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All communications to the Editorial Department should reach the offices, 23, Strutt-street, Manchester, early in the week in order to receive attention in the next issue.

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WOOLLENS FROM CANADA.

The thoughts which, as Robert Buchanan puts it, "buzz to the whizzle-whazzling of the loom," appear to have found a place in Canada to a much greater extent than is generally imagined. The Canadian mills have recently undertaken special lines in woollen dress goods, and the imports of Scotch and German makes have fallen off appreciably since the growth of the Canadian industry. Flannelettes and Shaker flannels have been produced much more largely. Canadian ready-made clothing has already found a steady market in the West Indies, partly as a result, it is understood, of the Jamaica Exhibition, which afforded the manufacturers of the Dominion an opportunity that was not allowed to slip. Mr. R. S. Fraser, of Montreal,

is said to have received a trial order for Canadian tweeds from a Yorkshire house, and repeats are promised if the goods serve their special purpose. It is said, though with what truth we know not, that Halifax (Nova Scotia) tweeds have for some time been shipped to London for use in the fashionable West End clothing trade. They are employed for gentlemen's sporting suits. The very name of Halifax tweed, it is further affirmed, is of Canadian and not English origin, the goods having been introduced into this country by the British officers stationed in the Nova Scotian capital, which, as our readers know, is an important naval and military depot.

A CALICO PRINTERS' SYNDICATE.

As will be seen from our Joint Stock News, a syndicate of calico printers has again been formed, and registered as a limited liability company. Its primary object is to put an end to the present system of price cutting and the terrible amount of allowances which merchants and shippers are so fond of claiming, and which under present conditions calico printers are not always in the best possible position to resist. Of the details of the proposed new syndicate very little is known at present, but it is said that the large firms are taking to it more kindly than they did to the last attempt to form a syndicate; and it is quite possible that if the promoters of the new movement have learnt a lesson from the ill success of the old scheme and can avoid its defects while utilising its good points, they may bring their new scheme to a favourable issue. Calico printers are a jealous set, and there will be an uphill fight to overcome this jealousy and bring them into line on the subject. It is to be hoped that they will not be so avaricious as certain of them were on the last occasion; they should remember that to overload the syndicate with unproductive capital paid, or rather overpaid, for works, is the system to pursue to strangle the concern and prevent it from earning fair dividends. Let them, therefore, ask only a fair and reasonable price for their works, trusting to the success of the new scheme to pay them for joining it. Time will shew whether the calico printers will join the new syndicate, but under good management there is no reason why it should not be a success, and effect the object for which it is formed.

"DELIVERY AS REQUIRED."

"For this is a sort of agreement, you see, That is binding on you, but not binding on me."
 —*Miss Flora M'Flimsy*.

Referring to our comments last week upon the yarn case tried before the County Court Judge of Nottingham, in which the purchaser, having bought with a clause like the above in the order, claimed the right to indefinitely postpone delivery if he so wished, and which the judge very properly refused to endorse, one cannot help being struck by the manner in which selfishness is permitted to blind the sense of equity and justice. It is also astonishing to find how widely spread such sentiments are. Referring to the above-mentioned case, a gentleman acquainted with the facts narrated to us the following parallel story: A silk lace manufacturer in Calais placed with a silk merchant a heavy order for silk at say 50s. per lb., the order containing the above clause, which is as common in Calais as in Nottingham. Silk went up from that point, and for a time deliveries were called for and went all right, nothing being said. In a short time it began to decline, and went below 50s., after which the requisitions upon the merchant entirely ceased. It went down to 45s. per lb., and still no demands came in for delivery. At this point the

merchant called upon his customer and asked him why he was not calling for delivery of the silk as usual. "Oh!" said he, in the politest manner, "I don't require any of your silk." "But you must be requiring silk," said the merchant, who had ascertained that his friend was obtaining supplies from another source. "Oh no, I don't require any silk at 50s. per lb., when I can buy the same quality at 45s." From this it will be evident that in France they attempt these things on the same lines as are tried here. It may, however, be safely affirmed that in this country no such claim would be held to be good when there was no converse to it in the order freeing the seller from responsibility in the event of prices going up. A bargain that contained both these clauses would simply fall to the ground, and thus all attempts to do business would be reduced to a nullity. It is a *reductio ad absurdum*.

THE AMERICAN CONSPIRACY AGAINST CANADA.

Now that the gigantic intrigue and conspiracy of the professional politicians of the dominant party in the United States has ended in a great *fiasco* and the discomfiture of the whole army of plotters, including Mr. Goldwin Smith, ex-professor of History at Oxford University, we are getting treated to the next moves of the galaxy of political geniuses represented by the Blaines, Harrisons, and others of the Republican party. The primary object of the McKinley Tariff was to make the position of the Canadian Confederation unendurable, in order to compel her to enter the American Union. The scheme had been conceived years ago and the preparations carried on for a long time before it was deemed that the suitable moment had arrived for its public promulgation. Sir John Macdonald was firmly installed in office as head of the Canadian Government, and it was well known that he could not be induced to take any part in a plot to promote the absorption of the country by the United States. Therefore he had to be displaced by some means, and at whatever cost. The support of the electorate had to be detached from him, and the instrument for doing this was the McKinley Bill, which on its enactment would destroy the trade between the two countries—a misfortune that would be overwhelming to Canada, and to avoid which it would, under the leadership of Sir John's opponents, seek admission to the Union. Vanity, like other things, grows by what it feeds upon, and so it was determined in the States to kill a few other birds with the same stone. These were the Spanish and British West India colonies and dependencies, and this scheme, whilst effecting more than the original one, would serve to disguise in some measure the primary object. Mr. Goldwin Smith was the prophet and apostle of the plot, and the *Toronto Globe* the chief press organ. Sir John Macdonald, however, was too smart for his opponents. Knowing well the unscrupulous character of the American politicians and their allies in Canada, he kept a sharp look-out upon their doings. When the policy of annexation had been promulgated, and the disastrous consequences of resisting it that would flow from the destruction of their trade under the McKinley commercial régime had been dwelt upon with great unction by the plotters, Sir John was enabled to destroy the effect of their action to a great extent by the revelation of the Wyman-Farrer-Smith and Co. conspiracy. This junta had not only been in at the inception of the plot and its subsequent conduct, but was also in constant communication with Washington, shewing its progress and advising the refusal of all applications for an arrangement for the grant to Canada of commercial privileges under the provisions of the tariff.

This exposure had the most damaging effect upon the fortunes of the so-called but really miscalled 'Liberal' party at the polls, notwithstanding their attempt to neutralize it by a lavish expenditure of money for corrupt purposes, some little of which has recently been brought to light in the numerous constituencies where the members of the party have been unseated and replaced by better men. It would be interesting and instructive to learn from whence this money came. The leader of the Liberal party, to his honour be it recorded, would not lead the disloyal faction to the destination they wished to go to, and retired from his post before the election. It was a great pity he was not bold and honourable enough to have rounded upon them and shewn up both plot and plotters: the collapse would have been all the more and instantaneously complete. It has, however, been sufficient for the perfect discomfiture of the plotters, and recently the public of Toronto were treated to the valedictory address of Professor Smith, who declared it was the last political speech he intended to deliver: his political swan-song in fact. Unfortunately no more reliance can be placed upon such statements as these from professional politicians than upon those of public entertainers. Accordingly, after a week or two's eclipse, he reappears before the public in an article in the *New York Independent*, on the situation in Canada, which has just come to hand. This, of course, is of such a character as might be expected from a discredited and discomfited politician who had assisted to lead his party into a quagmire. The concluding passage is characteristic of Mr. Smith's capabilities in performing the right-about-face movement without the faintest sign of a blush at the inconsistency of the movement, or trouble to his historical conscience. The closing passage is as follows:—

Canadian Liberals are ceasing to work for justice to England or to the British Press. That we have been and are struggling against a system of government by corruption, ruinous to the character of our people, is nothing. The system keeps the Colony in the state of dutiful dependence. That seems to be enough. We are sometimes reminded of the language held by British Tories about "our colonists" on the eve of the American revolution. Canadian Liberals are being forced to identify themselves with their own continent; a result to me not unwelcome, though I could wish to see it brought about by happier means and without diminution of that filial feeling toward the mother country which is strong in my own heart and is perfectly compatible with a belief in the necessity of autonomy for the New World.

This "working for justice to England, and struggling against corruption" is charming in view of the fact that the sole object of the incorporation sought with the larger community on the South, is to exclude England from all commerce with Canada just as has been done with the States, in every thing to which exclusion could be applied; and that the recent election enquiries have shewn incontestably that the party of Mr. Goldwin Smith is the party that has carried the practice of corruption to an extent never dreamt of before. It is honest political principle and a correct perception of its true and best interests that preserves the Colony's connection with England, a connection that will not be severed until the people are struck with mental blindness, or their political conscience has become so corrupt under the teachings of emissaries like Mr. Smith, that they will be led to prefer an apparent temporary personal interest to the welfare of all their children and descendants through all the generations that have to follow them. Of course Canada must be punished for refusing to swallow, *holus bolus*, the blessings of annexation to the United States, offered by these men; hence the Behring Sea seal fishery question has been raised, in and by which it is arrogantly proposed to deprive Canada of an important and valuable industry, by advancing demands on the part of

the United States of a right to conserve the Pacific Ocean. If this preposterous demand is not submitted to, Canada has to be further punished by the stoppage of all her winter commerce with Europe that now passes in bond through the State of Maine, during the time that her own ports are closed by frost; and Mr. Smith is a man who can approve of and advocate all these things, and then talk of "filial feelings towards the mother country which are strong in his own heart, and are perfectly compatible with a belief in the necessity of autonomy for the New World." We cannot see the honesty of such declarations as these, and we are confident that both the Canadian and English public will regard them in the light we do.

IRISH WOOLLENS.

The death of Mr. Mahony, head of the famous Blarney firm of woollen manufacturers, recorded by us last week, removes from the ranks of the trade a figure which, although that of an Irishman, was yet a prominent one in the woollen industry. Situated within a stone's throw of Blarney Castle, a dismantled stronghold which belonged to an old family of the McCarthys, the mill of Messrs. Martin Mahony and Bros. is surrounded by objects of historical interest. In the ancient square keep of the castle tower, still standing, juts out the old stone—the Blarney stone—which certain folk go to kiss. The last of the McCarthys was a sympathiser with the cause of James II., and his estates, valued at £150,000 a year, were forfeited. The present mills at Blarney are about 30 years old, and represent the only textile industry in Blarney, although a century ago there were thirteen manufacturers in the town, according to Arthur Young, and 300 operatives engaged in the linen trade. About 750 hands are now employed by Messrs. Mahony, 300 being men and 450 women and girls. The business has only assumed large dimensions during the past twenty years, and there are now 15,000 spindles and 140 looms in the factory, fingering yarns and Blarney tweeds and serges being produced. Messrs. Mahony are by far the largest firm of woollen manufacturers in the county Cork, the next in size being Messrs. O'Brien Bros., of Cork city, who have only, however, one-fifth as many spindles and about half the number of looms owned by the Blarney firm. The remaining woollen manufacturers in the county have from two to seven looms each, and the only industrial establishment of magnitude, besides the two first mentioned, is that of the Cork Spinning and Weaving Company, flax and tow spinners and manufacturers, who have 150 looms. The venture is a revival of an old project, and has already been referred to in our columns. At Fermoy, Freemount, Dunmanway, Kilworth, Kinsale, Doneraile, Dripsey, Banteer, and Bandon, there are various small mills employed in spinning and manufacturing woollen yarn and cloth. That of Mahony's is, however, the chief. Their young hands earn from 4s. to 8s. a week, and the adults from 10s. to 50s. A large portion of the production finds an outlet in the Colonies, where good substantial tweeds and serges find a ready sale. Messrs. Mahony produce their own gas and soap, and do their own dyeing. Their cloths are of the class usually recognized as representative of the better classes of Irish woollens, and in design are perhaps superior to most of the products of Irish looms. Messrs. Hill and Son, of Blue Bell and Lucan Mills, Dublin, are also representative Irish woollen manufacturers. They have 106 looms and 5,000 spindles, and the mills turn out, according to one statement, 120,000 yards of cloth yearly; which, like other Irish goods, goes both to the home and Colonial markets, as well as to the

United States. Dublin has for a long time been a centre of the Irish woollen industry, and although besides Messrs. Hill's, Messrs. J. and F. Clayton's may be considered as the only remaining woollen concern in the country, there were formerly many more mills, now dismantled or converted to other uses. One of the severest blows ever received by the trade was in the early portion of the century, when the supply of the army and militia was almost the only demand left for Irish manufacturers to fill. This was monopolised by a few large houses with interest at Court or in Parliament. The monopoly further encouraged a feeling of carelessness, which had grown to large proportions as a result of the protective duties placed upon English goods. The manufacturer, by and bye, looked upon his Government contract as a vested right. His cloth became inferior in quality. Extravagant habits were soon engendered, and in 1810 one of the chief contractors in Dublin failed. The credit of nearly all the wool manufacturers of Ireland was so affected that the banks throughout the country refused to discount their bills. Disaster overtook many well-known firms, and it was a long time before the industry recovered from the stagnation which had overtaken it. Subsequently, a few intelligent men with fresh capital and new ideas set themselves the task of improving the status of the Irish woollen trade. In 1822 there were 45 manufacturers in and about Dublin, employing over 2,800 hands, producing goods valued at £336,000 per annum, Messrs. Hill and Messrs. Clayton are now the only manufacturers of piece goods in the country. At Balbriggan there is, in addition, the important hosiery factory of Messrs. Smyth and Company. At Athlone there is also a well-known woollen factory with 98 "foot" looms on Saxoniae, friezes, and serges. The business of the concern has developed rapidly since the commencement of what is popularly known as the Irish industrial movement. The mills are on the banks of the Shannon, and much of the wool consumed is grown in the counties of Galway and Roscommon. A fine tweed is a speciality of the firm.

GERMANY AND THE NEW TREATIES OF COMMERCE.

The treaties of commerce recently concluded between Germany and several of the neighbouring countries are not regarded with much satisfaction by some Germans, however much they may have pleased diplomatists. A writer in a German textile contemporary maintains that so far as some of these treaties are concerned, Germany has gained very little indeed. The arrangements made with Austria bring no practical advantage, in his opinion, to the textile manufacturers of Germany, whereas the Austrians have managed to obtain substantial concessions in other directions. Switzerland has been similarly successful in giving too little and getting too much. The statement, which it appears has been made, that the cotton industry of Germany was about to find markets in countries inhabited by 136,000,000 persons must, in the judgment of our contemporary, be relegated to the region of fable. It takes, indeed, a very gloomy view of the prospects of textile manufacturers in some of the neighbouring countries. There is little hope from Austria, and the position in Italy is similar, the sale of German cotton goods to Italian customers having declined, it seems, year by year. The extent to which these goods are manufactured in Northern Italy is becoming larger and larger—Italian textiles are already met with in markets beyond the sea, and as wages are so low in Italy and the wants of the working population are so few, this competition is likely to increase. The densely inhabited

country of Belgium, which used to take a large quantity of textiles from the German manufacturers, orders less every year. Printing works—printed goods having constituted the main article in the textile trade between Germany and Belgium—have been established in the latter country, in accordance with the demands of the times, so that even with the relatively low tariffs in force it is hopeless for Germany to expect to be able to stand her ground. This state of things is owing, the writer seems to believe, to the want of sufficient protection for German trade. "We do not in the least question the right of our neighbours to screw up their tariffs as high as they consider necessary; it is only to be regretted that there has not been similar action on our side." Two inferences will be drawn by English readers from such German jeremiads: one, that many of their continental brethren are still quite unable to see or unwilling to admit the failure of protection; and the other, that if free-traders have difficulties to contend with, protectionists are, to say the least, not better off.

THE DEPRESSION IN THE SILK TRADE.

Although the demand for some descriptions of dress silks has improved, the general turnover is still extremely unsatisfactory in volume. A few trimmings are said to have been bought, but beyond this very little can be reported. There has been no noteworthy change in prices of China and Japan raws, the demand for which is, however, steady. The opinion is widely expressed that rates could scarcely be lower than they are at the present time. The current quotations must of necessity be unremunerative to the producer in comparison with those previously paid. There is practically no margin for a further fall, and were it not for the dulness of the market for piece goods it is considered that rates would by this time have mounted to a higher level. The American outlook for silks promises to be much more satisfactory than that at home. The enquiry has already been large, and an extensive demand for European goods is expected. New York and Chicago houses have already been large buyers. Paris and London, however, are dull, and without greater activity in these important markets purchases of European silks are not likely to appreciably increase in volume. Surahs and failles have been bought more freely, and it is noticeable that the tendency of the demand is towards the cheaper classes of goods. Some retailers make sensational announcements concerning the "unheard of stagnation in the silk trade," offering dress goods, including spun checks, Surahs, pongees, and moires, at 6d. per yard—a rate at which no fabric worth wearing can be manufactured. The depression in the velvet and plush trades still continues. Some of the looms bought in this country some time ago on American account were again offered for sale. The shrinkage of prices, consequent upon the necessity of holding forced sales, has been very serious, and the reduction in values of schappe and cotton has further injured the market for silk pile goods. There has, furthermore, been an increase in cost of production, arising from the diminished number of looms at work, while other expenses have not been lessened in equal proportion. In November and December last there was a somewhat brisker enquiry for goods to be used for dress purposes and for trimmings. The demand, however, has not been maintained, and since the commencement of the year the hopes of distributors and manufacturers alike have been disappointed. The demand for umbrella silks has not been large. Ribbons, however, have been in much steadier request, an increasing

number of looms finding employment in this branch of the business. Neck silks have slightly improved; the demand for Windsor scarves is still one of the principal features of the trade. Lyons houses, however, have not allowed the trade to be confined to English looms, and the enterprising manufacturers of the French town are now offering goods the production of which has evidently followed a careful examination of the fabrics which Macclesfield houses are now turning out. As the spring season advances, the delay in the general demand for silks tends to produce serious loss, as when the enquiry comes the mills will be unable to meet the demand with sufficient rapidity.

FRANCE AND HER TARIFFS.

The exaggerated egotism of France, or perhaps it would be better to say of the French people, produces some very curious effects upon outside spectators. Her soil is quite "sacred" soil, but she never by any chance admits that the soil of any other country is so to her, or even to its own people. She is the leader of civilisation in all the world, and those who do not admit this are to her *anathema maranatha*. In proof of this assumption she points to her glorious uprising of last century, when she effected a revolution in her political institutions, cut off the heads of her king and queen, abolished her chamber of aristocrats, inaugurated a new era of progress, and bade mankind look to her for leadership. We never could reconcile these arrogant claims to our historic conscience, for if there is any merit to be claimed for a popular revolution, founding a republic, abolishing a legislative chamber of privileged aristocrats, or cutting off the head of a king, surely it should be awarded to England. We did all this in the Cromwellian period, and as to cutting off the heads of queens our Henry VIII. is the champion in that rôle. So in these respects France must really take a back seat. This illustration is only typical of the remaining phases of the French national character, in every one of which she advances claims and demands that she will not permit to other states. It would be quite easy to shew this did space permit. Our purpose, however, now is merely to direct attention to its manifestation in respect to commercial matters. About ten years ago France inaugurated the present disturbance in tariff matters that has led to the almost universal abrogation of treaties of commerce. In doing this she claimed, and expected to have the claim conceded, that she had a right to impose any tariff she liked upon the competing industries of other countries, whilst they ought to continue to take the productions of her people as before and be very grateful that she would condescend to permit them to do so at any price. All this spirit was strongly shewn during the negotiations a few years ago when a futile endeavour was made by this country to establish a new basis for a fresh commercial treaty, the Cobden-Napoleon one being far too liberal to England for French taste. And this notwithstanding that she had absolutely free admission into this country for all the productions of her people excepting wines, spirits, and tobacco, which are taxed for revenue purposes from wherever they may come. But even these changes did not satisfy her, and as is well known she has recently abrogated all her commercial treaties, and inaugurated a new device for controlling competition with her home productions. This is the institution of a dual tariff, a minimum and a maximum one, the former for application to those on whom she chooses to bestow her favour, and the latter for those whom she chooses to regard as not treating her with the deference due to her divinely appointed mission as the leader of civilization in

the world. But even her favourites have small cause to be thankful to her, as the minimum tariff which she has condescended to bestow as a mark of favour is a large advance upon all preceding ones, and prohibitive in many of its aspects. So far as we are concerned we should reply to such a favour by the imposition of a heavy duty upon French wines and silks, compensating the home public by an abolition of the existing duty of 4d. per lb. upon tea, which, at the same time, would tend to increase our trade with our best Eastern customers. But the countries that France has favoured with her maximum tariff, of which Spain is one, have naturally felt a stronger disposition to retort, and, consequently, a tariff war practically prevails between France and Spain, and France and Italy. It has only just begun between the first two countries, and already France is crying out. On Friday week a deputation of the Paris Chamber of Commerce had (says the Paris correspondent of the *Standard*) an interview with M. Ribot and M. Jules Roche, and handed them the following resolution, which speaks for itself:—"The Paris Chamber of Commerce is deeply concerned at the position in which France has been placed by the exaggerated tariffs of Spanish customs, which suppress all transactions, thus benefiting English and German competitors, who enjoy privileged tariffs until the 30th of June next." On behalf of numerous syndical chambers which share its own views as to the dangers of this rupture, the Paris Chamber of Commerce calls upon the Government to consider at the earliest period the measures requisite to amend a state of things which imperils national industry and the condition of the working classes. Surely it should not matter to France whether our privileges extend to June 30th or to the Greek Kalends when the arrangement accords almost absolute freedom of export from Spain to this country. But there is no satisfying our trans-channel neighbours, whatever course may be taken.

QUOTATIONS OF LINEN AND COTTON GOODS.

Owing to the peculiar condition of the textile trades during the past few months, very close attention has been paid in Dundee to the relative positions of cotton and jute prices. The effect of the unusual fall in cotton has, as we have already indicated, injured certain branches of the jute trade, especially since the rise in prices of the Indian fibre. To a certain extent the cheapness of the Lancashire staple has affected linens, although the latter have not been injured to anything like the same degree as jute goods. The returns of the Flax Supply Association for the past month shew that shipments both of flax yarns and linens have fallen off in comparison with February, 1891, while the figures for the two months indicate an increase in the case of yarns, and a falling-off in cloth. Of linen threads 184,500 lb. were shipped in February last, as against 183,400 lb. in 1891. For linen the quantities were 14,411,600 yards and 15,140,300 yards respectively. Imports of flax and tow shew an increase from 6,565 tons in February, 1891, to 8,136 tons last month, the values being £226,723 and £285,459 respectively, an average of £34 per ton last year, as against £33 this. For the two first months of each year the quantities were 12,295 tons (£421,285), and 19,173 tons (£618,519), the averages being £34 and £32 respectively. It is obvious, therefore, that during January our flax imports were cheaper than twelve months before, those for February being dearer than in the corresponding period of 1891. The scarcity of fine flax this year has naturally resulted in an increase of quotations for such growths, while the inferior character of the crop

generally has naturally led to an abundance of supplies of the cheaper kind. Below we give a comparative table shewing the average values of our cotton and linen exports. The figures for cotton refer to January, and those for linen to February:—

Cotton yarn lb.....	10'57d.
Flax „ lb.....	13'68d.
Cotton greys yard.....	2'12d.
Cotton bleached „.....	2'04d.
Cotton printed „.....	2'87d.
Cotton dyed „.....	3'67d.
Cottons: Total.....	2'56d.
Linen: Total.....	5'37d.

It will be seen from this that the average value of the linens shipped in February was about twice as great as that of the cottons exported in January, only the more expensive dyed goods approaching in anything like close proximity the prices of linens, the difference between the two being 1'7d. per yard.

THE NEGROES IN AMERICA.

The racial problem in America, as we have often pointed out, is one of the most important now presenting itself for solution in the United States. In its essence it consists in discovering the terms upon which the two races, white and coloured, shall live in harmony side by side, and mingle together in industrial, commercial, and social life. It must be confessed that so far as the facts have shewn themselves the outlook has hitherto been anything but of an encouraging character. Since the negroes ceased to be the chattels of the white man they have emphatically received more kicks than halfpence, and have been treated with anything but equity and justice. For years past, in the interval between harvest-time and spring planting, the dominant race, feeling no particular and close necessity for their services, has been addicted to indulgence in negro *battue* shooting, and to give an excuse for its commencement there was only wanted the advancement of some vague charge of attack or attempted outrage upon a white man, woman, or child—the middle one the better for the purpose. Immediately the sheriff's myrmidons would be astir, an arrest would be made—whether of the right man or the wrong one did not much matter; a mob would gather, storm the prison, and headed by the most daring spirits would proceed to murder the object of their malignant feelings. Last year these sentiments were, by an accident, diverted upon a number of Italians, and so the negroes partially escaped. This year we are pleased to observe that the outbreaks have been deferred for about two months beyond the usual time, and have not hitherto been as destructive as usual, so far as any information has been permitted to reach this country. Possibly there may be no more this season, as agricultural operations will now be very generally resumed by this time, and will engross attention. Lancashire has a great interest in the solution of this question in a satisfactory manner, though it may be a somewhat distant one. We are continually becoming more and more dependent upon the cotton States of America for our supply, and it can never be forgotten how Lancashire suffered in the days of the cotton famine. A second chapter of experience of this kind is to be deprecated. It cannot therefore be uninteresting to learn how the negroes regard their position and prospects. According to *The Times*,

A conference of negro representatives "living in the black belt, the heart of the South," has just been held in Alabama, when a number of carefully prepared resolutions were arrived at on the present state of the race in America. "Set at liberty," the manifesto begins, "with no inheritance but our bodies, without training in self-dependence, and thrown at once into commercial, civil, and political relations with our former owners, we consider it a matter of great thankfulness that our condition is as good as it is, and that so large a degree of harmony exists between us and our white neighbours." Their material progress, like that

of the whites, is greatly hindered by the mortgage system. Most of the negroes live on rented lands, and at the beginning of the year are usually in debt for the supplies of the year before. While much laxity in morals and superstitions in religion is admitted, it is claimed that much progress is being made in this respect. "As to our educational condition, it is to be noted that our country schools are in session an average of only 3½ months each year; that the Gulf States are as yet unable to provide school-houses, and as a result the schools are held almost out of doors, or at least in such rude quarters as the poverty of the people is able to provide; that the teachers are poorly paid and often very poorly fitted for their work, and as a result of these things, both parents and scholars take but little interest in the schools. Often but few children attend, and these with great irregularity. Among other remedies the conference suggested the purchase of land, though very little at a time, and the raising of their own food; that more of the young people should be taught trades, and that the field of woman's work should be broadened; that the people should make every effort to get out of the habit of living in debt, and should supplement the action of the State in building schools and lengthening the educational term; and that ministers and teachers should give more attention to the material condition and home life of the people. The conference recognised a growing interest in negro education on the part of the best white people in the South, and appreciated friendliness and fairness shewn to negroes by white people in business and "all lines of material development." Finally, it was decided to discourage any efforts at wholesale emigration, "recognising that our home is to be in the South." In this connection, it may be said that 200 negroes recently arrived in New York expecting that they would be shipped thence to Liberia. The American Colonization Society has appealed to the public for £4,000 to send the negroes to their desired haven and keep them for six months afterwards. The Society heads the subscription list with £400.

Taken on the whole this is encouraging, and with patient forbearance of one another's failings the time may come when the two races will live together tolerant of one another's presence, and disposed to deal justly the stronger with the weaker. After that, time may be allowed to do the rest.

FRENCH TERMS IN THE WOOLLEN TRADE.

Commercial men must be sorely puzzled at various times by the irregularity of the nomenclature employed in the French language as applied to textiles. The dictionaries, unfortunately, do not prove to be of much assistance where modern technical terms are concerned, and the reader of a trade report in French must needs have studied much if he is to avoid confusion in translating. The average dictionary calmly informs us that *tapis* is carpet, and that carpet is *tapis*, with which equipment of knowledge the student is left to flounder through all the niceties involved in distinguishing between *tapis d'Orient* (which is simple enough), *tapis à points noués*, *tapis bouclé*, *tapis moquette*, *carpette*, and what not, all signifying entirely different classes of goods. The two first-named refer to goods in which the Oriental method of production is adopted—a method similar to that of the old hand-made Axminsters, in which knots were tied upon the warp placed upright between beams. *Tapis bouclé* indicates Brussels carpet, and a *moquette* is a Wilton carpet. The Americans employ both terms, and there is still lacking an authoritative definition of the class of goods indicated by the French one. A *carpette* is sometimes not a carpet at all, but a covering for the table, which was the use to which carpets were originally put in this country. But there are velvet piles, power-loom Axminsters, and tapestries besides, the definitions for which are by no means clear. Similarly French terms for woollens are difficult to understand amongst the uninitiated. In order to remove a few of the doubtful points in this respect we give examples of cloths coming under the headings of *tissus teints en pièce*, *etoffes de fantaisie*, and *draperie*. The dictionary definition of "drapery" as the translation for the latter term is eminently slovenly and unsatisfactory. As we use the term, all textiles are drapery, and the Englishman who refers to a dictionary

wishes to know to what subdivision of cloths the French term *draperie* is applied. When French writers speak of the *fabrique des draps*, cloth for men's wear is sometimes referred to only. The term *draperie*, however, includes in addition goods intended for mantles—mantle cloths as we should say. They are, of course, frequently manufactured by firms engaged also in the production of trouserings, vestings, and coatings, and to them the name *draperie* is frequently applied. They may be frequently bracketed with men's goods owing to their similarity in texture, mantle cloths being much heavier than such material as would be used for a dress, for instance. The distinction is a very important one, and unless clearly understood one is apt to totally misconstrue the significance of tables in French shewing the movements of imports or exports. The centres of production of *draperie* are scattered all over France, the principal being Roubaix, Elbeuf, Tourcoing, Sedan, Rheims, Picardy, and Vienne. Sedan houses make large quantities of dress goods, livery and billiard cloth, and astrachans (used for overcoats). Roubaix, Tourcoing, Picardy, and Rheims turn out worsted *draperies* and cheviots, the latter having of late interfered with the sale of figured goods. Vienna has increased its output of printed goods having cotton warps, and *renaissance* yarns for welt, the latter being woollen yarns composed of "wool crumpled up and unravelled out"—*laine efflochée*. "*Fils de renaissance*" is a term which will not be much clearer after this dictionary explanation. Under the heading of *etoffes de fantaisie* are included carpets, shawls, dress goods, and furniture stuffs. Goods with mixed yarns have been in fair demand of late, the warps being white and welt coloured, *vigoureux* and foulards, all wool and cotton warps, have been in brisk request, together with Jacquard designs. Piece-dyed goods used for linings and dress goods, are manufactured in the following centres:—Rheims, Fournies, and St. Quentin for merinos, Indian and Scotch cashmeres, muslins, and flannels; Roubaix for serges, China satins, and figured goods. Picardy, which ten years ago manufactured merinos and cashmeres almost exclusively, has now commenced to compete with Roubaix. Rheims is still, however, the predominant centre for merinos, flannels, and cashmeres, while Roubaix is the market for serges, China satins, and *armures*. 9-8 10-twill merinos fell 25 per cent. last year, having been reduced from 1¼ francs to 1 franc per metre.

ENGLISH ENTERPRISE IN PERSIA: FROM A FRENCH POINT OF VIEW.

It might appear from statements which have been made in English reports that English trade with Persia is either completely ruined through Russian competition, or at least on the brink of ruin. This, however, is by no means the case. Attention has recently been called to the circumstance that about a year ago almost all the cottons in the province of Adjerbaïdjan—the province nearest to Russia, and therefore most exposed to Russian influence—was found to be supplied from Manchester. *Apropos* of these reports a French writer makes the following remarks, which are interesting as shewing how we are regarded by some intelligent foreign observers: "This (the circulation of these reports about declining trade with Persia) shews that the English have the very wise maxim of crying 'fire' before the conflagration has assumed proportions too great for it to be checked. And their appeal is not lost. There are always persons ready to listen to such outcries. More than this, the English are seeking with their characteristic energy to ward off the threatening danger by establishing a service of vessels on

the Karoun by means of a new port at Mohammerah. Their boats go as far as Chouchter; then their goods are forwarded by caravan into the interior of Persia to Hamadan, Teheran, etc. They propose now to construct a carriage road connecting Chouchter with Teheran, and they are turning into a canal a mouth of the Karoun called Behemchire, which will enable them to enter Persia without traversing Ottoman territory. A glance at the map is sufficient to show that the proposed route is far shorter, and consequently more advantageous than the route *via* Bassorah, Bagdad, and Kirmanchah, which has been followed until now, not to mention the avoidance of the tiresome formalities and expenses connected with the custom house of Bagdad. Certainly the route by Karoun is still new, and at the present moment is scarcely tried, but a few years of perseverance will suffice to obtain the results which the English expect, and will go to furnish another demonstration that we must know how to wait if we are to succeed. Unfortunately," adds our authority with a sigh, "this persevering and enterprising spirit possessed by the English is wanting in the French."

THE INDIAN FACTORY ACT AND INDIAN OPERATIVES.

We heard a great deal about what would be the consequences of bringing the Indian spinning and manufacturing industries under the restraints of a factory law, such as the trade in this country has had to endure for half a century, and which has been steadily drawn tighter at every change that has been made, until now it threatens to effectually strangle it. The Indian cotton industry, which is perhaps the most powerful competitor of Lancashire, has until quite recently been practically untrammelled, and has the further advantage of working on the spot where its raw material is produced, and in the midst of the consumers of its productions. Yet with these advantages, when brought under a very mild Factory Act it has, if we may believe the telegraphed statement of the President of the Upper India Chamber of Commerce, held at Calcutta, kicked over the traces. The President of the above Chamber, in his annual address, says that the Indian Factories Act has resulted in the dismissal of all operatives under 14 years of age and of all women employed in certain factories, as the employers prefer the simple course of making a clean sweep of such hands to keeping them under the tedious provisions which are found so irksome, especially where women are concerned. He gives instances of hardships thus caused to families, and says they are typical of thousands which have followed the passing of the Act. We presume these remarks refer mainly to the jute mills of Calcutta, of which the President has, probably, the most opportunities of observation. But even here we are loth to think that such a drastic measure has been taken as would be indicated by such language. In the cotton trade of the Bombay Presidency and the up-country districts we do not think it can have any real application, and must decline to accept it until it is authoritatively confirmed from additional sources. If, however, it should prove true, it is pregnant with a lesson to the Lancashire people that they would do well to note. It is a most incontestable demonstration of the serious disadvantages under which their own employers conduct their trade, and ought to show them how perilously near to the edge of ruin they have brought it by their repeated and senseless clamour for more and more stringent legal restrictions, and which from a moribund Parliament they have obtained. It ought to prove to them that such legislation must be relaxed, and that their own harassing conduct must cease, if they wish their industry to continue.

THE WAR BETWEEN CAPITAL AND LABOUR.

The aspect presented by industrial England during the past few years has been one in which the harmonious co-operation of Capital and Labour has been strikingly conspicuous by its absence. The scene, indeed, has all along been one of wanton and unreasoning aggression by Labour upon Capital; in hardly a single instance during the past seven years has the reverse been the case. Of the disputes on the largest scale, we need only mention those initiated by the dockers, gasmen, sailors' unions, the engineers, and colliers. In our Australian colonies we might mention the strikes in the mercantile marine, and amongst the wool shearers, for their magnitude and the bitterness with which they were fought out. We need not extend our review to the Continent, beyond observing that almost every State there had had its difficulties on a large scale with Labour, which have been attended by the peculiar manifestations that usually accompany Continental labour agitations. English industrial life, at the moment we are writing, presents to the judicially minded a scene in actual life that would for its idiotic folly transcend the capability of the wildest romancist to evolve from his imagination. Over 500,000 colliers, banksmen, clerks, carters, and miscellaneous men directly employed in connection with our collieries have, at the dictation of a few irresponsible men, been idling for a week, their object being to deplete the supply of coals to our industries and households to such an extent as to prevent an apprehended decline in prices and a consequent reduction of wages. It does not enter into their considerations that the rate of their wages is at high-water mark, and that during the past two or three years the aggregate advances they have obtained reach 30 to 35 per cent. Of course their blundering action has involved the compulsory idleness of a number of persons outside their unions, certainly of over 100,000, whilst it has inflicted a terrible hardship upon hundreds of thousands of humble homes in the kingdom, which could ill afford to pay the enhanced prices for fuel that have resulted. The stupidity of their action has apparently been brought home to them at last, as they have decreed a return to work on Monday. But the penalty of the blunder has to be paid; nothing can obviate that; the worry and the cost of this infliction of folly upon our industries will leave its mark in the ledgers of many industrial concerns, and will be a subtraction of the amount from the depleted profit fund. Another instance of the want of reason in the conduct of working men may be adduced in the existing strike of the engineers on the North-east coast, consisting in the aggregate of between 30,000 and 40,000 men, who have been idling now for many weeks because two sections of workers cannot agree as to which should have a certain portion of work. This case conclusively shows that in the ranks of English workmen there are many men who would rather "play" upon 10s. per week than earn 35s. per week by honest labour. In the textile industries a different policy has been followed. No great strike has been inaugurated, but instead of that a system of deliberate petty persecution and harassment of employers has been adopted in every department, and this has been so uniformly the case that it justifies the conclusion that it is one which has after due consideration been unanimously agreed upon. To render it more effective the leaders have for a long time past been systematically coquetting with the professional politicians, and impressing the aspirants for social position with the fact that they are the men who make and unmake members of Parlia-

ment, and that unless these are prepared to do their behest they may give up all hope either of returning thither or of making a first journey thereto as members. It is to this policy and the fact that a dissolution of the present Parliament is impending that recent legislation has been attained, and the present obsequiousness of politicians is owing. Of course the recent Acts have been obtained mainly with a view to using them as instruments of flagellation for recalcitrant employers. This, however, is only one feature of the policy. Another is to compel non-unionists to join their ranks, and make the employers the instrument. The quarterly report of the Executive Committee of the Amalgamated Association of Operative Cotton Spinners has just been issued, and deals at length with the non-union workers' question. Details:—

The most important point in our policy that has come to the front since we issued our last quarterly report is that of compelling operatives in the carding and spinning departments of the cotton industry to join their respective associations. It is a policy which has never before been formally adopted by an association in the cotton trade, and in all probability would not now have been acted upon had not employers got into the habit of saying that we were doing so. If we were to have what they, no doubt, considered to be blame from what we were not doing it was thought that we might very fairly do it without causing any change in their views. It was, therefore, not without surprise that after the federated card-room hands and spinners had commenced to act upon it that we received an intimation from the North and North-East Lancashire employers asking for a meeting to discuss the matter. This was held in the last week of last year, when the question was fairly discussed on both sides. Nothing was, of course, arrived at, nor was it expected there would be. The employers do not like the idea of having their mills stopped because some of their hands won't pay to their union, but they have an easy remedy. They have only to refuse to take non-unionists on and they will then have no trouble, except such as is of their own creating.

We have had to take Mr. Mawdsley to task quite recently for his disingenuous statements, and there is here ample room for doing so again did space permit. The allegation that the policy of compelling non-unionists to join their ranks was initiated because spinners and manufacturers averred it was in vogue, is one of the most impudent falsehoods ever penned, and shews to what mean shifts the leaders are compelled to descend in order to increase or maintain their influence amongst their deluded followers. This precious report also contains the following passage:—

Business is not now in a flourishing condition, which is one reason why it is not desirable to move with undue haste. But every spinner should be asked to join, and if he refuses his name and address, and any other necessary particulars, should be entered up at the local clubhouse. When the right time comes—and our members will be informed when it does—it may then become a question of whether these men shall even be allowed to join the union, and work at the trade, so long as there is a single man drawing out-of-work pay from the union funds. There must be no nonsense about this. If a thing is worth doing at all it should be done well, and in this case doing well consists in driving every "rat" out of the business.

Then is every man who does not choose to delegate the management of his private business and capital—for the capability to work at any given industry is the working man's capital, and the utilization of the capability is his business—into the hands of such men as Mr. Mawdsley is to be "driven out of his business." Is this the liberty Englishmen have struggled for for a thousand years and had hoped they had conferred upon every man bearing the name? Is such an action consonant with the protection accorded to every one of the Queen's subjects? But even this is not the extent of the tyranny contemplated. A recent issue of the operatives' organ contained the following:—

It is under consideration to put a monetary penalty on all persons who cause the trouble of meetings being held to make them pay to their trade. When notices to strike work against non-payers have to be given in, each of such non-payers will be required to pay a fine

of ros., and to join the union, otherwise the strike will be carried on until the obnoxious individuals are discharged. Anyone who is so discharged will not be allowed to work at any other mill until the conditions named are complied with. The fact is there must be no non-unionism in the cotton industry of Lancashire, and the motto, "Unionism is strength," must be made a reality.

We could go on quoting instances of oppression and arrogant demands such as these for any length of time, but sufficient has, perhaps, been given for the present to justify our once again urging upon employers in the textile industries to join every man his respective local association, and upon each association to join its respective general Federation. When this is accomplished, in view of such pretensions as these and others we have recently discussed, it will not be difficult to bring them all together in a universal federation of capital. Labour would then discover that capital was in a position to turn at bay and repel the insensate attacks upon property and liberty that have constituted the basis of every movement of late years. Already there are signs of it, and something may be heard of resistance in the cotton trade even by the time this appears before our readers.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

Boston, March 3rd.

This may be termed a printed goods season, for the demand for printed goods was never so great, as almost all of the prevailing styles run in that direction. In piece silks all lines of printed pongees, Indias, and Chinas are selling well, and in plain goods, faille Française and sarahs are leaders. The foreign buyer of Folwell, Bros. & Co., Philadelphia, has returned from the London wool sales, where he has purchased some of the finest Australian wool ever grown. It spins 50,400 yards to the lb., or nearly thirty miles, and it runs 90 to 100 in the count. This fine wool is used in making their popular silk-warp Collingwood glorias, silk-warp Bedford cords, and silk-warp Henriettas.

Large sales of Australian wools are noted locally at low prices, and prices that must make the wool a pretty cheap one for the buyers. Some Queensland wools have been sold on a basis as low as 62c., and good free clothing at 67c. To cost 80c. a wool must be exceptionally choice, and a wool that last year would have easily brought this costs to-day less than 75c., which is the price for a choice, fine Port Philip combing wool, ranging from this price down to 61c. The bulk of the sales are certainly under 70c. Probably the finest wool on the market is shown by Fred Hartley, and so choice is it that already three manufacturers have made offers for it in order to make goods from it for the World's Fair. The wool is a fine clothing from Tasmania, and is exciting a considerable amount of favourable attention.

There is a rumour that a British hosiery company may build another mill at Thornton, Rhode Island, in the spring, in addition to its present plant.

Frequent meetings are now being held in both New York and Philadelphia among the carpet men for the purpose of forming a pool. The manufacturers of ingramms met last week in New York, and the body Brussels men met in Philadelphia. The velvet and tapestry manufacturers are not so much interested in the arrangement, since their prices have already advanced slightly. Various forms of combinations have been attempted in the past by the carpet mills, but always without success. Shortly after the passage of the tariff law an attempt was made to unite the leading mills in the hands of one selling agent, but this met with only a small

measure of success. It has been demonstrated that no form of combination can be adopted that will hold. There are so many manufacturers and the output of carpets is so large that it is impossible to secure that combined action which is necessary. The new plan is not to form a trust, but a pool. By it all the mills will agree, if the plan goes through, to stop a given per cent. of their looms for a given time, under penalty. It is now supposed that the first agreement will be to stop about ten per cent. of the machinery for thirty days, and at the end of that time a further arrangement will be made. In this event, a certain number of the looms of each manufacturer will be tied up, and if any mill puts them to work before the expiration of the time, it is believed that the matter can easily be found out.

After importing their fuel economisers for many years, Messrs. Edward Green and Son, Limited, whose present address is 172, Broadway, New York, have established at Matteawan, N.Y., a plant complete in all its details for the exclusive manufacture of the economiser, and are prepared to turn out the same in the highest class of workmanship with assured efficiency for the purpose in view, at a considerable reduction in price from the quotations for the imported article, which carried a duty of 45 per cent. *ad valorem*.

Designing.

NEW DESIGNS.

COATINGS AND TROUSERINGS.

A most effective trousering pattern may be produced with Design 14, made as follows:—

Warp.
2 threads 2/24's medium blue grey cross-bred,
6 " " black and blue mixture cross-bred,
2 " " medium blue grey " "
14 " " black and blue mixture " "
12's reed 4's.

Weft.

All 12's dark cross-bred; 48 picks per inch.

If made in the above order, the weave (shown in solid type) should come on the last eight of the fourteen threads, black and blue mixture producing a faint weave stripe.

Since this combination is based upon the coincidence of the 2-and-2 twill with the eight-end sateen, a perfect check may be formed, as shown in Design 15. Should the same scheme of colouring as the above be adopted in both warp and weft, the medium blue grey should be darker, since loud stripes are more admissible than loud checks. Of course the effect may be largely extended by drafting, 16 shafts being employed.

An effect using the 12-end sateen on a similar principle is given in Design 16. The above sett will be equally effective here, while a fine yarn may be applied with equal success as follows:—

Warp.

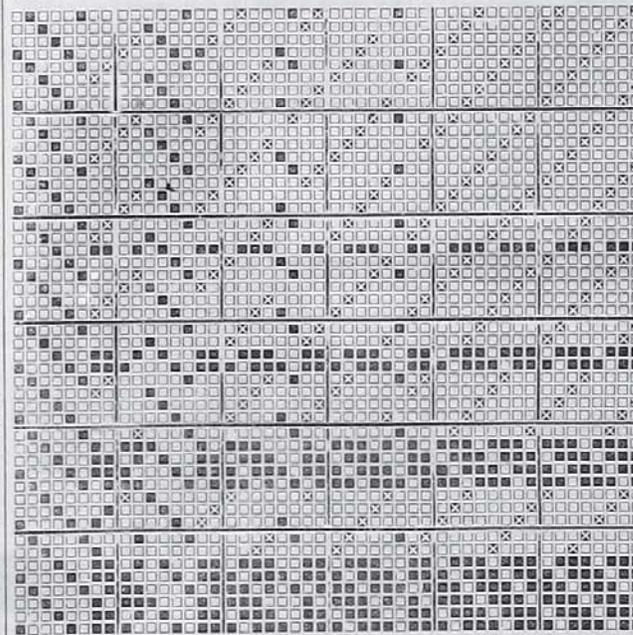
24 threads 2/40's dark grey worsted,
12 threads 2/40's dark blue mixture,
12's reed 6's.

Weft.

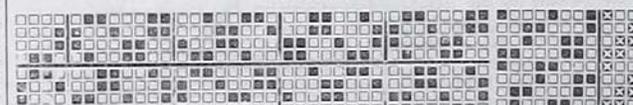
All 20's dark brown worsted; 70 picks per inch.

An effective addition will be two threads of black and white twist in the dark grey worsted warp, a similar weft checking also being used.

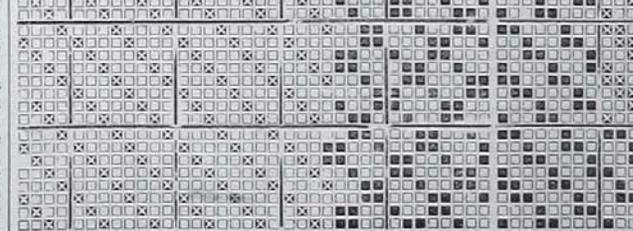
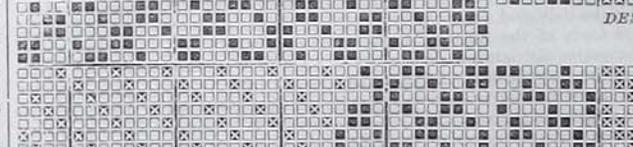
A useful stripe effect for development in either cross-bred or woollen yarns is as follows:—



DESIGN 17.



DESIGN 14.



DESIGN 16.

DESIGN 15.

- 8 threads lavender,
- 2 " medium green and grey mixture,
- 4 " lavender,
- 2 " medium green and grey mixture,
- 4 " lavender,
- 4 " medium green and grey mixture,

Design 17 is a suggestion for the more efficient combination of colour with weave effect. It is intended that all the threads and picks developed in solid type shall be twist yarns, while the cross type represents solid colours, as follows:—

Warp.

- 6 threads blue and brown twist,
- 4 " dark blue,
- 4 " blue and brown twist,
- 6 " dark blue,
- 2 " blue and brown twist,
- 7 " dark blue,
- 1 " blue and brown twist,
- 18 " dark blue,

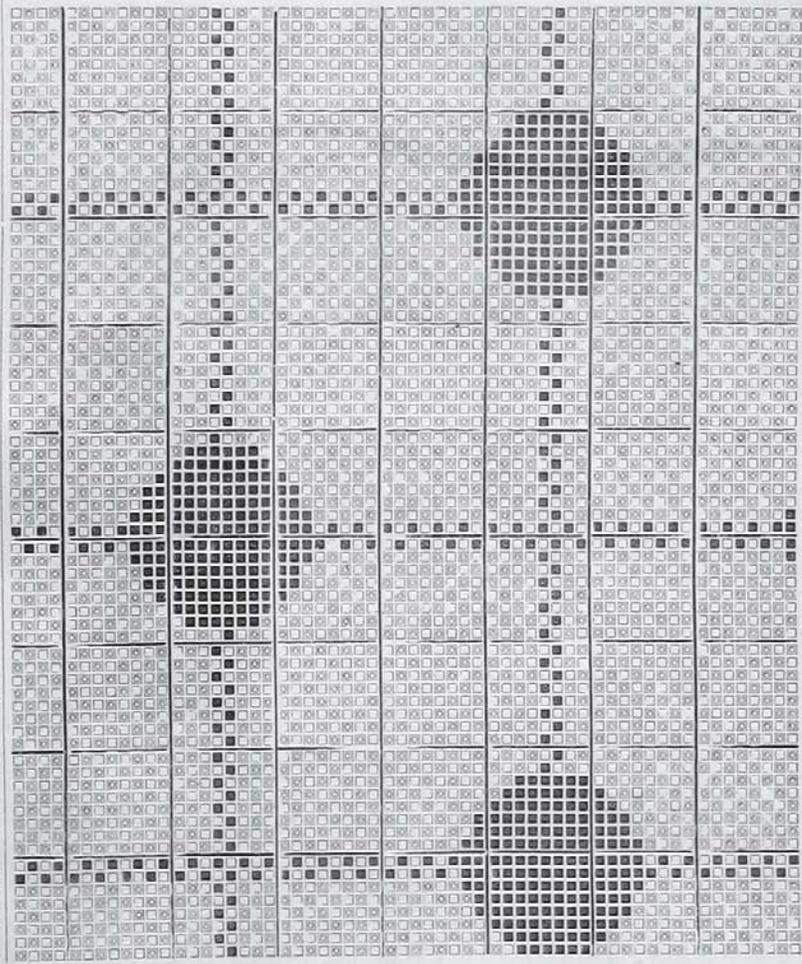
The 12-end sateen is here also made the basis of the design, it being converted for the twist yarns into a 3-and-1 twill, thus subdividing them, while for the solid coloured threads it may be converted into any of the sateen derivatives as desired.

COTTON DRESS GOODS, DESIGNS, ETC.

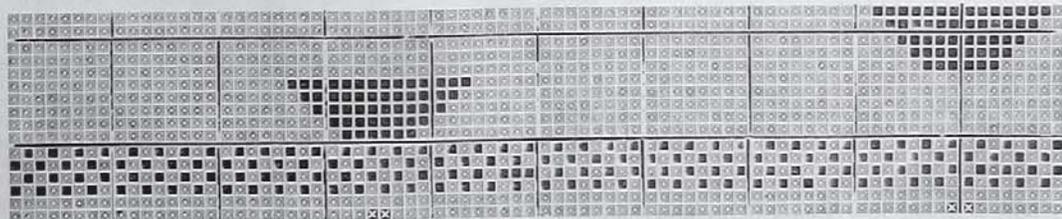
During late spring and the summer muslin and light zephyr cloths will be in demand. Design A will convey some idea of the ornamentation required on these fabrics. By reference to the draft (which we cannot give in full on account of space) it will be seen that 14 shafts are necessary, that is, four for the ground and five each for the spots; 50 dents per inch of 40's twist for the ground warp, two-fold 50's for the spot yarns; the weft 40's with 100 picks to the inch; lighter cloths made in proportion to these quantities. We give a pattern so that the draft and pegging plan may be fully understood: 52 very light tan on the first four shafts for ground, two in a dent, one dark blue spot yarn on 5th shaft; two fawn on ground shafts, making three in a dent, one dark blue, on 6th shaft; two tan ground, three in a dent, one dark blue, on 7th shaft; two tan, one dark blue on 8th shaft; two tan, one dark blue on 9th shaft; two tan, one dark blue on 9th shaft; two white, one dark blue on 9th shaft; two tan, one dark blue on 8th shaft; two tan, one dark blue on 8th shaft; two tan, one dark blue on 7th shaft; two tan, one dark blue on 9th shaft; two tan, one dark blue on 5th shaft. This completes one of the spots, all dark blue, with 52 tan on ground shafts. Then for bosoming spot: one bright red on 10th shaft; two tan, one red on 11th shaft; two tan, one red on 12th shaft; two tan, one red on 13th shaft; two tan, one red on 13th shaft; two tan, one red on 14th shaft; two of vivid green, one red on 14th shaft; two tan, one red on 14th shaft; two tan, one red on 13th shaft; two tan, one red on 13th shaft; two tan, one red on 12th shaft; two tan, one red on 11th shaft; two tan, one red on 10th shaft. This completes the second

spot, and the pattern repeats from the first 52 tan for ground, so that this determines the distance between the spots. The weft pattern must correspond, so that a proper square check warp and weft may be formed. (See design.) The pegging plan will convey some indication of how to obtain this effect. Take the weft as follows: 2 green, 24 tan, 2 white, 24 tan; the green and white shuttles must be made by the pegging plan to cut the spots in the centre, as shown in the plan given by the two 22's. We have been unable to give this plan in full for want of space, but the instructions given, if carefully followed, are sufficient to prevent any mistake. More extensive patterns may be pro-

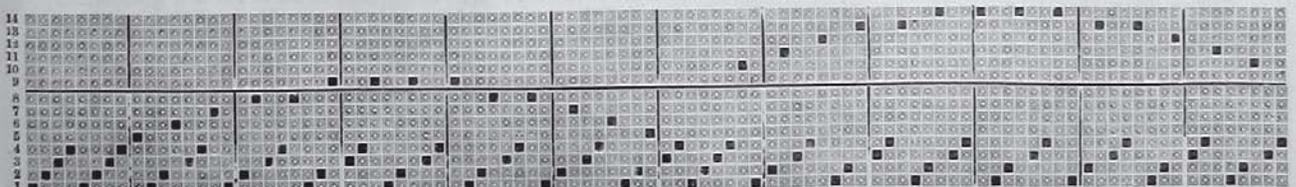
duced, but a limit must be maintained in the distance between the spots, both in warp and weft, so as to minimize the length of the floats on the back of the material. We may just point out that the ground colours may be alternated, as also the crossings; further ground and spots may be all pure white, the two alone between the spots in warp and weft being fancy colours in spun silk, which would produce a very beautiful pattern well worthy of notice. A careful finish, without much stiffening, would be requisite; 29 inches breadth out of the loom; where there is ample convenience in shuttle and dobbie motions, colours and combinations of spot and checking may be made without stint.



DESIGN A. CHECK MUSLIN WARP SPOT.



PEGGING PLAN FOR DESIGN A.



DRAFT FOR DESIGN A.

TEXTILE MACHINE-MAKING ESTABLISHMENTS.

MESSRS. HOWARD AND BULLOUGH'S MACHINE WORKS, ACCRINGTON.

The subject we have selected for our present sketch is that of a machine works mainly devoted to the construction of the most recent type of cotton spinning and cotton manufacturing machinery. This is the establishment of Messrs. Howard and Bullough, Limited, Globe Works, Accrington. This town is essentially the creation of the Lancashire cotton trade. At the beginning of the present century it was simply an insignificant village. Now it is a considerable town, with numerous handsome public buildings, a corporation, and a bench of magistrates. Its industries are numerous, and much more diversified than is commonly the case in a Lancashire town. Besides cotton spinning and manufacturing, it has considerable calico printing and dye works, machine-shops, and chemical manufactories. It is situated amongst lofty hills rising from 800 to 1,800 feet above the sea level, and affording in many of their aspects grand and picturesque effects. Its name, Accrington, meaning the dwelling in the clearing in the oaken forest, carries one's mind back to primeval times.

The Globe Machine Works, Accrington, were founded in 1853 by the late Mr. John Howard. He was joined a few years later by Mr. James Bullough, one of the most notable inventors of the first half of the century, who acceded to a partnership mainly with the view of inducting his son, the late Mr. John Bullough, into the business. The latter, inheriting a large share of the inventive genius of his father, determined upon making it a machine shop with hardly a peer. When the cotton trade emerged from the difficulties of the American Civil War, business at the Globe Works rapidly increased, and Mr. John Bullough, who had then become sole proprietor, seeing the promising future of the then new type of spinning machine, the ring frame, threw the whole of his great energy into its improvement and construction. In this effort he was backed by an able corps of leading subordinates, and the result is the Globe Works, with their world-wide reputation. Twelve months ago this great industrial captain was struck down in the prime of his life and inventive capabilities. Our obituary notice will be found in our issue of March 7th last year, to which we refer those of our present readers who may not have seen it. The view of the works, given in our supplement with this issue, includes the most recently designed extensions, which the firm are now proceeding to carry into effect.

These important works are situated upon rising ground, and this fact is taken advantage of to facilitate the handling of its productions in transferring the materials from one department to another. At the upper portion the furnaces are situated, which are fed from the ground level from the "pig" store behind. The consumption of pig and other iron is 300 tons per week. In this building is situated a large dynamo and engine, generating electricity for lighting purposes, the new light being used throughout the establishment.

The moulding shop is a spacious, lofty, and well-ventilated shed, furnished with every convenience for the easy conveyance of the glowing molten metal to the moulders at work. Should any defective casting be discovered it is rejected. Every provision is made to insure clean and good castings, and especially in toothed wheels. About 270 tons of good castings are made per week. The scene is a lively one, there being about 350 men,

consisting of furnace tenters, core makers, moulders, and dressers.

The card cylinders are amongst the most important castings made, and require great care in finishing. The most conscientious labour is devoted to giving to them a perfectly even and true surface for the reception of the card filleting. Inequalities on the cylinder surface would produce corresponding inequalities on the surface of the clothing when it has been put on, and this would be completely destructive of all chance of obtaining the best results in carding until the prominences were ground away. It is equally important in the interest of the cotton spinner that the cylinders shall be in perfect balance. Revolving at the high speeds they do in working, if they happened to be a mere trifle out of balance, the centrifugal force developed would be very unequal, and would have a most destructive effect upon the cylinder shaft and its bearings. In order to keep perfectly clear of all risk from this source, each cylinder is carefully tested, and not one is passed that is wanting in this respect. The doffers of the card are also most carefully constructed, and finally tested for balance in the same manner as the cylinders. To the construction, electrical testing, and clothing of the flats the most minute and conscientious care is given, as this is one of the most important features of the card.

In the turning shop the smaller castings, such as collars, spindle and bobbin wheels, tube wheels, etc., are carefully turned, bored, and polished, and castings of larger dimensions that require planing, grinding, and glazing, receive equally careful attention. Every department is replete with the most modern machines for producing the best results.

The firm makes the spindles for all its machines. Of these, besides those for slubbing, intermediate, and roving frames, there are about 40 varieties of twist and welt ring spindles for spinning and doubling. These may be classed mostly under the head of common Rabbeth and flexible spindles.

An interesting department is that in which the rings and spindles are tested. This test is made in order that the firm may feel the most perfect confidence that each spindle in every frame leaves their establishment in perfect condition; and that when they commence work—it may be at home in this country, or in India, China, Japan, or the Brazils—they will give every satisfaction. They are always made of the best steel, and in order to ascertain that the quality does not vary from a proper standard either in the direction of hardness or softness, they are also tested frequently for flexibility. The correct tempering of spindles is a highly important matter to spinners, as, if they are in any way defective in this respect, the rough usage to which they are subjected by the operatives soon strains them and makes them run untruthfully, to the great disadvantage of the work produced.

Hardly of less importance is the high quality of the rings. The rings need to be, if possible, as hard as the diamond, and to be polished to the highest degree. This is necessary in order to resist the destructive action of the traveller, which makes, say, ten thousand journeys round it in contact in the course of every minute. If the steel that composes the ring is not of the hardest, and polished to the utmost possible degree, the action of the traveller, it must be obvious, will soon destroy it. The object sought, therefore, is to ensure the ring being so hard and highly-finished that the traveller shall not affect it, but shall take all the wear upon itself, as it can easily be replaced at an insignificant cost compared with that of the ring. Each ring is, therefore, tested for three qualities: size, shape, and

hardness. Slubbing, intermediate, and roving frame flyers are also tested to see that they are perfectly balanced, and that the centrifugal presser is in proper working order.

The firm make all the most important screws used in the establishment, thereby assuring the best quality. The stripping of screw and nut threads, though trivial matters in themselves, become important in places thousands of miles away from the spot where they can be renewed. This shews how carefully every point that would be likely if in any sense imperfect to incommode the spinner, is anticipated and provided for.

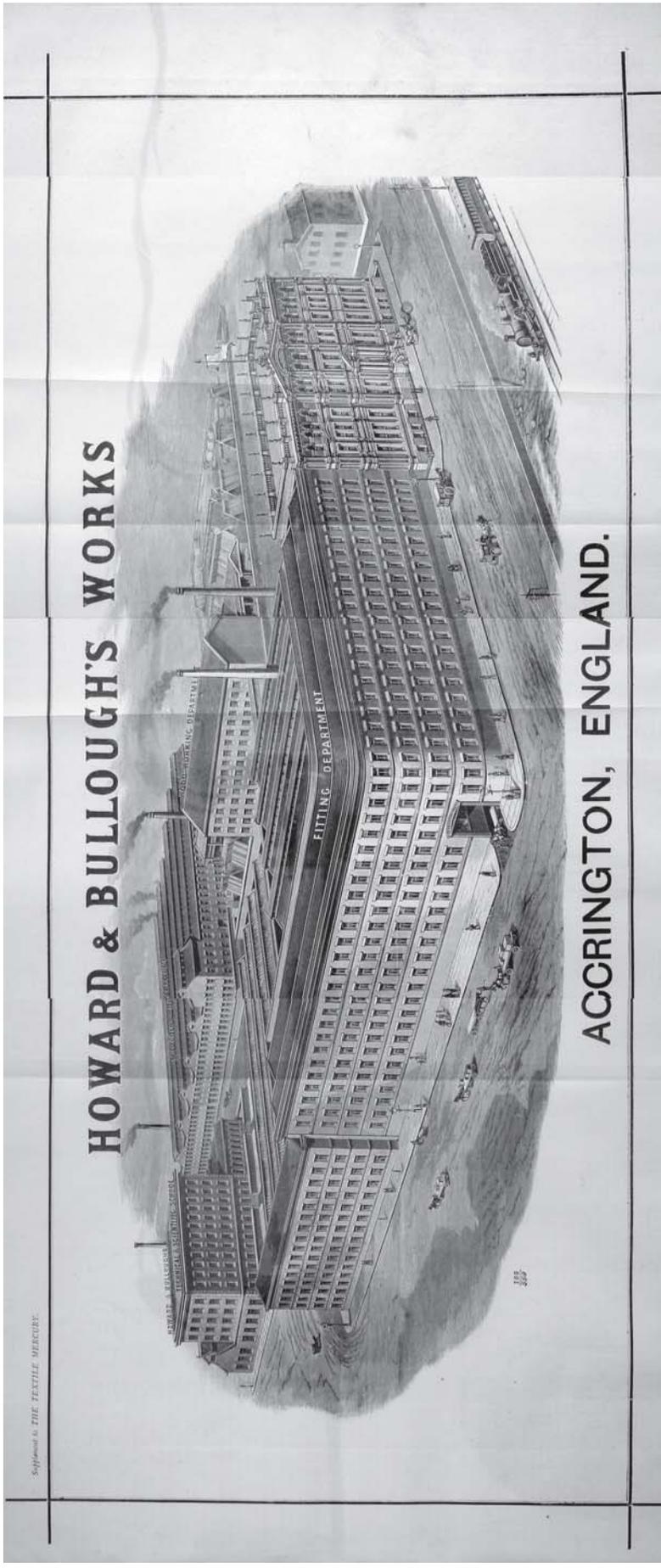
The grinding shop is a large well ventilated building, very completely equipped for its special purpose. The work done here is very considerable, as so many parts of almost every machine require to be ground and glazed.

An important department is that for wood working. The amount of wood consumed in the construction of creels, rollers, beams, and sizing machines, covers for roller cards, etc., and for packing cases, is simply enormous. This is conducted in a large building containing three floors. The bottom one is devoted to case-making. Adjoining is a large yard for the storage and drying of timber.

The fitting department is a handsome new building, forming a conspicuous object as the visitor enters the town by the train from the Manchester direction. It is four storeys in height, all of which are well lighted and very lofty. The top room is devoted to the fitting up of ring-spinning and doubling frames. Every machine before being sent out is first erected, up to the last bolt and screw, in order to ensure its being complete; it is afterwards taken down and the parts carefully packed, so that nothing shall be wanting when it is re-erected in the position it has permanently to occupy. This room is a scene of constant activity in building up and pulling down machinery, as the weekly production of these machines is 25, ranging from 300 to 500 spindles. Of this machine the firm are, we believe, the largest makers in the world, the number of spindles they have up to now supplied to the trade exceeding 4,400,000,—a testimony to excellence beyond which it would be difficult to go, excepting in the same direction, and in this it is continually being strengthened.

The room below is devoted to the erection of openers, scutchers, revolving flat carding engines, beam warping frames, and sizing machines. The winding frames are erected in another department. Nearly all these are amongst the largest and most bulky or space-occupying machines made. The large number of revolving flat carding engines on the floor naturally first strike the eye and impress the visitor. This machine is also amongst the most important in the whole series of those belonging to the spinning branch of the trade. Having so recently described it in these pages, it is not requisite that we repeat it. It need only be observed that the firm produces 30 cards per week, all constructed with the utmost care in respect of details, and fitted with their latest improvements. The quality of this card is proved by the fact that, since its introduction, the firm have made and sold over 4,820.

Winding, warping, and sizing machinery is a strong department of the firm's productions. It is with these machines and the loom that the fame of the elder Mr. Bullough is most closely associated. In fact he may almost be said to have been the parent of the sizing machine and the beam warping machine, whilst his improvements in the loom have certainly contributed more to its present perfection than that of any other single inventor. This high reputation the firm have done much—indeed a great deal—not only to conserve, but to



HOWARD & BULLOUGH'S WORKS

ACCRINGTON, ENGLAND.

Supplied to THE TEXTILE MERCURY.

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enhance. The inventions introduced to the trade in connection with these machines, and especially upon the sizing machine, would be much missed were they to be suddenly withdrawn. The patent frictional winding and slow-motion traversing and two-roller press motion, marking and measuring motion, requiring no change wheels, amongst numerous others, may be especially mentioned.

The second floor of this department is devoted to the erection of drawing, slubbing, intermediate, and roving frames. These, of course, are the machines intermediate between the card and the spinning machines, and form a very important series. To the first and third of these the firm applies its celebrated electric stop motion, for the prevention of "single." This invention has been of inestimable value to the cotton trade, and continues to be highly valued, as the firm have already applied it to 31,525 delivery heads of drawing, and to over 187,220 intermediate spindles. The statement of a fact like this renders unnecessary any commendation from us. It may, however, be mentioned as testifying to the excellence of this invention, that though the firm have patterns for and advertise both the mechanical and electric stop-motion machines, the orders they receive for the former only constitute about one per cent. of the total.

The firm make a large number of their own tools, these being specially constructed to meet their own requirements. The tool-making department is, therefore, a very important one in an establishment of this magnitude. They also make their own templates, and here are to be found the most accurate machines for measuring and gauging the standard templates required in the production of the various machines made in the establishment.

Each machine for export is carefully packed in boxes, as an experience of 30 years has demonstrated that the least breakages occur with this method at ports and remote country stations abroad, where very often the boxes are tumbled off the waggons to the ground without the intervention of lifting cranes.

We have only space to just mention the highly-equipped and admirable technical school the proprietors of this great establishment have provided for the young men in their employment, and a full description of which we gave in our issue of Feb. 7th last year. To this we invite all our readers to refer as an example of how much can be accomplished by enlightened private liberality.

A brief summary of the productive capacity of this establishment is all we can now permit ourselves. The firm employs over 2,000 work-people. It consumes for its productions over 300 tons of iron per week. These men from this material produce : 2 scutchers; 30 carding engines; 4 drawing frames; 18 roving frames; 25 ring frames; 6 beam warping frames, and 1 sizing machine, making a total of 86 machines, or a machine every 38 minutes. The best materials and most perfect tools are used, and the greatest care is exercised to see that every machine is sent out in the most perfect state, in order to ensure its yielding the highest quality and the greatest amount of production that can be obtained. In the various machines are incorporated a large number of inventions made by the late principal and the leading members of the staff, and which we cannot even enumerate. Suffice it to say that the result is that every machine issues from the establishment with the guarantee of the firm's high reputation that it is as good as can be made, and though it may be equalled will not easily be surpassed. It is pleasing to think that under its re-arranged management, consequent on the death of Mr. Bullough, there is every promise that it will continue its distinguished career of enterprise, invention, and commercial prosperity.

Machinery and Appliances.

NEW LET-OFF MECHANISM FOR LOOMS.

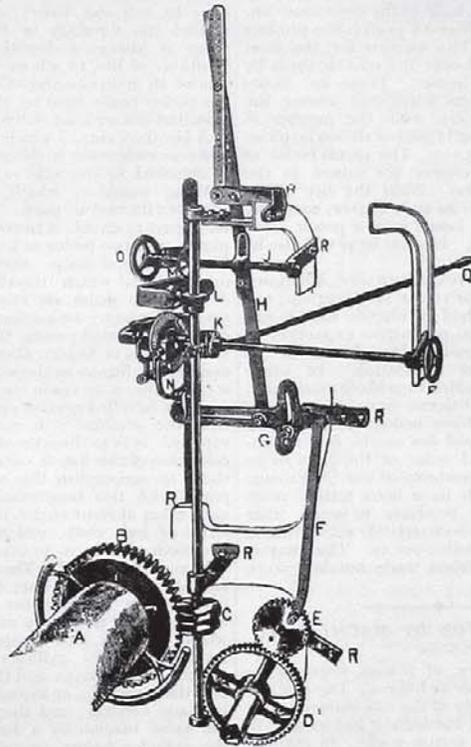
Mr. John Gilbert Avery, of Spencer, Mass., U.S.A., is the manufacturer of the improved let-off which we illustrate in this issue. Mr. Avery claims that this let-off possesses features of peculiar merit. That it is certainly ingenious must be admitted by those familiar with the weaving department, and we understand it is giving satisfaction in all the mills where it has been applied, and is especially valuable on all classes of goods where a variation in the number of picks per inch is apt to cause streaks or cloudy effects on certain delicate colours. This

operating a vertical shaft, near the lower end of which is another worm c, in mesh with a worm wheel on the warp beam a.

So far there is nothing particularly novel about the device. It will be seen that at each beat of the lay, as the main shaft of the loom makes a half turn, motion is transmitted in such a way by the connecting mechanism, that a certain length of warp is let off the beam.

The ingenious feature of the mechanism consists in the manner in which the variation in the circumference in a warp beam, between a full and empty beam, is overcome.

Near the top of the vertical shaft is a worm gear l, in mesh with a series of other gears, by which motion is communicated to what is termed a graduator shaft j, which is screw-threaded, and provided with a loose screw nut, which travels forward under the action of the screw thread as the warp is unwound. This



LET-OFF MECHANISM FOR LOOMS.—MR. J. G. AVERY, SPENCER, MASSACHUSETTS, U.S.A.

let-off is worked by gears, and is claimed to be positive in its action and to provide the required length of warp at each pick, without dependence in any manner upon the tension of the warp or upon its resistance to pressure. The action of the let-off is described by the *Textile Manufacturing World* (U.S.A.), as follows:—

On the picker shaft of the loom is a spur gear n, in mesh with which is a smaller gear, to which a connecting rod is attached, operating a lever. At the other end of this lever connection is made with a ratchet wheel x, on which the dogs are arranged in such a manner that half point one way and half the other. Suitable dogs are provided to work in this ratchet wheel, so that as the lever is pulled down this ratchet wheel will be turned by one set of dogs, while, when the lever is moved up, the other set falls into operation, and practically makes a continuous movement in the same direction as this ratchet wheel. This ratchet wheel in its turn is attached to a shaft, on which is a worm k, and in mesh with this worm is a worm-gear

screw nut is attached to a lever h, one end of which forms a movable fulcrum g, for the lever operating the ratchet wheel, which in turn communicates motion to the warp beam. A series of holes in the graduator lever and its connections provides for setting the device for coarse or fine warps. It will be seen that the operation of this graduating lever is such that as the warp unwinds, the movable fulcrum, upon which the lever which controls the motion of the warp beam works, moves along, so that the stroke of the lever is longer than at first, the ratchet wheel is given more of a turn, and the difference in the circumference of the warp beam is compensated for by the motion communicated to it.

The hand lever q, shewn in front, is for the purpose of disconnecting the clutch in case of a pick-out. The hand-wheel p shewn in front, is for the purpose of turning the beam back after the pick-out. The hand-wheel on the screw-shaft o, is for adjusting the number of picks required.

ELECTRIC POWER LOOM WORKING AT ST. ETIENNE.

Writing with regard to the introduction of electricity into the weaving industries of St. Etienne, the United States Commercial Agent at that town says:—

The city council of St. Etienne has decided upon a departure which will have an important effect on the silk and ribbon industries, both in Europe and in America. It has been resolved to apply electric motive power to all the hand looms in the city, and contracts have been made with an electric company for the necessary plant and currents.

The electric dynamos are to be driven by water from the city reservoirs. There is practically an unlimited supply of water in the reservoirs, with a fall upwards of 100 ft. The cost of producing the electricity will be reduced to the lowest point possible.

To grasp the importance and far-reaching results of this innovation it is necessary to understand that the bulk of the enormous output of ribbons (£4,500,000 a year) is the product of house industry. The weavers for the most part own their own looms and operate them by hand in their own houses. There are 18,000 looms which are thus distributed among the homes of the weavers, while the number of looms driven by steam in the few ribbon factories of the town is only 5,000. The 18,000 looms of the independent weavers are valued in the aggregate at £900,000. What the city of St. Etienne proposes to do is to convert each one of the 18,000 hand looms into a power loom driven by electricity. Electric light will also be furnished.

The result of this change from slow, laborious, uncertain hand-power to the swift, regular, un-failing power furnished by electric motors will be an increase in the productive capacities of the looms, and a considerable reduction in the general expenses of fabrication. In other words, art will be wedded to modern machinery. The weavers of St. Etienne have always been the most artistic ribbon makers in the world, but they have enjoyed few mechanical advantages. Now the old order of things is to be changed, and the products of the St. Etienne ribbon looms, which have been a trifle more costly than similar products in some other countries, notably in Switzerland, will be turned out at the lowest possible prices. The weavers employed in the ribbon trade number 70,000 souls.

PICKING COTTON BY MACHINERY.

Mr. Parsons Shaw, of Bolton, writes to the *Manchester Examiner* as follows: The cost and the available quantity of the raw material must ever be a matter of the highest importance to all engaged in the cotton trade. In 1891 the Southern States produced 8,500,000 bales of cotton; and every ounce of this immense crop had to be picked by hand. It takes ten able-bodied and expert hands to pick enough to make a bale when ginned. But very few are able to pick that amount, and many only a small fraction of it; so that it requires the labour of nearly, if not quite, four millions of hands to secure this crop. Moreover, the picking is done in the season of the year that is, in other crops, devoted to harvesting; so that where cotton is grown other crops have to be neglected, and the consequence is that the people of the cotton regions purchase a great deal of their food, so that the proceeds of the cotton crop, instead of being available for purchasing the refinements of life, are nearly all spent in the necessities of existence. As the picking season is comparatively limited, and the demand for labour at that time imperative, it commands a good price; and a man who can pick a tenth of a bale a day can earn from one dollar and a quarter to one dollar and a half. As it requires what is equivalent to eighty-five millions of such a day's work to pick the crop, the cost may be set down at about one hundred and twenty million dollars, or nearly a third of its value when ready for shipment.

Not only is the picking a very serious item in

the expense of the raw material, but the available labour for picking determines the amount of cotton that can be produced; for there is enough land and labour to plant a much greater area than is at present possible. When we consider what a wearisome task it is to gather in the cotton by hand, and that the pickers are mostly negro men, women, and children, we can easily understand how slovenly much of the work is done. And as this labour is getting every year more difficult to control, large quantities are often not picked at all; and it is estimated that, in this way, from 8 to 10 per cent. of the crop is lost. A machine, therefore, that will pick the whole crop and do the work thoroughly, thereby greatly increasing the quantity from the same planting, must be an acquisition to the cotton grower equalling the gin. For a long time the question has been asked if some one could not invent a machine for picking this crop in a quicker, cheaper, and better way; and the fortune awaiting the successful inventor is apparent. The usual reply has been that a cotton picker must have eyes to see the bolls; and this apparently settled the question in the negative. But there is always a doubting Thomas in all positions of life, to whom we are indebted for almost all progress; and a Chicago man doubted if a picker really must be able to see, and has invented one without vision.

A few days since I was invited to see it, and will now endeavour to describe it. The machine is attached to the axle of two wheels like a mowing machine, which, when in motion, operates its various parts. The wheels are four feet apart to enable it to cover a row of cotton plants, and two mules or horses, walking in the furrows, drag it along. On the axle is a drum or cylinder, which travels around with it. Around this drum are ranged at intervals 16 small cylinders. Into a segment of the surface of these, at stated points, there are fixed nine wooden pins or fingers, about a foot in length, making 144 fingers in the machine. These are screwed into a socket in the cylinder connected with the bevelled gearing on the inside, which, when the machine is in motion, rotates them rapidly. It is to these revolving fingers that the collection of the lint is entrusted. To enable them to accomplish this work, they are prepared with two longitudinal grooves crossing each other at right angles, into which are glued strips of hair cloth, which project about the twentieth of an inch, to catch the lint from the boll and twist it off. These fingers, rotating laterally, gather the lint; and when they are lifted up, on reaching the upper side of the drum, the lint is quickly removed by brushes, which throw it into receptacles prepared to receive it. The cylinders and fingers are operated by gearing; and the dip of the fingers into the plants, by an ingenious cam movement, is made vertical; and they are withdrawn in the same manner by a forward movement of the cylinder before engaging again with the plants. At first glance the machine appears to be somewhat complicated, but on more intimate acquaintance it is not so. As the cotton plant is elastic, no harm is done, as the machine passes over it; nor does the play of the fingers, as they search among the stalks, do any injury. Consequently, as the plant is gently drawn into the centre of the machine, the fingers revolve among its limbs and secure the ripe lint, leaving the stalk entirely uninjured; and, if early in the season, still able to produce.

The advantages of such a machine are apparent; and from the testimony of those who have seen it work and my own investigation, I believe it will effectually do what is claimed for it. But the collateral feature of this matter already intimated I consider of even more importance than the price of cotton. All the conditions under which the fibre is raised in the South are such that it does not add to its wealth, and it is a proverb that cotton and niggers will ruin any country. I have pointed out that the labour in the cotton region is all required in the picking season, and that the necessities of life that ought to be grown at home are, to a great extent, brought from the North. Moreover, the good wages in the busy picking season tend to make the negro idle at other times and improvident. Relieve and deprive the agricultural

labourer of the South of this burden of cotton picking, and it will be turned into good and other production. The cotton region will then become what it never has been or ever can be under its present system—a country advancing in wealth and a good market for manufactured goods—for a market is good or bad just as it has or has not the means to pay, and whatever adds to the wealth of any country is a benefit to the manufacturer.

When we consider, therefore, that this machine can pick more than two bales of cotton per day, against the labour of 20 to 25 skilled hands; that it gathers an increased quantity of the fibre, thus adding that amount to the crop; that it picks the entire crop for less than 40,000,000 dols. (and then allows a great profit to the machine), as against 120,000,000; and produces it in a better condition; that the crop is no longer limited to the amount that can be picked; that the agricultural labourers now required at a critical period of the year can be used for the production of good and other primary necessities, thereby leaving the cotton crop able to purchase more manufactured goods; we have in sight an economic revolution of great proportions that must be of immense value to all who come within its influence.

THE DRY PIPE SPRINKLER SYSTEM.—On the 11th inst., a fire broke out in the waste warehouse of Mr W. C. Jones at Collyhurst, near Manchester. Large quantities of open waste were distributed all over the room in which the fire originated, and this was speedily in a blaze. Four Grinnell Sprinklers opened, allowing the compressed air, with which the installation was charged, to escape. The water followed immediately, the alarm sounded, and the fire was quickly extinguished, the only evidence that there had been a fire consisting of the marks made by the water from the Sprinklers on the whitewashed ceiling. This warehouse is not artificially heated, and to prevent the freezing of the water in the pipes and Sprinklers in Winter time the whole installation is on the dry pipe system. It may also be noted that this installation is fitted with a new type Grinnell head. This is the 74th actual fire that has occurred under the Grinnell dry pipe system, and in 54 of these cases no claim has been made on the Insurance Companies.

Bleaching, Dyeing, Printing, etc.

PRODUCTION OF ORANGE IN CALICO AND WOOL PRINTING.

The method for the production of orange in calico printing, which has been in use for a long time and is still largely made use of, is based on the fact that lead acetate and potassium chromate yield yellow lead chromate, which on treatment with lime becomes orange. The orange is prepared as a pigment colour, and then printed with blood albumen; $\frac{2}{3}$ parts of lead acetate are precipitated with one part potassium bichromate in a sufficiently dilute solution, the precipitate is washed and boiled with milk of lime, well washed, filtered and pressed, and about 400 grammes of the orange lake thickened with 600 grammes albumen solution, printed and steamed. If the orange is required yellower, one part of the orange is replaced by one part of yellow lead chromate, or by printing the material with a thickened lead salt, chroming, and then passing through a bath of caustic alkali. On printing the lead salt, about 300 grammes lead acetate or nitrate must be taken per litre of thickening, printed and steamed, or aged, passed through ammonia, chromed according to the size of the pattern with the necessary quantity of bichromate, and then passed through a boiling concentrated milk-of-lime solution.

Another orange is produced with alizarine orange, which gives a brilliant lake with alumina salts. Either alumina acetate, nitrate, or sulphocyanide may be used, with the addition of calcium nitrate or acetate, printing on material which has been impregnated with Turkey-red oil, steaming and soaping. Thickening (550 grammes) and 150 grammes alizarine orange R are well mixed, and 50 grammes acetic acid 9

Tw., 200 grammes alumina acetate at 10° Be., and 50 grammes calcium acetate at 10° Be., are added. The colour should be printed immediately after its preparation. Alizarine orange may, for instance, be turned more yellow by the addition of lead acetate and chroming afterwards.

A second method is to mix with it some gallacetophenone or alizarine yellow. This yellow is fixed by means of alumina sulphocyanide and calcium acetate, and agrees perfectly well with alizarine orange.

Another orange, which up to the present has not had much application, is acridin orange. This is fixed by means of tannin on cotton material, and finally the latter is passed through an ordinary tartar emetic bath. With Persian-berry extract, or flavine and a tin-salt, very fine oranges may be obtained, but these, as a rule, are not fast to soaping.

Lately a new orange for printing, under the name of diamond orange, has been brought out. It is a reddish-brown paste, which has the advantage over alizarine orange of not settling at the bottom of the casks like the latter, and it can consequently be stirred better. A further advantage lies in the fact that the printing colour may be preserved for some time without losing any of its intensity. Alizarine orange, on the other hand, after a very short exposure loses as much as 50 per cent. of its colouring power, even when sulphocyanide is employed instead of aluminium acetate. The printing colour is best prepared by mixing well 740 grammes thickening, 200 grammes diamond orange, and 60 grammes chromium acetate. The chrome lake produced with diamond orange on oiled material is redder than the one obtained with alizarine orange and alumina, but can be turned yellow with diamond yellow.

Alizarine yellow, or diamond flavine, like diamond orange, may be fixed with chromium acetate. A shade similar to alizarine orange may be obtained as follows:—787 grammes thickening containing acetic acid, 100 grammes diamond flavine G, 66 grammes diamond orange, and 47 grammes chromium acetate at 20° Be., are mixed together. This is printed on material impregnated with Turkey-red oil, steamed one hour without pressure, passed through a chalk bath, and soaped about 20 minutes at 50° C.

In wool printing alizarine orange R gives an orange fast to soaping, when produced as follows:—110 grammes alizarine orange R, 590 grammes thickening, and 40 grammes aluminium sulphate (dissolved in 140 grammes water), 20 grammes oxalic acid (dissolved in 50 grammes water), and 50 grammes glycerine at 28° Be., are mixed together. Develop on prepared wool by means of steaming; wash, and soap. Of other colours, croceine orange and orange II., are much employed in wool printing. Both give fiery shades by dissolving in water and acetic acid, and thickening with gum water, printing on chlorinated wool, then steaming and washing well. The proportions are about 1—2 grammes colouring matter, 8—9 grammes acetic acid at 6° Be., 30 grammes water, and 60 grammes gum water.

NEW COLOURING MATTERS.

Some rather interesting colouring matters from a new base have recently been patented, which are capable of dyeing cotton from an alkaline bath. The new base, or rather bases, are the two isomeric *a* and *b*-naphthyl glycines. These bodies have only recently been discovered, and now they are pressed into the service of the colour maker. There are some differences in the properties of the dye-stuffs yielded by the two glycines: thus, the *a* compound, when combined with benzidine, tolidine, and benzidine sulphone, gives dye-stuffs soluble in water; while the corresponding *b* compounds are insoluble in water. So far as the shades of colour are concerned the compound of *a*-glycine and benzidine is dark red, resembling Congo Corinth G; while the blue from benzidine sulphone and *a*-glycine is similar to azo-blue. In both cases the shades are brighter and less sensitive to alkalis, which is a decided advantage. The reds, which can be made from the glycines by combination with tolidine and benzidine monosulphoacid, are more resistant to

the action of acids than most other direct reds. When placed on the market these new products should meet with a favourable reception from dyers.

New mordant-dyeing blue dye-stuffs are described as being obtained from galloxyamine by heating with anhydrous trimethylamine and amines of the same series. The trimethylamine compound dyes chromed wool from acid baths fine blue tints; isobutylamine gives a blue-green, while diamylamine gives a dye-stuff dyeing pure blue tints. Whether these new dye-stuffs are satisfactory, so far as resistance to light, washing, and acids are concerned, the patent specification does not say.

Messrs. Read Holliday and Sons have patented the preparation of a new *a*-naphthol sulpho acid, to be used in the preparation of azo and tetrazo colouring matters. This new acid is prepared by heating *a*-naphthol with sulphuric acid under certain conditions. The characters of the new acid, as given in the specification, do not seem to agree with certain statements made in describing the process of manufacture. The description, too, of the properties of the new acid are scarcely sufficient to differentiate it from known acids of *a*-naphthol.

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 shewing our readers what their competitors are doing:—

BLACK ON CLOTH.

For 100 lb. woollen cloth. Prepare a bath with

6 lb. acetate of chrome, 32° Tw.

Enter the goods in this at about 80° F., raise to the boil, and work for 1½ hours; then lift, allow the bath to cool down a little, and add

25 lb. alizarine black W R.

Re-enter the goods, raise to the boil, and work for 1½ hours longer; then lift, wash, and dry.

BLACK ON WOOLLEN CLOTHS.

For 100 lb. cloth. Prepare a dye-bath with 10 lb. Glauber's salt, 2½ lb. diamond black, ½ lb. diamond green

Boil for an hour, then pass through a fresh bath of

2 lb. bichromate of potash

for three-quarters of an hour at the boil; wash, and dry.

BLUE PRINT ON CALICO.

Prepare the printing colour with 4 lb. acetic-starch-tragacanth thickening 2 lb. chrome blue paste, ½ lb. acetate of chrome, 32° Tw. Print, then steam for one hour at a low pressure, soap, wash, and dry.

SCARLET ON COTTON.

For 100 lb. cotton. Prepare the cotton by steeping for six hours in a bath of 5 lb. tannin.

Then lift, wring, and pass into a bath of 4 lb. tartar emetic.

Work half an hour, lift, and dye at the boil in a fresh bath of

1 lb. saffranine prima,

½ lb. auramine O.

Lift, wash, and dry.

BLUSH ROSE ON WASTE SILK.

For 10 lb. silk, the bath is prepared with 10 oz. alum, 3 oz. sulphuric acid, 3 oz. chloride of tin, ½ oz. acid magenta, blue shade, working at the boil for 1½ hours.

ORANGE ON WASTE SILK.

For 10 lb. silk. Prepare the bath with ½ lb. alum, 3 oz. acetic acid, 3 oz. crocein orange, working at the boil for an hour; then lift, wash, and dry.

PALE VIOLET ON CASHMERE.

For 100 lb. cashmere, the dye-bath is made with

10 lb. Glauber's salts, 4 lb. sulphuric acid, 1½ oz. fast acid violet R, 1½ oz. cyanin B,

working at the boil for an hour; then lift, wash, and dry.

GREEN ON JUTE.

For 100 lb. jute, dye in a boiling bath with 1½ lb. azo-green, 5 lb. alum,

until the shade is developed; then lift, rinse, and dry.

VIOLET BROWN ON JUTE.

For 100 lb. jute, boil the goods with

8 lb. sulphate of alumina, 2 lb. bluestone,

for an hour; then allow to cool; add 11 lb. logwood extract.

Work for 1½ to 2 hours longer, then lift, wash, and dry.

FAST BLUE ON COTTON.

For 100 lb. cotton, dye in a boiling bath of 3 lb. benzazurine G,

10 lb. Glauber's salt, 2 lb. soap,

working for an hour; then pass into a new bath of

5 lb. copper sulphate, 3 lb. logwood extract,

working for an hour in the cold. Lift, wash, and dry.

GOLD BROWN ON CLOTH.

For 100 lb. cloth, prepare the dye-bath with 2 lb. oxalic acid,

2 lb. bluestone,

4 lb. coppers,

3 lb. crocein orange G,

2 lb. dry logwood extract.

Enter the goods at 120° F., then raise to the boil, and work for an hour. Lift, wash, and dry.

DARK BROWN OLIVE ON COTTON.

For 100 lb. cotton, prepare a bath of

28 lb. fustic, ¼ lb. logwood,

18 lb. catechu, 4 lb. turmeric,

2 lb. copper sulphate, ¼ lb. alum,

Work for an hour at the boil; then sadden on a new bath of

1 lb. bichromate of potash

for half an hour; then sadden on a new bath of ¼ lb. nitrate of iron,

working in the cold for half an hour; lift, wash, and dry.

PALE OLIVE ON COTTON.

For 100 lb. cotton, prepare a bath with

2½ lb. alum,

1 lb. logwood,

½ lb. Brazil wood,

4 lb. fustic.

Work at 180° F. for half an hour, then add

½ lb. bluestone.

Work quarter of an hour longer; then lift, wash, and dry.

FINISHING MIXING FOR FUSTIANS.—25 lb. starch and 50 lb. farina are boiled up with water to 65 gallons of mixing. This mixing is suitable for a light weighting and finish on fustians.

FINISHING MIXING FOR SHIRTINGS.—12½ lb. white starch, 3 lb. farina, ½ lb. tallow, and ¼ lb. stearine are boiled up with water to 16 gallons of mixing.—Another mixing is 10 lb. starch, 6 lb. farina, ½ lb. tallow, and ¼ lb. stearine, boiled up to 17 gallons.

THE INDIAN FACTORIES ACT.—The *Times* correspondent at Calcutta, telegraphing on Tuesday, says: The President of the Upper India Chamber of Commerce, in his annual address to the Chamber, says that the Indian Factories Act has resulted in the dismissal of all operatives under 14 years of age, and of all women employed in certain factories, as the employers prefer the simple course of making a clean sweep of such hands to keeping them under the tedious provisions, which are found so irksome, especially where women are concerned. He gives instances of hardships thus caused to families, and says they are typical of thousands which have followed the passing of the Act. In the same address the President says that the Bengal cotton trade has almost collapsed. He attributes this partly to the cheapness of American and Egyptian cotton, but chiefly to the persistent system of adulteration, which the Chamber has vainly tried to check during the last few years.

News in Brief.

ENGLAND.

Accrington.

The firm of Mr. William, Lancaster, machinist of Accrington, having ceased to exist, Messrs. William Dickinson & Sons, Blackburn, have purchased all patterns and patent rights, and will be pleased to supply parties with duplicates, castings, or any parts of the said machines, when parties using them may require such.

Atherton.

Messrs. Platt Bros. and Co., Limited, Oldham, have secured an order to fill a new mill to contain some 80,000 spindles at Atherton with cotton spinning machinery.

Bacup.

The names of Mr. J. H. Maden, M.P., and Mr. Joshua Hoyle, the younger, both of Bacup, have been added to the Commission of the Peace for Lancashire.

Barnsley.

Messrs. Dibb and Clegg, solicitors, have filed a petition for the liquidation of the affairs of Mr. Henry Spencer, trading as J. S. Spencer and Co., linen printers and calenderers, Barnsley. Mr. Spencer committed suicide on Wednesday week by shooting himself with a revolver.

Batley.

On Thursday last a deputation, consisting of the Mayor, the Town Clerk, Mr. W. Parker, and Mr. Walter Bagshaw, had an interview in London with Sir Owen Roberts, the Clerk of the Clothworkers' Co., and with the chairman of their Technical Instruction Committee, in reference to the proposed technical school for Batley. The deputation have good reason to be satisfied with the results of their mission. It is expected that building operations will be commenced shortly.

Bury.

The number of members on the funds of the Bury Spinners' Association during the last four weeks has totalled 96, or an average of 24 per week, and the sum expended in payment of their claims is £73 18s. 10d. The stoppages for repairs at the Woodhill and Egyptian Mills are responsible for the major portion of this expenditure.

Bolton.

The death is announced of Mr. John Kershaw, of Green Bank, Deane, in the 77th year of his age. The deceased gentleman originally owned the Derby-street Mill, which he built in 1867. Ten years ago he retired into private life, and was succeeded at the mill by Messrs. John Haslam and Co., who have since considerably enlarged it. The deceased was much respected by his acquaintances and his former workpeople.

Mr. J. T. Fielding, secretary of the Bolton and District Operative Cotton Spinners' Provincial Association, in his annual report, states that the membership has increased to 4,233 spinners and 8,659 piecers, the total being 12,418. He speaks with approval of the federation with the Card and Blowing-room Association. The latter association have increased their membership by 3,000 during the year. Under no circumstances, he says, will the members be counselled to come out on strike without at the same time inviting the other departments to come out. The total expenditure for the year amounted to £12,766, an increase of £1,627, of which £276 had gone in "victim" pay and £1,839 for disputes. The pay to members out of employment had, however, decreased £706, from £3,197 to £2,403. The report adds that the Council are determined to stop the barefaced fraud of spinning counts finer than paid for.

Burnley.

Mr. Jacob Wareing, manufacturer, of the firm of Wareing and Phillips, died on Saturday. Deceased, who was about 60 years of age, was well known for the action he had taken in connection with the Burnley Co-operative Society, of which he was one of the founders.

A Burnley weaver, John Bennett, died late on Monday night from injuries received in an extraordinary manner. It is alleged that he went while intoxicated to Messrs. Harrison's Mill, and used abusive language. As he was interfering with workmen in the warehouse the manager ordered him out, and accompanied him to the top of the stairs. The deceased said he would go down if the manager went first, and pushed the latter. Bennett, it is stated, slipped and fell to the bottom, fracturing his skull.

Bradford.

Mr. William Bateson, a member of a family whose ancestors have been connected with Windhill for three centuries, died on Wednesday. Mr. Bateson was one of three brothers, sons of the late James Bateson, who carried on business together as cloth makers in Brigate, Windhill, from 1850 to 1866. Joseph Bateson withdrew in 1866, and has latterly lived at Cottingley. James and William Bateson continued in the business together

until 1880, when Mr. James Bateson retired. The deceased carried on the business until a few years ago, when he left it almost entirely to one of his sons, Mr. Samuel Bateson. Mr. Bateson, who was within a month of his seventieth year, leaves a widow, three sons, and one daughter, one of the sons being in Australia.

In Bradford very few firms have found themselves unable to provide for the contingency of a ten days' or fortnight's stoppage of the coal supply. Should it last more than a week, one or two of the largest establishments will be inconvenienced. The largest general users of coal are the dyers, in whose business steam plays an important part other than in the supply of motive power. Some of the dyeing firms have therefore been engaged in making greater provisions than the average Bradford trader, and one firm has stacked up 500 tons of coal. But manufacturers, spinners, woolcombers, and dyers alike unite in saying that no increase in price will meet with the slightest response so far as they are concerned. Trade is so depressed, profits, where there are any, are so small, and so much machinery is idle or but partially employed, that rather than submit to anything which may tend to increase the cost of the production, employers will close their establishments.

Blackburn.

Mr. John Walker, cotton spinner, Mellor Brook, near Blackburn, having retired from the firm which has worked Mellor Brook Mill for some years past, and also from the Phenix Mill Co., in which he was a partner, has recently acquired a lease of Rose Hill Mill from Mr. John Hindle, the owner, and will shortly commence operations thereat. As the mill has been laid out for medium fine counts, Mr. Walker intends spinning 60's twist and 80's weft from Egyptian cottons. The makers of mulls and other fine cloths in the Blackburn district will, no doubt, find this a considerable convenience in their midst. We wish Mr. Walker every success in his enterprises.

Navigation Mill, one of the best types of the old class of cotton mills in this town, has just resumed operations after having been closed some time. It is the property of our quondam townsman, Col. R. R. Jackson, now of London, and it is Col. Jackson himself, we understand, who will be principal in the new firm, which will trade under the style of the Navigation Mill Spinning Co. Mr. John Walker, who has just taken the Rose Hill Mill, assumes the chief management on behalf of Colonel Jackson. The mill will spin the counts of yarns most in demand in the district. Most of the machinery is now at full work. Is the spinning industry going to revive in Blackburn?

Brighouse.

Acting on the advice of several friends, the Committee of the silk dressers out on strike at Messrs. Ormerod's, Limited, Brighouse, have written to their employers offering to submit the case to an independent arbitration, the men to have four representatives and the masters two. Failing the acceptance of this proposal, it is suggested that the question in dispute be referred to the newly-formed Board of Conciliation at Halifax. Last Saturday evening there was a crowded audience at a concert given in the Town Hall in aid of the silk dressers on strike, the arrangements having been made by the Committee of the Brighouse and District Trades and Labour Council.

Colne.

On Monday, at Colne County Court, two sisters named Wood sought to recover 30s. each from Mr. John Pickles, cotton manufacturer, Colne, as wages due in lieu of notice. It was shewn that defendant's son, because of complaints about the weavers spoiling cops and returning them into cases with good ones, went into the shed and found seven "stuck" cops in a tin at the elder plaintiff's looms. The next day the sisters were discharged, although the younger one denied that she had any spoiled cops about her looms. The defendant relied on a rule which permitted instantaneous dismissal for misconduct—His Honour Judge Gates, said that negligence and damage to cloth must be done in such a way that the conduct of the weaver might properly be called misconduct. There might have been some slight negligence and inattention in this case, but he did not think it of such a character as to deserve the appellation of misconduct, and he thought, therefore, the defendant had acted in a high-handed way in dismissing the plaintiffs summarily. Judgment would be for the plaintiffs.

Elland.

On Saturday, at the Halifax West Riding Court, Alexander Ferguson, George Pearson, and David Brook, employes of Mr. J. F. Milner, Woodside Flour Mills, Elland, were summoned for "following" one Richard Mitchell, also an employe at Woodside Mills.—Mr. Boocock appeared for the complainant, and stated that on the evening of the 7th inst. the three defendants, with others who were out on strike, followed the complainant as he was returning from work in an annoying and threatening manner. Complainant had been followed several times before, and the pro-

ceedings were taken in order to shew the defendants and others that they could not be allowed to interfere with men who chose to work. Since the summonses were issued the following complained of had altogether ceased, and if the defendants would promise not again to molest Mitchell the cases would be withdrawn.—The Chairman (Mr. W. H. Rawson) (to the defendants): I think you are fools if you don't accept the offer. Men are at liberty to strike if they like, but not to interfere with those who choose to remain at work.—Mr. Reed (Huddersfield), for the defendants, said his clients denied altogether having "followed" Mitchell, and were the evidence gone into he would be able to shew that the complainant had brought the whole thing on himself by his conduct. The defendants would not annoy him in any way in the future, and they denied ever having done so.—The cases were then withdrawn, the Chairman remarking, "Strikes are the curse of the country."

Farnworth.

News came to hand on Saturday of the death at Brazil, from yellow fever, of Mr. William Hibbert, who went out from here about 12 months ago to act as a mill manager. Mr. Hibbert was last employed as overlooker with Messrs. S. and J. Prestwich.

Haslingden.

On Monday, at the Police Court, seven "doffer" lads, employed at Hazel Mill, were summoned for leaving their work without notice on the 7th March, and £5 was claimed as damages. The defendants were employed at the mill on the 7th inst., and left their work without giving notice. Owing to some doffers being off on strike, the defendants, for the extra work, had 25s. divided amongst them for absent doffers' work they had done. They left the mill without making any complaint, and on the Monday morning worked until breakfast time, and left the mill without saying anything, and joined the operatives who were on strike. Mr. James Clarke, the mill manager, estimated the damage and loss sustained by the consequent stoppage of ten ring frames at £35.—Mr. Riley, for the defence, called four of the defendants, who stated the reason they left work was because the mill company did not pay them all they were entitled to.—The Bench ordered two of the defendants to pay 7s. 6d. damages and costs, and the remaining five defendants 15s. and costs each.—The company offered, if defendants would pay the costs and return to their work, to receive them back again.

Heckmondwike.

The Heckmondwike district has not experienced much inconvenience from the stoppage of the collieries. Nearly all the leading firms have taken the precaution to lay in large stocks of coal. The only exceptions appear to be one or two well-known blanket manufacturers, who have made no provision whatever to meet the stoppage, but, on the contrary, have given notice that their works will be closed until such time as a supply of coal can be obtained in the usual way. It is well-known, however, that these firms have no pressing orders on hand, and that the opportunity will be embraced for carrying out the repairs usually done in Easter week.

Halifax.

John Henry Blagbrough, of Woolpack-yard, Halifax, has been committed for trial to the sessions for having robbed the office of Messrs. James Robinson and Son, silk spinners.

Huddersfield.

Under our "Joint Stock News" will be found particulars of the formation of "The Cotton Cord and Velvet Cutting Machine Co., Ltd.," for the purpose of acquiring and working the patents of Messrs. Keighley and Netherwood (of the firm of Messrs. Lockwood and Keighley, woollen manufacturers, Upperhead Mills, Huddersfield), for fustian and velvet cutting. A full description of the machine embodying these patents appeared in *The Textile Mercury* of October 10th, 1891, a reprint of which is circulated with the prospectus of the new company. The company has taken the Clayton Dyeworks (formerly Brundret's) for the purpose of cutting goods on commission.

Keighley.

On enquiry it appears that the "nip" in coal will be severely felt by such firms as have not much room for storage, or where the situation has not been grasped in time to prepare for the worst. Many have done this, however, but, to tell the truth, the heads of some of the biggest firms would regard with comparative indifference, if not with absolute satisfaction, the prospect of an enforced stoppage for a week or two. The local iron trade is in an unusually depressed condition. Two of the leading manufacturers of textile machinery are making very short days; one of them has been reducing its staff to the extent, it is said, of over 100 hands within the past fortnight or so; and the other is giving long holidays to the men in turn.

Kidderminster.

The wedding present from the town of Kidderminster to the Earl of Dudley, High Steward of the

borough, has been on view at the School of Science and Art Museum. It consists of a splendid specimen of the industry of the town, being a beautiful Chenille Axminster carpet, manufactured by Messrs. Tomkinson and Adam. It is made in one piece without seam, the size being about 32ft. by 20ft. It is a pattern of a Persian character on a dark blue ground, with a contrasting border on a quiet gold ground. The Kidderminster coat of arms is arranged in the corner, treated in an unobtrusive way. The carpet will be used for the dining-room at Dudley House, Park-lane, London. It was manufactured on a loom 24ft. wide, and took four men to weave it, the designing and weaving occupying three months.

Leeds.

The woollen mills of the district are sufficiently supplied with coal to relieve the manufacturers and the workpeople of any immediate anxiety.

Under the auspices of the Yorkshire College Textile Society, a lecture on "The Draw-loom" was delivered on Tuesday at the college by Mr. George Washington (assistant lecturer in the textile department). The lecturer, whose remarks were illustrated by lantern views, said the draw-loom was of Eastern origin, and was used in Damascus, and a species of draw-loom was used in China and Japan for figured weaving. It was said to have been introduced into Europe by Crusaders, and was brought to England by Flemish weavers in the sixteenth century. Having described the structure and the working of the draw-loom, Mr. Washington proceeded in detail to shew the character and construction of the fabric woven. In conclusion, he said the skilled workmanship of the weaver, combined with time and patience, produced results quite equal to anything that could be made with modern machinery.

Macclesfield.

It is reported that Messrs Brocklehurst and Messrs. Birchenough have secured some large Government orders for silk handkerchiefs for the navy.

The weavers have issued a circular to the employers asking for an advance of wages on all goods over 24 in. wide, excepting Windsor scarves. It is not known yet what action the employers will take, and the weavers appear determined to press forward their claims.

Manchester.

A case which has been several days before the Stipendiary at the City Police-court, in which Messrs. Bankhead, Hill, and Co., of London, were charged with an infringement of the trade mark of Messrs. Horrocks, Crewdon, and Co., came to a satisfactory termination on Tuesday. An undertaking was given on behalf of the defendants that the particular mark complained of should no longer be used, and the complainants thereupon consented to a withdrawal of the summons. The defendants' explanation, that they had acted in ignorance and from no dishonourable motive, was frankly accepted.

The annual meeting of the proprietors of the Manchester Royal Exchange was held on Wednesday, when a special resolution was adopted authorising the directors to proceed with the scheme for extending the Exchange by "bringing into the large room all the available space on the east side (Cross-street) of the building, by removing the inner pillars of the portico and utilising the present outside approaches." This, Mr. Jardine, chairman of directors, explained, would give an additional floor space of 400 yards, equal to the requirements of 800 additional subscribers. The number of subscribers at present is 7,320, being an advance of 71 upon last year, and with the opening of the Ship Canal it is expected the number will go on increasing.

Nelson.

The strike of the weavers of Messrs. Berry and Evans, Nelson, which started about three months ago, has at last been settled, and the operatives returned on Tuesday to work. The settlement has been facilitated by a certain tinker leaving. The employers have agreed to abolish the slate system, and also board (if the majority of the Nelson manufacturers will do the same). The present operatives will continue their work, and the strike hands will get back their looms as far as possible.

Nottingham.

A meeting of the Nottingham Chamber of Commerce was held on Monday, Mr. B. Stiebel (president) in the chair. The question of the large increase in insurance rates on lace and hosiery factories and machinery was considered, but it was felt that the Chamber was powerless in the matter. The following resolution was unanimously passed:—

That the borough magistrates be requested to decline to sign a certificate of origin in the case of lace goods from this country for Spain unless the firm applying for the certificate is on a list of manufacturers who are known as shippers of goods to Spain to be furnished by this Chamber, and unless in addition a separate declaration, signed by a member of the firm, be sent with the ordinary declaration and certificate, setting forth the genuineness of this declaration that the goods have been manufactured in this country.

The following letter had been received from the Spanish Vice-Consul:—

Dear Sir,—I have had a communication from the Consul-general in London on the subject of some Nottingham firm or firms declaring French goods as English for the purpose of introduction into Spain, and shall be glad to know whether any further steps have been or will be taken in this matter on the part of the local authorities.—I am, dear sir, yours faithfully,

R. H. Beaumont, Esq., Secretary, Chamber of Commerce. F. MEYER. Oldham.

Mr. Buckley, one of the carders at the Higginshaw Mills and Spinning Co., is leaving.

It is stated that the firm of Mr. John Mason, of Rochdale, have received the order for filling the Clarence Mill with machinery. This concern has been taken over by a limited company for the purpose of carrying on ring spinning.

Mr. Edward Rostron, formerly manager of the United Spinning Co., has been appointed to a similar position at the Higginshaw Spinning Co., vice Mr. John Platt, who has gone to be the first manager for the Holly Mill Co., Royton.

Messrs. Platt Bros. are filling as quickly as possible the mill of the Ellen-road Spinning Co. with machinery. A considerable portion of the carding and spinning machinery is already fixed, and it is stated that an attempt is being made to make a record.

At the Oldham County Court, yesterday week, before Judge Jones, the case re Bankside Spinning Co. came on for hearing, in which the court was called upon to settle a supplemental list of contributories of the company. The case has aroused great interest in limited company circles, and consequently there was a good attendance of gentlemen connected with company matters. At the outset Mr. Stewart Smith, who represented 22 of the respondents, questioned the jurisdiction of the court on the ground that the capital of the company was under £10,000. The company, at a previous period of its history, had a capital of £15,000, but it was now reduced to £4,500. Mr. Maberley, who appeared for the liquidator (Mr. James Dawson, accountant, Union-street, Oldham), contested this view, and argued that until an order of the Palatine Court was made, setting aside the question that it was a company with a capital under £10,000, the court had jurisdiction. His Honour, however, decided that he had jurisdiction, against which judgment Mr. Smith asked leave to appeal, and the case was adjourned to allow of this being carried out. It seems that there are 1,940 shares in the company, and the case of the respondents is that they do not hold any of the shares.

Pudsey.

On Monday, Mr. T. Bray sold by auction 22 shares, £2 each, fully paid, in the Pudsey Worsted Mill Co., at £2 7s. per share.

Radcliffe.

The Cardroom Operatives' Association held their annual tea party and ball on Saturday night, about 140 being present, at the Pavilion.

Ramsbottom.

At several of the mills in this district the manufacturers are being seriously inconvenienced by the number of operatives on the sick list. To see from a dozen to twenty looms empty all together, is nothing unusual, and this state of things has prevailed for several weeks.

Although the state of trade in the town is not of the best, it is a considerable improvement upon what has been experienced for the past two years. Nuttall Mill, which until recently was far from flourishing, is under the new firm looking up wonderfully, and not only are the operatives fully employed, but they are getting good average wages.

Sowerby Bridge.

Messrs. Asa Lees and Co., Limited, Oldham, have received an order for cards, etc., from the Ripponden Spinning Co., Sowerby Bridge, whose mill is also being protected with the Grinnell sprinkler, as is also another similar structure in the district.

Shipley.

So far as can be expected at present, the scarcity of coal will not be seriously felt in the industrial district which comprises Shipley, Windhill, Baildon, and Idle. Most of the large mills, such as Salthaire, Victoria Works, Shipley, and Airedale Mills, are fully stocked, and have received assurances from the coal merchants that they will be in no danger of coming to a standstill from want of fuel.

The second annual reunion of the students at the Shipley Technical Schools took place on Saturday evening last in the Victoria Hall, Salthaire, and was attended by some 300 persons. The programme included amateur theatricals, music, and dancing. The monetary proceeds of the reunion are to be devoted to a prize fund for the students, to take the place of the prizes hitherto given by the Science and Art department, and now discontinued.

Stalybridge.

The dispute at the Stalybridge Spinning Co.'s mill still continues, and, although the recent excitement has to a considerable extent subsided, many people continue to watch the departure of the new

hands from the mill each evening, in the anticipation, presumably, of some open rupture taking place. On Saturday some of the non-unionists who have hitherto been sleeping on the premises left for their respective homes, the non-residents of the town being escorted to the railway station by the police. They returned, however, on Monday morning, when work was resumed as usual. The police were on duty at the mill, as also were the "pickets." It is stated that there are now 21 pairs of mules running, with card preparation, 110 hands, all told, being employed. Last week there were only 12 pairs of mules running. If the influx of hands continues at the same rate as last week the employers estimate that the whole mill will be working in about a fortnight.

Wigan.

Several new pairs of roving frames, by Messrs. Dolson and Barlow, of Bolton, are being put in at Messrs. Eckersley and Sons'.

Mr. Thomas Taylor, founder of the well-known firm of Thomas Taylor and Brothers, Limited, cotton spinners and manufacturers, Wigan, died rather suddenly at Southport, on Tuesday, where he had been staying for the past few weeks for the benefit of his health. For the past half century few men have occupied a more prominent position in the development of the cotton industry in Lancashire than Mr. Taylor, whose name is known in all quarters of the globe. He was 83 years of age, and up to a few days ago took an active interest in the large concern over which he had so long presided. He was a magistrate for the county, had filled the office of Mayor of Wigan, and had also discharged the duties of High Sheriff of Oxfordshire. His name will be handed down to posterity by his generous gift to Wigan of the present handsome free library.

Yeaddon.

The threatened stoppage of the collieries for a fortnight has caused something like a panic in this district, and there has been an extraordinarily increased demand for coal from mill-owners. Many of the mills have laid in good stocks.

SCOTLAND.

Dundee.

Flax is now being landed at Dundee from the Baltic at 13s. 6d. freightage. This is in strong contrast to the palmy days of 80s. per ton paid.

Mr. John Sharp, manufacturer, Dundee, has been elected chairman of the First, Second, and Third Scottish American Trust Companies, Limited, in a room of the late Mr. John Guild's Mr. Sharp is a large shareholder in the three companies.

Dudhope Works, Dundee (Messrs. Fergusson and Sons) are running on short time. The machinery stops at one o'clock on Fridays, and work resumes on Monday mornings. The firm has not fixed the period during which their works will be kept on short time.

Fonfar.

Short time has been resolved upon at Haugh and South-street Works (Messrs. John Lowson and Son), operations to be stopped on Saturdays.

Glasgow.

There have of late been quite lively times in the stock market as far as Coats's shares are concerned. The "bears" have been at work both here and in London, but the game is considered risky.

Mr. James Merry, sole partner of the firm of James Merry and Co., calico printers, Glasgow and Manchester, appeared yesterday week before Sheriff Guthrie for examination in bankruptcy. The bankrupt put in a statement accounting for his deficiency, and the trustee being satisfied with the explanations which he had already received, no questions were asked, and the statutory oath was administered.

A singular action was decided in the Court of Session, Edinburgh, on Tuesday. The Port Glasgow and Newark Sailcloth Co. sought to recover £12,000 from the Caledonian Railway Co. as compensation for the loss of a flax store by fire, which, they alleged, was caused by the sparks from a locomotive. In the Outer House the plaintiffs had been awarded damages; but the Railway Co. appealed to the First Division, and the judges, holding that the engine did not send forth sparks in excess, decided that the defendants were not liable to pay the damages, and were entitled to expenses.

Serious complaints are being made by local merchants as to loss of business with Spain in consequence of the increased import duties recently adopted by that country. Firms here, who have been in the habit of sending goods to Spanish ports and disposing of them there at a fair profit, state that the new tariff is completely prohibitive. In connection with this matter one exporter has received a curious letter from his correspondents in Spain, stating that it is now quite impossible to sell its manufactured goods there, and at the same time requesting that the Glasgow firm should send out par-

ticals as to how the goods are manufactured, as the agents believe they could produce the goods at a profit to themselves. Needless to say, the local firm has not obliged its correspondents in this matter.

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 to date for the year. The first line refers to cotton goods, and the second to linen:—

India and China	U.S. and Canada	W. Indies & S. America	Australasia	Africa and Egypt	Continents	Total	Total for year to date
£74,123	11,550	602	875	1,538	100	88,993	979,652
250	15,426	—	886	271	220	17,053	239,432

The following are the total values of the export for the same eleven weeks of last year:—Cotton, £893,727; linen, £233,749.

A meeting of Messrs Napier's weavers and winders, Daimarnock-road and West-street mills, Bridgetown, who are on strike against a proposed reduction of wages, was held in the Temperance Institute, on Saturday afternoon. Mr. Robert Haddow said the girls were sweated by capitalist employers. He suggested that four girls be selected from the audience to accompany him to the gates of Ibrox Park, and make a collection from the crowd as they were leaving the football match. "I will do the speaking," said Mr. Haddow, "and you girls will lift the money." The suggestion was adopted with enthusiasm, and four girls left the hall amidst loud cheering. Mr. George Cooper said it was a consummate lie that the girls objected to the introduction of improved machinery. The attempt to collect subscriptions at the football match was a comparative failure. A committee of the strikers has been appointed to wait on the workers in all the mills in the city with the view of gathering £150 by to-day. Messrs. Napier are hopeful that an amicable arrangement will be come to before many days are over. They are prepared to guarantee six months' steady work at the rate of wages they offered before the strike took place.

Letters from our Readers.

UNIVERSAL SYSTEM OF TEXTILE CALCULATIONS.

(To the Editor of *The Textile Mercury*.)

SIR,—I am much interested in the question raised in your last issue *re* the adoption of a universal system of calculating in our textile trades; and cannot allow the opportunity of offering a few suggestions to pass.

First, then, let me remind your readers that there are certain complex preliminaries to go through before attention can be directed to the adoption or otherwise of the decimal system. This, in my opinion, is the greatest difficulty, for to whatever section of the trade we turn variation is universal. In counts and in sets the variation is very great. Take, for example, two mills within 100 yards of each other, say between Leeds and Bradford. In one sets are calculated on the Bradford system and in the other on the Leeds system, while probably in another mill close at hand threads per inch is made the basis of all calculations. Both parties see the folly of such a condition, but the Leeds man says his method is the best, and the Bradford man stands by his town, and the result is they agree to differ, and so matters stand.

Now I think we are justified in supposing that there is a widespread desire to simplify these undesirable conditions, and, if this is so, the question is—"How is it to be done?"

Firstly, then, it seems to me the best possible system should be ascertained, leaving no stone unturned in search for that system.

Secondly, having adopted a system which we are confident will withstand all criticism, this must be introduced by some means or another into every manufacturing concern.

This is the most difficult part of the work; in fact, it would be well nigh an impossibility but for two things—first, the evident worth of the proposed innovation, and second, the influence exerted by our technical schools upon the rising generation. In this, in my opinion, lies our great hope, and it is to suggest this that I have taken the liberty of offering these somewhat incomplete thoughts, which, should occasion offer, I should like to place before your readers in a more perfect form.—Yours, etc.,

ALFRED F. BARKER.

Technical Schools, Shipley, March 16th.

Miscellaneous.

THE COTTON ACREAGE: PROPOSED REDUCTION.

The Manufacturers' Record (Baltimore) says:—"We have had some recent reports from the South that seem to indicate a purpose on the part of cotton growers individually to plant this year a full and possibly an increased acreage, every grower being inspired by the belief that all other growers will plant less than formerly, and that the aggregate cotton crop will thereby be greatly reduced and prices correspondingly advanced. Human nature is human nature, and it is not at all improbable that a sufficiently large number of farmers will proceed upon this motive to make the next crop a larger one than the last. Besides, the cotton growing area is extending. Every year new lands along the Mississippi and its tributaries are cleared of timber and planted in cotton. In Texas, which last year produced a considerable part of the whole crop, the cotton acreage is increased continually by the advent of farmers from other parts of the country who buy lands hitherto uncultivated and go to raising cotton. Here, and in the older States as well, advanced methods of agriculture have, as to many localities, increased the yield per acre. Oklahoma and Indian Territory are likely to become large producers of cotton."

Our contemporary continues: "The *Manufacturers' Record* has repeatedly stated that the matter of reduction of the cotton acreage is more in the power of the bankers and merchants of the South than of the planters themselves. For many reasons the resolutions of farmers' associations to decrease the acreage have little effect, but if the bankers and business men generally throughout the South would unite to bring about a smaller cotton crop and a larger acreage in food-stuffs, the result would be very marked. Acting on this line, Mr. Weekes, the president of the American National Bank of Galveston, has written a letter to the president of the Bankers' Association suggesting that the bankers of the South take this matter up. Mr. Weekes's letter, as published in the *Galveston News*, is as follows:

"GALVESTON, TEXAS, Feb. 8.

"DEAR SIR,—In view of the deplorable condition of the cotton market and the declining tendency of its already distressingly low prices, would it not be well to call a meeting of the executive committee of the Texas Bankers' Association to discuss the advisability of sending out a circular letter to all the banks throughout the State, requesting them to confer with the merchants and planters of their respective localities to the end of arriving at some general plan of action whereby the acreage to be planted in cotton this year be decreased to an extent that would materially affect the production and a corresponding increase in that of grain?"

"Texas being the largest cotton-producing State, a movement of this kind with her merchants, planters, and her 350 banks acting in full accord in a common cause would necessarily command the attention of consumers and investors.

"The co-operation of the banks of the other cotton States might be invited in like manner with their merchants and planters, and if a concerted action be secured at this time, a further decline would undoubtedly be checked and the market stimulated to the extent of restoring prices to something like reason. Overproduction of the staple is having more to do with the existing depression than any other cause, and if the last two excessive crops are to be followed by another one of 8,500,000 the coming season, five cents will more likely be nearer the ruling figure, at which price producers would have but little to spare for bread and meat, if they have to be bought.

"I do not wish to in any way interfere in the affairs of the merchants and planters, nor attempt advice, but thought to express to you my crude ideas as a remedy without going to the abstract, leaving the ways and means to be adopted, if any are necessary, to the better wisdom of those more experienced and directly interested. Unless something is done to arrest this rapid and ruinous decline in cotton and cause a timely reaction, it means further disaster to many planters, merchants, and bankers alike. Their interests are identical, and the success of one depends on the prosperity of the others.

"Of course, if a sufficiency of grain and meat could be made, then cotton would not in the future be

slaughtered as now in its helplessness below the cost of production.

"The South is passing through the ordeal that the West experienced some years ago with her 40-cent wheat, resulting in a wholesale mortgaging of farms; and like Brazil, when coffee declined below 7 cents in New York, but Brazil wisely curtailed production, and the same coffee is now commanding in the neighbourhood of 18 cents. This may serve as a lesson for us.

"If an understanding could be arrived at and a general movement be made all along the line before the planting season is upon us, a decided and lasting improvement in prices would quickly follow. Any action to do good will have to be speedily taken, as the time is short.

"If the bankers of every Southern State would take this matter up and act at once, it would be possible to count with certainty upon a great reduction in this year's cotton acreage. Prompt action is needed if any good is to be accomplished."

RUSSIAN TEXTILE INDUSTRIES.

The French Consul at St. Petersburg, in a recent report, says that manufacturing industries in Russia have all experienced a considerable development during the last quarter of the century. Dating from the abolition of serfdom, the principal industries have made such an advance that they are now able to supply all the requirements of the home markets, and the importation of manufactured articles is becoming less every year. It is particularly the textile industries which have benefited by this movement, and these have now become one of the most important branches of the manufacturing interests of the country. The number of spinning mills and cloth factories, which, in 1885, amounted to 2,726, increased in 1889 to 2,979, while the production rose in value from 410 million roubles to 522 millions. In 1885 there were 336 establishments for the production of cotton goods, whose out-turn was valued at 55 million roubles; in 1889 there were 534 factories, with a production valued at 68 millions. Silk goods realised nine millions of roubles in the former year, and 12 millions in the latter. Woollen cloths were produced to the value of 42 million roubles in 1885, and 43 millions in 1889.

Until within a very recent period, the cotton consumed in the Russian manufacturing establishments came from the United States of America, but the energetic measures adopted by the Russian Government with the view of developing the cultivation of the textile in Turkestan and the provinces of Central Asia have produced good results, and, for some time past, the cotton grown in these districts has taken the place of the foreign article. In 1888, 1,054,955 pounds (pound=36 lb. avoirdupois) of cotton were brought into Russia over the Asiatic frontier, and in 1889 1,459,808 pounds, valued at over 10,000,000 roubles. During the same period Egyptian cotton entered into competition with the American raw material. While the imports into Russia from Central Asia and Persia, of cotton, amounted to more than 1,500,000 pounds in 1889, this quantity was considerably increased in 1890; and from this it is deduced that the production of Russian cotton will be called upon in the future to play a very important part in the economy of the country. It is through the custom-house of Astrakhan that this textile is introduced into Russia, where it is sent to Moscow or Warsaw, or direct to the spinning establishments. Foreign cotton enters through the ports of Reval, Liban, St. Petersburg, and Odessa, but it is principally to Moscow and Warsaw that the greater part of it is consigned, these two markets being the centres of the great cotton industry. The Governments of Vladimir and Moscow absorb half of these supplies, and the remainder is taken by Petrokovsk, St. Petersburg, and Esthonia.

The largest number of spindles and looms are found in the province of Moscow, amounting respectively to 847,734 spindles, and 139,226 looms; St. Petersburg has 767,828 and 8,966; Vladimir, 554,148 and 3,606; and Petrokovsk, 595,715 and 10,127. The annual value of the production in Vladimir is estimated at 69 million roubles; in Moscow, 62 millions; in Petrovsk, 30 millions; and in St. Petersburg

26 millions. It has been remarked that the large cotton manufacturing establishments of Moscow have recently opened shops for the retail sale of their goods in that city. This has been done with the double object of selling their goods for cash, and of shewing the excellence of their fabrics, and the favourable comparison they will bear with foreign products. The articles chiefly on sale are nankeens, satinettes, zephyrs, and cotton tissues used in upholstery.

The cloth factory of Grasnick at Drossen has been completely destroyed by fire a short time ago.

The lace-making firm of Bacher and Loon, in Berlin, which has branch establishments in Annaberg, Zwickau, and Eibenstock, has erected a factory in Komotau.

A FRENCH company is establishing a joint-stock cloth factory, with a capital of 2,000,000 roubles, at Bialystok.

The newly established dyeworks of J. K. Poznausk, in Lodz, have been destroyed by fire, with all the machines and goods. The damage is estimated at several hundred thousand roubles.

SOME Germans are flattering themselves that German flannels are gaining more and more favour in Eastern Asia. The goods of this class imported from England into Japan for last year represented only 206,104 *yen*, whereas those imported from Germany represented 715,258 *yen*. It is allowed, however, that the English flannels, though more expensive, are better, as they do not shrink. It is also admitted that in cotton flannels and fustians German industry cannot compete with the native weavers.

THE EXPORTATION OF COTTON YARNS FROM RUSSIA.—At the Glasgow Chamber of Commerce on Monday a letter was read from the Under Secretary for Foreign Affairs stating the amount of the drawbacks to be granted on the exportation of cotton yarns and cloth from Russia. These drawbacks, which will be returned to Russian exporters, vary from 8 per cent. to 13 per cent. on the market price of the goods.

INDIAN PATENT LAWS.—In the House of Commons, last week, in answer to Mr. Leng, Sir John Gorst said: Representations have been made to the Secretary of State to the effect that patentees in British India are precluded from obtaining the advantages conferred by sections 103 and 104 of the Act of 1883 as amended by the Act of 1885. An alteration of the Indian law is required before the necessary order in Council can be issued in this country, and the Secretary of State has recently instructed the Government of India to deal with the subject when their Patent Act comes under amendment.

ENGLISH people who are afflicted by the spelling of foreign names may take comfort from the difficulties experienced by some of their Continental brethren in dealing with English names. One of the most influential of the organs of the German textile manufacturers made not fewer than three mistakes of spelling in a short note of only a few lines on the fall of the chimney at Cleckheaton. The building on which the chimney fell belonged, we are told, to Mr. Barclaugh, and the place was Cleckheaton. After this who can blame us if "Englanders" now and then go slightly astray in reproducing the orthographical horrors which are sometimes met with in Bohemian, Polish, and even in German names?

LABELS FOR THE ORIENT.—A recent letter from Smyrna states that several consignments of goods have been held over by the Turkish Customs officials there, owing to the labelling of the merchandise in question. Care should be taken never to use labels or designs likely to ruffle any Oriental susceptibilities. A few instances in which goods were retained by the authorities may be given:—A case of watches, because the inside cap was stamped "Mashallah," a Turkish word meaning "God preserve you;" cigarette paper stamped with the picture of the Greek Crown Prince and Princess; and pictures of veiled Turkish women and mosques. Of late pictures of scenes from the Grecian war of independence have also been confiscated.

IRELAND AT THE CHICAGO EXHIBITION.—The American Commissioner for Great Britain in a recent address in the United States on the World's Fair at Chicago announced that "one of the most interesting features in the Exposition will be an exhibit prepared and managed by a woman well known in Great Britain—Mrs. Ernest Hart. She will reproduce an Irish village, and within the cottages of this village women who have been taught by her, or by her agency, will be at work weaving cloth, preparing the dyes from peat, and dyeing before your very eyes the product of their looms. Mrs. Hart will also exhibit the product of a factory which she has established in Ireland, where are employed men, women, and boys in turning out many products, examples of which you will see in the women's department. Such establishments as these furnish a solution, in part, of the Irish question." It is intended by Mrs. Hart that the village shall consist of a picturesque street of cottages, in each of which an

Irish hand industry will be carried on by actual peasant workers, imported with their implements of work from county Donegal. The village buildings will, if possible, include a reproduction of an ancient round tower, a Celtic Cross, and the ruins of Donegal Castle.

JUTE AND HEMP MILLS IN BRITISH INDIA.—The following particulars respecting the jute and hemp mills of British India are taken from the latest official returns forwarded to the Board of Trade by the India Office:—There were 25 mills working jute and one mill working hemp at the end of 1890-91, employing a daily average number of 61,915 persons, namely, 37,970 men, 12,472 women, 5,459 young persons, and 4,993 children, besides 1,041 persons undistinguished as to sex and age. The mills contained 8,101 looms and 161,845 spindles. The nominal capital of the mills worked by joint stock companies is stated in the returns at 31½ million rupees (£3,152,000, at the conventional exchange of 10 rupees to the pound); but the figures are not complete, for some of the mills no returns of capital have been furnished. Probably about 3½ or 4 million rupees may be added to the total on account of these. All but two of these mills are in Bengal, most of them in the vicinity of Calcutta. Of the two not in Bengal, one (a small one) is at Vizagapatam and the other at Cawnpore, where it commenced work during the year 1886. The progress of the industry during the last 10 years is shewn by the following figures:—Number of mills 1881-82, 21; 1890-91, 26; number of looms, 5,655 and 8,101; number of spindles, 90,755 and 161,845; number of persons employed, 40,551 and 61,915.

FLAX PRODUCTION IN THE UNITED STATES.—A bulletin on flax production, prepared by Special Agent Hyde, in charge of the division of agriculture at Washington, shews, the total area of land devoted to the cultivation of flax in the United States in 1889 to have been 1,318,698 acres, the production of flax seed 10,250,410 bushels, the production of fibre 241,389 tons, the amount of flax straw sold or so utilised as to have a determinable value 207,757 tons, and the total value of all flax products 10,436,228 dollars. Although flax seed is reported from 31 States, Minnesota, South Dakota, Iowa, and Nebraska produced 80.06 per cent. of the total amount, or 1,035,613 bushels in excess of the entire production of the United States at the census of 1880. Flax is now cultivated almost exclusively for seed, and in the old fibre-producing States its cultivation is almost entirely abandoned. South Dakota had the largest acreage in 1889, and Minnesota the largest production of seed. Of the States containing 1,000 acres or upward in flax Wisconsin has the highest average yield of flax seed per acre, 11.42 bushels, and the highest average value per acre of all the flax products, 13.39 dollars. The average yield for the entire country was 7.77 bushels per acre. Throughout the greater portion of the principal flaxseed-producing region flax straw is of little or no value, and much of the so-called fibre is only an inferior quality of tow, used chiefly for upholstery purposes. There are indications, however, of the revival in the United States of a linen industry that will afford a market for fine flax fibre of domestic production, and revive a branch of agriculture that has for many years been almost extinct. No previous census report contained any statistics of the acreage in flax or of the value of flax products.

Textile Markets.

COTTON.

MANCHESTER, FRIDAY.

Our market seems rapidly drifting into an absolutely unprecedented condition. Cotton continues to steadily decline in value, whilst estimates of the out-turn of the current crop are, by the force of maturing facts, being raised correspondingly higher. Mr. Henry Neill has this week issued a circular giving 9,250,000 bales as his definite estimate. Mr. Neill seems to possess a more pliable mind than the bulk of cotton prophets. He began with comparatively low figures, though not nearly so low as many of the others; these figures he has repeatedly increased, until they now stand fully one million bales above his original forecast. It would not argue much for a person's ability to make an approximately good guess when he makes six or more attempts, which is the case with Mr. Neill, whatever figure may prove to be the exact one, he will be in the happy condition of being able to say on a basis of one or the other of his estimates, "I told you so." Guidance of this kind, however, is not exactly what the trade wants. A broad, comprehensive view and estimate without bias, from a fairly matured condition of facts, is what the trade requires. Most of Mr. Neill's competitors having seen their forecasts so utterly put to rout by the facts, have already prudently retired from the field in order that the poorness of their guessing capability

may not remain too conspicuously prominent. The readers of this report will recollect that as early as the closing weeks of last November we estimated that the current crop would in effect be equivalent to one of 9,400,000 bales. This enormous total, which was not deduced without a careful survey of the facts that had up to that time manifested themselves, was submitted to many of the cotton-dealing brotherhood in Liverpool, and was ridiculed and jeered at—those parties maintaining at that time a most confident assurance that 7,750,000 to 8,000,000 bales would be the extreme possible out-turn of the crop. There is an old saying that those may laugh who win. It is, therefore, perfectly legitimate for us to ask—"Where are those prophets now?" The realisation of these figures necessarily comprised a corresponding reduction in price, and several weeks ago we affirmed that 3½d. per lb. was within a measurable distance. To-day it is 3½d. below that point for futures, and 3½d. above for spot cottons. Practically, therefore, this prediction has also been realised. We do not wish in any sense to be thought to be boasting in this matter, because there really is nothing to boast about. All the facts in which our judgment was based were open to every eye else, but were simply either not read with the necessary care or skill, or read with unbiassed minds. The professional prophets have been utterly out of it, and the fact that this is not a solitary instance ought to induce spinners to carefully consider whether it would not be better to undertake their own thinking for the future. The editor of Messrs. Whitaker, Whitehead & Co.'s Cotton Trade Circular, after going all steam ahead on the wrong tack until the end of the year, felt compelled at that time to reverse his engines, and run as fast in the other direction. In the issue of this circular of the 10th inst. is given an estimate of "8,873,000 over minimum, which, so far," it is affirmed, "is the largest printed estimate yet published." We would refer him to our issue of November 28th last, where, in the article on "The Cotton Position," he will find given the estimate quoted above. Mr. Pasch, of Havre, may also make the same reference with advantage. In writing this, we simply claim credit for *The Textile Mercury*, where credit is due.

COTTON.—The increased steadiness with which the market closed on Friday last was of very short duration. On Saturday, under the indifferent influence of Friday's business in Manchester and enfeebling advices from America, a relapse took place. The continuance in the excess of receipts over last season crushed once more the struggling hopes of the "bulls" that they would see a decline below the parity of those of last year. Both spots and futures gave way, the former fully 3½d., and the latter closed at a reduction all round of 3 points. The official figures for spots were not changed. Monday was a very flat day in cotton, the inherent weakness of the market and the poor advices from America conducing to greatly intensify the depression. Spot cottons were reduced all round 3½d. Other growths were dull and tending to irregularity. Futures opened weak and steadily declined, until at the close they shewed a loss of from 3 to 4 points on the various positions. On Tuesday the market was again very quiet and cotton was freely offered. The official quotations of spots were again reduced 3½d.; and other growths were weaker. Futures fluctuated, losing as much as 4 to 4½ points, but recovered about ½, closing steadily at 2 to 2½ below the previous evening's rates. On Wednesday there was a rather fuller demand, but quite insufficient to overcome the despondency of the market. Spots were the turn easier. Other growths were very idle. In Egyptian brown was reduced 3½d., and in Indian (Dhollerah and Oomrawutte) a like decline was recorded. Futures fluctuated somewhat and finally closed at a decline of 1 to 2 points for the various positions. Yesterday the market shewed symptoms of improvement, and after the early hours were got over futures began to rise, and closed firm at an advance of 3 to 4½ on the day. Spots were correspondingly harder. Brazilian and Egyptian were reduced 3½d., and in Indian, Broach, Bengal, and Tinnivelly were lowered 3½d.

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

	Import.	Forward.	Sales.	Stock.	Actual Export.
American	75,755	54,548	45,920	1,487,310	2,833
Brazilian	—	299	260	45,430	—
Egyptian	6,607	5,671	1,400	132,240	1,785
West Indian	648	445	750	30,180	14
East Indian	100	781	1,050	39,390	716

Total .. 83,110 .. 61,744 .. 49,380 .. 1,734,550 .. 5,318

The following are the official quotations of the Liverpool Cotton Association:—

	G.O.	L.M.	Md.	G.M.	M.F.
American	3½	3½	3½	3½	4
	M.F.	Fair.	G.F.		
Pernam	4	4½	4½		
Ceara	4	4½	4½		
Paraiba	4	4½	4½		
Maranhm	4½	4½	4½		

	Fr.	G.	F.	F.	G.	F.	G.	F.	G.
Egyptian	4 1/4	4 1/2	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4
Datto white	4 1/4	4 1/2	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4
M.G. Broach	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2
Dholerah	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Oomra	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Bengal	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Tinnivelly	3	3	3	3	3	3	3	3	3

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

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

	Satur-day	Mon-day	Tues-day	Wednes-day	Thurs-day	Friday
March	3-37 37	3-33 34	3-30 31	3-30 31	3-30 31	3-33 34
Mar-April	3-37 37	3-33 34	3-30 31	3-30 31	3-30 31	3-33 34
April-May	3-38 38	3-35 36	3-32 33	3-32 33	3-32 33	3-35 36
May-June	3-41 42	3-38 39	3-35 36	3-35 36	3-35 36	3-38 39
June-July	3-45 46	3-42 43	3-39 40	3-39 40	3-39 40	3-42 43
July-Aug.	3-48 49	3-45 46	3-42 43	3-42 43	3-42 43	3-45 46
Aug.-Sept.	3-52 53	3-49 50	3-46 47	3-46 47	3-46 47	3-49 50
Sept-Sept.	3-54 55	3-51 52	3-48 49	3-48 49	3-48 49	3-51 52
Sept-Oct.	3-54 55	3-51 52	3-48 49	3-48 49	3-48 49	3-51 52
Oct-Nov.	3-57 58	3-54 55	3-51 52	3-51 52	3-51 52	3-54 55
Nov-Dec.	—	3-57	—	3-52	3-52	—
Dec-Jan.	—	—	—	—	—	—

Price of Mid-American	3 11-16	3 7/8	3 9-16	3 9-16	3 9-16	3 9-16
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Estimated Sales including Spec. and Export.	7,000 1,500	8,000 1,500	6,000 1,000	10,000 2,000	10,000 2,500	10,000 3,000
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YARNS.—Last week's business in yarns proved, as reported, to have been on a diminishing scale throughout, and Saturday last inaugurated nothing better for the week closing to-day. Yarns are now very commonly selling at prices below any previous record, though cotton has not quite touched an unprecedented point. Of course, to-day, cotton is transformed into yarn at less expense than it was 42 or 43 years ago. But the plight of the spinner to-day is very bad. In every description and in every department slowness reigns supreme. The state of the cotton market on Monday had a very adverse influence upon yarns, buyers everywhere holding aloof. Producers were anxious sellers, but were little rewarded in any direction for their labours. Prices were lower and very irregular. On Tuesday this depression was intensified by Messrs. Neill's circular again advancing their estimate of the crop, bringing their figures up to 9 1/4 million bales. The demand for yarns was as small as it well could be, and the little business that took place was almost solely induced by the temptations spinners placed before buyers. Prices were reduced on an average fully 1/2d. per lb. On Wednesday, yarns showed no improvement, the sales accomplished mostly having something of a sacrificial character about them. Yesterday there was no improvement in the enquiry for yarns in any quarter, and prices in nearly all were irregular, and some very cheap lots for instant delivery may be picked up.

CLOTH.—The business of last week in cloth was not great, but coming upon that of the previous fortnight it was sufficient to enable producers to resist attempts to make further inroads upon their already impoverished margins. Little business is attempted in cloth on a Saturday, and the opening day of the week under notice afforded nothing exceptional in this respect. Nothing stimulating in the cloth market turned up on Monday. So far as could be gleaned, all foreign advices were poor, and if anything came to hand of value it was not deemed an opportune time to introduce it to the market. Manufacturers maintained a comparatively steady front. On Tuesday, cloth producers, encountered an experience by no means exhilarating. Still, there was nowhere any particular depression, excepting, perhaps, in Burnley printers, which are in superabundant supply. The better grades are not quite so depressed. Little change was recognisable in any section of the cloth market on Wednesday. Yesterday there was no material change in the demand for cloth, which continued slow in all departments, with prices tending slightly in favour of buyers.

To-day the cotton market maintains last night's improvement, but it makes no further progress. For yarns there is perhaps a trifle more enquiry at the lowest point touched, but not much business results. Cloth is quiet and practically unchanged.

WOOLLENS AND WORSTEDS.

BRADFORD.—The wool trade is dull. Yarns are quiet, only urgent requirements being filled just now. There is no appreciable change in quotations, but some

foretell a further decline, unless the consumption increases at a greater rate. The latter does not seem to be a probable consummation just now. Botany tops are steady. Merinos are rather easier to buy. Mohair and alpaca are slow of sale at late rates. There is no material change in the yarn market. Merchants give out very few orders to spinners, who complain of the apathy which prevails. This is the condition of business for both home and export. The stocks of spinners are accumulating, and the lessening of production by running short time is still spoken of as the only means of relief. The piece market remains flat. A moderate business is doing for the home market, and also in light worsted coatings for the American market. The shipping trade as a rule is extremely dull, and the American coatings referred to are not bought in large quantities.

LEEDS.—Prices are all round very low, and the foreign trade keeps dull. Both spring and summer goods are not moving off with the average briskness. Winter orders are, however, being booked to a fair extent. Stocks of heavy goods have been brought down to a very low level, owing to the long and severe winter. Black goods are still in request, and as quotations are low buyers have had no difficulty on this score. New styles in chevrets are bought. The Italian trade has been quiet of late, repeat orders from the Peninsula being rather scanty.

HUDDERSFIELD.—The stoppage of the collieries has not had the effect anticipated. Manufacturers laid in a good supply of coal before the miners commenced playing, and upon these they are now drawing. A week's supply is stacked at many of the mills, and a further week's supply is kept by friendly merchants on account of manufacturers. Many mill owners say they would rather close their mills for a few days than pay higher prices for coal, as under existing conditions the trade is not sufficiently remunerative. There is a steady demand for some specialities, but the shipping trade is dull.

ROCHDALE.—Merchants are now directing their attention more particularly to collecting samples for comparison for the next season's trade. A few orders have been placed. It is expected that for some weeks merchants will devote most of their attention to preliminary enquiries before giving out the orders. Their own stocks and those of the manufacturers are exceedingly low. The trade is regarded as being in a healthy position, and the opinion is general that the consumption has at length overtaken the present rate of production. Prices keep firm.

GLASGOW.—Messrs. R. Ramsey and Co., wool brokers, in their report dated 15th March, say—Wool: In the wool market there is practically no change this week. The demand is still slow and dragging, both on home and export account, users operating sparingly, and only for immediate wants. Prices are nominally firm. The next series of public auctions take place here on 23rd current. Sheepskins: The supply is well maintained, with a large proportion of prime skins. Depression and uncertain values still continue in pelts and skin wools. Prices are therefore somewhat irregular.

FLAX AND JUTE.

DUNDEE, WEDNESDAY.—The market continues depressed. Jute spinners and weavers have largely diminished production, both by stopping machines and by short time. But instead of values rising in consequence, the prices of all kinds of jute goods continue to droop. Jute for extreme prices, say £21 for firsts on the spot. Some sellers willing to secure their profit take five shillings less, but as yet, there is no sign of any important concession in the price of the raw material. The figures still indicate a short shipment to Europe, on the year, of a million bales. This on a total average shipment of about two and a half millions is an important shortage, and makes holders of jute confident. The result is a crisis in the trade which perplexes the most experienced business men. Jute yarns droop. For 8 lb. cop is. 10 1/2d. was easily got a few weeks ago. To-day is. 8 1/2d. is the best price obtainable, a price utterly out of keeping with the selling price of jute. Ordinary warps are is. 10 1/2d. to is. 11d. For Hessians the demand seems still inadequate to take off even the diminished production, and to effect sales manufacturers would have to submit to a further fall in price. The remarkable thing in the midst of all this is the fact that the finest classes of goods retain their price, and the best makers can only enter orders for future forward delivery. Flax is affected by the stoppage of a St. Petersburg bank. Russian exchange, which is very unstable, had been rising for a day or two. To-day it is again lower, and this of course instantly affects sterling values here. Sellers are, therefore, able to take a little less for Riga, but for fine qualities of brown flax it is not yet possible to effect purchase, at any reduction. Flax and tow yarns

of good warp quality are firm at the recent rise. The demand for linens is good, and both America and other markets ask goods for forward delivery. The unfortunate state of trade in the English counties affected by the Coal Crisis prevents orders coming in, else one might almost call the linen trade of our district prosperous. In Arbroath the canvas trade is still quiet. Dundee fancy jute goods are dull, and prices weak, save the exceptional fabrics in new and special designs. Cords, rope, and twines all in good demand.

HOSIERY AND LACE.

LEICESTER.—Although transactions in raw wool are not extensive, consumers would be ready to operate more freely if quotations were lower. At present they purchase very cautiously. Good wools, however, command fair rates. Tuesday's trade showed if anything a slight increase in the turnover, and prices are less irregular. Growers and country dealers are apparently not of the opinion that any further immediate fall in prices is likely, for they are holding back supplies in many instances in the hope of seeing prices strengthen. Their views, however, are not those of consumers, as is evidenced by the conduct of the latter. Yarns are dull and spinners express great dissatisfaction at the quotations they are getting. Hosiery buyers are operating more freely, although dissatisfaction is still expressed at the character of the trade. Elastic webblings are in fair request.

NOTTINGHAM.—The better classes of cotton laces are in larger demand, and it would appear from the signs of the times that an improvement in the lace trade is probable. Lever's machines have so far chiefly benefited by the change. This is evident from the reports presented at various large factories. Silk lace is rather quiet. The same remark applies to common cotton laces. Moderate orders for cotton embroidery edgings and trimmings are in course of execution, and there is a steady demand for mob-caps, aprons and other made-up goods. Novelties in frillings are attracting some attention. The curtain trade is unhealthy. Sales in the aggregate are large, but profits are very small. The plain net trade is in much the same condition as of late, makers being only moderately well engaged. The hosiery trade does not improve to any extent, and the demand for most classes of goods is inactive. The local market for both lace and hosiery yarns is quiet, and quotations are still low. Enquiries for raw and spun silk are not numerous.

DRY GOODS.

MANCHESTER.—The turnover this week has been fair, the advent of more spring-like weather having been followed by a briskening in the fancy departments. Laces have moved off with much greater rapidity, especially in the fancy cotton, and the reports from Paris and other fashionable centres shew that the material is being used now much more extensively by the *couturiers*. There is not much doing, however, in silk lace, which for so long has been dull and unsatisfactory to producers and distributors alike. The carpet trade does not maintain the rate of improvement recently noted. It is very quiet, in fact, except in a few branches, and distributors find it difficult to infuse life into the business. Prints are steady as far as the home demand is concerned. Shippers, however, are not doing much.

Joint Stock and Financial News.

NEW COMPANIES.

BRADFORD AND DISTRICT DYING COMPANY.

Capital, £31,000 in ten £100 preference shares and 3,000 £10 ordinary shares. Object, to acquire as a going concern the Old-lane Dyeworks, situate at Old-lane, Halifax, in accordance with two agreements, each expressed to be made between J. M. Kirk and Sons, Limited, of the one part, and C. H. Priestley, on behalf of this company, of the other part, and to carry on business as dyers, stovers, and finishers in all its branches. Subscribers:—

	Shares.	Pref. Ord.
J. Booth, Halifax	1	1
J. Drummond, 4, Friar-lane, Bradford	1	1
W. H. Maynard, Shipley, Yorkshire	—	1
W. Maynard, Baildon, Yorkshire	1	1
C. H. Priestley, Cottingley Hall, Bingley	5	1
W. A. Whitehead, Baildon	2	1
A. Wilkinson, Halifax	—	1

The first directors are J. Booth, W. E. B. Priestley, W. A. Whitehead, and A. Wilkinson. Qualification, £500. Remuneration: Chairman, £100 per annum; ordinary directors, £50 per annum.

INVERNESS TWEED MILL COMPANY.

Registered in Scotland, with a capital of £20,000 in £1 shares. Object, to acquire the undertaking of the Inverness Tweed Mill Company (in liquidation), and to carry on the business of woollen manufacturers in all its branches. Subscribers:— Shares

- J. C. McEwen, manufacturer, Inverness... 1
P. G. Spence, East India merchant, 17, Philpot-lane, London... 1
Tina Spence, 57, Maida-vale, London... 1
Emily McEwen, Trafford Bank, Inverness... 1
W. C. McEwen, W.S., Edinburgh... 1
T. H. Smith, warehouseman, Inverness... 1
A. M. Spence, 57, Maida-vale, London... 1
H. Wallis, merchant, 17, Philpot-lane, London... 1
Messrs. J. C. McEwen and P. G. Spence are to be the first directors, Mr. McEwen to be managing director.

CALICO PRINTERS' SYNDICATE, LIMITED.

Registered by Grundy, Kershaw and Co., 4, Newcourt, Lincoln's-inn, with a capital of £5,000 in £5 shares. Object, to promote co-operation among the proprietors of calico-printing businesses and other allied undertakings. There shall not be less than three nor more than seven directors. The first are Robert Boyd, G. W. Taylor, and R. W. Thom, all of Manchester. Qualification, £250. Remuneration to be determined.

ROBERT PEEL AND COMPANY, LIMITED, MANCHESTER.

Capital £20,000 in £10 shares. Object, to acquire the undertaking now carried on at Cambridge-street Finishing Works, Cambridge-street, Manchester, by R. Peel and Co., in accordance with certain agreements made between R. Peel and K. P. Birley, and with R. Peel, J. H. Helsby, and H. Schofield of the first part, and this company of the other part respectively; generally to carry on business as dyers and finishers, makers-up, and packers of every description of textile goods. The first directors are R. Peel, J. H. Helsby, H. Schofield, A. Birley, and K. P. Birley. Qualification, 50 shares. Remuneration to be determined.

THE COTTON CORD AND VELVET MACHINE CUTTING CO., LTD.

Capital, £20,000, divided into 2,000 ordinary shares of £10 each. Object, to acquire, work, and sell the English and Foreign Patents for cutting fustians and velvets by power, recently taken out by Messrs. C. W. Keighley and T. B. Keighley, of the firm of Lockwood and Keighley, woollen manufacturers, of Upperhead Mills, Huddersfield, and Wm. Netherwood, the manager of their cord cutting department. The total price to be paid by the Company for the patent rights will be £9,000, payable in fully paid up ordinary shares of the company. Subscribers:— Shares

- C. W. Keighley, J.P., Huddersfield... 1
T. B. Keighley, Huddersfield... 1
Wm. Netherwood, manager, Huddersfield... 1
J. C. Fielden, manufacturer, 12, Lever-street, Manchester... 1
G. A. Robinson, accountant, 10, St. James's-square, Manchester... 1
C. H. Bingham, electro-plate manufacturer, Sheffield... 1
M. H. Schunck, Finndale House, Grundisburgh, Suffolk... 1
The first directors are the above-named C. W. Keighley, T. B. Keighley, and W. Netherwood. Two others are to be appointed. Registered offices, 10, St. James's-square, Manchester.

BRITISH FLAX AND JUTE COMPANY, LIMITED.

Registered by Grundy, Kershaw, and Co., 4, Newcourt, Lincoln's-inn, W.C., with a capital of £50,150 in £1 shares, 150 of which are founders'. Object, to acquire from the Barrow Flax and Jute Company, Limited, and with a view thereto to carry into effect three agreements made (1) between the Barrow Flax and Jute Company, Limited, of the one part, and this company of the other part; (2) between his Grace the Duke of Devonshire of the one part and this company of the other part; and (3) between Thomas Briggs of the one part and this company of the other part; generally, to carry on business as spinners, manufacturers, bleachers, dyers, and dealers in jute, flax, hemp, cotton, and other fibrous and textile substances; with extensive special powers. Subscribers:— Shares

- T. Briggs, 21, Major-street, Manchester... 1
W. Fleming, 21, Major-street, Manchester... 1
T. E. Briggs, 21, Major-street, Manchester... 1
H. Miller, 16, Kennedy-street, Manchester... 1
A. J. Briggs, 21, Major-street, Manchester... 1
E. Nichols, 16, Kennedy-street, Manchester... 1
W. Morrison, 14, Cavendish-grove, Eccles, Lancs... 1
Mr. T. Briggs has been appointed managing director, and the other directors are to be appointed by the subscribers to the memorandum of association. Qualification, £2,000. Remuneration, £300, divisible.

Gazette News.

PARTNERSHIPS DISSOLVED.

C. A. Letzon and O. A. Thoene, Addle-street, London, soft goods merchants; as regards O. A. Thoene.
T. and J. Baxter and O. A. Jowett, Apperley Bridge and Leeds, cloth manufacturers.
Joseph Barker and Son, cloth manufacturers, Holybrook Mills and Canal Mills, Apperley Bridge; and at King-street, Leith.

Patents.

NOTICE OF REMOVAL AND CHANGE OF FIRM.

E. K. DUTTON & CO.

(Late DUTTON & FULTON),
CHARTERED PATENT AGENTS
Removed from 1, ST. JAMES'S SQUARE, to QUEEN'S CHAMBERS, 5, John Dalton St., MANCHESTER.

SPECIFICATIONS PUBLISHED.

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

- 1891.
2,788 TABARD and others. Pile fabric.
3,307 OAKES and LEIGH. Looms.
3,695 HIGGINSON. Carding engine flats.
4,929 HOPFGAARD (Jensen). Sacks.
4,980 RAMSDEN and WALTON. Gilling and drawing wool, etc.
5,984 WILLCOX (Farbenfabriken vorm. Fr. Bayer and Co.). Azo colouring matters.
6,281 WILSON, J. W. and W. B. Flanged bobbins.
6,472 WOODCOCK and others. Dyeing machines.
6,600 GREEN. Carding engines.
6,601 SMITH, J. and I. Washing and scouring wool, etc.
6,675 THOMPSON. Slubbing and roving frames.
6,769 WARD and LANCASHIRE. Circular knitting machines.
6,786 JOHNSON (Badische Anilin und Soda Fabrik). Hydrazene, etc.
15,437 REUTER. Loom-shedding apparatus.
17,096 STOTT. Cutting bagging cloth, etc.
1892.
171 BARNETT and BLACK. Combing fibres.

ABSTRACTS OF SPECIFICATIONS.

14,432. Sept. 13, 1890. Dyes. J. DAWSON, Kirkheaton Colour Works, near Huddersfield, and R. HIRSCH, Huddersfield.

Azo dyes.—Relates to the process described in Specification No. 3,503, A.D. 1885, of preparing a yellowish red substantive colouring matter by the action of one molecule of tetrazo-dithiol on two molecules of naphthylamine-monosulpho acid. Consists in modifying the process by employing naphthionic acid in large excess, viz., 4 to 6 molecules, and in allowing the mixture to stand for several days, or a week. The black precipitate first formed gradually assumes a red yellow tint, which, on the addition of a drop of caustic soda, turns a brilliant scarlet. The mixture is diluted, made alkaline with caustic soda, and the bluish red colouring matter is precipitated by common salt. The excess of naphthionic acid is recovered from the mother liquor by precipitation with hydrochloric acid. The use of excess of amine or sulpho acid thereof is stated to be applicable in similar cases.

14,431. Sept. 13, 1890. Looms. A. FLATHER, 18, Lairdridge-lane, W. FLATHER, 46, Lairdridge-lane, and D. WRIGHT, 3, Quaker-terrace, Little Horton, all in Bradford.

Jacquards.—The lifting books of double lift machines are formed with loops c for resting on rods d on the bottom board, and with loops or bends k for resting upon a stationary griffe C when they are required to remain up after having been raised by the ordinary griffes. Two books are employed to each neck of the harness. The card cylinder is operated from a grooved cam, which ensures the descent of such books as are not to remain up.

14,412. Sept. 13, 1890. Knitting. N. ADUCCI and R. and C. PETRINI, all of Forli, Emilia, Italy.

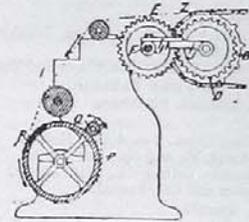
The machine consists of a traversing rack or comb, working in combination with a shuttle and an ordinary sewing-machine needle, and is formed either as an attachment to an ordinary sewing-machine or as a separate machine. Drawing.

14,416. Sept. 13, 1890. Dyes. J. V. JOHNSON, 47, Lincoln's Inn Fields, Middlesex.—(Badische Anilin und Soda Fabrik; Ludwigshafen-on-Rhine.)

Azo dyes.—Consists in combining the alpha-amido-beta-naphthoxy-acetic acid, or the alpha-amido-beta-naphthoxy-acetic-beta-sulpho acid described in Specification No. 12,386, No. A.D. 1890, with a diazo or tetrazo compound to form an amido-azo body, and then diazotising this body and combining the resulting diazo or tetrazo compound with amido or phenolic bodies, such as are usually employed in the manufacture of azo dyes. The preparation of a green black colouring-matter, which is fast to soap and dyes wool directly from an acid bath, from the anhydride of alpha-amido-beta-naphthoxy-acetic acid, Freund's naphthylamine-disulpho acid, and beta-naphthol-disulpho acid (R Salt) is described as an example. Other naphthylamine sulpho acids, or o- or p-amido-naphthoxy acid may be used in the first step, and alpha or beta-naphthol or other sulpho acids thereof in the second state.

14,453. Sept. 13, 1890. Texturing fabrics. J. W. W. SHAW, John-street, and J. STROTTER, Ryding's Mill, both in Rochdale.

The cloth Z passes over the roller Q in contact with the measuring drum P, which is connected by spur gearing with the



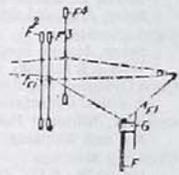
shaft F. This shaft carries a spur wheel E, which gears with a wheel D attached to one of the pitch chain wheels B, and can be shifted laterally with the chain. The relative positions are maintained by a compound link J, J', formed as shewn.

14,457. Sept. 13, 1890. Traversing warp machines, etc. F. SUBBUK, Market-street, Works, Hileston.

The warp threads are tensioned by a flanged tube or roller, which rests against the threads and the bobbins, and may be weighted by means of a forked wire weight-carrier, suspended from the ends of the tube or roller.

14,503. Sept. 15, 1890. Looms. W. DENT, 68, Robinson-street, J. PICKLES, 25, Travers-street, R. WHITAKER, 49, Thorn-street, and T. SCHOLFIELD, 14, Brennand-street, all of Burnley.

Selvages, Forming.—For weaving selvages in twilled fabrics, the usual "boats" are dispensed with, and a staple E, sliding in the bracket G, is employed instead and made to bear on the selvage threads F1, which pass through the loops of the heads, F2, F3, above the eyes. The other selvage threads pass through the eyes of the head F4. Two binder threads at the extreme edges of the warps are respectively passed through the eyes of the heads F2, F3. The invention may be modified.



14,685. Sept. 17, 1890. Knitting. M. PULLEN, Lower Cotes, Brighouse, Yorkshire, and T. M. PULLEN, Diss, Norfolk. Circular machines.—In order to allow large bobbins to be used in machines in which the ribbing dial is held stationary by a fixed radial arm, the arm is divided into two parts, so that the thread can pass between them. Drawing.

14,810. Sept. 19, 1890. Knitted garments. S. HODGKINSON, 12, Hazel Grove, Bolton.

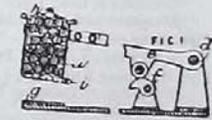
Vests, shirts, bodices, and like garments, made on circular knitting machines, are formed with a mock seam down each side and a welt at the bottom.

14,836. Sept. 19, 1890. Dyes. J. V. JOHNSON, 47, Lincoln's Inn Fields, Middlesex.—(Badische Anilin und Soda Fabrik; Ludwigshafen-on-Rhine.)

Indulines.—Relates to the manufacture of a colouring matter which dyes wool a yellowish red from an acid bath. Consists in heating the higher sulpho acids of a red basic naphthalene colouring matter described in Specification No. 15,259, A.D. 1888, or the crystallisable trisulpho acid or the uncrystallisable sulpho acid contained therein, with dilute sulphuric acid at 125°-150° C. The new product is precipitated by ice and purified by converting it into its sodium salt and reprecipitating by acidifying a solution of the latter.

14,839. Sept. 19, 1890. Bleaching, dyeing, etc. O. HOFFMANN, Neugersdorf, Germany.

Relates to a process and apparatus for washing, bleaching, and dyeing fibrous materials. Consists in means for expelling the air to facilitate penetration of the treating liquid. In Fig. 1, apparatus for subjecting the material covered with liquid to concussion is shewn, consisting of a vessel a provided with a liquid supply pipe b and exit pipe c, and attached to the end of a lever e pivoted at d. The lever is raised by a cam f and then allowed to fall, so that the vessel a strikes a caoutchouc pad g.



In Fig. 3, a centrifugal drum h is shewn partially closed in at the top and with no exits except the cock L. During rotation the air is forced out of the material by centrifugal action and by the centrifugal pressure of the liquid. After impregnation of the material, the liquid is flung out through the cocks or valves i,

which may be opened during motion by a sleeve on the drum shaft and suitable connections, or they may be provided with springs which yield under the pressure induced by very rapid rotation. A double bottom may also be provided to facilitate removal of the liquid. An interior open work cage may be used to keep the air-bled goods under the liquid. Warp yarns in strata are rolled up cylindrically and partially twisted before introduction into the drum. Yarns in skeins are spread out in ring form. Cops are placed radially. Fabrics in the piece are rolled up cylindrically in full width in an openwork vessel which is placed in the drum.

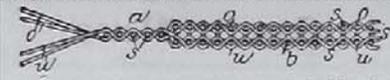
14,897. Sept. 20, 1890. **Dyeing, etc.** W. P. THOMPSON, 6, Lord-street, Liverpool.—(F. Cornfeld; 3, Housageplatz, Prague, Austria.)

Relates to a method and apparatus for dyeing, bleaching, washing, steaming, or otherwise treating yarns in cops or similar form. Consists in fitting the cops into receptacles provided with obstructions for delaying the passage of the liquid and facilitating its access to all parts of the yarn. These obstructions are flanges on hinged plates, arranged when closed to penetrate between the coils of yarn. Under the cover are placed other obstacles in the form of hinged rings, which also penetrate between the coils. The receptacles are placed over conical nozzles rising from a false bottom in the treating vessel, a tight joint being formed by a rubber plate. The tops of the receptacles pass through apertures in a plate, and the liquid is circulated through the cops by suitable apparatus. *Drawings.*

15,002. Sept. 23, 1890. **Sacks.** R. A. MATTHEW, Bretting, near Palmita, Saxony.

Sacks are woven seamless by passing the weft alternately

between an upper and lower set of warp threads *a* and *w* respectively, the bottoms being formed by weaving these two sets of



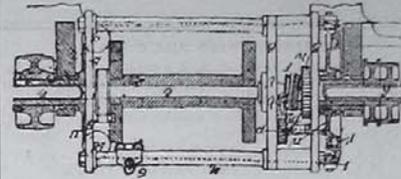
warp threads together as at *a*. The tubular portion *b* is made of sufficient length for two sacks.

15,012. Sept. 27, 1890. **Spinning.** W. R. LAKE, 45, Southampton Buildings, Middlesex.—(E. H. Chase; 8, Sixth-street, Haverhill, Mass. U.S.A.)

Cotton gins.—In roller gins the beater or stripper consists of a roller provided with radial wings, which are slid into the longitudinal grooves in the collar, and are secured by end collars. *Drawings.*

15,052. September 27, 1890. **Spinning.** E. DAWES, 3, 67, Frankford Avenue, Philadelphia, Pennsylvania, U.S.A.

Consists of a machine for spinning rope yarns or for making rope, twine, or cord, by twisting a number of strands together. The spindles or strands are passed through the hollow shaft *f* and twisted together by the flyer *B*, the twisted strands after passing over the haul pulleys *F* being wound on to the bobbin by a reciprocating guide *G*. The haul pulleys are driven by spur gearing *H* and a pinion on the shaft *I*. The guide *G* is traversed along a grooved rod *M* by means of a cord *L* which is wound on to drums *I* connected by bevel gearing with a loosely mounted mangle wheel *N*, which is driven from the shaft of one of the haul pulleys through level gearing *O*, *P*, worm gearing *A*, *pi* and



inion *n*. In a modification, a drum which forms part of the hub of the mangle wheel *N*, is employed in place of the independent drums *I*.

PATENTS.
W. P. THOMPSON & CO.
Agents for procuring Patents and Registering Trade Marks and Designs.
6, Bank St. (Exchange), Manchester.
6, Lord St., LIVERPOOL; and 323, High Holborn, LONDON.
Largest Patent Agency in Great Britain.
"Facts for Inventors" (Trifling sent free on application.)

TEXTILE MACHINERY, APPLIANCES, &c.—DIRECTORY OF MAKERS.

Auctioneers:
Rushton, Edward, and Son, Blackburn, and Manchester.
Salisbury & Hamer, Blackburn and Manchester.

Bandings, Tape and Tubular:
Hart, Thomas, Blackburn.

Belting:
Fleming, Thom., Son, & Co., Halifax.
Reddaway, F., and Co., Pendleton.
Rossendale Belting Co., Manchester.
Sampson and Co., Stroud.

Bobbins, Spools:
Dixon, John, & Son, Steeton, near Keighley.
Kay, John, Rochdale.
Livesey, Henry, Limited, Blackburn.
Wildman, T., & Co., Caton, Lancashire.
Wilson Brothers, Limited, Todmorden.

Boilers:
Fernibough, J., & Sons, Stalybridge.
Galloways, Limited, Manchester.

Braiding Machinery:
McGowan & Hadwen, Manchester.

Calenders:
Hall, Robert, & Sons, Bury.
Hoyle, E., and Sons, Limited, Halifax.
Riley, J. H., and Co., Bury.

Card Clothing:
Sykes, Joseph, Brothers, Huddersfield.
Wilson & Ingham, Liversedge.

Card Grinding Machinery:
J. Jones, Dukinfield.

Cement, Mineral Fusible:
Fox and Williams, Manchester.

Chaining Machine:
Hurst, W., & Co., Rochdale.

Cop-Tubes:
Jagger & Co., Oldham.

Cop-Tubing Apparatus:
Jagger and Co., Oldham.

Cotton Driving Ropes:
Hart, Thomas, Blackburn.

Crystoleine:
Wells, M., & Co., Manchester.

Doffing Comb Motion:
Brooks & Doxey, Manchester.

Driving Ropes, Bandings, &c.:
Hart, Thomas, Blackburn.
Kenyon & Sons, Dukinfield.

Drying Machinery:
Hall, Robert, & Sons, Bury.
Whiteley, Wm., & Sons, Huddersfield.

Electric Lighting:
Woodhouse & Rawson, United, Ltd., London.

Emery Filleting:
Dronsfield Brothers, Oldham.

Engines:
Goodfellow, Ben., Hyde.
Musgrave and Sons, Ltd., Bolton.

Fire Hose:
Reddaway, F., & Co., Pendleton.

Fire Pumping Engines:
Worthington Pumping Engine Co., London and Manchester.

Fustian Cutting Machines:
Lockwood and Keighly, Huddersfield.

Humidifiers:
Matthews and Yates, Manchester.
Parsons, P., Blackburn.

Hydraulic Presses:
Dickinson, Wm., & Sons, Blackburn.
Hall, Robert, & Sons, Bury.
Livesey, Henry, Limited, Blackburn.

Hydro-Extractors:
Broadbent, Thomas, and Sons, Huddersfield.
Watson, Laidlaw & Co., Glasgow.

Indicators:
Orme, G., and Co., Oldham.

Jacquard and Card Cutting Machinery:
Ayrton, Wm., and Co., Manchester.
Devoe & Co., Manchester.
McMurdo, James, Manchester.

Knitting Machinery:
Harrison, W., Manchester.
Bothwell, W. & Co., Limited, Bolton.

Lattices, Pegs, Jacquard Slips, &c.:
Livesey, Henry, Limited, Blackburn.

Looms, etc.:
Butterworth and Dickinson, Burnley.
Dickinson, Wm., & Sons, Blackburn.
Hacking and Co., Bury.
Hall, Robert, and Sons, Bury.
Hutchinson, Hollingworth, and Co., Dobeross, Oldham.
Livesey, Henry, Limited, Blackburn.
McGowan and Hadwen, Manchester.
Platt Brothers and Co., Limited, Oldham.
Tattersall & Holdsworth, Burnley.

Machinery (Bleaching, Dyeing, Printing, &c.):
Hawthorn, John, & Co., New Mills, Stockport.
Dickinson, Wm., & Sons, Blackburn.
Hall, Robert, & Sons, Bury.
Klauder-Weldon Dyeing Machine Co., Huddersfield.
Mather and Platt, Manchester.
Whiteley, Wm., & Sons, Huddersfield.

Machinery (Cotton Preparation, Spinning, Doubling, etc.):
Ayrton Wm., and Co., Manchester.
Bethel, J., Manchester.
Brooks & Doxey, Manchester.
Coulthard, T., & Co., Preston.
Curtis, Sons, & Co., Manchester.
Dobson & Barlow, Ltd., Bolton.
Guest and Brookes, Manchester.
Hetherington, John, & Sons, Ltd., Manchester.
Hall, Robert, & Sons, Bury.
Howard and Bullough, Ltd., Accrington.
Lees, Asa, and Co., Limited, Oldham.
Lord Brothers, Todmorden.
Platt Brothers and Co., Limited, Oldham.
Stott, J. H., Rochdale.
Stubbs, Joseph, Manchester.
Tattersall & Holdsworth, Burnley.
Taylor, Lang and Co., Stalybridge.
Threlfall, Rd., Bolton.

Machinery (Flax, Tow, Jute, &c., Preparation and Spinning):
Fairbairn, Naylor, Macpherson & Co., Leeds.

Machinery (Sewing and Card-lacing):
Singer Manufacturing Co., London.

Machinery (Thread):
Ayrton, Wm., and Co., Manchester.
Brooks & Doxey, Manchester.

Machinery (Silk):
Brooks & Doxey, Manchester.
Coulthard, T., & Co., Preston.
Dobson & Barlow, Ltd., Bolton.
Guest and Brookes, Manchester.
Hall, Robert, & Sons, Bury.
McGowan and Hadwen, Manchester.
Platt, Brothers and Co., Limited, Oldham.
Stubbs, Joseph, Manchester.
Sykes, John, and Sons, Huddersfield.
Taylor, Lang and Co., Limited, Stalybridge.

Machinery (Sizing, Filling, &c.)
Dickinson, Wm., & Sons, Blackburn.
Hall, Robert, & Sons, Bury.
Livesey, Henry, Limited, Blackburn.
Whiteley, Wm., & Sons, Huddersfield.

Machinery (Soaping, etc.):
Mather and Platt, Manchester.

Machinery (Woolen and Worsted):
Brooks & Doxey, Manchester.
Coulthard, T., & Co., Preston.
Curtis, Sons, & Co., Manchester.
Dobson & Barlow, Ltd., Bolton.
Guest and Brookes, Manchester.

Hetherington, John, & Sons, Ltd., Manchester.
Hall, Robert, & Sons, Bury.
Lees, Asa, and Co., Limited, Oldham.
Platt Brothers and Co., Limited, Oldham.
Stubbs, Joseph, Manchester.
Sykes, John, and Sons, Huddersfield.
Taylor, Lang and Co., Stalybridge.
Tattersall & Holdsworth, Burnley.
Whiteley, Wm., & Sons, Huddersfield.

Needs for Hosiery, &c. Machinery:
Ellis, Philip, Lenton, Nottingham.

Oil:
Wells, M. & Co., Manchester.

Oil Cans and Oilers:
Jagger & Co., Oldham.

Oilcloth Machinery:
Ayrton, Wm., and Co., Manchester.

Patent Agents:
Dutton E. K., & Co., Manchester.
Thompson, W. P., & Co., Manchester, Liverpool and London.

Pickers:
Bromley, Thomas, Bolton.

Pistons:
Lancaster and Tonge, Pendleton.

Pulleys:
Richards, Geo., and Co., Broadheath.
"Unbreakable" Pulley and Mill Gearing Co., Limited, Manchester.

Pumping Engines:
Worthington Pumping Engine Co., London and Manchester.

Roller Leather:
Meredith-Jones, J., and Sons, Wrexham.

Rust Preventives:
Wells, M., & Co., Manchester.

Shuttles:
Hall & Sons, Bury.
Kay, John, Rochdale.
Livesey, Henry, Limited, Blackburn.
Wilson Brothers, Limited, Todmorden.

Shuttle Swells:
Hall, Robert, & Sons, Bury.
Livesey, Hy., & Co., Ltd., Blackburn.
Whalley, J., Blackburn.

Sizing and Filling Preparations:
Adley, Tolkien, and Co., Blackburn.
Eastwood, James, Manchester.

Smoke Consumers:
Automatic Smoke Prevention Syndicate, Ltd. Manchester.
Groaves, W. McG., Manchester.

Sprinklers, Automatic:
Dowson, Taylor & Co., Ltd., Manchester and London.
Witter & Son, Bolton and London.

Steam Traps:
Lancaster and Tonge, Pendleton.
Whiteley, Wm., & Sons, Huddersfield.
Crowley and Co., Ltd., Sheffield.

Temples, etc.:
Blezard, James, and Sons, Padiham.
Brooks & Doxey, Manchester.
Hall, Robert, & Sons, Bury.
Lupton Brothers, Accrington.

Tools (Machine):
Hetherington, John, and Sons, Manchester

Ventilation:
Matthews and Yates, Manchester.
Parsons, P., Blackburn.
Pickup, J. H., & Co., Ltd., Bury.

Warping Machinery:
Bethel, J., Manchester.
Hall, Robert, & Sons, Bury.
Livesey, Henry, Limited, Blackburn.
Stott, J. H., Rochdale.
Whiteley, Wm., & Sons, Huddersfield.

Waste (Cotton) Picking Machinery:
Brooks, Samuel, Manchester.

Wool Extractors:
Jarman & Son, Huddersfield