spinner to discover the damp before the bales are opened at his mill. It seems to me, therefore, that there are two points to be secured before the evils of sand and damp can be remedied—first, the protection of cotton from the weather from the moment it is ginned to its deposit in the ship's hold; and secondly the stopping of nefarious practices in some of the packing houses. To effectually arrive at so desirable a result, it must be made unprofitable to deliver damp and sandy cotton. A standard should be agreed upon which shall regulate the tenderable condition of cotton both in America and in this country, with heavy allowances for excess. The result would be that cotton would be properly guarded from the weather, and the steam or water pipes in some press-houses would be stopped. The present scale of arbitration allowances in Liverpool for damp is miserably inadequate. A bale of cotton which feels damp to the touch does not contain less than 12 to 13 per cent. of moisture, or from 4 to 5 per cent. in excess of what is considered the maximum amount it ought to contain; and this means a loss of 20 lb. to 25 lb. a bale, as compared with a miserable 2 lb. or 4 lb. usually allowed by the arbitrators. Gross cases there are as high as 70 lb. a bale of excessive damp, but I imagine even a Liverpool arbitrator would consider such to be unmerchantable.—Yours, etc., ALBERT SIMPSON, Elmhurst, near Garstang.

THE state of the Saxon cloth industry has been rendered very serious by the McKinley Tariff. One of the articles commonly sent to America, women's stockings, for which 2s. wages were paid, can now obtain only 90pf. to 1mk. 20pf. (11d. to 1s. 2d.), and many small works are closed. The dye-works are slack in consequence, and many hands have been dismissed. As the South American and Oriental markets are also dull, prospects are dark, but some improvement is looked for with the change of the season in December and January.

Textile Markets.

COTTON.

MANCHESTER, FRIDAY.

The tumble down in the prices of cotton predicted and so often referred to in these columns, has brought out claims from an unexpected quarter. As spinners have managed to retain in their own hands the advantage of nearly all the decline that has taken place, their position at the present moment shews an enviable margin in their favour between cost of production and selling prices. The leaders of the operatives, who are ever on the watch in the interests of their clients, have not been slow to perceive and take advantage of this position by formulating a demand for a 5 per cent. advance of wages. They have requested a conference with the employers, and mean to urge their demands with all the strength they possess. As yet the demand has only been advanced by the Oldham and Bolton districts, but as these important centres govern the whole of Lancashire, the settlement, if the concession be made, will cover the remainder of the spinning districts spinning yarns known as 'Oldham' and 'Bolton counts.' It would almost have been an advantage to spinners had their position not been quite so strong, because then they would have to have given away to the weaving department a portion of the advantage that has accrued to them, that department suffering rather severely from the narrowness of the margin existing between cost of production and selling prices of cloth. Rather than accept current offers many manufacturers prefer to stop their looms. This is bound to force from the spinners a portion of their present advantage. The mischief, however, has already been done, the claim has been made, and very probably whatever adverse change may take place, unless of an extraordinary

character, will not be regarded as a sufficient excuse for refusing to pay the advance requested.

COTTON.—The demand for spot cotton throughout the week has again been very small, and prices have continued to decline. Business in American has been very limited, and prices are reduced 1/4d., with the exception of middling fair which is unchanged. Texas and old crop cotton are most in request, though the former is now commanding a premium. Brazilian has been in moderate demand; but being offered freely has further declined from 1/2d. to 1/4d. Egyptian has been in fair request, but owing to crop accounts indicating free offering it has again declined 1/2d. to 1/4d., with a continued tendency downward. Rough Peruvian has held its own, but smooth varieties have declined 1/4d. East Indian, having been in limited request, has been partially reduced 1/4d. African cotton has been quiet, and prices have declined 1/4d. The future market has been a good deal disturbed by various influences, the most potent one being the high crop accounts, which are now being placed at 8,000,000 bales; financial difficulties in New York have also adversely affected values. It is unnecessary to detail the fluctuations under these circumstances, but the results of the week's changes is a decline of 4 to 5 1/2 points for near positions, and of 2 1/2 to 3 1/2 for distant ones.

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

	Import.	Forw'ded.	Sales.	Stock.	Actual Export
American	130,109	59,278	37,370	391,710	4,429
Brazilian	8,555	1,914	1,670	15,090	25
Egyptian	14,538	5,712	2,100	58,910	465
W. Indian	2,194	1,042	1,410	16,800	305
E. Indian	.. ..	3,003	3,060	185,720	3,252

Total.. 150,391 70,949 45,610 664,230 8,476

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

	G.O.	L.M.	Mid.	G.M.	M.F.
American	5	.. 5 1/2	.. 5 1/2	.. 5 1/2	.. 5 1/2
Pernam	.. ..	.. ..	.. ..	.. ..	.. ..
Ceara	.. ..	.. ..	.. ..	.. ..	.. ..
Paraiba	.. ..	.. ..	.. ..	.. ..	.. ..
Maranhm	.. ..	.. ..	.. ..	.. ..	.. ..
Egyptian	.. ..	.. ..	.. ..	.. ..	.. ..
Ditto, white	.. ..	.. ..	.. ..	.. ..	.. ..
M.G. Broach	.. ..	.. ..	.. ..	.. ..	.. ..
Dhollerah	.. ..	.. ..	.. ..	.. ..	.. ..
Oomra	.. ..	.. ..	.. ..	.. ..	.. ..
Bengal	.. ..	.. ..	.. ..	.. ..	.. ..
Tinnivelly	.. ..	.. ..	.. ..	.. ..	.. ..

YARNS.—All through the week a very slow trade has prevailed for yarns and cloth. In yarns the home-trade section has been exceptionally dull and quiet, and scarcely anything better can be observed of the export division. Spinners have maintained their rates with remarkable persistency and strength, only here and there very slight reductions having been obtainable. As long as their production moves off freely in fulfilment of existing contracts, and they can sell anything they may have to spare at full rates, they are not likely to give way.

CLOTH.—There has been a fair amount of business offering in the cloth department for Eastern markets, but this has been at rates that preclude most of it being put through. Printing cloths remain very quiet and unsatisfactory in price. In other divisions quietness prevails, and the market is simply sustained by the fact that contracts have not yet run off. In the Haslingden district a meeting of the trade has been held, and resolutions to run short time have been adopted. Already two mills are reported to have commenced.

WOOLLENS AND WORSTEDS.

BRADFORD.

Prices of wool are not yet firm, the number of transactions being still limited. Business has, however, recovered from the disturbing influences caused by the threatened change in the bank rate, and there is a feeling of greater confidence all round in consequence. Manufacturers' stocks of English wools are not large, and staplers here as well as country dealers are also ill-provided. It is difficult therefore to force prices downwards, and as a matter of fact present rates are not more than 1/4d. per lb. less than two months ago. To Colonial wools the same remarks may generally be applied. Stocks of fine descriptions are small. Crossbreds are in fair request, at unchanged prices. In the yarn market the demand in all classes of yarn is of a very restricted character. Business for Continental export is very meagre, and just to supply urgent requirements. Prices are on the whole well

maintained. Spinners seem to be more disposed to curtail production than to work to stock or to yield a concession in price, and it is reported that in a few cases short time working has accordingly been adopted for the present. The demand in yarns for consumption by local manufacturers is much less active. A limited business is doing in mohair yarns. Spinners of Botany yarns are well employed on old orders, new orders in this class of yarns not being readily obtained. Prices are generally in favour of buyers. Business in the piece market is without improvement. The demand in goods for the home market is moderately active. Considering the recent large exports of goods for the American market, in anticipation of the new tariff coming into operation, there is a moderate amount of business still doing for that quarter. The demand for the Eastern markets is very restricted. Prices have a softening tendency.

**HUDDERSFIELD.**

Manchester, London, Glasgow, Belfast, and Dublin distributors have been in the market this week, and season goods have perhaps been in better demand, although the enquiry is not quite up to the average for this time of the year. Medium goods are being sold at prices which leave very little profit to the makers, and this state of things is aggravated by the action of buyers, who only purchase in a hand-to-mouth fashion, in accordance with a custom which now seems to have become general. Fancy worsted makers also complain as to prices, and their position is rendered less satisfactory owing to the change in favour of serge and low tweed. Serges have without doubt become much more popular. The shipping trade is fairly brisk. Spinners are well engaged, and wool is firm.

**ROCHDALE.**

Our flannel market is only one for getting together assortments or the buying of small miscellaneous lots. The continuance of mild weather is against a brisker demand, and, as there are suggestions of a shorter winter than usual coming, manufacturers have begun to consider whether they should not diminish production. Besides, they are making up their minds that there cannot this season be any improvement in prices. Yorkshire woollens are without change.

**FLAX AND JUTE.**

**DUNDEE TRADE REPORT.**

WEDNESDAY, 12th Nov., 1890.

The wires from Calcutta bring no important news. The jute crop is large, and for firsts £11 to £11 5s. is the quotation.

Already here there are arbitrations, and the spinners having bought at much higher prices refuse to accept jute of inferior quality in complement of their purchases.

The early arrivals were excellent, but some of the later shipments are said to shew a great falling off.

There is great need for reform in having a standard of quality as well as a local arbitration. The delay, cost, and uncertainty of the present mode of settling differences between merchants and shippers ought long ago to have been changed.

Flax is without change—weaker rather. The panic in the money market has quite checked the tendency to rise.

Jute yarns are rather stronger this week, and there are no longer sellers at the very bottom prices.

Jute Hessians are also a little better to-day. Makers are all engaged till the new year, and refuse to enter at the very bottom prices till they are compelled to do so.

Flax yarns are quiet, and tows are a shade easier to buy.

Linsens continue in fair request. A good business is doing in the home trade, and Forfar and Fife are both busy.

Arbroath canvas continues in excellent demand for both railway and shipping purposes. There is no change in price, but manufacturers are all firm.

In Dundee the fancy jute trade is brisk, and the twine and cord departments extend.

**MANCHESTER.**

The demand this month for linsens has not been so good as last. Prices, however, are very firm, but manufacturers complain that buyers do not offer rates for cloth which at all compensate for the considerable advance that has taken place in yarns. The death of Mr. J. E. Taylor, of Messrs. Thomas Taylor and Sons, Barnsley, removes from amongst us one of the oldest links between the English linen trade of to-day and that of the past. Mr. Taylor belonged to a school

that is rapidly disappearing from view. Amongst the Barnsley firms he occupied a prominent position, as over a third of the looms in the town were in his factory. The fancy handkerchief trade has been brisk, as is usual just before Christmas.

**DRY GOODS.**

**MANCHESTER.**

There has been an irregularly distributed demand this week which leaves much to be desired. Seal buyers are at length beginning to feel the effects of recent events in the Behring Sea. Well-posted business men long ago foresaw that, with such wholesale destruction as that which has been carried on for some time off the Alaskan coast, prices of seals in this country (where the bulk of the catch is dressed and dyed) could not remain stationary. This view has been confirmed by facts, the manufacturing furriers having raised quotations 60 per cent. The decline in the available supply of the natural seal may have a beneficial effect upon the sale of the manufactured silk article. Fancy printed cotton table covers of German make and with a rep effect have been sold here of late. The goods are superior to anything that has yet been turned out by English firms. The carpet departments have men on the road booking orders for delivery in January. Pinks continue to be favourite colourings in set squares.

**SILK.**

**LONDON.**

THURSDAY.—London Produce Clearing House quotations of 5 $\frac{1}{2}$  Tealoe: November 11s. 10 $\frac{1}{2}$ d., December 11s. 10 $\frac{1}{2}$ d., January 11s. 11d., February 12s., March 12s. 1d., April 12s. 2d., May 12s. 3d. June 12s. 3d. per lb. Sales registered, nil.

**HOSIERY AND LACE.**

**NOTTINGHAM.**

The lace trade continues to shew a slight improvement, as far as certain departments are concerned. The shipping section of the trade, while suffering from a decline in the American demand, has been able to do an increased business elsewhere, so that the net loss has not been so great. Curtains and blinds continue to be amongst the articles chiefly sold. The hosiery departments are unchanged. Buyers of hosiery yarns are not purchasing so freely.

**LEICESTER.**

The wool market is firmer, and the general tone of the trade here is more satisfactory than was the case a short time ago. Concessions are now difficult to obtain, thanks to the firm front presented by holders to the attacks of consumers on their position. Notwithstanding this attitude of sellers, enquiries have been much more numerous, and although the total volume of transactions is not very extensive, staplers are at length able to prophesy with some degree of confidence a change for the better. Lustre fleeces are slow, but demis are in better request. The demand for skin wools quite keeps pace with the supply. Colonials are slow. Deep-stapled half-and-half wools of good quality make 23s. 4d. to 24s. 6d. per tod; superior descriptions, 25s. 6d. to 26s. 6d. per tod; choice lots, including a large proportion of Shropshire wool, 27s. to 28s. per tod; and inferior lots, including Scotch fleeces, 21s. to 22s. per tod. Yarns are steady, and stocks small. Spinners decline offers at lower rates. Lambewool yarns sell fairly well at firm rates, and the consumption of cashmeres is larger. The hosiery trade is healthy, with a good average business and a more promising outlook. Elastic web fabrics, cords, braids, and dress banding are in good request for home and Continental markets.

**THE KIDDERMINSTER CARPET TRADE.**

No very great alteration has taken place in the condition of this industry during the past week. Here and there perhaps machinery is running rather better, but this is probably in consequence of an accumulation of small orders rather than of pressure, and in the great majority of instances lack of employment is still in evidence. Notwithstanding the sluggishness of business, however, the utmost confidence in the future prevails amongst manufacturers, and they were never so determined to adhere to their prices as they are at the present time. As has already been stated, the present condition of the trade causes neither surprise or anxiety; it was quite expected that the new price list issued just at the commencement of the selling season would

check operations for a time, and in this case it is simply the expected that has happened. It is becoming evident now that no important alteration can take place this side Christmas. With the turn of the year the cutting-up season in the warehouses commences and the hands of buyers will consequently be forced.

In the Royal Axminster branch of the trade the demand continues good. Some large orders have been lately booked throughout the trade, and everything points to a most favourable season. Some of the patterns produced this season far excel anything ever accomplished in this fabric before. The wool market continues dull and without features of interest, and for some qualities values are slowly declining. On the other hand, however, for qualities in better request, prices are firmly upheld. In the spinning mills there is an improvement in the turnover, and spindles find pretty steady employment. A large quantity of yarn is, however, for other purposes rather than for carpets. Bradford and Leicester districts are taking a fair portion and foreign consignments are quite up to the average.

**Tariff News.**

**THE NEW FRENCH TARIFF.**

(Continued from page 321.)

**COTTON YARNS.**

With reference to the tables below in which both the general tariff and the minimum tariff of the proposed Bill are compared with the rates under the existing Conventional tariff, under which British goods are admitted into France, the existing French measurement of counts is in thousand metres to the half kilo, while those contemplated are reckoned on the basis of a thousand metres per kilo. This explains the apparent reduction in the proposed duties on certain counts which, as a matter of fact will have to pay an increase to the next scale. The fact that comparison would thereby be rendered more simple has led us to adopt, as far as possible, the new measurement in printing the present Conventional tariff. In other words we have multiplied by two the metres per half kilo, by which the yarns are now classified, and have thus been able to obtain a standard of comparison with the proposed duties.

**SINGLE.**

	Present Conventional Tariff per 100 kilos.	Proposed.	
		Gen. Tariff per 100 kilos.	Min. Tariff per 100 kilos.
	f. c.	f. c.	f. c.
<b>GREY:—</b>			
Measuring per kilo—			
40,500 metres or less	15 0	24 05	18 50
40,500 " to 50,500 "	20 0	28 60	22 0
50,500 " to 60,500 "	30 0	32 50	25 0
60,500 " to 70,500 "	30 0	42 90	33 0
70,500 " to 80,500 "	30 0	48 10	37 0
80,500 " to 90,500 "	40 0	58 50	45 0
90,500 " to 100,500 "	40 0	65 0	50 0
100,500 " to 120,500 "	50 0	80 60	62 0
120,500 " to 140,500 "	60 0	96 20	74 0
140,500 " to 160,500 "	70 0	113 10	87 0
160,500 " to 180,500 "	90 0	136 60	105 0
180,500 " to 200,500 "	100 0	156 0	120 0
200,500 " to 220,500 "	120 0	182 0	140 0
220,500 " to 240,500 "	140 0	208 0	160 0
240,500 " to 260,500 "	160 0	240 60	185 0
260,500 " to 280,500 "	200 0	286 0	220 0
280,500 " to 340,500 "	250 0	330 0	300 0
340,500 and above	300 0	455 0	350 0
BLEACHED	15 p.c. more than grey	20 p.c. more than grey	15 p.c. more than grey
<b>DYED OR PRINTED:—</b>			
Ordinary dye		39 centimes per kilo. more than grey.	
		25 c. per kilo. more than grey	
Turkey red	do.	58 c. per kilo. more than grey	45 c. per kilo. more than grey
<b>TWO AND 3 FOLDS IN ORDINARY HANKS</b>			
GREY	20 p.c. more than single grey	26 p.c. more than single grey	20 p.c. more than single grey
BLEACHED	15 p.c. more than 2 and 3 fold grey	20 p.c. more than 2 and 3 fold grey	15 p.c. more than 2-fold grey



Table with columns: Present Conventional Tariff, Gen. Tariff, Proposed Min. Tariff. Includes sections for DIED OR PRINTED, BLEACHED OR DYED PER 1,000 METRES SINGLE, TURKEY RED DYE, MIXED COTTON YARNS, SPUN SILK YARNS, BLEACHED, UN-BLEACHED, OR DYED, and SILK NOIL YARNS.

Table for WOOLLEN YARNS (Per 100 Kilogrammes.) SINGLE. Includes sub-sections for BLEACHED OR UNBLEACHED WORSTED, CARDED, BLEACHED OR UNBLEACHED, and DYED WORSTED.

Table for ALL WOOL FABRICS. Includes sub-sections for STUFFS, CASSIMERS, AND OTHER FULLED GOODS, and FURNITURE STUFFS.

Table for DIED WOOLLEN YARN, WORSTED, BLEACHED OR UN-BLEACHED, DOUBLED, and DYED WOOLLEN YARN. Includes sub-sections for DOUBLED WORSTED YARNS FOR TAPESTRY, BLEACHED OR UNBLEACHED.

Table for ALPACA, LLAMA, VIGONIA, OR CHAMOIS YARNS. Includes sub-sections for PURE, MIXED WITH WOOL, MIXED WITH OTHER FIBRES, and GOAT-HAIR YARNS.

Table for OTHER FABRICS OF HAIR, PURE OR MIXED, HAIR PREDOMINATING IN WEIGHT. Includes sub-sections for GOODS PRODUCED FROM ALPACA, VIGONIA, LLAMA, YACK, OR GOAT HAIR YARNS.

Table for CLOTHING and HOSIERY. Includes sub-sections for GLOVES AND MITTENS, JERSEYS WITH PLAIN TRIMMINGS, and SOCKS.

Table for CARPETS. Includes sub-sections for Brussels, Velvet pile, Persian (knitted), Carpets à la Jacquart, and Others.

Table for PASSEMENTERIE AND RIBBONS. Includes sub-sections for TAPESTRY, Shawls, knitted or fashioned, and Indian Cashmere.

Table for FABRICS OF MIXED WOOL. Includes sub-sections for Cassimers and other fulled goods, and GOODS CONTAINING IN THE WARP MORE THAN 10 PER CENT. OF SILK OR SPUN SILK YARN.

Table for GOODS PRODUCED FROM ALPACA, VIGONIA, LLAMA, YACK, OR GOAT HAIR YARNS. Includes sub-sections for PURE, Do. with other mixtures, and GOODS MADE FROM THE HAIR OF THE GOAT.

Table for HAND-MADE LONG CASHMERE SHAWLS AND SCARFS. Includes sub-sections for GAZETTES, EDGINGS, FRINGES, and LEOM-MADE SHAWLS.

Table for OTHER FABRICS OF HAIR, PURE OR MIXED, HAIR PREDOMINATING IN WEIGHT. Includes sub-sections for GOODS MADE FROM THE HAIR OF THE GOAT, HAND-MADE LONG CASHMERE SHAWLS, and LEOM-MADE SHAWLS.

\* These counts for doubled yarn are on the basis of measurement per kilogramme in single yarn.

	Proposed.		
	Present Conventional Tariff per 100 kilos.	Gen. Tariff per 100 kilos.	Min. Tariff per 100 kilos.
<b>HORSE HAIR, CLOTHS, PURE OR MIXED, HORSE HAIR PREDOMINANT, INGENWEIGHT (tresse)</b>	160 0	200 0	160 0
Do. <i>passementerie</i> and other	250 0	400 0	300 0
<b>PURE AND SPUN SILK FABRICS.</b>			
Foulards, crepe, tulle, hosiery, <i>passementerie</i> , and lace of pure silk, per 100 kilos	Free	Free	Free
Do. hosiery and <i>passementerie</i> of spun silk, unbleached, bleached, dyed, or printed	200 0	248 0	200 0
Do. made from silk noils, for furnishing purposes, weighing over 250 grm. per square metre	150 0	186 0	150 0
Do. of pure and spun silk mixed	The same rates as for goods made of spun silk.		
Do. of silk or spun silk mixed with other textiles (silk predominating)	300 0	372 0	300 0
Do. <i>passementerie</i> or silk lace with pure gold or silver threads	1200 0	1488 0	1200 0
Do. alloyed or imitation	350 0	434 0	350 0
<b>RIBBONS OF SILK (PURE OR SPUN) MIXED WITH OTHER TEXTILES (SILK PREDOMINATING).</b>			
VELVETS	500 0	620 0	500 0
Others	400 0	496 0	400 0
Garments, <i>lingerie</i> or other articles of cloth, wholly or partly made up	Duty on the cloth chiefly used plus 15 per cent. general tariff and 10 per cent. for the minimum tariff.		

(To be continued.)

## Joint Stock and Financial News.

### NEW COMPANIES.

**DAISY BANK MANUFACTURING COMPANY, LIMITED.**  
Registered by Charles Everett, 124, Chancery-lane, W.C., with a capital of £10,000 in £10 shares. Object, to acquire the business of a cotton manufacturer, carried on by J. C. Fielden, at Calcebeth, near Warrington, under the above title. The first directors are J. C. Fielden, S. T. Woodhouse, J. Ashworth, J. Allison, and T. Dean. Qualification, five shares. Remuneration to be determined in general meeting.

**COTTON POWDER COMPANY, LIMITED.**  
Registered by Anthony Pullbrook, 20, St. Helen's-place, E.C., with a capital of £40,000 in £2 10s. shares. Object, the acquiring of the patent rights, name, property, and assets of the Cotton Powder Company, Limited; to carry on business as manufacturers of cotton powder or gun cotton, or any similar or other explosive products, etc., etc. The first subscribers are:— Shares.  
H. Andrews, 27, Martin's-lane, E.C. .... 1  
H. Green, 1, Fyfield-road, Brixton ..... 1  
W. H. Simmons, 186, New North-road, N. . . 1  
G. S. Dawson, 43, Great Coram-street, W.C. . 1  
H. J. Semarke, 312, North End-road, S.E. . . 1  
H. Judd, 45, Great Coram-street, W.C. .... 1  
C. H. Slater, 21, Egmont-street, New-cross 1  
There shall not be less than three nor more than seven directors. Qualification, 50 shares. Remuneration, £250, divisible.

**HAEZEL MILL COMPANY, LIMITED.**  
Registered by Waterlow Brothers and Layton, Limited, 24 and 25, Birch-lane, E.C., with a capital of £40,000 in £5 shares. Object, to acquire the cotton mill known as the Acre Mill, Haslingden, Lancashire, and carry on business as cotton spinners, doublers, etc. The first subscribers are:— Shares.  
J. Ormerod, Haslingden ..... 100  
W. H. Shaw, Haslingden ..... 100  
R. Harrison, 64, Middleton-road, Oldham 100  
N. Ackroyd, 13, Rutland-street, Oldham 100  
F. Hamer, 276, Chadderton-road, Oldham 100  
T. L. Ormerod, Haslingden ..... 100  
L. Barlow, Hookston-street, Moss Side, Manchester ..... 1  
There shall not be less than five or more than seven directors. Qualification, 100 shares. The first are the signatories to the memorandum of association.

**JOHN STANNING AND SONS, LIMITED.**  
Registered by Woodcock, Ryland and Parker, 11, Lincoln's-Inn-Fields, W.C., with a capital of £100,000 in £10 shares. Object, to carry on the business of bleachers, finishers, and dyers, or in any other way manipulating cotton, flax, or other fibrous substances, and for such purposes to carry into effect the contract for the purchase of the Shropps Bleachworks, situated at Leyland, Lancashire, entered into by an agreement, made October 30, between John Stanning, as vendor, and Peter Kevan. The first subscribers are:— Shares.  
J. Stanning, Leyland ..... 1  
Mrs. Stanning, Leyland ..... 1  
J. H. Stanning, Leigh ..... 1  
Lieut.-Col. J. E. P. Mosley, Hulland Hall, Ashbourne ..... 1  
J. W. Makant, Bolton ..... 1  
J. Harwood, Woodsleigh, Bolton ..... 1  
G. Hesketh, Astley Bridge, Bolton ..... 1  
C. W. Rawlins, 8, Horton-street, Kensington ..... 1  
There shall not be less than three nor more than five directors. Qualification, 50 shares. The first are J. Stanning, G. Hesketh, and J. W. Makant. Remuneration to be determined in general meeting.

## Gazette News.

### ADJUDICATIONS.

Paul Wallace, Victoria Mills, Honley, near Huddersfield, worsted spinner.

### RECEIVING ORDERS.

John Locke, Heddon-street, Regent-street, London, cloth merchant; London.  
Joseph Kirk and Henry Kirk, Old-lane, Halifax, dyers; Halifax.  
Paul Wallace, Honley, near Huddersfield, worsted spinner; Huddersfield.  
Kershaw Jowett, Clement-street, Bradford, machine maker; Bradford.

### NOTICES OF DIVIDENDS.

A. Ambler, trading as Abraham Ambler and Co., 10, Carlton-place, Horton-road, Bradford, and trading at Hollings Mill, Sunbridge-road, and Albion Mills, Fulton-street, Bradford, machine wool comber, lately trading with J. Beanland; 2s. 8d., first.  
S. S. Freeman, 10, Sawney-place, and Victoria Mill, Bowling, Bradford, worsted spinner; 12s., first.

A. Lister, Prospect-place and Victoria Mills, both in Low Moor, near Bradford, Yorkshire, manufacturer of fancy silk dress goods; 4d., third and final.

### PARTNERSHIPS DISSOLVED.

W. and A. Riley, Holker-street Mill, Colne, Lancaster, cotton manufacturers.  
James Farrar and Brothers, Manchester, manufacturers.  
Batchelor, Shuter, and Co., York-street, Manchester, merchants.

## Patents.

### APPLICATIONS FOR PATENTS.

The names in italics within parentheses are those of Communicators of Inventions.

Where Complete Specification accompanies Application an asterisk is suffixed.

### 3RD TO 8TH NOVEMBER.

17,571. R. THORNTON, 20, Mapperley-road, Nottingham. Warp machines.  
17,578. J. HIGGINSON, junr., 13, Temple-street, Birmingham. Adjusting revolving flats.  
17,585. W. J. LYON and M. FEARN, 70, Market-street, Manchester. Doubling machines.  
17,642. G. P. GARDNER, 70, Wellington-street, Glasgow. Composition for fixing or mordanting colours.  
17,653. G. KIRKHAM, 18, St. Ann's-street, Manchester. Machinery for clearing and gassing yarns.  
17,694. E. W. FOXLEE, 22, Goldsmith-road, Acton, London. Printing with primuline.  
17,712. B. WILLCOX, 47, Lincoln's-Inn-Fields, London. New derivatives of alizarine and its analogues.—(*Farbenfabriken vorm. F. Bayer and Co., Germany.*)  
17,769. T. F. NAYLOR and A. NAYLOR, Green-street, Kidderminster. Dye vats.  
17,803. J. C. MEWBURN, 55, Chancery-lane,

London. Breaking, scutching, and hackling flax, etc.—(*J. Cardon, France.*)

17,835. A. SOWDEN, Central Chambers, Halifax. Circular box looms.

17,872. T. SALZMANN, 28, Southampton Buildings, London. Process for production of dyed cotton yarns or threads.\*

17,906. H. RAWSON, 8, Quality Court, London. Looms.

17,909. W. LEE and G. CROLL, Lawside Foundry, Dundee. Cloth cropping or clipping machines.

17,933. E. TURCK, 6, Bream's Buildings, London. Ornamenting fabrics.

17,949. G. H. HOLDEN and J. ASHWORTH, 13, St. Ann's-street, Manchester. Doubling and twisting yarns or threads.

17,965. E. HORSFIELD, 13, Longshaw-street, Hollin Bank, Blackburn. Looms, crank shaft, "tappet rest motion."

17,968. W. H. KELLETT, Market-place, Huddersfield. Card-setting machines.

17,972. T. THORNTON, 58, Low-street, Keighley. Stop-motion, applicable for "Noble" or like combing machines.

17,981. J. W. SHEPHERD, W. AYRTON, and R. CLEGG, 62, Wellington-place, Longsight, Manchester. Winding yarn on to bobbins, spools, etc.

17,982. F. P. LEES and H. LEES, 17, St. Ann's-square, Manchester. "Raising" textile fabrics.

17,995. H. CAUSE, 70, Market-street, Manchester. Shuttlers for looms.

18,018. A. J. BOULT, 323, High Holborn, London. Treatment of vegetable materials to convert them into textile fibres.—(*G. Rudel, Germany.*)

18,021. B. WILLCOX, 47, Lincoln's-Inn-Fields, London. Periodicides of isobutyl phenols and isobutyl cresols.—(*Farbenfabriken vorm. F. Bayer and Co., Germany.*)

18,022. B. WILLCOX, 47, Lincoln's-Inn-Fields, London. Methyl and ethyl-phenacetin.—(*Farbenfabriken vorm. F. Bayer and Co., Germany.*)

18,024. O. IMRAY, 28, Southampton Buildings, Chancery-lane, London. A novel pyrazolon.—(*The Farbwerke vorm. Meister, Lucius and Bruning, Germany.*)

18,025. O. IMRAY, 28, Southampton Buildings, Chancery-lane, London. Sodium formylphenylhydrazine and symmetric alkyphenylhydrazine.—(*The Farbwerke vorm. Meister, Lucius and Bruning, Germany.*)

### SPECIFICATIONS PUBLISHED.

1889.

15,993. FROGGATT. Spinning, etc., machines. 6i.  
16,982. WILKINSON. Harmonious colouring. 1s. 1d.  
17,882. PEGLER. Preparing textile, etc., materials. 6d.  
18,147. LAVAL. Stretching fabrics. 8d.  
18,249. SMITH. Carding engine flats. 8d.  
19,464. TOLSON. Preparing wool, etc., for spinning. 8d.  
19,534. ADAMS and others. Knitted ribbed fabrics. 8d.  
19,988. SOUTH. Looms. 6d.  
20,193. SYKES, E. and D. Spinning, etc., machinery. 6d.  
20,219. IMRAY. (*La Societe Anonyme des Matieres Colorantes de St. Denis.*) Azoxy aniline, etc. 4d.  
20,229. AUNAY. Looms, etc. 8d.  
20,292. IMRAY. (*La Societe Anonyme des Matieres Colorantes de St. Denis.*) Colouring matters. 4d.  
20,330. BARNES. Warp beaming machines. 8d.  
20,668. JOHNSON. (*Badische Anilin and Soda Fabrik.*) Colouring matters. 6d.  
20,678. IMRAY. (*The Farbwerke vorm. Meister, Lucius and Bruning.*) Colouring matters. 6d.  
1890.  
371. YORK STREET FLAX SPINNING COMPANY, Ltd., and McKIBBIN. Wet Spinning frames. 8d.  
2,584. HYDE. Machine spindles. 6d.  
7,504. BOULT. (*Legrand.*) Embroidering machines. 1s. 3d.  
8,296. SERRELL AUTOMATIC SILK REELING COMPANY, Ltd. Preparing cocoons for reeling. 4d.  
13,599. ADAMS and GREENWOOD. Loom check end and buffer straps. 6d.  
14,503. DENT and others. Twilled fabrics. 6d.  
AMENDED SPECIFICATION.  
1888.  
15,849.\* GREEN. Colouring matters. 4d.  
THIRD EDITION.  
1881.  
2,196. TAYLOR and WARBURTON. Figured cloth. 4d.



ABSTRACTS OF SPECIFICATIONS.

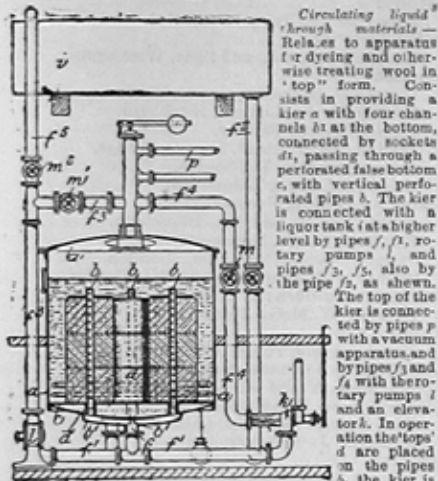
9,082. June 1, 1889. **Spinning.** M. Firth and J. ROBERTS, Bolton Woods Shed, Bradford.

Combing machines.—Additional drawing-off aprons are employed, which run in contact with the ordinary aprons and take over rollers. The combined slivers are delivered by an ordinary coiling box instead of by revolving funnels as usual. The additional aprons are traversed simultaneously with the others by means of forked arms, carried by roller brackets, mounted on the tables of an ordinary traversing apparatus. 84d. Drawings.

9,101. June 1, 1889. **Pile Fabrics.** J. J. SMITH, Albany Mills, Oldham, and G. MARR, 50, Backville-street, Manchester.

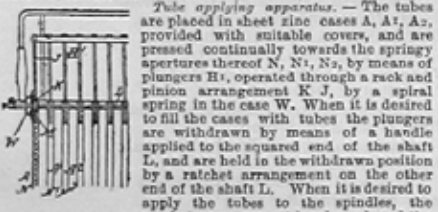
Fancy fabrics are made with alternate stripes of white or coloured cord or plain velvet pile, and of coloured fancy weaving. Additional effects may be produced by applying colour to the pile after cutting, and, in the case of the white stripes, by introducing coloured warp threads along the centre of each flat or race. The method of producing the fabrics is described. 44d.

9,149. June 3, 1889. **Dyeing, etc.** S. MARSH, Junr., 2, St. Ann's Place, Manchester.



Consists in providing a kler with four channels at the bottom, connected by sockets at the top with pipes *p*, passing through a perforated false bottom *c*, with vertical perforated pipes *t*. The kler is connected with a liquor tank at a higher level by pipes *f*, *l*, rotary pumps *i*, and pipes *f*, *s*, also by the pipe *f*, as shewn. The top of the kler is connected by pipes *p* with vacuum apparatus, and by pipes *f*, *s* and *f*, *l* with thermostatic pumps *i* and an elevator. In operation the pipes *d* are placed on the pipes *b*, the kler is exhausted, liquor is then admitted from the tank *i* by the pipes *f*, *l*, and *f*, *l*, and when the tops are immersed, circulation of the liquid is effected by the elevator or pumps, the various valves *m*, *n*, being suitably adjusted at each step. 84d.

9,186. June 3, 1889. **Spinning.** A. J. BOWLER, 323, High Holborn, Middlesex.—(A. Strubel, Breditz, Austria.)

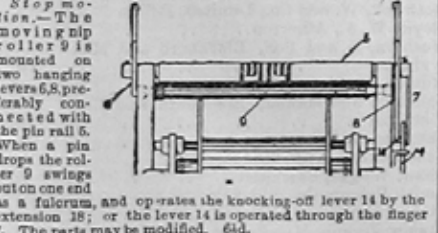


Tube applying apparatus.—The tubes are placed in sheet zinc cases *A*, *A1*, *A2*, provided with suitable covers, and are pressed continually towards the spring apertures thereof *N*, *N1*, *N2*, by means of plungers *H*, operated through a rack and pinion arrangement *K*, *J*, by a spiral spring in the case *W*. When it is desired to fill the cases with tubes the plungers are withdrawn by means of a handle applied to the squared end of the shaft *L*, and are held in the withdrawn position by a ratchet arrangement on the other end of the shaft *L*. When it is desired to apply the tubes to the spindles, the ratchet arrangement is released, and the row of tubes nearest the apertures *N*, *N1*, *N2*, on the spindles, and the apparatus is withdrawn, when a row of tubes are left on the spindles, and the next in order take their places at the apertures *N*, *N1*, *N2*. 84d.

9,235. June 4, 1889. **Silver cans.** G. STIEHLE, Kempfen (Allgau), Germany.

The ends of the silver cans are stiffened and strengthened by wiring and by means of rings, which take over the bending on the edge and may be provided with one or more corrugations for engaging with corresponding grooves in the side of the can. The bottom is loose, and may be arched upwards. If the corrugations are dispensed with, the can may be used either end upwards, the loose bottom falling to the lower end when the can is reversed. 64d. Drawings.

9,248. June 4, 1889. **Yarn beaming machines.** A. HIRCOX, Globe Works, Accrington.

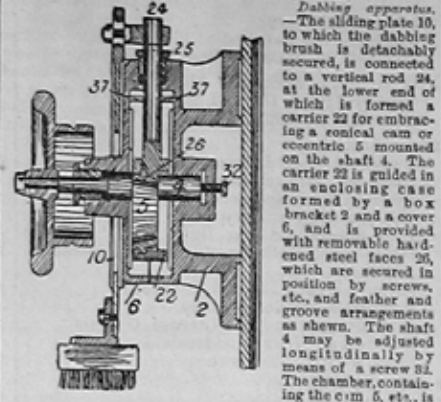


Stop motion.—The moving nip roller *A* is mounted on two hanging levers *B*, *C*, preferably connected with the pin *D*. When a pin drops the roller *A* swings out on one end as a fulcrum, and operates the knocking-off lever *L* by the extension *K*; or the lever *L* is operated through the finger *T*. The parts may be modified. 64d.

9,344. June 5, 1889. **Knitting.** C. DAWSON, Fletcher Gate, Nottingham.

Relates to the manufacture, on rotary knitting machines, of articles for ladies and gentlemen, such as vests, night-dresses, dresses, bathing costumes, combination, jerseys, bodices, chemises, chemisettes, night-shirts, shirts for bathing, tennis, cricket, racing, and cycling, jockey's shirts, and other undershirts and garments. In order to make them fit the shoulders, both sides of either the back or the front are made with the requisite number of narrowings, and both sides of the other part are widened to the selvaige to correspond. The two parts are joined together on a turning-off machine, the rest of the garment being formed and finished in the usual way. 64d.

9,366. June 5, 1889. **Combing Machines.** R. HADDAN, 18, Buckingham-street, Strand, London, W.C.—(The Newington Worsted Co., Newton, Massachusetts, U.S.A.)



—The sliding plate 10, to which the dabbing brush is detachably secured, is connected to a vertical rod 24, at the lower end of which is formed a sprocket 25 for engaging a carrier 22 for embracing a conical cam or eccentric 5 mounted on the shaft 4. The carrier 22 is guided in an enclosing case formed by a box 6, and is provided with removable hand-actuated steel faces 26, which are secured in position by screws, etc., and feather and groove arrangements as shewn. The shaft 4 may be adjusted longitudinally by means of a screw 82. The chamber, containing the cam 5, etc., is about half filled with lubricant, by the agitation of which the whole of the parts are automatically lubricated; suitable baffle-plates 37 are provided to prevent the escape of lubricant at the stuffing-box 25, and also ribs for guiding the drippings from the plates 37 again to the lower part of the chamber. 84d.

9,384. June 6, 1889. **Dyes.** H. D. KENDALL, Lowell, Massachusetts, U.S.A.

Consists in the preparation of a brown colouring matter called "Essanine," produced by the action of hydrochloric acid upon dinitroso-resorcin or its homologues. To commercial dinitroso-resorcin is gradually added one-third its weight of hydro-sulphite of sodium, with constant agitation for about one hour. The resulting solution contains the colouring matter, which is soluble in all proportions in water or weak alkalies, or acids. The dye is applied to cotton by ordinary, or preferably chrome mordants, and to wool or silk by the usual methods. 44d.

9,410. June 6, 1889. **Cleaning; Bleaching.** A. H. PARKER, 17, Mildmay-road, Middlesex.

Relates to a composition for cleansing, scouring, and bleaching wool and other fabrics, and for cleansing purposes generally. Consists in a mixture of pearl-ash, borax, ammonia, Scotch soda, soft soap, and Jey's disinfectant. 44d.

9,427. June 6, 1889. **Dyes.** J. Y. JOHNSON, 47, Lincoln's Inn Fields, Middlesex.—(Badische Anilin and Soda Fabrik, Ludwigshafen-on-Rhine.)

Oxyketone series.—Relates to colouring matters of the class described in Specification No. 8,373, A.D. 1889. Consists in dissolving gallic acid in *n*-naphthol at about 230 deg. C., and gradually adding zinc chloride. Excess of *n*-naphthol is extracted by benzene, and the tetraoxyphenylphthonylketone remaining is dissolved in alcohol, and precipitated by pouring the solution into water. It dyes cotton mordanted with alumina a greenish yellow colour, and chrome mordanted wool brownish yellow shades. 44d.

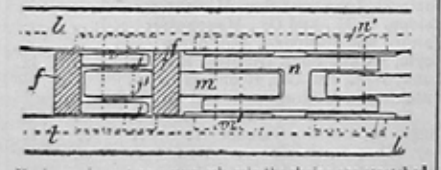
9,428. June 6, 1889. **Dyes.** J. Y. JOHNSON, 47, Lincoln's Inn Fields, Middlesex.—(Badische Anilin and Soda Fabrik, Ludwigshafen-on-Rhine.)

Oxyketone series.—Relates to the preparation of colouring matters of the class described in Specifications Nos. 8,373 and No. 9,427, A.D. 1889. Consists in substituting for the organic acids and carboxyl derivatives mentioned in the above Specifications the corresponding acid chlorides or anhydrides. For example, trioxylbenzophenone is prepared by gradually adding pyrosulphol to benzoyl chloride at about 80 deg. C. After the evolution of hydrochloric acid ceases, zinc chloride is added, and the mixture is kept in agitation at 140 deg. C. for several hours. The product is dissolved in boiling water, from which the dye-stuff crystallises on cooling. The same product is obtained by heating pyrosulphol and benzoic anhydride in presence of zinc chloride at 145 deg. C. for three hours. 44d.

9,429. June 6, 1889. **Dyeing.** J. Y. JOHNSON, 47, Lincoln's Inn Fields, Middlesex.—(Badische Anilin and Soda Fabrik, Ludwigshafen-on-Rhine.)

Consists in producing coloured compounds of gallicacetone with metallic oxides or mordants within or upon animal or vegetable fibrous materials. The known processes of dyeing and printing and the known mordants are employed. A yellow print colour, for example, is produced by means of a mixture of gallicacetone as a 10 per cent. paste, trichloroacetone solution, acetate of lime solution, acetic acid, and thickening. By omitting the lime acetate, a yellowish-brown print colour is obtained. With acetate of iron and acetic acid, a black print colour is obtained. These colours are printed and steamed as in the development of all-saline colours, and the goods are then soaped, washed, and dried. 64d.

9,432. June 7, 1890. **Washing, Dyeing, etc.** G. A. GREYEV, Crefeld, Germany.

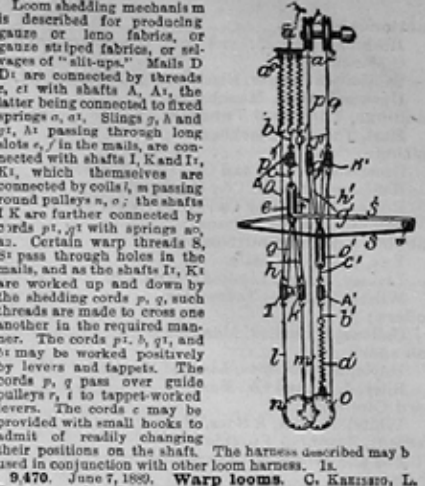


Shank machine.—A reservoir, wherein the skins are stretched over rods held on notched bars by ledges secured by bolts, communicates by a pipe with a vessel containing sufficient liquid to fill the reservoir, and connected with a pneumatic pump or reservoir containing rarefied air. The process consists in allowing the liquid to run into the skin reservoir and immerse the skins, and then, after a sufficient interval, withdrawing the liquid into the chamber in order to expose the skins to the air. This alternate exposure to liquid and air is repeated as often as necessary. The vessel may be below the skin reservoir and the liquid may be caused to rise into the latter by a pump, or by air or steam pressure. 84d. Drawings.

9,439. June 7, 1889. **Knitting.** A. E. ADAMS, Albion-street, Leicester, and J. HALLAM, Adelaide-buildings, Albion-street, Leicester.

Means are provided for automatically waiting, splicing, and changing from one rib to another in the manufacture of ribbed fabrics. 84d. Drawings.

9,458. June 7, 1889. **Gauze weaving.** F. HELMER, Horgen, Wald, Zurich, Switzerland.



Loom shedding mechanism is described for producing gauze or leno fabrics, or gauze striped fabrics, or selvaiges of "slit-ups." Shafts *D* are connected by threads *e*, *f* with shafts *A*, *A1*, the latter being connected to fixed carrier *22* for embracing a conical cam or eccentric *5* mounted on the shaft *4*. The carrier *22* is guided in an enclosing case formed by a box *6*, and is provided with removable hand-actuated steel faces *26*, which are secured in position by screws, etc., and feather and groove arrangements as shewn. The shaft *4* may be adjusted longitudinally by means of a screw *82*. The chamber, containing the cam *5*, etc., is about half filled with lubricant, by the agitation of which the whole of the parts are automatically lubricated; suitable baffle-plates *37* are provided to prevent the escape of lubricant at the stuffing-box *25*, and also ribs for guiding the drippings from the plates *37* again to the lower part of the chamber. 84d.

9,470. June 7, 1889. **Warp looms.** C. KARISSO, L. SOHN, and O. HARTIG, Grimma, Saxony.

Latch needles *a* are used, and whilst a row of meshes is being locked in, the guide *l* lays its thread twice on the needles, the first time before the sinkers *p* remove the work so from the latches *a*, and the second time before the loops *f*. 64d.

9,503. June 8, 1889. **Spinning.** T. BIVETT, Lancashire Hill Thread Works, Stockport.

Reeling machines.—In order to prevent the threads from becoming entangled through ballooning, each thread is passed through a pair of rings formed of a piece of bent wire, and hinged to the frame to facilitate the placing of the bobbins, etc., into position. 64d.

9,521. June 8, 1889. **Warp sizing machines.** R. W. GODDARD, Osborne Mill, Bradford.

Of the two pressing rollers, the former is driven by bevel gearing, whilst the latter is pressed against it and driven from it by frictional contact. The pressure is obtained by levers connected with weighted levers below, and acting on projections on the sliding bearings. 64d. Drawings.

9,548. June 8, 1889. **Looms.** W. J. CHEETHAM and S. JOYCE, Savins Mill, Kirkstall, Leeds.

Jack-stands.—The uprights of the descending grate are held clear of the under side of the ascending grate by fixed clearing bars, which are operated through levers and rods from hammer heads, pressed on as they rise, by fixed bowls; springs return the hammers to position. As the grates descend the hammers turn up on their joints, and the clearing bars are not operated. The uprights are formed with turns or projections which, after they have been lifted, engage with the fixed knife which supports them until they are required to go down. The details may be modified. The number of neck cords required is reduced to one-half by these arrangements. 64d. Drawings.

9,549. June 8, 1889. **Looms.** W. G. THOMSON, Standard Works, Halifax.

Pattern lags and pegs.—The lags are formed with holes, preferably countersunk, for the reception of headed pegs. The latter are prevented from falling out by a slide plate formed on the "hit-and-miss" principle. 64d. Drawings.

9,566. June 8, 1889. **Spinning.** E. and E. PIERRARD, 23, Boulevard de Strasbourg, Paris.

Combing machines.—The object is to automatically clear the comb bars or fallers of the square motion in square motion and like machines. This is effected by means of a roller covered with wire cards, which is mounted on the supports of the brush, and moves to and fro with the slide which operates the comb bars. When moving from the nipper, the roller and comb bars move together, the former being stationary with regard to its axle, but during the return motion the roller is rotated by contact with the stationary comb bars and clears the latter from "robbing." The roller being itself rotated by means of an adjustable saw-toothed blade. In order that the comb bars may be cleared completely at intervals of 20 to 30 minutes, etc., the roller is at such times caused to rotate as it approaches the nipper first in the usual direction and then in the opposite direction by means of a ratchet and pawl arrangement. The first row of teeth of the comb bars may be completely cleared by means of a toothed bar, which is operated from the same shaft from which the levers of the brush motion are operated, and takes into the spaces formed by the removal or omission of the last row of teeth from each combed bar. 1s. Drawings.

9,600. June 11, 1889. **Rust stains, removing.** A. BUCKEN, Heidelberg, Germany.

Solution for removing rust stains from cloth, etc. Consists of oxalic acid, chloride of tin, benzoic acid, and water. The cloth is dipped in hot water containing some of the solution; or boiled for some time in water containing about 20 per cent. of the solution. 44d.

9,609. June 11, 1889. **Looms.** G. HALSTED, 98, Leods-road, Nelson, Lancashire.

Shuttle.—The tongue is held steady in a line with the hole leading to the shuttle eye by a blade spring, which catches against a ledge on the shank. 64d. Drawings.

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<b>Bandings, Tape and Tubular:</b> Hart, Thomas, Blackburn.	<b>Lattices, Pegs, Jacquard Slips, &amp;c.:</b> Livesey, Henry, Limited, Blackburn. Stone and Burnett, Preston.	<b>Oil:</b> Wells, M. & Co., Manchester.
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<b>Boilers:</b> Galloways, Limited, Manchester.	<b>Machinery (Bleaching, Dyeing, Printing, &amp;c.):</b> Arnfield, J. & E., New Mills, Stockport. Dickinson, Wm., & Sons, Blackburn. Heppenstall, E., Huddersfield. Riley, J. H., and Co., Bury. Whiteley, Wm. & Sons, Huddersfield.	<b>Pickers, Picking Bands, &amp;c.:</b> Greenwood, John, Todmorden.
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<b>Chemicals:</b> Grimshaw Bros, Clayton, Manchester.		<b>Shuttles:</b> Kay, John, Rochdale. Livesey, Henry, Limited, Blackburn. Pickles, Robert, Burnley. Walton and Halstead, Hebden Bridge. Wilson Brothers, Todmorden. Greenwood, John, Todmorden.
<b>Cop-Tubes:</b> Jagger & Co., Oldham.		<b>Sizing and Filling Preparations:</b> Adley, Tolkien, and Co., Blackburn. Eastwood, James, Manchester. "Gloy" Manufacturing Co., London. Grimshaw Brothers, Clayton, Manchester.
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<b>Cotton Driving Ropes:</b> Hart, Thomas, Blackburn.		<b>Steam Traps:</b> Lancaster and Tonge, Pendleton.
<b>Cutters (Spiral) and Ledger Blades:</b> The Smith's Patents Co., Sheffield.		<b>Tambouring Threads, Braids, &amp;c.</b> Makinson, E. and W. G., Preston.
<b>Gold and Silver Wire:</b> Makinson, E. and W. G., Preston.		<b>Technological Handbooks:</b> Bell, George, and Sons, London. Naismith, J., Manchester.
<b>Driving Ropes, Bandings, &amp;c.:</b> Hart, Thomas, Blackburn.		<b>Temples, etc.:</b> Blezard, James, and Sons, Padiham. Lupton Brothers, Accrington.
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<b>Engineering Work:</b> Bransby Foundry and Engineering Co., London. Hoyle, E., and Sons, Limited, Halifax.		<b>Wire, Gold and Silver:</b> Makinson, E. and W. G., Preston.
<b>Fire Hose:</b> Reddaway, F., & Co., Pendleton.		<b>Wire Healds:</b> Barlow, H. B., and Co., Cornbrook, Manchester.
<b>Furnace Bars:</b> Bransby Foundry and Engineering Co., London.		<b>Yarn Assorting Balance:</b> Thomas, G. and Co., Manchester.
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Grimshaw Bros., Clayton, Manchester .. .. .	—	Platt Brothers and Co., Ltd., Oldham .. .. .	—	Wilson Bros., Cornholme, Todmorden .. .. .	vii.
Guest and Brookes, Manchester .. .. .	—	Reddaway, F., and Co., Pendleton .. .. .	i.		
Hacking and Co., Bury .. .. .	—	Renshaw and Co., Manchester .. .. .	—		
Hall, Robert, and Sons, Bury .. .. .	xi.	Rossendale Belting Co., Manchester .. .. .	—		