

The Textile Mercury:

A Representative Weekly Journal for
Spinners, Manufacturers, Machinists, Bleachers, Colourists, and Merchants,
 In all Branches of the Textile Industries.

Vol. III.—No. 75.

SATURDAY, SEPTEMBER 27TH, 1890.

PRICE
 THREEPENCE.
 Annual Subscription, 12s. Post free.
 Six Months " 6s " "
 Three " 3s " "
 For Foreign Subscriptions, see first column below.

TO GREY CLOTH AGENTS, YARN AGENTS,
 ETC. A leading Insurance Company can offer Special
 Terms to gentlemen having good connections and opportu-
 nities of inducing business in the Textile Trades. Apply
 E 6, Textile Mercury Office.

The Textile Mercury.

OFFICES: 23, STRUTT STREET, MANCHESTER:
 MARSDEN & Co., Publishers.

LONDON OFFICE—121, NEWGATE STREET, E.C.:
 Mr. C. VERNON, Representative.

NEW YORK (U.S.A.) OFFICE—95, DUANE STREET,
 NEW YORK CITY

Mr. BYRON ROSE, Representative,

to whom subscriptions from readers in the United States and
 Canada may be forwarded.

Editorial Notices.

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

. Readers at home and abroad are invited to avail them-
 selves gratis of our columns, for the purpose of entering into
 communication with machine makers, or others able to supply
 their wants, and for obtaining any other information on
 textile matters which they may desire. Their names will not
 be published unless requested.

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.

Publishers' Notices.

All remittances to be made payable to Marsden & Co., 23,
 Strutt Street, Manchester.

Copies of the Textile Mercury may be obtained by order
 through any newspaper in the United Kingdom, and also from
 the following Wholesale Agents:

MANCHESTER: Mr. John Heywood; Messrs. W. H. Smith
 and Son.

ABERDEEN: Messrs. W. and W. Lindsay.

GLASGOW: Messrs. J. Menzies and Co.

EDINBURGH: Messrs. J. Menzies and Co.

LONDON: Mr. C. Vernon, 121, Newgate-street, E.C.

SUBSCRIBERS' COPIES.—THE TEXTILE MERCURY will be
 forwarded to any part of the United Kingdom, from any date,
 post free, for 12/6 per annum; 6/6 for Six Months; 3/6 for
 Three Months.

Abroad (thin paper edition): India, Ceylon, China, Hong
 Kong, Japan, Singapore, Philippine Isles—One year, 17 shil-
 lings; six months, nine shillings; three months, five shillings.
 Other places: One year, 15 shillings; six months, seven
 shillings and sixpence; three months, four shillings. (Note.—
 Readers in the United States, Canada, Mexico, and other
 places who find it more convenient may remit their sub-
 scriptions to Mr. Byron Rose, 95, Duane Street, New York,
 instead of to Manchester, England.)

All subscriptions payable in advance.

ADVERTISING.—"Advertising is to Business what Steam
 is to Machinery—the Grand Propelling Power."—Mansfield.

Scale of Charge for displayed advertisements will be for-
 warded on application to the publishers.

ADVERTISEMENTS of Auction Sales Machinery for Sale
 or Wanted; Mills, Works, Rooms, or Power, to be Let, or
 for Sale; Partnerships; Estates for Disposal; Situations
 Vacant of Wanted, Agencies, etc., etc., 12 Words, 6d. EVERY
 ADDITIONAL WORD, 4d. THREE INSERTIONS FOR THE PRICE
 OF TWO.

These advertisements should reach the office, 23, Strutt
 Street, Manchester, not later than Wednesday morning so
 as to appear the same week. Remittances under 5/- may be made
 in Half-penny Postage Stamps.

All communications to be addressed to the Offices of The
 Textile Mercury, 23, Strutt Street, Manchester.

Current Topics.

THE MERCANTILE BANK OF MANCHESTER,
 LIMITED.

The prospectus of this new project was issued
 to the public in the early part of the week. It
 has met with a response which must be highly
 gratifying to its promoters, as we are given to
 understand that the capital asked for has been
 subscribed five times over. It will thus commence
 operations with a large balance of public favour
 to the good, which is an important matter to a
 young financial institution. The Bank has a
 good board of directors, including Dr. F. H.
 Bowman, cotton spinner, of Halifax, a gentle-
 man well known to the bulk of our readers, by
 repute at least, for his scientific acquirements.
 The doctor, whose accomplishments are of the
 most widely varied character, has been elected
 chairman, which we feel assured he will esteem
 as a high compliment. It is not often that Lan-
 cashire crosses its own borders in order to find
 presidents for its commercial enterprises. The
 Board, we understand, is working at the applica-
 tions for shares in order to make the allot-
 ments as soon as possible. We have pleasure in
 wishing the new institution a successful career.

OUR EASTERN TRADE.

In a consular return just issued upon the
 trade of Chefoo, in China, it is stated that
 "the most noteworthy feature in the import of
 piece goods is the decrease in British manufac-
 tures all along the line, whilst a corresponding
 increase is observable in American productions.
 In 1887 and 1888, on the contrary, the import
 of British shirtings and drills shewed a remark-
 able expansion, and American drills and sheet-
 ings a great decline. It is not easy to say to
 what cause is attributable the change evi-
 denced by the returns of the year under review.
 Cotton yarn has again decreased by 355,645 lb.
 The Indian yarn steadily gains ground, as
 against that produced in England. The
 import of the former was 7,467,200 lb.,
 while that of the latter was only 300,501 lb."
 These statements ought to suggest some
 serious thoughts to spinners and manufacturers
 in the cotton trade at home. Time was—and
 that not long ago—when India neither spun
 yarn nor manufactured cloth on the English
 system, and the country received large quanti-
 ties of yarn from Lancashire. This trade, how-
 ever, has not only ceased in the lower numbers,
 but Bombay, through its advantages, is rapidly
 ousting this country from neutral markets.
 The Rossendale Valley once produced enormous
 quantities of T and long-cloths for India, but
 the industry has almost all died off, owing to
 the competition of Bombay looms. Is it not
 suggestive of the query whether the trade in
 the lighter goods may not also give way in the

early future before the attempts that are likely
 soon to be made to spin finer yarns and manu-
 facture finer cloths than has hitherto been ac-
 complished? The answer to this is an impor-
 tant one, because if India should succeed in
 doing it to supply her own wants, she will soon
 carry her operations beyond that limit with the
 most disastrous results to Lancashire. We
 would recommend the consideration of this
 matter to both masters and employés, and would
 point out that the latter have something much
 better to do than make the exorbitant demands
 they have for the past year or two been making
 upon the former. The employers ought to be
 allowed to devote their energies to the serious task
 of encountering their competitors, either foreign
 or domestic, whether their operations are carried
 on in foreign lands or in our own dependencies.
 The killing of the golden goose by the operatives
 is within a measurable distance if they continue
 the systematic persecution of their employers
 and the attempts to drive them from business.
 Only a short time ago an employer who had
 just cleared out his establishment by auction,
 rather than continue submission to the pre-
 posterous and arrogant demands of an ignorant
 trades-union official, declared that "he would
 never as long as he lived supply another weaver
 with a warp." This is an example that may be
 followed.

RUSSIA AND HER COTTON GROWING.

The association of the name of Russia with
 cotton growing always strikes one as strangely
 incongruous. It is, however, a genuine measure
 of the growth of this vast empire, especially in
 the direction of southern latitudes, and particu-
 larly in Asia. We have frequently referred to
 the endeavour of the authorities to promote the
 cultivation of cotton in Merv, and the qualified
 success only that has so far attended their ex-
 periments. But there is no sign of the attempt
 being abandoned. The rapid increase of cotton
 production in Egypt since the country came
 under English control has evidently attracted
 the attention of the Russian authorities, who
 last year despatched an officer of the Russian
 Crown Lands to study cotton cultivation in
 Egypt. He was so much impressed with the
 excellence of the irrigation system that he has
 returned to Cairo to invite, in the name of the
 Czar, Sir C. S. Moncrieff to accompany him to
 Merv, where the Czar possesses extensive prop-
 erty, and to advise on the best means of irriga-
 ting it. It would appear from this that the
 air in the district of Merv is naturally too dry,
 at least at certain times, to be favourable to the
 growth of the much-desired vegetable down,
 and that it is possible in the opinion of the
 administrators of the Russian Crown
 Lands that a good system of irrigation
 will improve matters, so that the fields
 shall whiten unto harvest in a much more abun-

dant degree than has been the case before. If this projected irrigation give reasonable hope of proving a success it will be accomplished, and, as a result, Russia may ultimately find herself able to dispense with all outside assistance, as regards the raw material with which to keep her cotton mills at work. Sir C. S. Moncrieff, who has had charge of the system of irrigation in the Nile Valley, has obtained the permission of the Khedive to accept the invitation, and will start on Tuesday for Merv, where he will probably remain to the end of November, proceeding thence to London before returning to Cairo. The satisfactory state of the Nile enables him to leave Egypt without anxiety. There is only one remark we wish to add, and that is that Continental powers who are doing everything to exclude English productions from their dominions, are never loth or in any way backward to ask the assistance of the best men of this country to aid them and help them out of their difficulties. Surely, as a people, we may claim credit—which is not always awarded us—for the possession of generous sentiments. Such actions on the part of the English ought to beget a little reciprocity of good feeling, and—good actions.

THE QUIMBOMBA FIBRE AGAIN.

In an official report from St. Jago de Cuba there is a note referring to this plant, the fruit of which (*hibiscus esculentus*) is well known in the English West Indies under the name of "okra," and is used as a vegetable. Although Pichardo, in his "Diccionario de Voces Cubanas," mentions the plant as being "applicable to rope making," the writer is unaware that it has been used as a fibre, and, therefore, refers to it again. Last year Messrs. Bosch and Company, of St. Jago, made an experiment with some, and sent 400lb. of the dried fibre to London, where it was much liked, and found to be worth £40 per ton. Three crops are obtained in the year, and its preparation, by maceration, gives very little trouble. The stem produces a fibre of fine quality and about four feet in length, and is apparently strong. Further trials will probably be made there. The writer sent a sample with his report, which has been forwarded to Kew Gardens.

THE APOTHEOSIS OF LABOUR.

Every country and every age has its idols, but the most remarkable golden calf ever designed and manufactured is the one that it is just now being endeavoured to set up for public adoration, yecept "labour." It is a curious thing that the elements going to the composition of the new deity should be the lowest forms of matter from which such a figure could be manufactured, such as dock labourers, gas stokers, firewood cutters, policemen, postmen, and many others too numerous to mention. We are quite willing to admit that each and all of these professions, as we suppose we must call them, are useful, if not, indeed, indispensable to society. Hitherto, however, they have indisputably occupied a lowly position in the ranks of industry. But in the manner in which almost everything is being turned topsy-turvy in these days, they are claiming or having claimed for them the highest position in the industrial scale, and therewith by implication the highest rewards. But not content with putting its claims forward for consideration, this lowest type of labour is endeavouring to force the concession of the same, whether just or not, upon all the rest of society. But will society concede its demands? We think not, and especially so long as skilled

labour of far higher value is remunerated on a much lower basis. A correspondent of the *Times* has just put the matter in a very terse and practical form. Writing to the editor of that journal, he says:—

Sir,—There is one point of view from which few people have sufficiently looked at the wages question. It is suggested by your leader on the wages census—for if we set aside by the side the wages of the unskilled labourer and of the educated professional assistant we shall arrive at some curious results. Let us take three samples of unskilled labour.

(a) The dock labourer, working eight hours a day, six days a week, at 6d. an hour (and, on Mr. Giffen's plan, deducting 10 per cent. for illness, etc.), earns per annum £56 3s.

Some dockers earn more, some less.
(b) The tram conductor, earning 4s. 6d. a day, at six days a week, earns £63 3s.

(c) The omnibus driver, in the employ of the London General Omnibus Company, receives 6s. a day. Working six days a week he earns £84 4s. 9d.

Here are some of Mr. Giffen's figures:—Jute trade, £50 5s.; hemp, £61; silk, £57 16s.; carpet, £69 4s.; lace, £70 18s.

Now let us take the case of the professional assistant, educated at a cost of from £500 to £1,500.

(a) The doctor's assistant, who I think I am correct in stating earns £100 a year, or £70 and board and lodgings—in other words, 5s. 5d. a day, working seven days a week.

Here is a case I can vouch for. Yearly wage £100; daily wage 5s. 5d.; average hours per week, 100 to 110; no extra pay for "overtime;" about 60 houses visited daily, 1,000 ft. of stairs climbed, and at least 120 patients treated; meal time, one half-hour for the whole day. This man's education had cost £1,000.

(b) The clergyman. Let the Friend of the Clergy Corporation and the A. F. D. tell us something about these salaries. A relative of my own had to support a wife and eight children on £70 a year, which was all that for many years the glebe produced.

I wish I knew enough about it to add

(c) The clerk.

But I hope I have suggested two things.

1. That very much educated labour is underpaid.
2. That the labourer ought to realise that if his educated fellow-wageman can, and often does, pay his way, and bring up his children to be working gentlemen and ladies without coming on the parish for assistance in illness, then he, too, the labouring man, can (if he will) become what he calls himself—a "gentleman."

Here is a true story, the point of which you will readily appreciate. It was given to me by the parish doctor of a large district in Essex. He was attending the wife of an agricultural labourer, who lived rent free. The woman asked him for an order on the parish for 2lb. of meat.

Doctor.—Well, Mrs. —, I think you can get it for yourself.

Woman.—I don't see how, Sir.

Doctor.—If you think a little, I fancy you will see the way. Your husband and your son between them earn a pound a week all the year round.

Woman.—Yes, sir, they do.

Doctor.—Then, as there are 52 weeks in the year, the sum that enters this house is £52, is it not?

Woman.—To be sure it is. I never thought of it like that before.

Doctor.—Now, £50 is exactly the sum that enters your clergyman's house in the course of the year; and you would be very much surprised if when one of them was ill he were to apply to a relieving officer for a couple of pounds of meat.

Woman.—Why, yes, indeed, I should sir.

Hoping to elicit further information on the subject of this letter, I am, sir, yours obediently,

OPEN TO CORRECTION.

Indeed, it is highly desirable that more information should be forthcoming. And when it arrives we shall be much mistaken if it does not prove that in relation to the higher grades of labour and the professions, the lower and medium grades are extremely well paid, and that there is not the slightest ground for society entertaining the demands put forward. The amelioration of the condition of our lower classes depends to a much larger extent upon the improvement of their personal and domestic habits—thrift, economy, temperance in eating and drinking, and better knowledge of and care in the expenditure of their earnings—than it does upon an increase of their income from their labour.

THE INDIAN MAILS.

The Manchester Chamber of Commerce has done commercial interests a service in drawing the attention of the Postmaster General to the manner in which the homeward Indian mails have been detained at Calais on several occasions recently, and in getting the matter redressed. There is a tendency in our national Post Office to regard it as a profit-making institution, which primarily it is not and ought not to be. The first object and duty of the officials in charge ought to be the attainment of the highest degree of efficiency in the transmission of the public correspondence all over the world, and to do this without loss or any of the cost falling upon the public in the shape of a tax. This means that the business should not be conducted with a view to making a profit, but that if the latter accrue it should be regarded only as an incident. The public taxation ought not to be relieved by a tax upon the most sensitive part of our commercial system—its correspondence. If there are postal duties to perform which in ordinary parlance "do not pay," the difference ought to be made up from the profits of other sections. If this principle of rendering the service as efficient as possible were properly regarded we should not have such "economies" practised as those to which the Manchester Chamber of Commerce has drawn attention, but on the contrary we should have a large reduction of postal rates, especially to foreign countries. And that these reductions should be made is vitally important to the promotion and stimulation of trade, for with the enactment of such measures as the McKinley Bill our Government should facilitate in every possible manner the endeavours of manufacturers and merchants to extend our trade in other directions in order to compensate the country for the loss. A great help would be a large reduction in our foreign postal rates.

THE WISE MEN FROM THE EAST END OF LONDON.

The Burns, Manns, and Tillets, and their confrères who have distinguished themselves in the promotion of the numerous strikes that have deranged the commerce of London and other of our leading cities during the past year or two, and who have led their blind followers into all sorts of disasters, are now taking alarm at the steps taken by the shipping companies of Southampton to dispense with the services of their dupes. They are anxious to circumvent this step, but as yet do not know how to do it. They are suggesting legislation on the lines of the American Contract Labour Laws, but they forget that the circumstances of the two cases are entirely different. In America the protectionist movement was initiated and maintained by manufacturers of one kind or another, and was carried to such cruel extremes as to become highly oppressive to the workpeople, who were protected in nothing whatever. The present writer more than ten years ago pointed out this fact and the hardships incident thereto, shewing at the same time that a consistent application of the principle of protection demanded that it should protect the workers as well as those capitalists who had invested their means in the various manufacturing industries. The suggestion was extensively quoted in the States, and it was not long before a strong demand arose for the protection of labour as well as capital, whereupon the capitalists, rather than sacrifice their selfish and unjust gains, threw a tub to the whale, in the shape of the contract labour laws. In this country the case is entirely different: it is the

mised workers who are screaming out for protection, while the capitalist neither enjoys any nor asks for any. And we confidently affirm that with these conditions prevailing the labourers will be a long time before they get any legislation in any sense akin to that of the United States.

THE UNIFORM WEAVING LIST.

The weavers and their representatives have taken a sensible course in adopting their new general weaving list, which has been for some time under their consideration. We ventured to predict that they would do so, notwithstanding the resistance offered by inconsiderate sections. We hold that it will be far more to their advantage than to that of their employers, as the parent Blackburn list has long ago proved to be. It will place every district in Lancashire on even ground and thus stimulate enterprise, which will be for their advantage more than for anybody's else. A man who would like to invest some capital in the cotton trade may have binding ties in one district which he cannot leave. This, however, being for example a district in which a higher rate of wages than in others has been compulsory, he has been deterred from making the investment. The whole county will now be liberated from the thralldom of the inequalities previously imposed, and as a consequence enterprise will receive a new stimulus. There only now remains the adoption of the new list by the Manufacturers' Association, to which we anticipate that not much objection will be made, though amongst every large number of men differences of opinion will find expression. We may claim a little credit for *The Textile Mercury's* contribution to the settlement of this vexed question.

MEASURING PIECE GOODS.

The measuring of grey cotton goods in the piece and of the same in various sorts of finish, especially the soft finishes, is a matter much less easy than might appear at the first glance. An illustration of the difficulty has just been brought home by the *Times of India*, which we transcribe for the benefit of our readers. Says our contemporary:—

The history of a very curious incident in the measurement of piece-goods is detailed in the interesting report of the Managing Committee of the Kurrachee Chamber of Commerce, which has just reached us. Certain goods were found in dealers' premises in Kurrachee bearing stamped lengths, which did not appear to correspond with their actual lengths, and with a view to getting an impartial opinion from uninterested parties, the Kurrachee Chamber was asked to examine an opened bale of a similar consignment containing fifty pieces of the same description of goods as those which had been found apparently short. The bale was opened in the presence of two members of the Committee appointed by the Chamber, and forty-nine of the fifty pieces were carefully examined, the remaining piece having had a sample cut from it. They found scarcely any two pieces of the same length, and although each piece (they were grey shirtings) was stamped "37½ yards," the Committee's measurements varied from 36 yards 27 inches to 38 yards 18 inches, the mean average measurement being 37 yards 14 40-49 inches, or 3 9-49 inches short of the stamped length. Now it would seem to the uninitiated to be anything but a complex matter to measure a piece of grey shirting, and if a committee of experts is engaged in that operation, a Philistine would not hesitate a moment in accepting their declaration. The Philistine, however, would be led considerably astray by his confiding trust. Doubts were expressed about the accuracy of the measurements made by the Committee appointed by the Chamber, and the bale in question was repacked and sent to Manchester, when seven firms laboriously measured each piece, and everyone of the seven gave a different result in the measure of individual pieces, and every result was different from that of the Kurrachee measurers! In fact, scarcely any two measurements agree. Piece No. 18, for instance, is given by these seven firms as 36-28, 36-33, 37-1, 36-30, 36-32, 36-30, and 36-31

respectively, the mean being 36 yards, 32 inches, and the Kurrachee measurement being 37 18½ inches! The mean of seven measures of Piece No. 1 was 36 yards, 18 inches, against a Kurrachee measurement of 37 yards, 7 inches—a difference of 2 feet, 1 inch, and there are even more extraordinary discrepancies than this. The average of the seven Manchester measurements of the whole 49 pieces comes out at 36 yards 30 45-49, against the 37 yards 14 40-49 of the Kurrachee Chamber of Commerce; so that this matter of measuring is by no means so simple as it seems. When experts disagree in this remarkable (but, it is stated, perfectly natural) manner, there need be little wonder if the Customs people are occasionally at fault. So far as the over-stamping is concerned, it is only fair to state that the manufacturers explain that it was only this particular lot which was over-stamped, the over-stamping occurring through an accidental error in calculating the lengths from the "laps" or pleats. But with this matter we are less concerned just now than with the fact that, as it is demonstrably impossible to get an accurate measurement of the length of a piece of shirting, the Customs officials must exercise considerable charity in their conclusions as to the infringement of the stamping clause, which are as likely to be wrong as right.

The people who have had this matter in hand, as also our contemporary, express more surprise than they would do were they in any way practically acquainted with the processes of manufacturing cotton goods. In the very first process in which the material is measured, uncertainty commences. This is in the warp, when it is being sized. The sizing machine automatically, and with great accuracy, marks the lengths of the pieces upon the warp as it passes through. If the mill in Lancashire making these goods is a small one, and has only one sizing machine, the warps will be marked with uniformity, but if there are several there will hardly be two of them marked alike, as each man will work his set of beams with a different tension upon them. The effect of this will be that the warp will still be marked in certain lengths as before, but owing to the strain upon the yarn varying slightly in each from the least to the greatest, the elasticity will be proportionately exhausted, and the yarn that has been stretched the most will in the weaving process make the shortest pieces. In this way one may get from, say, four sizers, piece-goods in the warp that will yield from nine inches short to nine inches over length, according as they are dealt with by the weaver. Weaving is the second department of the work in which the length may be made to vary, and again quite unconsciously. One weaver will weave with very little tension upon his warp, and, in consequence, his pieces will run short. In a shirting length—such as is referred to above—by so weaving, the piece may be made from nine to eighteen inches short, when all has been properly prepared to come out right, and ought to have done so. On the contrary, a weaver who works with a heavy tension upon his warp may gain as much as the other loses, and so there may be actually a difference of a yard in two pieces that were intended to be of the same length. Again, the length will be affected and reduced somewhat by a change of the weft in a coarser direction to the extent of three or four hanks; by making the weft finer it will be correspondingly lengthened. Thus it will be seen that there are numerous factors which strongly tend to produce irregularities without there having been the slightest intention to bring them about. But we are still far from being at the end of the sources of trouble in relation to this matter. There is the hooking or making-up of the pieces. The usual practice is to "hook them up" by one selvege in pleats of one yard in length, and as the hooker has to draw these sufficiently taut, he may strain them a little; if he does he makes the length probably half-a-yard longer

than the actual figure, that is when the same is counted by the pleats, which are assumed to be one yard. Should he hook up slack, the reverse error occurs. It may be asked—Why not measure them up by the standard yard-stick? The answer is that such a thing, besides being impracticable on account of cost, would yield no better result. The irregularities of manufacture would be in still, whilst the measurement by hand would be liable to be slack or tight measure just as is the hooking, and there would be the additional liability to forget the count, a contingency that would often be a fact. On the whole there is no better plan than the present, which makes a small allowance on each side, and is content when the average is correct.

ALLEGED VICTIMISING AT BOLTON.

Trades-unions are governed by a strange code of morals. A strike has occurred in one of the weaving establishments of Messrs. John Musgrave and Sons. The weavers "came out" without consulting their union, and the consequence was their union would not "countenance" such conduct, and therefore refused to furnish any strike pay. No doubt, from a trades-union point of view, these weavers, if they had not committed a crime, had done that which was worse—they had blundered. Therefore they must be punished, and punished they were accordingly by the refusal of strike pay. Then, after having thus stopped the establishment and lost their case, they offered to resume work on the old conditions. They ate the leek. "But now comes another element into play," writes "Demos," the trades-union J.P. for Bolton, and continues thus:—

By way of teaching the hands a lesson, Messrs. Musgrave single out some eight persons, and discharge these forthwith as being the ringleaders. It is difficult to understand their action in this respect, and I have not a word to say in defence of it. In my opinion the firm has needlessly thrown oil on the fire, with the result that the dying embers have burst out anew. The weavers generally have decided to stand by their victimised fellows, and the association have likewise done the same, and advised the whole of the weavers employed by the firm to leave work in defence of their comrades. I don't see what else the society could do. It was willing to ignore the complaints of its members until they were tendered in a legitimate manner, and to that extent was assisting the employers; but it is the duty of a trade-union to protest against the victimising of its members under any and every circumstance, and to protect them from the same, and this the Power-Loom Weavers' Association are doing at the present time in the dispute at Atlas Mills.

It appears from this that breaches of the regulation of the union must be punished, but breaches of contract and the stoppage of an extensive plant, disconcerting the employer in the delivery of orders, and subjecting him to the danger of having them cancelled or the deficiency brought against him, are unsubstantial trifles, and that the employer who thinks otherwise and believes that the men who have misled their fellow workmen may do the same again, and in consequence are not desirable people to keep in his employ, and accordingly declines to receive them, does a wrong to the operatives, against which the union must defend them. Accordingly they have again been "brought out," and "Demos" defends the action as being right. Are these extra-judicial "principles," or are they the same as those by which Mr. Fielding guides his decisions on the Bench? It would really be interesting to have an answer. If the latter, it would appear that there is a defect in the constitution of the country, which ought to be remedied as soon as possible: this is the failure to provide that the meting out of punishment should be strictly reserved to the trades-unions.

COMPETITION EXTENDING.

Our readers are familiar enough with the fact that cotton manufacturing is being planted in many parts of the world in which hitherto it has been unknown; and they are equally familiar with the fact that in all the centres in which it has existed for some time it is found to be extending. They are not, therefore, under any particular alarm when they hear of a small mill or even a large one being built in some place where such a structure has not been known before. The irony at the end of the following editorial paragraph from *The Times of India* will not, we venture to think, cause them to lose a wink of sleep either in the industrial or commercial centre of the calico trade. It is not the fact of India's having begun to manufacture cotton goods that is causing the present agitation on the subject of factory laws for India, but that Indian and English capital should be permitted to manufacture cotton in India free from the legal restraints that environ it at home. The remarks of *The Times of India* are suggested by the recent opening of a cotton spinning mill in Constantinople, and also of a similar concern in Ceylon, already fully described in *The Textile Mercury*. Our contemporary says:

The competition with Manchester in cotton spinning and weaving is beginning to extend in what would a short time since have been deemed most unlikely places. A few months ago a cotton mill was started in Ceylon, and, we learn, is now working most satisfactorily, while a spinning and weaving mill is rapidly approaching completion in Shanghai. The same firm who supplied the machinery for these two concerns—Messrs. Dobson and Barlow, of Bolton—have just started a spinning mill in Constantinople. The *Levant Herald* says that the mill was opened by Arifa Pacha, President of the Council of State, and Nouri Bey, Secretary to the Sultan, who specially represented his Imperial Highness; and the first products of the mill in the shape of yarns were forwarded to the Sultan, who is said to be greatly interested in the experiment. The operatives are stated to be mainly women and girls, who will be quite satisfied to work for pay, little, if anything, higher than Indian hands, and from the fact that ample supplies of cotton are available from Smyrna and Egypt, it is calculated that the promoters of the industry in Constantinople will start with an advantage of something like 25 per cent. over Lancashire manufacturers. Should the experiment prove as successful as seems to be anticipated, it will probably not be long before the Manchester and Blackburn representatives of the cotton industry will be appealing to Her Majesty's Government to address the Sublime Porte in favour of factory legislation in Turkey.

THE NIJNI NOVGOROD FAIR.

This important fair has just been held, and reports state that an average of business has perhaps been done. It is, however, much too early to get any details worth placing reliance upon. Indeed it is only just recently that the results of the fair held in the summer of 1889 have been officially reported. These are stated to have been, on the whole, satisfactory and above the average. No serious bankruptcies occurred, and bills were protested only for small amounts. The private rate of discount on 12 months' bills stood at from 6 to 6½ per cent. The total value of merchandise brought to the fair was estimated at £19,877,741. On the other hand, the value of goods sold at the fair of 1889 amounted to £18,854,277, and exceeded that of the merchandise disposed of in the previous year by £105,770. The general turn-over was £20,295,817, shewing a decrease of £301,326 on 1888. This was mainly attributable to a diminution of the quantity of Asiatic produce. There was a smaller supply of cotton manufactures; nevertheless the sale of these commodities, though rather slack at first, was brisk towards the latter part of the fair. Prices, however,

were from 10 to 15 per cent. lower than those of the preceding year, which is ascribed mainly to the circumstance that wholesale purchasers for a long time deferred acquiring goods, and the sellers, fearing that these would remain unsold, lowered their prices. Russian cotton manufactures were also bought in a smaller quantity by Persians, who are now able to supply themselves with these goods on more advantageous terms and with wider choice in Persia itself, where Russian manufacturers are said to be making active efforts to secure a larger market for the sale of their productions. There was a scarcity of Asiatic cotton at the fair, all of which was bought up at one price irrespective of quality. This scarcity is ascribed to the fact that a large quantity of Persian cotton, prepared for the Russian market, had been sent direct to Moscow, while a certain proportion of it did not reach the fair at all, owing partly to the shallow state of the rivers, as also partly to the inefficiency of the forwarding agents. There was an increase in the quantity of woollen goods, as also in that of manufactures of hemp and flax, which latter, however, were sold at lower prices than at the fair of 1888. Silk and half-silk goods were supplied in smaller quantities, and the trade in them was dull. It will thus be seen that this fair is still an important centre for the distribution of goods.

THE LEGAL PROTECTION OF DESIGNS.

An article in a foreign contemporary supplies the following brief data regarding the history of the legal protection of designs in England, France, and Germany. The movement is said to be of French origin. In Lyons as early as in 1744, any imitation of silk patterns rendered the offender liable to a penalty; and a decree of March 18, 1806, enabled a manufacturer to secure the right of exclusively using his own designs for from one year to five years, by depositing them with the Commercial Council. An English law on the subject came in force into 1787, but applied only to printed stuffs. In the middle of the present century this law was widened and improved so as to include all kinds of goods of which the designs are duly registered in London. Germany has enjoyed the benefits of a law of this kind only since April 1st, 1876. According to Section 1, the right to imitate in whole or in part a commercial design or model belongs exclusively to the author. These designs or models, however, must represent new and original productions. German law distinguishes between designs of taste and designs of utility, the latter not enjoying the protection accorded to the former.

"ENGLISH AS SHE IS WROTE."

Amidst the seriousness that characterises the general contents of *The Textile Mercury*, an occasional departure in a lighter vein may perhaps not be amiss. In such a spirit we draw attention to some amusing errors in a French contemporary, which is devoted to textile subjects, and quotes exhaustively the reports that appear in the English press from the various manufacturing centres of the United Kingdom. Under date of the 5th inst., we are informed by the journal in question that *les prix sont fermes*, which condition of things prevails at 'KUDDERFIELD,' while at 'HIDDERMINSTER' *les filateurs maintiennent leurs prix*. We wonder if they will maintain their gravity when they see these lines this week! Coming nearer home we find under Manchester that quotations are given of a mysterious cloth which is spoken of as "printer Bumley." The weavers of Burnley printers will surely smile when they hear such

a peculiar transformation of the name of their product. There is another feature in our contemporary which, although not a perversion of anything English, is still amusing. Under the heading of Lille appears a report of the cotton quotations dated 20th January, 1888—just two years and eight months before the publication of the issue containing the report. Clearly we have nothing to learn from France as far as trade journalism is concerned.

Articles.

THE CRISIS IN THE CALAIS LACE TRADE.

The causes of the difference existing between the masters and men in the Calais lace trade are so complex that those of our Nottingham readers desiring to grasp thoroughly the real position of affairs would do well to peruse carefully the very exhaustive details which appear below, and also in another portion of the present issue. Our last week's article on the dispute was the first intimation of the impending struggle that appeared in England, and the exclusive sources of information then opened to us still being available, we now give the latest news of the conflict in progress across the Channel. The minimum tariff which was suggested by the *Chambre Syndicale* of manufacturers, and referred to in last week's *Textile Mercury*, did not, it will be remembered, meet with the approval of the workmen, who determined upon issuing one of their own on a higher scale. Those firms that refused to accept the terms of the men were to be attacked in detail, and two houses—those of Gregory and Co., and Belart—frightened at the position of affairs, yielded. Messrs. Houette and Buttler were then approached with a demand that their men should be paid when patterns were being changed, *i.e.*, at a period when the racks were not at work and nothing therefore was being earned. We are informed that these terms were accepted, and that the men followed up this victory by still further demands, to the effect that no deductions should be made for bad work. Messrs. Houette and Buttler therefore conferred with the Manufacturers' Association, the result being that, as already stated in the *Mercury*, a decision was come to that whenever the factory of one of their body is boycotted, a general lock-out shall take place if it be shown that the employer is paying the tariff proposed by the Association, and if all means towards conciliation prove fruitless.

Finally, the "boycotting" of Messrs. Houette and Buttler not having been raised, the employers, in conformity with their resolution, met on the 15th inst. and issued a proclamation, stating that there would be a general lock-out of the foremen, winders, twisters, combers, wheelers, finishers, and other hands, the decision being applicable also to looms working on commission. Some of the designers, card cutters, certain female operatives, and the office staff were, however, to be kept on. It was also resolved that the widest possible publicity should be given to these facts, by means of paragraphs in the newspapers, posters, and circulars addressed to the whole of the trade. The following firms signed this proclamation:—G. Arnett, Aubert, Basset, J. Blanquart, L. Bomy, Bocherel, Brebion, Bruitte, A. Cadart, Capelle Eros, Caron *frs*, (Vve) Casella, Cordier and Sons, Cordonnier-Bricourt, J. Dagbert, L. Dagbert, Darquer-Bacquet, E. Daveniere, O. Deguines and Co., Deguines, *frs*, Delahaye and Dolain, C. Delannoy, Delattre

Bros., Despres, E. Disney, Duchene fils, Ducrocq Bros., Duquenois-Martel, J. Fiquoy, Fontaine and Riéder, G. Fournier and Co., Frances Bros., Froment, Gaillard, Ch. Gest, F. Gest, Gregory and Co., A. Hede, Hembert-Lefebvre, H. Henon, Herbelot, Houette and Butler, F. Hutin, J. Laporte, J. Lebas, Lebas and Co., Leclercq-Lebas, Lecomte and Co., T. Lefebvre and Co., Lenique Piquet and Co., Maxton Bros. and Watney, Mine and Gest, Moins and Son, A. Mullie, Noyon Bros., Pinet Bros., Poret Bros., H. Rembert, Roche Boin and Co., W. Smith, Soubitez, Topham, Tabary and Masset, Vandemalle Bros., Voisin, Yates, J. West, R. West. These names represent 700 looms.

An address has been issued by the Commission of Conciliation appealing to the good sense of the twist hands for the purpose of averting, if possible, the development of what promises to be a terrible crisis. "You are threatened," say Messrs. Daveniere, Noyon, Frances, Lebas, Piquet, and Rembert, "you are threatened with a stoppage in many factories. The leaders who are formulating these claims do not wish for conciliation. They desire above all things to prolong the agitation. It lies with you to spoil these criminal manoeuvres! Nothing, absolutely nothing, can justify the boycott of Messrs. Houette and Butler. It lies with you to put a stop to it. On Sunday next you will adopt resolutions on the subject at your meeting. Let them be considered in all seriousness, and let the voting be by secret ballot and not by a show of hands." The concluding portion of this address, which we have italicised, gives expression to the belief of the manufacturers that the workmen are being forced along against their will by the agitators, and by a secret ballot it was hoped that a different determination would be arrived at. Unfortunately, however, at the meeting of the men on Sunday, a full report of which appears in the following columns, it was unanimously decided by the 2,678 voters present not to raise the "boycott" of Messrs. Houette and Butler, so that a general lock-out to-day may be anticipated from what can be seen at present. Such is the situation, comment upon which we withhold until further developments take place. In the meantime we give the latest addition to the information which has reached us from Calais, by quoting a declaration issued by Messrs. Houette and Butler, and of which a copy now lies before us. The firm say:—

1. They have never refused to take back their entire staff.

2. They affirm that the question of price per rack has never been raised, and that it would not therefore have been the cause of the turn-out on the part of their hands, since the prices they pay are above the minimum tariff of the Manufacturers' Association. No article is paid for at a less rate than 90 centimes (about 9d.) per rack, and in many instances a higher figure is given.

3. An agreement between them and their operatives as to charges had been arrived at, and should have put an end to the conflict.

4. They consider above all that strangers have been the principal cause of the want of accord existing between masters and men.

The last paragraph is one which possesses a deep significance of its own. Nemesis, which for so many years seems to have followed in the footsteps of Nottingham manufacturers, marring their prospects, blighting almost every scheme as it was formed, and spreading ruin and distress throughout the town, has at last turned upon Calais, its own instrument in the past for accomplishing the undoing of Nottingham. How

much of the distress of the Midland town is due to the labour disputes that have taken place there need not now be discussed. We simply point to the fact that the Nottingham operatives, by backing up a scheme having for its object the equalisation of wages paid in their own town and Calais, are in a sense taking a step which, it is to be hoped, will undo some of the mischief they themselves have caused in the past. It will be a curious piece of textile history if Nottingham is to be checked in its downward career by a far-seeing move on the part of its operatives to take away the advantages of Calais in the direction of cheap labour, by which it has been able to crush its English competitor during preceding years.

THE MEETING ON SUNDAY: REJECTION OF THE MASTERS' PROPOSALS.

[SPECIAL REPORT.]

On Sunday the men concerned in the lace disputes at Calais held a meeting, at which some Nottingham trades-union delegates were present. They decided that they would accept the notice of being locked out, and that they would fight out the battle. The whole proceedings were exceedingly orderly. The meeting was announced for 10 o'clock, but it did not open till nearly 12-30. There were 2,678 workmen present, and the boycotting of Messrs. Houette and Butler received the unanimous sanction of the meeting. The gathering was presided over by Citizen Corbeau, assisted by Citizen Martin, secretary of the union, and Citizen Salembier (town councillor), together with seven delegates who had been appointed as a committee to come to an understanding with the manufacturers. In addition there were the Nottingham delegates.

After Citizen Martin had read a letter and a telegram received from London the evening before, promising to the Calais lace workers the moral and pecuniary support "of the trades-unions and of all the associations of workmen of the United Kingdom" (the reading of which was received with an almost religious silence, broken by cries of "Hurrah for the strike! "Hurrah for England!"), Citizen Salembier addressed the assembly. The town councillor gave an account of the interview between the workmen's delegates and the manufacturers, as well as of what followed. "In reply to a demand for an interview on the part of the Manufacturers' Association, we (the workmen) replied, 'We are at your orders; we wish for conciliation.'" Unfortunately, the first demand put forward by M. Cadart, the manufacturer charged with the duty of expressing the wishes of his fellows, was the unconditional return of the workmen at the old prices to the firms now being boycotted. To this the workmen's delegates replied that they had no authority to accept such terms, and that the workmen alone could decide on the matter. As far as the delegates were concerned they considered the proposals inadmissible. "Do not attack the large firms," was the reply of the manufacturers' delegates to this. "As for the smaller ones, we don't mind about them. You can do what you like with Gregory's and the others." Referring to the insinuations by which it was sought to throw discredit upon the workmen's delegates by speaking of them as agitators, M. Salembier, continuing, said that the latter who at the risk of losing their means of support, both for themselves and families, fought for the common cause were sufficiently well known to the men to be able to treat with disdain such remarks. M. Daveniere, on behalf of his colleagues, the manufacturers, had said that they would not treat with the Union which had been the promoter of the successive boycotts, but with the Union and Alliance (the Alliance is a workman's society controlled by the manufacturers). He (M. Salembier), replied that the Union, having assumed the responsibility of taking the initiative, could not allow the introduction at that stage of such an *état major* without troops, as the Alliance, which was besides entirely in the hands of the manufacturers, as was proved by the fact that for four years the *Conseil de prud'hommes* in which the workmen of the Alliance had a majority, had nominated a manufacturer for president. M. Salembier then went on to denounce the course of procedure taken by the manufacturers who had endeavoured to sow the seeds of discord in the ranks

of the workmen. Two firms had been at law, hundreds of thousands of francs being involved in the claims put forward, and yet they had joined hands for the purpose of crushing the operatives!

Put to the vote the proposal for voting the termination of the boycott of Houette and Butler by secret ballot was rejected; only three out of 2,678 voters dissenting. It was decided to vote by a show of hands.

M. Salembier hereupon made an appeal in favour of calm reflection. "If," he said, "you vote for the continuation of the boycott of Houette and Butler, think well on the consequences. It means the closing of 67 factories. It means misery, want of bread for weeks, perhaps for yourselves, your wives, and your children. If a single workman favours a concession he has the right, and it is his duty to speak out."

Put to the vote by the President the proposition that the employés of Houette and Butler should return to work was rejected unanimously, the result being received with applause.

A workman (M. Ribot), addressing the meeting, said that the operatives at the firm where he was engaged had an employer who would continue to find them more work than ever. They would contribute 50 per cent. of their wages to the strike fund, and he demanded that all who remained at work should sign a contract binding themselves to imitate their example. (Applause).

M. Salembier protested against such a contract. The workmen would do everything in their power. They would have no contracts. Contracts were all right for the masters who distrusted others as well as themselves. With the workmen, their word should be sufficient.

M. Davier, an employé of Black and Prior, said that he was authorised by his comrades to promise 25 per cent. of their wages towards the strike fund until work should be resumed. Several other speakers followed in the same strain.

M. Delcluze, amidst loud applause, said that he saluted the English workmen who held out their hands in a brotherly way across the frontier. In accepting the help thus offered they contracted an engagement in their turn to help the English operatives when they stood in need of assistance. Those present at that meeting had replied to the declaration of an unjust war made by the employers, by a declaration of a holy war. If they remained, united victory would be on their side. "In '93," continued M. Delcluze, "the Chouans, the reactionary minority, were defeated by the *bleus*, the masses; you also will vanquish the *Chouans de tulle*, the minority of manufacturers opposite whom your forces are now ranged. If they produce Charettes to lead them, you will have your Hoehes, your generals springing from your own ranks. Victory has always followed the efforts of the Hoehes." The success of the men's demands would add an additional million (francs) per annum to the trade of the town. M. Delcluze announced that he was about to propose a resolution in the Town Council, setting aside the sum of 60,000 francs for the sustenance of the families who would be left without resources by the action of the manufacturers. In a week the doors of some of the factories would be closed against them, and he advised those present to act as though they were ignorant of the fact, working during the last week as they did in those which preceded, submitting without a murmur to the exigencies of the situation brought about by those who wished to reduce them. Certain employers, in order to provide extra samples, or to make stock would impose upon them duties more laborious than usual. Let such duties be executed. Let them preserve that calm which befitted true dignity. They should continue in their rôle of victims. Any other attitude would only open a loophole for their enemies. (Loud applause.)

Citizens Dalertre and Salembier then briefly described the manner in which the collections on behalf of the strike fund would be made in each factory, after which the meeting dispersed.

WHEN dimethylaniline is first converted into nitrosodimethylaniline and this is then leucolised by means of zinc and finally oxidised, a basic body is obtained having the formula $2C_8H_9N_2O$ which is not freely soluble in water, but is so in alcohol or ether, with a red colour. This is the base of a dark blue basic colouring matter capable of giving on mordanted cotton blue shades which are tolerably fast, while if the cotton be mordanted with tannin and iron a deep black can be obtained. A grey violet colouring matter is obtained as a by-product of the reaction, which will work on unmordanted as well as mordanted cotton. These new products have been recently patented by Mr. John Dawson, of Kirkheaton.

Bleaching, Dyeing, Printing, etc.

ARTIFICIAL INDIGO: A NEW PROCESS.

The Chemistry, Dyeing, and Printing Department of the Manchester Technical School was opened on Friday night of last week, with an address by Mr. Ivan Levinstein, chairman of the Manchester section of the Society of Chemical Industry.

At the close of his address Mr. Levinstein submitted an experiment illustrative of the latest achievement of chemical technology, viz., an entirely new process for the production of artificial indigo. He said that twenty-two years had passed since the scientific world was surprised by the startling discovery that chemists had at last found the secret of producing alizarine, and before many years had passed away the artificial alizarine had entirely replaced the natural product. Twelve years later another greater achievement was announced, viz., the artificial production of indigo, and thus human hands were able to produce in practically unlimited quantities two of the most important dye materials, which had hitherto been solely accessible to mankind through the chemistry of nature. Fortunately, however, for a portion of our colonial trade, the processes for the production of artificial indigo were all so complicated and costly that its introduction into practical use had hitherto been very limited indeed. Quite recently, however, an entirely new method had been discovered, which was at once so simple and easy to execute that he could not help thinking that it might lead to the result so dreaded by our Indian friends who were interested in this product. Considering that Manchester was perhaps the largest consumer of indigo, and that the practical perfection of the process of manufacture of the artificial product would have a marked influence on the export of our colonies, he thought it might be of interest to them to make them acquainted with this latest discovery in the field of chemical technology. Long before the first attempt was successfully made at producing artificial indigo there was known to chemists a compound which was called "Phenyglycocine," a substance which could be easily obtained by the action of aniline on monochloroacetic acid. No technical use, however, had been found for this compound, until at last Professor Houmann, of the Polytechnic School in Zürich, was fortunate enough to discover that this apparently useless substance could easily be converted into indigo by simply heating it with caustic potash or caustic soda, a discovery which was as simple as it was beautiful. Monochloroacetic acid was produced by treating glacial acetic acid with chlorine. The ingredients therefore necessary for this new mode of manufacturing indigo were acetic acid, chlorine, caustic alkali, and aniline, ingredients all readily obtainable in the market. It was also interesting to observe that whilst aniline was first obtained in the year 1826 from indigo, aniline appeared to be destined to become the primary and principal material for obtaining indigo.

DYEING OF LINEN.

FOR 90 PIECES.

1. **Black.**—Enter into a warm bath at 60° C. containing 9½ lb. cutch, 6½ lb. dry logwood extract, 3½ lb. copper sulphate. Work half hour, then enter in a boiling bath of 3½ lb. bichromate of potash for one hour, next dye with 20 lb. logwood and 1½ ozs. soda, sadden with 1 lb. 10 oz. of copperas, wash, soap, then wash and dry.

2. **Aniline Black.**—Work the linen in a bath of 11" Tw. (strength containing 1,000 parts of aniline salts), 600 parts chlorate of potash, 100 parts copper sulphate, for some time at a temperature of 45° C.; age at 60° C. in ageing room, then run through a bath of bichromate of potash, at hand heat; wash in soda, and dry.

3. **Fast Grey.**—The linen is given a light blue bottom with indigo, and is then topped with tannin and iron liquor. For 90 pieces of linen

give a pale blue on the vat, then immerse in a bath of 16 lb. sumac extract at 30° C. for a few hours, then to the same bath add 9½ lb. nitrate of iron. Work to shade, rinse, and soap.

By using benzoazurine 3 G, and fixing with copper sulphate instead of the vat blue, fast greys can also be got.

4. **Dark Blue.**—Give a bottom with the indigo vat, then top with indophenin B.

5. **Drab.**—Very good results can be got with *cachou de Laval*. A method for obtaining a very fast colour is: For 90 pieces of linen, prepare a bath of 2 lb. cutch, 2½ ozs. copper sulphate, and 6 ozs. logwood extract. Use at 40° C. for one hour, then to the same bath add 6 ozs. sulphate of iron, work well, then pass through a fresh bath at 60° C. of 1 lb. bichromate of potash. Or the yarn may be treated at 40° C. with 4½ lb. cutch, 1½ lb. copper sulphate, 3 lb. dry quercitron extract, 3 lb. dry sumac extract, and 1½ lb. logwood extract. After working, add to the same bath 1½ lb. sulphate of iron, and 3 lb. nitrate of iron, then darken by running through a bath of 1½ lb. bichromate of potash at 40° C.

6. **STONE COLOURS.**—These important colours are in shade between grey and drab, with often a weak olive tone. The great variety of these shades may be seen from the following few recipes:—

Pale Stone.—For 90 pieces: Treat in a 30° C. warm bath of 2½ oz. tannin for a few hours; then in the same bath sadden with 5½ lb. acetate iron (iron liquor).

Middle Stone.—For the same quantity of linen: Take 2 lb. cutch, 5 oz. tannin, and 2 oz. quercitron extract; work well, then sadden in a fresh bath with 4½ lb. nitrate of iron.

Dark Stone.—For the same quantity of linen: Take 3 lb. cutch, 8 oz. tannin, and 4 oz. quercitron extract; work well at 40° C., then sadden in the same bath with 6½ lb. nitrate of iron.

Stone with Olive Shade.—For the same quantity of linen: Work in a warm bath at 40° C. of 3½ lb. cutch, 3½ lb. dry quercitron extract, and 4 oz. tannin; afterwards sadden in the same bath with 3 lb. nitrate of iron.

7. **BROWN.** (a) **Dark Brown.**—For 90 pieces: Treat in a bath at 60° C. with 12½ lb. cutch, 14 lb. logwood extract, and 14 lb. copper sulphate, for one hour; then in a fresh bath treat with 2 lb. bichromate of potash; enter again into the first bath, again chrome, rinse twice, and oil.

(b) **Cherry Brown.**—For the same quantity of yarn: Treat in a warm bath at 60° C. of 12½ lb. cutch, 6½ lb. logwood extract, and 3 lb. of copper sulphate; then sadden in a fresh bath of 3 lb. bichromate of potash. Repeat these operations as may be required, soap twice, and oil.

(c) **Olive Brown.**—Work in a bath at 60° C. of 5½ lb. cutch, 14 lb. copper sulphate, and 5½ lb. fustic extract; sadden with 2 lb. bichromate of potash, repeat the operations, rinse, and dry.

(d) **Gold Brown.**—Treat in a bath of 60° C. 3½ lb. fustic extract, 1 lb. cutch, and 1½ lb. copper sulphate; then sadden in a bath of 1½ lb. bichromate of potash. Repeat the operation, rinse, and oil.

(e) **Dark Bronze Brown.**—Work the goods in a bath of 9½ lb. quercitron extract, 9½ lb. cutch, 14 lb. logwood extract, and 3 lb. copper sulphate at 60° C.; then sadden with 3 lb. bichromate of potash; enter again in the first bath, to which 1½ lb. of sulphate of iron has been added; again enter in the chrome bath, repeat twice, rinse, and dry.

8. **OLIVE.** (a) **Dark Olive.**—For 90 pieces: Treat in a warm bath with 1½ lb. cutch, and ½ lb. copper sulphate. In a new bath treat with ½ lb. bichromate of potash, rinse, and enter in a weakly acidulated acetic acid bath of 1½ lb. alum, 18 lb. fast olive; dye to shade, rinse, and oil.

(b) **Yellow Olive.**—For the same quantity of linen: Treat in a bath at 60° C. with 3 lb. fustic extract, 1½ lb. cutch, and 1½ lb. copper sulphate; sadden in the same bath with 1½ lb. sulphate of iron; darken in a fresh bath with 1½ lb. bichromate of potash; repeat the operations, then rinse, and dry.

(c) **Dark Olive.**—Treat in a warm bath of 8 lb. fustic extract, 1 lb. cutch, 1½ lb. logwood extract, and 3 lb. copper sulphate; then sadden in the same bath with 3 lb. sulphate of iron; next darken with 1½ lb. bichromate of potash; repeat the treatments, rinse, and oil.

THE production of colour direct upon the fibre by the use of thioparatoluidine and its homologues is the subject of a recent patent taken out by Messrs. Read Holliday and Sons. Thioparatoluidine is closely allied to primuline, being prepared from the same materials and by the same process.

THE City and Guilds of London Institute have made some alterations in their examination in bleaching and printing cotton and linen. Hitherto this has been considered one subject, but next year it will be divided into two—Cotton and Linen Bleaching, and Calico and Linen Printing.

Designing.

NEW DESIGNS.

DRESS DIAGONAL.

This design may be considered of universal application; as a shirting, dress fabric, vesting, mantle, waterproof material, skirting, or suitings in woolen, worsted, silk, cotton, and linen, it is equally available. Of course to adapt the pattern to any or all of these materials the requisite calculations for counts, reeds, weft, &c., would have to be made. We give particulars suitable for a fancy shirting and vesting: 64 ends per inch of 24's cotton twist for warp, 2 in a heald, 1 heald per dent, 80 picks per inch of 16's cotton weft; warp all white; weft all dark shades; or weft light shades and warp dark blue and other dark shades. These details are for a shirting.

For a vesting a 48 reed, 4 in a dent of 40's two-fold cotton, dark myrtle for warp, of 96 ends per inch, 2 in a heald, 2 healds per dent, 80 picks per inch, of 40's two-fold polished cotton, in scarlet, white, maize, straw, primrose, and silver grey. The warps may be of these tints, and the weft dark, whichever arrangement may be fancied. A very pleasing, serviceable vesting cloth can be produced on 16 shafts straight over draft, 16 to the round. Spun silk wefts may be used if a more expensive material is required.

COTTON GINGHAM CHECK.

Plain canvas cloth made in 80 reed, 2 in a heald, 1 heald per dent, of 24's cotton twist, 80 picks per inch, 2 in a shed, of 24's cotton. Colours of warp and weft must be bright, clear, and fast, as this is meant for a washing material. Pattern of warp and weft as follows:—4 yellow, 4 black, 20 light strawberry, 4 white, 12 light strawberry, 4 white, 20 light strawberry, 4 black, 4 yellow, 12 mid blue, 4 light pink, 12 mid blue, 4 light pink, 12 mid blue, 4 yellow, 4 black, 20 light strawberry, 4 white, 12 light strawberry, 4 white, 20 light strawberry, 4 black, 4 yellow, 12 mid blue, 4 white, 12 mid blue; total ends in pattern: 224. This will make a very pretty gingham plaid and ought to make up with delicacy and daintiness. If the colours are fast it will wash well, and look fresh after every operation of the laundry. Useful widths are 44 and 49 inches.

FIGURED DRESS AND MANTLE CLOTHS.

Two figures, Nos. 25 and 26, are supplied as illustrations of the art of reducing natural forms to a condition suitable for application to textiles. The plant taken in both cases was the sunflower.

Figure 25 is almost an exact drawing of the plant, the same figure being placed in two positions opposing each other.

In Figure 26 an attempt has been made to conventionalise the same figure to a much greater extent. Looking at the design as given it would be difficult to say on what principle it had been constructed; the square, the drop pattern, the stripe, are all involved, and yet as a matter of fact the pattern has been produced by experimenting with none of these, but with the ogee basis. The treatment naturally suggested by the growth of the sunflower is a "straight up-and-down" effect; thus we have endeavoured to retain the tone of the form of the plant and yet to give the idea of some freedom of treatment.

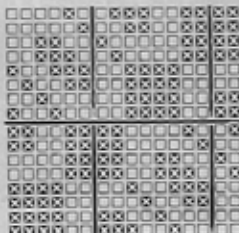
Other methods of treating the same form will undoubtedly present themselves; the two under consideration have simply been selected as types of the two systems of treatment, viz., the



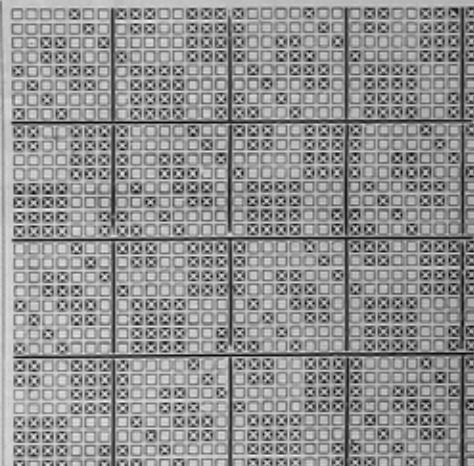
FIGURE 25.



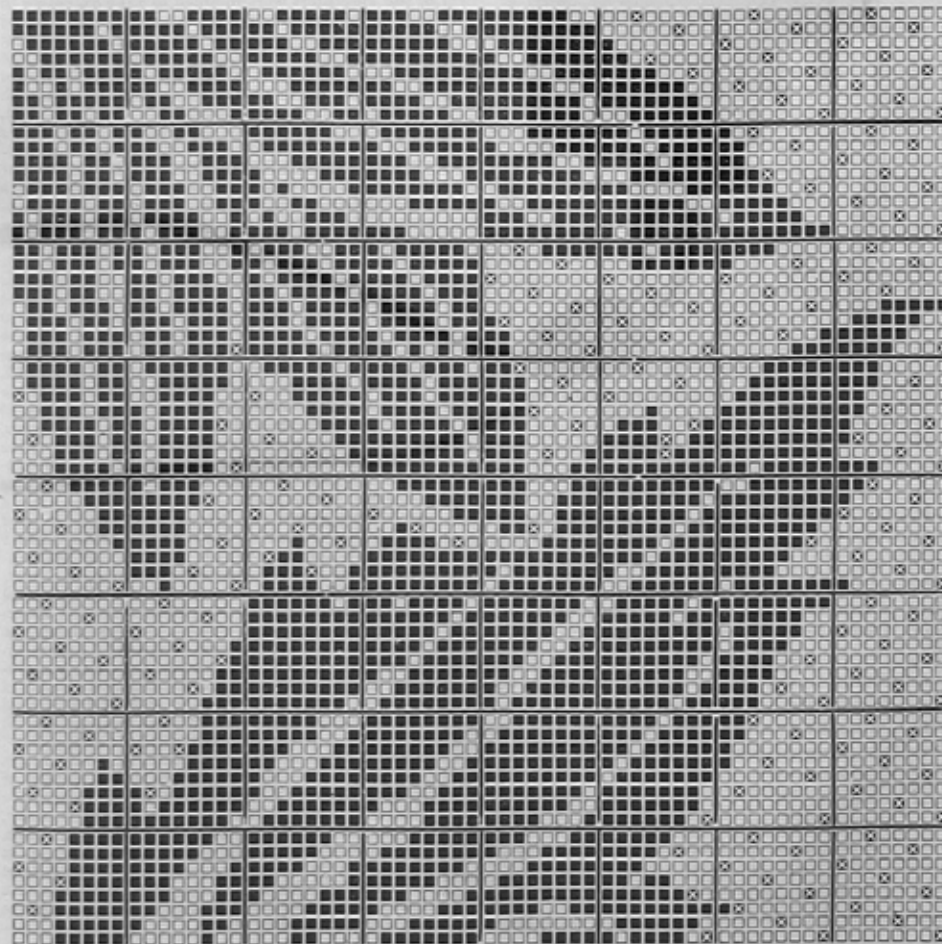
FIGURE 26.



DRESS DIAGONAL
PEGGING PLAN.



DRESS DIAGONAL.



DESIGN 83.—1st. Cut a card 8-end Sateen for ground. 2nd. Cut all but solid black marks.

natural, and the conventional. The natural system seems to be in favour at the present time, there being a growing tendency to copy and adapt from nature more precisely than has been the case for generations. Figure 25 is a type of figure utilised in many ways other than here specified. For example a very good effect will be obtained by using a bold scroll figure developed in neutral shades for the ground portions of the design, and then placing the two figures here given much farther apart and developing them in more pronounced colours and more lustrous materials.

Design 183 indicates the principle of developing Figure 25 either as a mantle cloth or figured silk. As a mantle cloth the following sett will be found suitable:—

Warp.
2/80's dark worsted,
18's reed 6's.

Weft.
1 pick 40's worsted for the ground,
1 " 80's n.ohair for the figure.
100 ground picks per inch.

The ground weave is sateen throughout; thus the figure will shew up very clearly upon it.

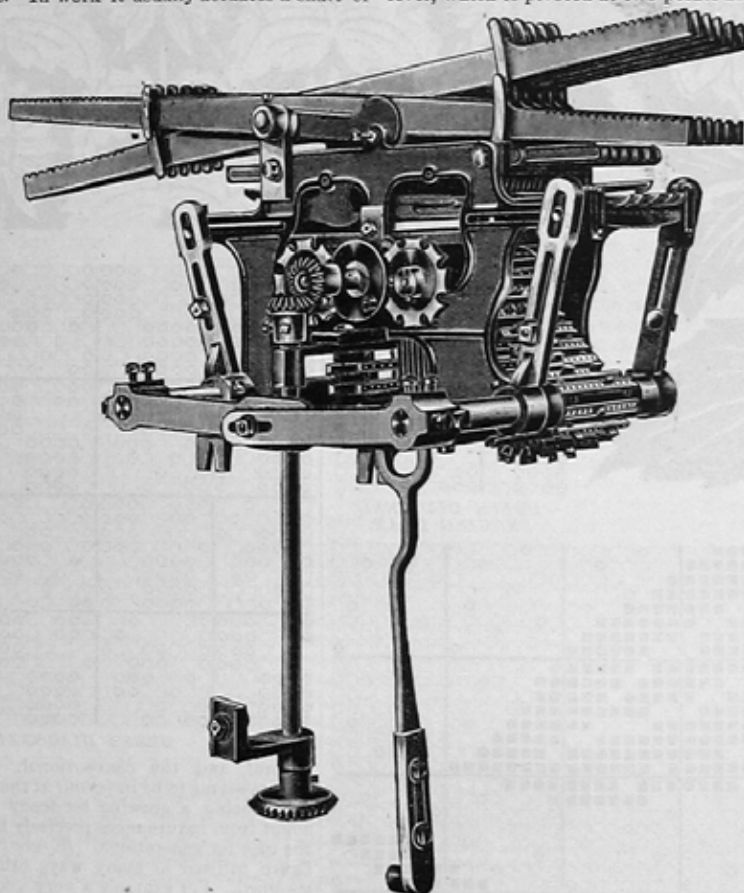
If the pattern be required for a figured silk, one weft, say dark green, should form the leaves and stem and also form the weft for the sateen ground, while only one extra weft will be required for the flower. Or again if 1 pick dark green, 1 pick yellow, be introduced, the green may be brought up to form the leaves and the yellow the flower every other pick, while both assist in binding the warp for the sateen ground.

Machinery and Appliances.

THE PATENT POSITIVE DOBBY.

MR. SAMUEL WALKER, EAGLE AND ATLAS WORKS, RADCLIFFE, MANCHESTER.

The dobby is a well-known variation of Jacquard's celebrated invention. It has a much less range of work than the latter, having been invented for a simpler class of work, and where a less complex and costly machine than the jacquard will serve equally well, if not better. In principle it is the same, but in the main it is applied to operate healds and not harness, except it may be a fine border thread, as in dhootie borders. In work it usually actuates a shaft of



THE PATENT POSITIVE DOBBY.—MR. SAMUEL WALKER, RADCLIFFE.

healds, whereas Jacquard's machine lifts a single thread at a time.

There are many types of dobbies, for all of which some special merit has been or is claimed. A weakness, however, that has very generally distinguished them, has been the necessity, in most cases, of drawing down the shafts of healds by the use of helical springs—instruments, it is well known, very unreliable in their character, and, it may be added, very unmechanical also. We have pleasure in bringing before our readers an improved dobby, made by Mr. Samuel Walker, of the Atlas and Eagle Foundries, Radcliffe, which is successful in eliminating this weakness, entirely dispensing with springs and actuating the healds with positive tappets. This will be admitted to be a decided gain. The inventors are Messrs. S. Walker and George Leek.

The accompanying illustration is a good representation of the new dobby. The machine is mounted upon a suitable head-piece attached to the loom frame. On the crank-shaft of the loom

is fixed a small spur wheel, which gears into a larger one carrying a crank pin attached to its side. To this pin is attached the connecting-rod, which is seen pendant in the illustration. The upper end of this rod is attached to a projection on one of the horizontal levers, mounted upon the rocking shafts. The levers, being connected in the middle by a pin upon which they are free to move by the means already described, rock the shafts, and so move the upper extremities of the vertical levers through a given arc of a circle. The extremities of these levers are slotted, and carry the knife bars, which of course have as usual a lateral movement in each direction. These knives actuate the horizontal books, which are notched at each extremity for the purpose of allowing the knives to engage with them. All these hooks rest upon the ends of a horizontal lever, which is pivoted at two points and is held

down in the centre by a small helical spring, which draws it down into its first position after the passage of the pattern pins or pegs that raise it. Beneath these levers are mounted the two pattern chain barrels, operated directly from the crank shaft of the loom by bevelled gearing upon the vertical shaft and the ring and star wheels, shewn in the front of our illustration. Returning to the horizontal hooks: these are pivoted from the under side of a sliding frame carrying a tappet or cam, which has a horizontal movement backward and forward. The cam, which is cast upon the top of this sliding frame, is an internal one, and receives an anti-friction bowl carried upon a stud on a projection on the under side of the heald levers. The internal cam being a curve, the forward or backward movement of the sliding frame which carries it causes it to elevate or depress the heald levers, thus shedding the warp. At the bottom of the loom there is a corresponding series of levers, having their fulcrums in the centre, as have the heald levers. At one end the heald levers have a direct connection with these by

cords, and at the other by the usual attachments through the healds. Thus a direct and positive movement is secured throughout. Both the bottom and top series of levers are balanced, whereby an easy movement is secured, quite free from the objectionable jerking action inseparable from the use of springs.

This dobby is very suitable for all the uses to which such a machine is adapted, and has especial advantages in cases where two distinct borders are required, as the pattern barrels can be put in and out of action with the greatest facility and without loss of time. The easy and reciprocal action of its various parts minimizes the power required to operate it, and the wear and tear upon the healds, and diminishes the breakage of the warp threads through the easy glide of its movements. It is compact, not liable to get out of order, and durable. It is a curious and interesting fact that this dobby comes from the identical establishment from which emanated the celebrated "Diggle's chain motion" many years ago. Our readers who may desire further information will be supplied with such upon application to the maker as above.

AUTOMATIC SPRINKLERS IN INDIA.

A very interesting trial of the Grinnell Automatic Sprinkler for extinguishing fires took place on Tuesday evening, says the *Times of India* of the 5th inst., on the premises of the Western India Spinning and Manufacturing Company at Chinchpoojy. A small empty building, detached a considerable distance from the remainder of the premises, was chosen for the purpose, and in this the pipes for conveying water to the sprinklers were erected, and four of the sprinkler heads were attached at a distance of 10 feet apart, exactly in the manner in which they are erected in mills fitted with these appliances. A pile of wood and grass plentifully sprinkled with kerosine oil formed the materials for the fire, and when alighted these burned so fiercely that the spectators standing about the doorway of the building had to beat a hasty retreat. In a former experiment, we understand that the doors and windows of the building were closed, and some of the spectators were inclined to take exception to this, on the ground that in an actual mill fire the windows would probably all be open, and that thus the conditions of the experiment were not the same as might obtain in a real fire. On the present occasion, however, Messrs. Macbeth Brothers and Co., who conducted the experiment, gave instructions that the doors and all the windows of the building should be left wide open; but, notwithstanding this, the time between the lighting of the fire and the opening of the first sprinkler was a little under half a minute, and only 35 seconds more elapsed before the pile of wood, etc., was a blackened mass. The sprinklers were allowed to play on the smouldering embers for a few minutes more, and then the water was turned off. We draw attention to this point, because we believe an idea prevails in some quarters that it is impossible to stop the flow of water from the sprinklers for some time after they have commenced to act, and that thus a great deal of water damage would be caused. This is not the case; all sprinkler installations are provided with a stop valve, the closing of which at once completely stops the flow of water to the pipes, and thus limits the action of the sprinklers to the actual spot where the fire occurs. It has been suggested also that the action of fire is necessary to fuse the solder, which keeps the sprinkler closed; but a very simple experiment proved that is not so, and that all that is necessary is that the solder should be exposed to a temperature of about 155° Fahrenheit. A fire was kindled under a bucket of water, and when the thermometer showed that the required heat had been obtained, a sprinkler head, connected with the water-supply by a flexible tube, was placed in the bucket, and "went off" almost instantaneously. On the whole, the trial was pronounced to be eminently satisfactory by a number of gentlemen connected with the mill industry, and the insurance companies who were present, and it was frequently remarked that if the "Gordon Mill" had been fitted with these appliances, it would have been in full work at the present time, instead of being turned into a second-hand metal mart. We hear that several mill companies in Bombay, tempted by the promise of a large discount from the insurance companies, as well as by the prospect of greater security for themselves, have ordered out automatic sprinklers from England, and we think there can be little doubt that their example will be very soon followed by others.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

NEW YORK, SEPT. 13TH.

IMPORTERS AND THE TARIFF.—OPPOSITION TO MR. MCKINLEY'S RE-ELECTION.—BRITISH MACHINERY FOR THE STATES.—THE SCOTCH FANCY FLANNEL MANUFACTURERS AND THE AMERICAN TRADE.—THE CARPET TARIFF.

Judge Edward Lauerbach, of New York, has recently been in Washington on behalf of the importers, who affirm that they are threatened with ruin if compelled to withdraw their goods from bond on the 1st October. He was actively engaged among members yesterday, and although members of the Senate Committee are not disposed to concede anything, those of the Ways and Means Committee are rather more liberal in their views. The Republicans profess to believe that the statements of the importers are exaggerated, and Mr. McKinley, who speaks, of course, as the mouthpiece of the manufacturers, says that the possible troubles are nothing like so serious as has been affirmed. The importers, he adds (and here one perceives the cloven foot), have brought it upon themselves by their large purchases for speculative purposes. In other words, they have bought of the hated foreigner, and should therefore be punished: that is about the long and short of it. Senator Allison gives it as his belief that \$10,000,000 will cover the duty on all goods now in bond, especially those which it is desirable should be taken out before the Bill becomes operative. Aside from the high-priced cotton fabrics, woollen dress materials, tobacco, hardware, and possibly one or two other classes of goods, there have been no material increases in duty, and consequently there can be no consuming haste in removing the articles from the warehouse. All of which indicates very clearly that now, as heretofore, the way of the importer is to be made as hard as the political hirings of the manufacturers of this country can make it. Apropos of McKinley, it may interest English readers to know that a special to the *Mail and Express* (N.Y.) on Thursday stated that Speaker Reed has agreed to go to Ohio and stump the Congressional district for McKinley. The *Mail and Express*, which is Republican, says the fight in Ohio will be the bitterest known for years, and that the chances are against McKinley.

Numerous protests have been received from manufacturers of binder twine against placing that article upon the free list. It is understood that the House Committee will not agree to this amendment, but will favour the re-imposition of the McKinley rate in conference committee. It is anticipated that the joint conference committee will have reached an agreement on all points at issue by the 22nd inst. Final disposition of the Bill may therefore be expected a day or two later.

Some of the Scotch fancy flannel manufacturers contemplate the erection of mills in the United States owing to the Bill. Andersons and Lambie and Higgins have, it is understood, already taken active steps. Both firms transact an extensive trade with this country, and as they cannot face the tariff they will produce on this side.

The Western Woollen Manufacturing Co., which recently secured control of the Woollen Mills at St. Boniface, just across the Red River from Winnipeg, Manitoba, has now everything in order and running smoothly. The new company will manufacture cloths, sheetings, flannels, blankets, yarns, sox, mitts, etc. Some new machinery for the manufacture of heavy cloths is being procured from Leeds, England. It is also intended to put in some new power knitting machinery to replace the present hand machines for the manufacture of sox, mitts, etc. Only pure woollen goods will be turned out. Electric lighting will be put in to enable the work to go on night and day, as orders are now a long way ahead. The factory is under the direction of

John Ryan, formerly of the Rapid City woollen mill.

Following the announcement that the Halifax (Nova Scotia) Cotton Company want to sell out their unprofitable business, comes the intimation that Messrs. Wm. Parks and Co., of St. John, N.B., the largest manufacturers of cotton yarn in the Dominion, have suspended. This is the second time that firm has been in difficulties since 1879; previous to that time it did an excellent and paying business, its cotton yarns having an almost Continental reputation.

A number of roving frames from Howard and Bullough, Accrington, will shortly arrive for the Shove mills, Fall River, Mass.

Thomas Lund and Mr. Lister, both of Bradford, England, are now on an American tour. Mr. Lund is interested in the Landenberg worsted mills of Landenberg, Pa., and states that he thinks the outlook for the American manufacturers of worsted yarns is very good. Mr. Lund is a large and successful spinner of worsted yarns in the suburbs of Bradford.

An agent of the Coats Thread Co. recently visited Baltic, near Willimantic, Conn., and thoroughly looked over the water power and abandoned mill property there. It is said that its purchase is probable. The mill is known as the Baltic woollen mill, and formerly ran three sets on fancy cassimeres.

The 140 carpet mills in Philadelphia, Pa., employ nearly 30,000 men. The business is divided into several parts, in a number of which girls do the sole work. The average day's work is ten hours, and this year the business is better than it was last year, when it was very dull. There has been no change in wages. The spinners receive 15 dollars a week; dyers two dollars a day; spoolers (girls) from five dollars to eight dollars 50 cents a week; winding (girls) pays seven dollars to 10 dollars a week; twisting (girls) pays six dollars; warping pays 11 dollars a week; weaving is done by the piece, and will average 10 dollars a week; reebers six dollars a week; helpers, fixers on looms, tiers, burlers, make from five dollars to five dollars fifty cents a week. At the present time the mills are very busy, and the boom will probably last the remainder of the year.

The Tariff Bill, as amended by the Senate, provides the following rates of duty on carpets and carpeting:—

Axminster, Wilton, Aubusson, Saxony, Tournay velvet carpets, woven whole, Oriental, Berlin and similar rugs and carpets—60 cents a square yard and 40 per cent. *ad val.* Present duty: 45 cents a square yard and 30 per cent. *ad val.*

Brussels—44 cents a yard and 40 per cent. *ad val.* The duty is now 30 cents a yard and 30 per cent. *ad val.*

Velvet and tapestry velvet carpets—40 cents a square yard and 40 per cent. *ad val.* Present rate: 25 cents a square yard and 30 per cent. *ad val.*

Tapestry Brussels—28 cents a square yard and 40 per cent. *ad val.* The rate is now 20 cents per square yard and 30 per cent. *ad val.*

Triple ingrain, three-ply and worsted chain Venetians—19 cents a yard and 40 per cent. *ad val.* The existing rate is 12 cents a yard and 30 per cent. *ad val.*

Two-ply ingrain and yarn Venetian—14 cents per yard and 40 per cent. *ad val.* The existing rate is 8 cents a yard and 30 per cent. *ad val.*

Wool Dutch and two-ply ingrain—14 cents a square yard and 40 per cent. *ad val.*

Druggets and backings—22 cents per yard and 40 per cent. *ad val.* The existing rate is 15 cents a yard and 30 per cent. *ad val.*

Hemp and jute carpeting—6 cents per square yard.

Mats, rugs, screens, covers, hassocks, art squares, and other portions of carpets or carpeting wholly or in part of wool, and not especially provided for, are to be subjected to the rates of duty levied on carpets or carpeting of similar descriptions.

Carpets and carpeting of wool, flax, or cotton, or made in part of any of these materials—50 per cent. *ad val.*

Cocca or rattan mats and matting—8 cents a square yard for matting and at 4 cents a square foot for mats.

Floor oil cloth, linoleum, corticine, &c., valued at 25 cents or less a square yard—10 cents a square yard and 30 per cent. *ad val.* If valued at over 25 cents a yard the rate of duty is to be 10 cents a square yard and 30 per cent. *ad val.* (*sic*).

Burlaps not exceeding 60 inches in width, and made of flax, jute, or hemp, or in which these

materials form component parts of chief value—1½c. per lb. If over 60 inches in width the rate for the grade generally used in linoleum and oil cloth will be 40 per cent. *ad val.*

Jute yarns—35 per cent. *ad val.*

A *Times* telegram of Thursday says:—The Tariff Conference has not yet made a report. Everything is accagued except sugar and binder twine. The Conference proposes to arrange these as the House wishes, making sugar below No. 16 free, and imposing 1c. per pound duty on twine. The sugar refining interest make strong objection to this settlement, wanting higher duties. The North-Western Senators adhere to free twine. If an arrangement is not effected to-night the Conference will probably decide to report to-morrow, leaving these agreements for further action in the House.

FACTORY LAWS FOR INDIA.

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

SIR,—Kindly allow me to reply to a letter signed "Spindle Point" which appeared in *The Textile Mercury* of August 2nd, and purported to be a reply to one I wrote some time ago on the above subject. I am given to understand it is the united efforts of three or four individuals whom I know. I suppose this letter of "S.P." is meant for the "crushing reply" that one of the parties told me had been sent to England. Very crushing indeed! I was surprised to see that not one of them had the courage to append their names to the letter. It shows they have not the courage of their convictions or else that their arguments are so shallow they are ashamed to acknowledge them.

This letter, I am sorry to say, is no answer whatever to mine, and being anonymous I hardly thought it worth my while to notice it, but by doing so it will give me another opportunity of further exposing the vindictive and selfish opposition of the Lancashire millowners and Chambers of Commerce to our cotton trade in Bombay, and also of stating a few more facts about the poor, hard-worked, and badly-fed Lancashire weavers. They call themselves "Poverty knockers"—what a significant name!

I have only been in Bombay eighteen months, and I am sorry I did not come here ten or twenty years ago, but it is not so much a question of time as of observation. Some people will learn more in twelve months than others in three years, and I shall state nothing in this controversy, but facts which I can maintain.

Before coming out to India, and on the way here, I found the natives extremely civil and obliging, willing and anxious to learn all they can. I spare no pains to instruct them in all the readier and easier ways of doing their work, and the grateful look they give me is ample compensation for all my trouble. When I tell you that we have increased our out-put of cloth from the same number of looms upwards of 1,500lb. per day, you will agree with me that a system of kindness to the work-people without favouritism is the best policy. Of the principal parts of my letter "S.P." says nothing, therefore I conclude that he tacitly acknowledges that in all those matters he does not mention I am right.

Before I enter into some fresh comparisons and proofs of what I before advanced, I will examine my "opponent's" figures. In England the recognised mill hours are 56½ per week, the average number of holidays are nine days, as per *Cotton Factory Times* August 1st, 1890, as follows—Oldham, 11 days in the year; Hyde, 11 days; Bolton, Stalybridge, Rochdale, 10; Preston, Blackburn, Darwen, Nelson, and Rishton, 9; Burnley and Accrington, 7; Longbridge and Church, 8; Chorley, 6; total, 62. Call the average 9 days per year, reckoning 10 hours each for 9 days (though we find several of the holidays occurring on the Saturday when the mills only work 6½ hours) which will give us a total of hours supposed to be worked in the Lancashire mills of 2,858 or 300 hours more than stated by "S.P." How he gets his total of 2,565 I cannot imagine, but being perhaps a fitter he may have been taking the mechanics' time, which is less than cotton operatives. I fearlessly contend that the hours worked in the cotton mills of England are nearer from 58 to 59 than 56½, and in support of my assertion I bring forward as my witnesses the cotton operatives of Lancashire themselves, in "the voices from the spindle and the loom" in their own paper, or a paper devoted to their interest, viz., the *Cotton Factory Times*, where they are in the habit of stating their grievances. My first extract shall be from the same paper, in which appeared "S.P.'s" letter:—"Sabbon, August 1st, 1890. For the last two months the employers at Menton mills have run the engines until half-past seven at night, and occasionally until four o'clock on Saturday."

[Our correspondent gives 31 other extracts, which we are obliged to omit for want of room. Ed. T.M.]

I could furnish you with a great many more extracts, but I think these will be sufficient to convince your readers that I am not far wrong when I said that 58 or 59 hours per week would be nearer the truth than 56½. However, I will be generous. I will call the time worked 56½ if he likes, or a total of 2,858 hours, or as I before stated, I will even take his figures as regards the hours worked by the engine in Bombay, viz., 3,630 per year, as against 2,858 worked in Lancashire. Now we come to this point. I stated in my previous letter that we employed double the number of workpeople they do in Lancashire, because I shewed very clearly, I think, that in consequence of the manner the people work they are scarcely ever all working at one time. Some are partaking of their khana (food), some are smoking, some are being shaved, some are resting themselves basking in the sun, some are taking their bath. They also often go to drink water. It would do Sir Wilfrid Lawson good to see the amount of water consumed by the natives here. Others again, as I stated before, visit their native country for one, two, and three months. There is the attendance at their funerals and weddings, also upon sick relatives, and the keeping up of the anniversary of the dead man, attending the bazaar, worshipping God in their temples—all in the working hours. I will give you an instance of how the Hindoos work here. Go into the native city of Bombay in the early morning, say at five o'clock, and you will see the workers in brass and copper and silver. All the trades are worked in the front part of the premises, abutting on the street. You will see these people as busy as bees. Pass by the same shop at night, say ten or eleven o'clock. You will see them still at work as busy as ever. Do not imagine for a moment that they have been at work all day. Oh, dear, no! They work for a time, take their rest when they want, eat their food the same, and if their time were reckoned up you would about find that they do what I have often heard the working people of Lancashire rave so much about getting, but it has always appeared in the dim and distant future, viz., eight hours' work, eight hours' play, and eight hours' sleep.

It is utterly impossible to keep these people to a hard and fast line. You cannot really understand them unless you live amongst them and study their ways, etc. So to keep "the strap on the fast pulley" as much as possible we employ more than double the number of workpeople who would otherwise be required. If this be true—and I know it to be—then in common fairness we ought to divide the hours worked here by the engine (3,630) by two, which will give us 1,815 hours really worked by our people as against the 2,856 worked in Lancashire mills, shewing to our credit 1,041. In a letter from a gentleman in Bombay who, I believe, had been over here upwards of three years, and which appeared in the *Cotton Factory Times* of July 25th, 1890, he corroborates much that I said in my first letter. He says, "There is a mill in Bombay of 20,000 spindles and 320 looms, which employs 700 workpeople. The same size of a mill would be worked in England by 280 workpeople, reckoning one weaver to two looms." In England I should reckon one weaver to three looms. That would give 226 in England, as against 703 in Bombay, in round numbers three times as many.

"Spindle Point" flatly contradicts me as regards workpeople going to their native country to the extent I said they did. Why, in our own mill I had, out of 260 weavers, 73 going to their native country at the end of one month, and the month following almost as many, for terms of one, two, and three months. Almost every month some of the workpeople go to their native country. I think I have conclusively proved my position so far. Now, I would ask what do the Lancashire millowners do when they employ the same or a less number of workpeople than we do in India? They work the engines night and day. I can point to a mill near the neighbourhood I came from that employed two sets of hands and worked the engines night and day, or at the rate of 5,712 hours per year, and yet the Blackburn Chamber of Commerce said nothing. But because we in India run our engines a few hours longer than they do in Lancashire, with a double set of workpeople, there is a howl from the Chamber of Commerce, clearly shewing that it is nothing but pure selfishness that animates its actions, for this is a case where, with the same number of workpeople, or less than we have, they work their engines actually 2,082 hours per year more than we do in Bombay. I have advanced nothing but what I know from practical experience to be correct. Our Sepoy never interferes with the workpeople coming outside the mill into the yard or compound—unless, indeed, they attempted to go outside without a pass. Then he would stop them, as the lodge-keeper in England would do.

Some people have thought that I fixed the figure rather low for the maintenance of a man, his wife and child. I will explain how I came to fix on that amount. A friend of mine—a Mr. Pyne, of Cabul—who is engaged as a civil engineer by the Ameer of Afghanistan, asked me to get him a weaving jobber, or a good weaver who could "gait" a warp up and "fettle" a loom. He had at Cabul a loom with a warp in, but he wanted it "gaited" up, so that when the Ameer visited Cabul he could see it working. He thought if the Ameer saw the loom making cloth he would build a mill. I asked several Hindoos, but none would go. I ultimately sent a Mahometan. One of the Hindoos I asked was a very active and intelligent young man—a weaver on two looms, also a *buddley* jobber (that is, he worked silk as a jobber)—who was the next on turn for a regular jobbing situation. I offered him 60 rupees per month, and all his expenses to Cabul, but after thinking the matter over he came to me and said he should prefer to stay in his native country; but I said, "Look at the wages, man. After a few years you will be able to purchase some land in your own country and settle down." "No matter," he said; "I am earning 20 rupees per month as a weaver, and in course of time I expect to become a jobber, and it only takes three or four rupees per month to keep myself, wife, and child. I am saving 16 rupees per month, and I should prefer not to go."

"S.P." says "he is again wrong" with regard to the Mussulmans. I certainly am not wrong, for at our mill I signed all the passes giving them permission to go out of the mill one hour earlier; and I have it on the best authority—that of the Mahometans themselves—that before they breakfast they first go to the mosque and engage in prayer, afterwards take their khana, and I have yet to learn that from 5-30 to 6-30 is not one hour. I did not speak of the clerk and his boy. I said clerk and assistant, for I find that in some cases the assistant, instead of being a boy, is the older man.

"Spindle Point" speaks about the low price paid for labour. I contend even on the question of wages the natives are better off than the workpeople of Lancashire. Their wants are few and simple. I remember, when a lad, going to Peel Park, Manchester, and immediately on entering I saw the statue of Brotherton, the philanthropist of Salford, and on the pedestal were engraved these great and memorable words, which I think I shall never forget: "My riches consist not in the extent of my possessions but in the fewness of my wants." A worker here can save more than a worker in Lancashire, if so inclined. The Bombay mill wallah whom I before alluded to says: "As to wages, a spinner with his 20 to 25 rupees per month is better off than an English spinner with his 30s. to 40s. per week." The native spinner, if he is disposed to be steady, can live on 5 to 7 rupees per month, keeping his wife and family, thus saving from 12 to 15 rupees per month. In about eight years he retires from the mill a landed proprietor. It really is the amount that a person can put aside for a rainy day that we must judge his position by. The greater portion of our weavers have earned close on 30 rupees this month, many as high as 24 rupees. Out of that they may, if they like, save 12 and 16 rupees, or perhaps more, and the purchasing power of the rupee in this country is equal to 2s. English money, whereas in Lancashire it takes a weaver all his time to make both ends meet, and instead of a bit of land and a bungalow up in his own country where he can sit under his own vine and fig tree, what has the English weaver to look forward to but the workhouse and a suit of corduroy with brass buttons, the horror of an English working man? Many a working man has preferred to starve before he would enter such a place, and I am sorry to say in thousands of cases this is his only and last refuge.

I think I have now disposed of "S.P.'s" feeble and futile attempts to answer my letter.

I will now touch upon another very objectionable phase of Lancashire mill life I do not see practised here, that is the great employment of married women with families as weavers, winders, warpers, reelers, and card-room hands. Of course we have married people here as winders and reelers. As I stated in my former letter, women are only employed here in the cotton mills as winders and reelers, but what I shall speak about as taking place in England we do not see here—that is the nursing out of poor workpeople's children, instead of being nursed and tended by their own parents. This is a great and growing evil, and in after years will tell, and has already told, on the health and stunted growth of the rising generation of Lancashire workpeople. Having to do this to eke out a living shews what a deplorable state they are in. And yet, forsooth, people boast of the great wages got by weavers of England, "the first commercial nation of the world!" It makes a person sick who knows the real truth of the case to listen to such twaddle.

If you will read their letters to their own paper you will see that in a many cases the miserable pittance they receive will hardly keep body and soul together, much less allow of their being able to save up and purchase land, and retire on a competence as many of the Bombay mill workers do. Only the other day I had a workman come to me to ask off for two months, while he built a bungalow for his family on some land he had purchased in his native country.

In this letter I intend to bring forward some more witnesses to prove some of the statements I made in my first letter, though I only stated what I knew to be true from my own personal observation. Let the "Voices from the spindle and the loom" be again heard. These come direct from the heart of the poor weavers of Lancashire, who are expected to make everybody's bad work good or else be "bated"—sometimes almost the whole of their week's wages. As in the case of working over hours, I will give the names of the town and the date of the paper. I have no need to exaggerate, in fact I keep on the charitable side, and, therefore, defy all criticism.

"FARRINGTON, June 20, 1890.—There are some very loud complaints again as to the obnoxious system of steaming during the hot weather. Steaming is carried on at some places to such an extent that it is almost past bearing. The ventilations are kept shut at one place, and the weaving shed is more like a stove than anything else."

[Our correspondent quotes 11 other complaints, all in reference to the steaming of weaving sheds.—Ed. T.M.]

Surely I have quoted enough to convince the most sceptical. This has all occurred since a special Act of Parliament was passed to prevent excessive steaming.

The Lancashire manufacturer and the Blackburn Chamber of Commerce have quite enough to do to sweep their own hearths clean without attempting to interfere and meddle with the cotton trade of India, about which they appear to know absolutely nothing. Even men you see writing from Bombay neither know the country nor the people. You cannot gauge the natives of India by your Western ideas, and to attempt to make the workpeople conform to a hard and fast line is sheer nonsense. To thoroughly understand them you must live amongst them and study their habits, their caste prejudices, their mode of living, their religious forms and ceremonies, and even then you must be a great deal cleverer than "Spindle Point," or you will make a fiasco of it.

I again invite criticism on my letter, but I hope the next writer will take my letter *seriatim* and answer it fully, if he can; and I may say that in future I shall not answer any letter unless signed with the *bona fide* name of the writer. Since I sent my first letter I have received many letters asking for information respecting the Bombay cotton mills. All those who sent stamps for return postage I answered, but I cannot be expected to spend my time and trouble for their convenience and pay the postage also.—Yours, etc.,

Crompton Villas, ISAAC WHITTAKER, Manager.
The Jivraj Balloo's Compound,
Tardeo, Bombay, India,
Sept. 5th, 1890.

INDIAN JUTE MANUFACTURERS' ASSOCIATION.—There can be no doubt, says the *Calcutta Journal Capital*, that we are fast approaching a crisis in the history of the Indian Jute Manufacturers' Association; the present condition of affairs cannot possibly last. It is an open secret that several members, who have hitherto been the strongest and most ardent supporters of the Association, will be unable to continue adherence to an agreement which has been found to be no longer adapted to the altered circumstances of trade. We venture to predict (1) that the principle of fixed prices will not be renewed, unless and until the present non-associated mills can be induced to become parties thereto. (2) That in the event of the three outside mills joining the combination the basis of fixed prices will have to be arranged on some more equitable system for the general good, and to carry a greater degree of guarantee against the possible danger of foreign competition. (3) That a large measure of concession in respect to extensions will have to be made to such mills as are at present incomplete and handicapped as regards equipment. We refer to mills that joined the Association previous to completion, and have space and motive power for a greater number of looms than they have at present working. With regard to 1 and 2 it must be apparent to the most ordinary observer that the price list, especially as it stands at present, has only served as an instrument to advance the interests of non-associated mills. It has operated directly against the

interests of the general body of those identified with the Association by denying to them the privilege of open competition, and forcing them to sell their productions to non-tariff markets at prices ranging from 15 per cent. to 25 per cent. under the so-called list. No wonder, therefore, that we hear of general demoralisation and want of confidence existing amongst members, and that all kinds of devices to get behind the price list have been freely resorted to. Then the course of exchange has so far altered circumstances as to bring Calcutta values to a higher sterling value than those of our great opponent Dundee, and consequently we are face to face with a positive danger of outside competition in markets that have hitherto been exclusively our own. With respect to para. 3 we believe that the Kankarrah Company have already notified that they can no longer subscribe to any combination which will exclude from them the right to fill up their at present incomplete mill. There are other concerns that have equally strong claims in the same direction, and it is rumoured that this point will be pressed to a degree which will demand concurrence before any new agreement can be arranged. It cannot be denied that the Association in times past has done real good service to the whole industry, and that it has been the means of promoting the prosperity and strengthening the position of our Indian mills. We commend these remarks to the careful consideration of all concerned in the welfare of the trade, and we trust that wise counsels will in the end prevail.

The firm of Henzel and Kunitzer, cotton spinners and manufacturers, of Widzew, near Lodz, Poland, advise us that they have converted the concern into a joint stock company, under the style of the "Actien-Gesellschaft der Baumwoll-Manufacturen von Henzel and Kunitzer." The capital is 3,000,000 roubles.

The silk crop of Asiatic Turkey has this year been unusually abundant, thanks partly to favourable weather and partly to the use of the Pasteur method of dealing with the silkworm disease. This bit of good fortune is of considerable importance to Turkey. Prices of silk are rising, and as the exports of this material in the shape of fibre and of cocoons are second in aggregate value only to raisins, and exceed £1,000,000 per annum, the good harvest of this year may be expected to give some impetus to Turkish trade. A correspondent writing from Broussa on September 4, states that owing to the revival of the raw silk industry there the aspect of the town has completely changed within the last ten years. The cultivation of the mulberry-tree has greatly extended, and the silk-spinning factories are busily at work. There is still much possibility of extension, and too much praise can hardly be given to the local firms who have laboured steadily to introduce the Pasteur treatment. The old breed of silkworms, which had disappeared, has been brought in again from Bagdad. Government aid is required, however, in order to encourage private efforts towards the improvement and extension of the silk-producing industry.

TRADE BETWEEN GREAT BRITAIN AND BULGARIA.—The British Vice-Consuls in Bulgaria, in their last reports, refer to the commercial arrangement between the two countries, which came into force at the commencement of the present year. Mr. Graves, of Philippopolis, describes the result so far as very encouraging. Not only have orders for English cotton goods in particular largely increased since the beginning of the year, but certain classes of goods, such as the coloured handkerchiefs of late years supplied exclusively by Switzerland and some varieties of cotton twist in which Austrian manufacturers were able to compete successfully, are now ordered in England only. Among cotton goods in demand, which, he thinks, might now be advantageously supplied from England, are "aladja," striped cottons dyed before weaving, which are used by the Turks for their sleeved vests. These are still imported from Switzerland. Mr. Dalziel, of Rustchuk, says that the convention promises to exercise a great influence on our commercial relations with Bulgaria. He mentions, as an illustration of the benefits to be expected, a fact related to him by a British merchant engaged in the Manchester trade. On the 1st of January this gentleman was in Manchester for the purpose of selecting his spring assortment of wares, when he became aware of the conclusion of the convention; his intention had been to buy goods to the extent of £10,000, but he immediately enlarged his views and decided to purchase to the amount of £25,000, and not only that, but he decided to buy certain sorts of yarns in Manchester which he had intended buying in Vienna, because formerly the great difference of duty, and that only, made it more profitable to import Austrian yarns than British. Mr. Brophy, of Varna, in like manner anticipates excellent results for British trade from the arrangement, as well as from the completion of the Yamboli-Bourgas Railway, and this opinion is shared by Mr. Hallward, of Bourgas.

News in Brief,

FROM LOCAL CORRESPONDENTS AND CONTEMPORARIES.

ENGLAND.

Accrington.

Mr. D. Murray, cotton manufacturer, has made an assignment on his estate to his creditors.

On Wednesday the building and fixed plant of the machine shop occupied by Mr. W. Lancaster was offered for sale by Messrs. Salisbury and Hamer, auctioneers, Blackburn and Manchester. No offer was elicited, and it was accordingly withdrawn. We understand that an offer was made for the property subsequently.

Atherton.

About ten pairs of mules have been erected in Howe Bridge new mill, and have commenced working. Another ten are expected to be ready in a few days.

It is stated that there is every probability of a new mill being erected by the Albion Spinning Co., Limited, and that if gone on with it will contain 100,000 spindles.

Barnoldswick.

The Well-house and Galf Hall Shed Co. are making rapid progress with the erection of the engine. A number of looms have already arrived and it is expected that a start will be made by the end of November.

Barrowford.

Messrs. C. Atkinson and Co. have taken space for 700 looms in the new shed being erected by the Barrowford Room and Power Company.

Burnley.

Messrs. Crabtree and Co. have taken room and power for 700 or 800 looms in Barrowford shed.

Messrs. Calvert and Berry have taken space for about 300 looms at the shed lately occupied by Messrs. Sutcliffe Bros., who have removed to the shed of Messrs. Melland and Coward, Elm-street.

Last week a serious breakdown of the engine occurred at Messrs. James Walton and Son's mill at Daneshouse, and it is thought that work will not be resumed for a week or two. About 130 or 140 hands are affected by the stoppage.

The demand for Burnley goods on the Manchester market continues very slack, and a large number of looms are standing in the town for want of warps. All the sheds are, however, running full time, and several extensions in the weaving branch are reported.

Mr. Osbaldeston has removed from the shed in Elm-street to Cliviger, where he has taken space for 400 looms in the shed lately occupied by Mr. R. Crabtree, who has removed to the Wood Top new shed, which contains about 1,400 looms, 400 of which are run by Messrs. Lord Bros., and the remainder by Mr. Crabtree.

The dispute at Messrs. Whitehead and Altham's mill was settled on Monday. During the forenoon a meeting of the weavers was held at the Weavers' Association, and Mr. David Holmes was deputed to see the manager of the mill. He subsequently returned to the room, and announced that arrangements had been made for them to return to work at noon that day. The result was that nearly all the operatives on strike resumed work.

The General Purposes Committee, at their meeting on Monday, had under consideration the report of the sub-committee appointed to confer with representatives of other bodies in regard to the establishment of a technical school for Burnley. Two schemes were discussed—the adaption of the old municipal building in Elizabeth-street, and the construction of entirely new premises. The committee decided to adopt the principle of the Act, but all details were left for the consideration of the sub-committee, which was strengthened by the addition of Aldermen Howorth, Keighley, and Sutcliffe.

Batley.

On Wednesday afternoon Bulrush Mills, Carlinghow, were sold for £7,070 to Mr. Peter Laycock, of Leeds, on behalf of Mr. Robert Talbot. Mr. Hollis, of Leeds, was the auctioneer.

Blackburn.

The secretary of the Blackburn and East Lancashire Infirmary has issued a statement giving the accounts received in this district on Saturday last—Hospital Saturday—towards the fund of the Infirmary. The total sum is £190 10s. 7½d., this including £103 18s. 9d. from 33 mills, etc., in Blackburn, and £41 9s. 9d. from 15 mills, etc., in Darwen.

The movement for forming a company to build a new weaving shed at Rishton is still going on, though it is not making as much progress as was expected. This is attributed by some to the fixing of the shares at £20 each, which debar's many from becoming shareholders. It is proposed to call the company the Rishton Perseverance Mill Co., with a capital of £10,000 in 500 shares of £20 each. At the quarterly meeting of the Rishton Co-operative Society, held on Monday night, the question of taking shares in the company was brought forward, and after considerable discussion, it was decided that shares to the amount of £500 be taken up.

Bolton.

The matters in dispute between Messrs. J. Musgrave and Sons and their weavers have been settled amicably, and work has been resumed.

The tapestry quilt weavers employed by Messrs. Barlow and Jones and Messrs. Johnson, Allsopp, and Co., resumed work at the beginning of the week. They struck for an advance on the prices offered, but a compromise has been effected.

A meeting called at the request of a large number of piecers was held at the Coffee Tavern, Bradshawgate, on Thursday night of last week. Long before eight o'clock, the time announced for opening the meeting, the large room was filled, and some hundreds were unable to gain admittance. Mr. J. Shuttlebotham was elected chairman. He stated that he hoped no one would use any harsh words against the minders, as they themselves might become minders ere long. He advised them, as the best means to better their condition, to at once show their desire to become organised. The following resolution was moved and seconded, and supported by the piecers themselves, Mr. C. A. Clarke and Mr. J. Ridings also supporting it:—"That we, the piecers of Bolton and district in this meeting assembled, believe the time has arrived when a union should be formed for the same. We, therefore, desire to become members of an association here and now to be called the 'Lancashire Piecers' Association, Bolton District."—The resolution was carried unanimously. The election of officers was then proceeded with, the chairman receiving the largest number of votes for president. One of the piecers was elected secretary, and Mr. Clarke treasurer. These, with eight piecers and Mr. Ridings, were appointed as a committee. It was decided the contributions should be for side piecers 2d. per week, and little piecers 1d. The meeting adjourned for a fortnight.

Bradford.

Messrs. Shackleton and Wroe, who commenced manufacturing in Valley-road about twelve months ago, are removing to larger premises in New Leeds, Bradford.

The death has occurred at his London residence of Mr. Ludwig Nathan Hardy, senior partner in the firm of Messrs. L. N. Hardy and Co., merchants, Well-street, Bradford. Mr. Hardy married a daughter of the late Sir George Jessel.

The past and present students of the dyeing and chemical departments of the Bradford Technical College have just presented to the late head master, Dr. Knecht, prior to his departure for Manchester, a picture consisting of *carte-de-visite* groups of students, encircling a cabinet portrait of the recipient, as an acknowledgment of the able manner in which he has conducted the department.

The facilities for drying the wool at Holy Brook Mills, Apperley Bridge, have been somewhat limited for some time, the appliances for this purpose being not altogether adequate to keep the machinery dependent on this process fully employed. Consequently, in order to ensure a more efficient supply of dry wool to the other machinery, as well as to lessen to a certain extent the necessity of human labour, a novel machine has been erected, by which the wool is passed through heated air and properly dried in an infinitesimal proportion of the time required by the old process.

The will, made in 1885, with six codicils, of the late Mr. Greenwood Garnett, of Greengates, Ecclehill, cloth manufacturer, who died in March last, aged 76 years, and was the senior of the firm of Greenwood, Garnett and Sons, has been proved by the executors, his son, Mr. John William Garnett, and his daughter, Mrs. Eliza Pallan, the value of the testator's personal estate having been sworn at £29,898 12s. 2d. He devised and bequeaths his entire estate in trust for all his children, but as to the shares of his daughters, Mrs. Annie Mathers and Mrs. Martha Fletcher, upon special trusts for the benefit of them and their children. The option of purchase of his interest in the Valley Mills is to be given to his sons, and the trustees have liberty to leave his capital in the business of Greenwood, Garnett and Sons for a period beyond that which is provided by the articles of partnership.

Bacup.

Mr. Henry Maden, of Rockliffe House, Bacup, and Kensington Place, South Shore, Blackpool, died at his residence at Blackpool, on Sunday evening, of Bright's disease. He leaves one son, Mr. J. H. Maden. Deceased was the son of the late Mr. John Maden, cotton manufacturer, Bacup, who commenced the extensive business now carried on under the style of Messrs. John Maden and Son. He was born on October 15th, 1828, and was consequently in his 62nd year. He was married in 1875 to Miss Martha Darlington, of Shrewsbury, who died about three years ago. Outside his business connections Mr. Maden's influence has been chiefly felt in the political world. He has taken a leading part in all elections in North and South Lancashire, North-east Lancashire, and Rossendale for nearly 40 years. For at least 25 years he was one of the acknowledged leaders of the Liberal party in Bacup. He was recently invited to become the Gladstonian Liberal candidate for Rossendale in opposition to Lord Hartington, but declined on account of the state of his health. Mr. Maden took a very active part in the North and South controversy nearly 30 years ago, and was an enthusiastic Southerner. He was returned a member of the Lancashire County Council, and on the election of county aldermen, Mr. Maden was at the head of the list. Mr. Maden has been on the commission of the peace for Lancashire for over 25 years, and has sat both at Bacup and Blackpool. He worked three large cotton mills at Bacup—Springbome Mill, Throstle Mill, and Lee Mill—and was partner with Mr. Kaleb Hoyle, under the style of Maden and Hoyle, at Dardale Mill, Todmorden. Mr. Maden had also extensive interests in shipping at West Hartlepool, in collieries and in farms in various parts of the country. He was a generous giver to institutions in his native town and benevolent institutions throughout the country, and was very highly respected. He also gave extensively to the poor of Bacup, and one of his latest acts was to give public baths and a recreation ground to that town.

Farnworth.

Manufacturers in this district are getting much busier, and have all commenced running full time. Messrs. Topp and Hindley have just completed a handsome tower in preparation for sprinklers.

The technical classes, held at the Grammar School, are making a good start in point of numbers.

Much interest is being centred in the sale or otherwise of Lskfield Mills, formerly worked by Messrs. S. Hurst and Co., but which have been in Chancery for some time. The sale is by order of the Court. The district would be much benefited by their re-starting.

Great Harwood.

The weavers of Nos. 1 and 2, Commercial Mills, are at present out of work owing to stoppages for repairs. About 1,200 hands are thrown idle.

Hastingsden.

Acres Mill, the largest spinning mill, etc., in the Hastingsden district, is expected shortly to re-commence work.

Heckmondwike.

A movement is on foot in London for the establishment of a limited liability company to commence business at the Union and Crystal Mills, Heckmondwike. These mills were closed only a few months ago, the concern being one of the most important in the district. As the heads of departments of the late firm have been communicated with, it is presumed that a similar business to that which laid the foundation of the prosperity of the late Mr. Fairfax Kelley will be undertaken, namely, spinning and the manufacture of carpets.

Heywood.

Mr. Robert Kay has recently been appointed manager for Messrs. W. E. Wood and Brothers, Birch Mill, in the place of Mr. Thomas Carnall, who has retired through ill-health.

Huddersfield.

Mr. William Marsden, aged 67, formerly a woollen manufacturer, of Grove Place, Dalton, died on Saturday morning at his residence, from the results of an accident which befell him on the 16th inst. Mr. Marsden was going up an outside stairway to a warehouse in the Beant Market, and, when about 15 feet from the ground he stopped and rested against the hand rail, which snapped in two, and he was precipitated to the ground.

Leeds.

The opening of Perseverance Mill, a new cloth factory, built at Woodhouse Carr, for Mr. Peter Laycock, was celebrated on Saturday night. The new mill is an important addition to the premises already occupied by Mr. Laycock, and will necessitate the employment of about 200 more hands. The building consists of five floors. The total floor

space is 3,000 square yards. Machinery of the best and latest type—including 120 looms—has been laid down.

Manchester.

Mrs. Ernest Hart is to give an address on village industries in Ireland in connection with the joint sale of the products of the Carna and Donegal industries to be held in this city next month.

The will of the late Mr. James Worrall, of the firm of Messrs. James and John M. Worrall, Ordsal, Dyeworks, Salford, and Old Garratt Dyeworks, Princess-street, Manchester, who died on the 13th July last, has just been proved. The gross personalty is sworn at £332,964. The executors are Mr. James Worrall, son, Mr. Ernest Bellhouse, son-in-law, and Mr. William Carnelley, of Fallowfield. To the last-named a sum of £500 is bequeathed. There are no public bequests. By the will, which bears date November, 1884, the testator leaves the whole of his estate in trust for the various members of his family. Two codicils make provision as to the use and occupancy of his house, etc., at Whalley Range by certain of the testator's daughters.

Mr. Julius Allmann, of the firm of Julius Allmann and Co., engineers, machinery exporters, and patent agents, 70, Deansgate, Manchester, announces that he has arranged to retire from the business carried on by him since 1865, which in its entirety will now be transferred to Mr. E. T. Whitelaw, who has been associated with him for the past 21 years as pupil and chief assistant. In tendering his thanks to his clients for the many favours shown him in the past, he trusts they can see their way to continue their business relations with his successor, who has a thoroughly scientific and practical knowledge of general engineering, as well as an intimate acquaintance with English and foreign patent law and practice. Mr. Whitelaw will continue the business at the same address under the style of E. T. Whitelaw, successor to Julius Allmann and Co.

Mellor.

On Tuesday an alarming fire broke out in the machine room at Dove Bank Mills, Mellor, near Marple, by which considerable damage to stock and the premises was done. With great difficulty the flames were subdued. Valuable manufactured goods were saved.

Nelson.

Preparatory to the meeting of Operatives' Committees, Mr. T. Birwistle, the weavers' general secretary, is engaged in obtaining particulars relating to payments made for weaving Bradford goods.

Oldham.

It is proposed to name one of the new Royton spinning companies the Holly.

Mr. William Shepherd, of the Old Glebe Mill, has been appointed engineer of the Broadway Spinning Company.

The manager of the Lime Mill Company, Hollinwood, has been appointed to a similar position by the directors of the Rycroft Mill Company, Ashton.

The Oldham Boiler Works Company keep exceedingly busy, and the capacity of the firm is put to a severe test just now in getting the work out fast enough to satisfy their clients.

The steam engines of the Ruby Spinning Company have been christened by the chairman (Mr. J. H. Dankerley), who named them "Diamond" and "Pearl." Spinning operations have now been commenced.

Next week the Royal Mills Company will come into possession of the premises which they are taking over from Messrs. W. T. Cocker, Royal Mills, Rochdale-road, Oldham. It is contemplated to build an additional mill to hold 70,000 spindles.

The Neville Mill Company has taken possession of the premises formerly belonging to the Abbey Spinning Company, which came into the hands of the mortgagee. The premises closed just prior to the wakes, and have been re-opened this week.

The Broadway Spinning Company has not been able to resume operations this week, as was anticipated, in consequence of the repairs to the engines not having been completed. However, a start is expected to be made next week.

At the monthly directors' meeting of the Manchester Chamber of Commerce, held on Monday, Mr. Alfred Emmott (of the firm of Messrs. T. Emmott and Company, Limited, and vice-chairman of the Oldham Chamber of Commerce) was elected a member of the Chamber.

At a special meeting of the shareholders of the North Moor Spinning Company, on Monday night, it was resolved to pay back £1 per share, which will reduce the paid-up capital from £60,000 to £40,000. The capital is £100,000, divided into 20,000 shares of £5 each. It is intended to replace the lessened capital by loan at 4 per cent. interest.

The strike at the Melrose Mill, Butler Green, still continues, and so far as we learn no overtures have been made between the two bodies—employers and operatives—with a view to settling the points in dispute. The employer receives a subsidy from the Masters' Association, and the operatives the strike pay of their respective associations.

On Tuesday afternoon the first set of cops were doffed at the mill of the Ruby Spinning Company, in the presence of officials and principal servants of the firm. Messrs. Asa Lees and Company are supplying the machinery, and the splendid cop produced in the first running is said to reflect the highest credit on this firm. The counts were 40's twist.

The inaugural address to the cotton students at the Oldham Lyceum was delivered on Friday night of last week by Mr. Thomas R. Marsden, of Platt Bros. and Co., Limited. Mr. Taylor, one of the directors, occupied the chair. The lecturer dealt with the improvements made in openers and scutchers during the last few years, and gave some sound advice to the students.

A ballot of the shareholders of the Werneth Spinning Company is being taken on a proposal to build an extension to their premises. A resolution giving the directors power to extend the mill premises was passed at the quarterly meeting on August 12th, but the directors state that they have taken the course in view of the opposition raised at the meeting.

The following are the mills in Oldham district which either have recently started work, are commencing work, or are in building:—Stamford, Pearl, Rio by, Earl, Pine, Beal, Royal, Ivy, Richmond, Lion, and Elm. The mills will give an increased spindle power of nearly 900,000. If three more mills are put up, as is at present talked of, two of which are in the Royton district, then the spindle power of Oldham district will have been increased by over a million spindles within a period of about two years.

The local machine-making trade continues in a very satisfactory condition, all hands being kept at full work, while overtime is a common occurrence. The engineering branch is also in a satisfactory condition, and we learn of one firm which has orders in that will last for 12 months. Of course in this district a number of steam engines have lately been laid down; while some have commenced working, others are shortly expected to do so, and there are several yet in the makers' workshop almost ready for delivery. Messrs. Backley and Taylor have just finished a pair of engines for Rio de Janeiro, while they have several others in hand.

We had thought with the present crop of new mills in this district there would have been an end for a time of the formation of companies for the building of mills—this is a new way of putting it; no floating, mark you!—but not so, however. For the past few years Roytonians have not had much of a "cut in," Lion being the only one they have promoted to an issue, although attempts have been made to get off turnover concerns, but they have failed. Now there are rumours that three new companies for Royton are on the *tapis* , besides a turnover concern undergoing a "limited conversion." Besides, the Parkside directors are intending putting up a new mill. One of the reasons assigned for the putting up of these mills is that if they don't do this the population will decrease; they say they must keep pace in finding employment for the increasing population, and Royton must not go back nor stand still. Crompton, which is an adjoining township, has for the past few years been extending its spinning power by leaps and bounds, while Lees, Oldham, and Chadderton have been going at a moderate pace.

Rochdale.

On Saturday evening the workpeople employed by Messrs. Barnes, of Firgrove Mill, Milnrow, sat down to a tea, at the Lord Nelson Inn, in celebration of the marriage of Mr. Wm. Barnes, a member of the firm.

At the Rochdale Police-court the Rochdale Union Manufacturing Company have been charged with a breach of the new Cotton Act. Mr. Osborne, the Government Inspector of Manufactories, said that the manager of the Union Manufacturing Company had been warned by him several times. On the 16th of July there was an excess of two degrees of moisture in the shed more than was allowed by the Act of Parliament. Mr. Worth, who appeared on behalf of the company, said that the class of goods manufactured in this shed was a new industry to any other in Rochdale, and it was necessary to have a certain degree of moisture when the work was being performed. The company had been spending money to keep the atmosphere of the shed within the limits specified by the Act, and in future they would try to prevent a repetition of the offence. A fine of £5 was imposed.

Royston.

The Thornham Spinning Company, Limited, which has hitherto pinned its faith to the roller and clearer card, is about to put in preparation on the revolving flat system, and has given the order to Messrs. Asa Lees and Co., Limited.

Shaw.

Mr. Thomas Goodwin, carder, at Clough Mills, Shaw, will act in the double capacity of manager and salesman to the Neville-street Spinning Company.

Mr. Cooper, of Manchester, has been appointed head book-keeper and cashier for the large firm of Messrs. A. and A. Crompton and Company, Park and Woodend Mills, Shaw, in place of Mr. Ogden, who goes to the Duke Spinning Company as salesman.

Messrs. John Clegg and Sons, Ltd., are again extending their mills at Newtown. Work is progressing in the erection of a three-storeyed building, to be utilised by the reelers and as a warehouse. In the rooms now occupied by the reelers the firm contemplate erecting new spinning machinery.

Stockport.

On Wednesday afternoon the marriage of Mr. Wm. Ball (a member of the widely-known firm of Wm. Bower and Son, cotton brokers, of Liverpool and Essex) with Miss Laura Marion Fernley (second daughter of Colonel G. A. Fernley, J.P.) was celebrated at St. Andrew's, Ashley Place, Westminster. Colonel Fernley is the principal of the firm working Wear Mills, Chestergate, and his workpeople presented the bride with an excellent timepiece, set in marble, and a pair of vases, the timepiece being suitably inscribed. Mr. William Newton, weaving overlooker, made the presentation to the bride on Saturday at her father's residence, at Buxton, Mr. John Robinson, carder, also taking part in the presentation, which included an address from the workpeople.

SCOTLAND.**Glasgow.**

On Wednesday in the Court of Sessions an application was heard by which Messrs. Edmund Potter and Co., of Charlotte-street, Manchester, and Dinting, near Manchester, seek to interdict the Braço de Prater Printing Co., 55, Cathedral-street, Glasgow, from infringing sixteen registered designs for calico printing. Respondents, it is said, in 1884 acquired the business of William Graham, junior, and Co., Glasgow, and have since carried on business at Lisbon, Portugal. Complainers say that respondents have been under-selling them in the Portuguese market with cloth bearing their designs, and that the result has been an almost entire stoppage of orders from Portugal. Counsel for complainers stated that respondents were able to under-sell complainers by printing the cloth at Lisbon, whereby they saved a heavy import duty. His clients spent from £10,000 to £20,000 a year in preparing new designs, and respondents' cloth was known in the market as "Graham's Lisbon Potter's." Respondents admitted that they had, unknown to themselves, sold designs which belonged to complainers, but that these designs were submitted to them by Portuguese merchants. In Portugal, they also said, there was no protection for any designs except those of native production, but they undertook not to print or send out more of complainers' designs. Lord Kinnear passed the note for trial of the case and granted an *interim* interdict.

Paisley.

Appropos of the present fashion of plaid ties, a Paisley manufacturer of tweeds and tartans states that after the marriage of the Duke of Fife his firm sold more tartans in one winter in Germany and France than they had sold in Scotland for twenty years.

IRELAND.**Lurgan.**

In anticipation of the early enactment of the McKinley Tariff Bill in America, and the consequent transfer to the United States of a large proportion of the work of finishing linen goods which has heretofore given so much employment in the North of Ireland, an extraordinary impetus has been given to this branch of the trade in Lurgan and many other towns. The object, of course, is to get the goods into the market before the McKinley Bill comes into operation; and, as far as Lurgan is concerned, the various finishing establishments, though working late hours every night for some time past, have yet found it almost impossible to execute their orders. On a single day last week no less than about sixty cases of finished goods were despatched from Lurgan alone. Each case repre-

sented 500 dozens of handkerchiefs; thus the consignments for this one day consisted of about 30,000 handkerchiefs. The prospect of the proposed hostile tariff about to be imposed by the Russian Government—amounting to 40 per cent., and to come into operation on 1st October next—has had its effect as well as the McKinley legislation in stimulating this phenomenal activity.

Miscellaneous.**THE AUSTRALIAN STRIKES AND THE WOOL TRADE.**

In the telegrams which have come to hand of late recording the development of affairs in regard to the labour crisis in Australia there have been various references to the attitude of the shearers and wool-shed labourers and carriers; while the despatches from Melbourne, published in *The Times* of Saturday, showed that there had been riotous disturbances at Sydney, owing to the passage through the streets there of carts laden with non-union wool, and driven by well-known citizens, escorted by mounted police and special constables. This question of the wool shearers and carriers constitutes a phase of the Australian strike troubles about which little seems to be known in England, though it is one that becomes all the more important in view of the announcement that the Labour Conference has ordered the men to suspend their work on Wednesday, the 24th inst. It constitutes, also, an instructive chapter in the history of recent events.

The trouble with the shearers has been steadily growing for some months past. They have a union of their own, but a large number of shearers have persistently refused to join the combination, and in this course of procedure they have had the support of the employers. The latter, it can hardly be denied, have shown a spirit of hostility to the men's union, owing to a belief that, as soon as the whole of the shearers had been brought into the union ranks, the wages would be forced up to double, if not treble, the amount already being paid. Hence, although they are paying the rate of wages now demanded by the union, they declined to employ only union hands, and they provoked much bitterness of feeling by persistently taking on the so-called "blacklegs," there being the less difficulty in the way of their doing so because, with the appliances now in vogue in Australia, the art of shearing can be acquired at once by even an ordinary labourer, who may never have done any such work before. In order to strengthen their position the Shearers' Union leaders gave notice somewhere about last June that during the ensuing season no wool shorn by non-unionists would be handled by the members of any affiliated society, arrangements to this effect having been duly made. To this declaration the Pastoralists' Union (for the employers have also combined) replied that they would not ship any wool by vessels which did not accept wool shorn by non-unionists, as well as wool shorn by unionists. These two announcements, as was pointed out at the time, put the shipowners in an awkward position, for if they accepted non-union wool the labourers would not work for them, while if they refused it they would get no cargo.

Hostilities having thus been formally declared, each side proceeded to secure the support of as many allies as it possibly could. The Shearers' Union made a vigorous attempt to obtain the support of practically all the labour organisations in the Australian colonies, representing to them that the question at issue was one that did not merely affect the individual interests of the shearers, but one that involved the far graver question as to whether trade-unionism itself should have a chance of continued existence in Australia. These efforts were so far successful that, according to the latest papers to hand, the Shearers' Union had received promises of support from no fewer than 220 labour societies of one sort or another in the different colonies. These included, it was said, nearly the whole of the maritime and other bodies concerned in the handling and shipment of wool, and the leaders declared that "such a cordon of unionism had been woven around the Australian continent that it would be impossible for the shipowners to get a single bale of wool on board." But in one instance, at least, the shearers met with a slight rebuff. They appealed, among others, to the newly-formed organisation of railway employes, before whom the matter was

brought at a meeting they recently held, the idea being that if they were required to handle non-union wool or convey it by train from one station to another they should refuse. One of the chief members of the railway men's union pointed out, however, that though they were unionists themselves, they were also public servants, and ought to be very circumspect in matters of this kind; the result of this good advice being that the subject was left over for further consideration.

The employers in their turn did their best to strengthen their position. The squatters were almost unanimously in their favour, and they had no difficulty in getting appended to the resolution, already referred to, the signatures of most of the large wool firms of Melbourne and Sydney, the remainder promising to sign as soon as the formal consent of their clients had been obtained. Thus they won the sympathy of most of the leading men in the financial world of Australia, and what, perhaps, was still more in their favour—namely, the practical support of the shipowners, who made arrangements with them that, if the non-union wool could not be shipped at once, it should, at least, be safely stored until a favourable opportunity arose for sending it away. Further than this, the owners of the five large docks at Sydney agreed among themselves to shut the gates on the stevedore labourers, and not allow them to load any ships whatever unless they consented to handle non-union as well as union wool. When, too, a request was presented by the wharf labourers to the Steamship Owners' Association, asking that they should not be required to carry goods which they had resolved to boycott, the employers responded that they refused to make themselves party to a conspiracy. Still more practical was the course taken by some members of the Pastoralists' Union at a meeting of that body on August 8th. On a report being presented to the effect that certain shipping firms were prepared to carry non-unionist wool, and that the difficulty resolved itself into a matter of securing sufficient free labour, six members at once subscribed £1,000 each towards the cost of organising such labour. The example thus set has been followed by several firms in London, who have either cabled equally generous subscriptions direct or have contributed through their colonial branches.

Finding themselves in danger of thus being checkmated by the employment of free labour, the leaders of the Shearers' Union resorted to the further expedient of writing to the London Dockers' Union and other labour organisations here, with the idea, apparently, of not only winning their sympathy, but of obtaining their practical aid by inducing them to "block" on their arrival the vessels bringing over non-union wool shipped by non-union hands. Inquiries made on this side, however, show that the attitude of the dockers and others is one full of reserve in regard to the subject, and it may be said to their credit that they are not at all disposed to commit themselves to anything rash. Whether or not they are disinclined to precipitate the formidable struggle with the shipowners' organisation which is regarded as one of the probabilities of the more or less distant future, or whether they think it better to reserve their strength for the fighting of their own battles, certain it is that the only response to be obtained thus far to questions as to the probable course of action is the decidedly prudent reply: "It will be time enough to decide when the ships arrive."

In view of all the circumstances thus narrated it will be readily surmised that the unionist shearers and others concerned in the wool industry in Australia are quite prepared to "come out" in response to any summons to that effect given them by the Labour Conference, while the fact that "well-known citizens" have had to convert themselves into drivers, in order to get non-union wool taken through the streets of Sydney, well indicates the great difficulties under which the Australian wool trade is now being carried on.—*Times*.

Melbourne telegrams of Thursday say:—

The sheephearers are divided regarding the order to strike. Some have refused, while others are uncertain, and the complete results are still unknown.

The Labour Conference again invite the employers to confer with them; but the Sydney employers are unfavourable to such a conference, and are determined to uphold the principles contained in their manifesto, and they insist on the unionists accepting those principles before they will consent to meet them.

In obedience to the order of the union leaders, the strike of sheephearers in New South Wales and Queensland has commenced. Victoria is so far not affected.

No conference between the masters and the strikers has yet been arranged. It is stated, however, that the South Australian and Queensland employers are willing to meet the men.

INDIAN TEXTILE FIBRES.

In addition to the ten packages of samples of Indian textile fibres presented to the Manchester Chamber of Commerce a few months ago by the India Office, a further gift consisting of four packages has just been received from the same source. The following list of the more recent acquisition, with notes thereon by Mr. Chas. Bailey, has been prepared for and just appeared in the Chamber's *Monthly Record*—

SCIENTIFIC NAME.	DESCRIPTION.	FROM WHENCE RECEIVED.
<i>Abroma augusta</i> , Linn.	Fibre	Botanical Gardens, Saharanpur
(1) <i>Anandania digitata</i> , Linn.	Bark	Royal Botanical Gardens, Calcutta
(2) <i>Ananassa sativa</i> , (5)	Uncleaned fibre	Tenasserim, Burma
Ditto	Cleaned fibre	Ditto
<i>Bomarea nivea</i> , Hook and Arn. (4)	Stems	Pundalor, Madras
Ditto	Uncleaned fibre	Ditto
Ditto	Ditto variety	Ditto
Ditto	Cleaned fibre	Ditto
<i>Bombax malabaricum</i> , D.C. (5)	Cotton	Sunderbans, Bengal
Ditto	Ditto	Madras, Madras
Ditto	Ditto	Caddapah, Madras
Ditto	Ditto	Vizagapatam, Madras
Ditto	Ditto	Tenasserim, Burma
Ditto	Ditto	Chingleput, Madras
<i>Broussonetia papyrifera</i> , Vent. (6)	Bark	Royal Botanical Gardens, Calcutta
<i>Calotropis gigantea</i> , R. Br. (7)	Uncleaned fibre	Lucknow
Ditto	Cleaned fibre	Ditto
Ditto	Uncleaned fibre	Bahramghat Division, North-Western Provinces and Oudh
Ditto	Cleaned fibre	Chingleput, Madras
Ditto	Cotton	Sunderbans, Bengal
Ditto	Ditto	Bahramghat Division, North-Western Provinces and Oudh
Ditto	Ditto	Lahore, Punjab
Ditto	Ditto	Mooltas, ditto
Ditto	Ditto	Gujranwala, ditto
Ditto	Ditto	Poona, Bombay
Ditto	Ditto	Trichinopoly, Madras
<i>Cannabis sativa</i> , Linn. (8)	Stems	Director, Department of Land Records, Punjab
<i>Cocos nucifera</i> , Linn. (9)	Coir, cleaned	Madras
Ditto	Coir	Cocanada
Ditto	Rope, medium	Ditto
Ditto	Rope, thick	Ditto
Ditto	Entire nut	South Arcot
Ditto	Spikes	Ditto
Ditto	Coir	Ditto
Ditto	Rope, thin	Ditto
Ditto	Rope, thick	Ditto
Ditto	Entire nut	Ditto
Ditto	Nut, cut open	Amel Islands, Laccadive group, South Canara, Madras
Ditto	First process of removal of husk	Ditto
Ditto	Dry husk	Ditto
Ditto	First stage of cleaning fibre	Ditto
Ditto	Second and final stage of cleaning	Ditto
Ditto	First stage of twisting	Ditto
Ditto	Second and final stage of twisting the fibre into yarn	Ditto
Ditto	Coir	Cochin
Ditto	Rope	Ditto
Ditto	Rope, variety	Ditto
Ditto	Ditto	Ditto
Ditto	Ditto	Ditto
<i>Cyperus Pangorei</i> , Roth. (10)	Sedge, uncoloured	Palghat, Madras
Ditto	Ditto coloured red	Ditto
Ditto	Ditto coloured black	Ditto
Ditto	Mat	Ditto
<i>Cyperus Pangorei</i> , Roth. (10)	Mat	Tinnevely, Madras
Ditto	Mat	Kistna, Madras
<i>Cyperus tegetum</i> , Roeb. (11)	Sedge	Bombay
Ditto	Mat	Ditto
<i>Hibiscus sculneus</i> , Linn. (12)	Fibre	Saharanpur, North-Western Provinces
<i>Hibiscus siliaceus</i> , Willd. (13)	Fibre	Sunderbans, Bengal
Ditto	Uncleaned fibre	Tenasserim, Burma
<i>Malachra capitata</i> , L. (14)	Fibre	Saharanpur, North-Western Provinces
Ditto	Fibre	Bombay
<i>Maranta dichotoma</i> , Walc. (15)	Culms	Fariapur, Bengal
Ditto	Culms	Ditto
<i>Phoenix sylvestris</i> , Roeb. (16)	Split Culms	Bombay
Ditto	Unsplit leaves	Ditto
Ditto	Split leaves	Ditto
Ditto	Mat	Ditto
<i>Sida rhombifolia</i> , var <i>rhomboides</i> , Roeb. (17)	Uncleaned fibre	Bohhar, Rajshahye District
Ditto	Cleaned fibre	Ditto

(1.) Belonging to the *Buettneriaceae*, and an ally of the mallows, to which the cotton plant belongs. It is a quickly-growing plant, producing several crops of cuttings every year, from whose bark is derived a strong white fibre, which makes good common ropes.

(2.) The celebrated baobab, an ally of the *Bombax*, or silk-cotton tree, named above. It is one of the largest trees in the world, and named after a celebrated French botanist of Scotch descent. It forms a striking feature in the Botanical Gardens of Calcutta. Good rope is made from its bark, and the natives have a saying—"As secure as an elephant bound with a baobab rope."

(3.) This is probably the plant alluded to by Roxburgh as being very common throughout India and known to the natives as "Bilatee-ananas, i.e., European pineapple. The cultivated pineapple (*Ananas vulgaris*) belongs to the same genus.

(4.) There are about forty species of this genus, which was named in honour of the German botanist Böhmer. They differ very slightly from the common nettle, with which genus (*Urtica*) many botanists unite them, but, unlike them, they have no stings. This particular plant, in one or other of its forms, is the source of the celebrated Ramie fibre, China-grass, Tchou-ma, &c.

(5.) Known as the silk-cotton tree, hence its name from *bombyx*—raw silk. They form fine, handsome trees, but most of the species are American. The "silk" covers the seeds contained within the leathery capsule, which bursts like the fruit of the common cotton plant, with which it is allied.

(6.) This is the paper mulberry, whose inner bark is so largely used by the Chinese, and especially by the Japanese, in the manufacture of their tough, silky, light-brown paper. In the South Sea Islands the natives make it into cloth, or "tapa." The young twigs are chiefly used in all these countries, where they are grown as we grow willows, in osier-beds. Its leaves are very polymorphous.

(7.) An ally of the silkwoods (*Asclepias*). This plant, although named *Calotropis gigantea*, can only be considered a large shrub, or small tree, but it is the largest species of the genus. The inner bark is the source of the fibre, while the "cotton" is derived from its seeds.

(8.) The well-known hemp of commerce, remarkable as the solitary species of its genus. It is common all over Asia in the gardens of the natives. Besides its use in industry, its resin has narcotic properties, as the natives derive from it their bhang, hashisch, gunjah, and the like.

(9.) The common cocoanut palm, but its native country is unknown. It is common all round the coasts of India. The rough rind of its fruit—the husk which envelops the "nut"—is the source of the rough fibre or "coir" out of which cocoanut matting is produced, as well as cordage, &c.

(10 and 11.) These two sedges are members of an immense genus, and they grow in damp, marshy districts all over the world. The muddy banks of the Ganges and other Indian rivers are largely protected by *Cyperus Pangorei*, *C. inundatus*, &c., whose luxuriant growth and creeping habit help greatly in preventing the washing away of the banks. In Bengal, *C. Pangorei* is known as Chumati Patee, and *C. tegetum* as Madoor-Kati, and the two plants may be distinguished by the aerial stems, which are both triangular, but the angles are flat in the former and rounded in the latter. The mats which are so universal on the floors of the Calcutta houses are made from the stems of *C. tegetum*; but the specimens now sent to the Chamber are from Madras.

(12 and 13.) Two other plants belonging to the same natural order as cotton (*Malvaceae*). In these plants it is the inner bark, not the fruit, which gives them their commercial value. Roxburgh, in 1801, planted 40 square yards of young plants of *Hibiscus sculneus*, at distances of nine inches, and the plants yielded him 33 pounds weight of the naturally very clean fibres.

(14.) *Malachra* is another genus of malvaceous plants, also yielding fibre in its bark.

(15.) *Maranta arundinacea* is the plant whose tubers furnish the true arrowroot of commerce. A similar starch is no doubt procurable from *M. dichotoma*, but the specimens sent to the Chamber are stems which, when split, are employed in making the mats used for shading.

(16.) This palm is also used in the production of matting. It is very common all over India, and from its sap the natives make palm wine or tari, and also sugar which is known as "date sugar." The true date palm (*Phoenix dactylifera*) will not grow in India.

(17.) Another malvaceous plant, known in Bengal as Sufet or Shwet Bariala, or Berela. Its flax-like fibres are derived from the inner bark.

Mr. Robert Ernest Graves has been appointed an inspector of factories and workshops.

THE SILK TRADE OF BENGAL.

An interesting note on the decline of the silk trade in Bengal has just been forwarded by Babu Nitya Gopal Mukerjee to the Land Records and Agriculture Department by instruction of the Director. From this memorandum we learn that there was a steady rise in the export of Bengal silk from the days of the East India Company until the complete revival of the silk trade in Europe, this revival being wholly due to the increased production of cocoons, owing to the introduction of Pasteur's system of grainage, which had made the cocoon crop a certainty. Since 1876, however, the trade has declined rapidly, and the present prices are the lowest on record. From 1812 to 1835 the average export of raw silk from Bengal was 972,103 lb., from 1838 to 1855 it was 1,435,225 lb., and from 1856 to 1870 it was 1,518,592 lb. It was during this period that waste silk first began to be exported, and the average annual export of waste silk during the fifteen years was 520,750 lb., making the total of raw silk and waste 2,039,342 lb. From 1874 to 1881, however, the average annual export of raw silk and waste together was only 1,581,860 lb., and it is now very considerably less.

With a view to check this steady decline, the Government requested Babu N. G. Mukerjee to study the subject of sericulture, and in due course to formulate a report. In the meantime the Government had decided to establish a sericultural laboratory, and Babu Mukerjee now makes a series of proposals, the majority of which, we understand, the Government is inclined to accept, with the object of reorganising this once-important industry. It is now designed to make a special study of the diseases of different silkworms with a view to supply healthy seed to villagers, and of the best manner of rearing silkworms with a view to obtain superior crops and to protect them from various pests. Superior classes of cocoons, domesticated and wild, such as the Shanghai cocoons, the Yamama cocoons of Japan, &c., are to be introduced, and a special point is to be made of the selection of cocoons with a view to establish pure breeds and thus ensure uniformity of shade. The mixture of brown and white cocoons in the *Eri*, for instance, is a great drawback to its usefulness as a first class cocoon for carding purposes. The reeling of various cocoons with a view to introduce any improvements in this direction; the ascertaining the technical value of cocoons and raw silks, namely, what is done in the laboratory of Lyons; the attempting to lead up the silk industry of the country a step further by demonstrating how organzine and trame are made out of raw silk, the process being comparatively simple and capable of introduction in this country; and the training of a number of men, who will be able to spread any improvements effected in the laboratory in the silk districts, and who will also be able to keep themselves informed about the sericulture of other countries are also among the Babu's suggestions.—*Times of India*.

THE MANUFACTURE OF "TURKISH" CARPETS.

One of the most important manufactures of Asia Minor, as it is also one concerning which little is known by the general public, is the manufacture of those carpets which have acquired a world-wide reputation under the designation of "Turkish carpets." A correspondent of the *Levant Herald* describes the modes of producing them. They are, he says, principally made in the towns of Oushak, Ghiordes, Koula, Demirgi, Melas, Ladik, Pergamos, and Sparta, and are exported for the most part to England and America. Oushak, the seat of the trade, is pleasantly situated in the midst of a fertile plain. It is a town of some 20,000 inhabitants, most of whom are directly or indirectly occupied in carpet-making, the actual number of looms at work being 500. Koula and Ghiordes have populations of about 15,000. Demirgi has become a carpet-weaving town within the last six or eight years, owing to an accident.

Years ago the town was destroyed by fire, and the inhabitants, too poor to reconstruct their habitations, emigrated to Ghiordes, where they learned the art of carpet-making. As soon as they had gained some money they returned and rebuilt their native town, setting up looms of their own. Their carpets were not a success at first, but they managed to improve them, and now they rank superior both in texture and colour to the Ghiordes. Ladik, Pergamos and Melas are rug producing centres. At Sparta the industry has just been introduced. The manner of weaving the carpets is primitive enough. The wool, which is obtained from the fat-tailed sheep reared by the Turks on the highlands, is washed by the men in the neighbouring streams, and

then spun on the wheel by the old women of the town; it is then sent to the Boya Hane to be dyed, after which it is sold to the manufacturer. Three oaks of spun yarn are required for a square pic of carpet. The looms consist of two thick poles fixed firmly in the ground at some paces distance from each other; two others are joined, one above and the other below, and to these the warp or chain of the carpet is attached.

At the foot of this loom the weavers sit cross-legged, sometimes as many as ten in a row, each working at a two-foot width of carpet. The yarn is taken from bobbins suspended above their heads and tied to the warp; it is then cut with a sharp knife and the pile and weft are driven together by means of a comb. A carpet can be made of any length, but its width depends on the size of the loom. If the loom extends to ten paces in width, the carpet can be one, two, or ten paces wide. The largest loom in Oushak is at present twelve paces wide, so that if a carpet of a greater width is required a new loom must be made, although this, as one may judge from the structure, is not difficult. Notwithstanding that this is, as I have said, a primitive mode of proceeding, it is not without its advantages, for inasmuch as the texture must perforce be looser than the machine-made carpets, the colours can blend more easily, and the carpet or rug becomes softer and more pliant to the tread.

The carpet weavers are all women; they are daily chaperoned to the looms by an old woman, who sees that they work diligently. The average amount of work one person can do in a day is about a pic, for which the wage paid is from four to five piasters. Although the cold in winter is intense, and the workers suffer considerably, they will not accept the humanitarian efforts made to procure them some comfort. Mr. D'Andria, one of the largest carpet merchants in this town, offered to build for them a large factory, with glass windows, wherein they could work comfortably, though it blew a tempest without. Whether from fear of being seen, or for some equally valid reason, they refused this kind offer, and continue to work in wretched hovels barely fit for pigsties, warming their frozen fingers over the smouldering contents of a brazier. During the reign of Abdul-Aziz bright colours were in vogue, and the manufacturers had recourse to mineral dyes; now, however, the fashion has gone out, and they have reverted to vegetable pigments—violet for white and brown, yellow berries for green and yellow, madder roots and cochineal for red, and indigo for blue. These carpets come to Smyrna principally by two routes—first, from Oushak to Alashier, the terminal station of the Casaba Railway, a distance from Oushak of twenty-four hours by camel, and the other from Oushak to Chivril, the last station on the Sutlej branch of the Aidin line, which is distant from Oushak only six hours.

MANCHESTER CHAMBER OF COMMERCE.

The directors of this Chamber held their ordinary monthly Board meeting on Monday, Mr. Henry Lee, president, in the chair.

APPROACHING EXPIRATION OF EUROPEAN COMMERCIAL TREATIES.

The subject was briefly discussed, but in view of the fact that the Special Committee appointed by the Government to consider it (of which Sir J. C. Lee, a director of the Chamber, is a member), it was agreed that no action could be usefully taken by the Board until that Committee had begun its work. Meanwhile it was agreed that the Tariff Committee of this Chamber should be charged with the duty of taking cognisance of the interests of these districts with reference to the expiring treaties.

SHORT-REELED COTTON YARN IN THE DANUBIAN STATES.

Letters were read from the Foreign Office, informing the Chamber that her Majesty's representatives in Turkey, Roumania, Servia, and Bulgaria had been instructed "to make representations to the Governments to which they are accredited, pointing out that the fraudulent imports complained of in a previous communication of the Chamber were equally injurious to the British spinner and to the native consumer; also that a despatch has been received from her Majesty's Minister at Belgrade, stating that, in pursuance of instructions, he had drawn the attention of the Servian Government to the frauds perpetrated in the Danubian markets owing to the export of short-reeled cotton yarns by Austro-Hungarian firms. An assurance had been received that the Central Custom House authorities at Belgrade would be forthwith instructed to endeavour to detect any such frauds." The matter was referred to the Yarn Sectional Committee.

INDIAN TEXTILE FIBRES.

A second consignment, consisting of four cases of samples of Indian textile fibres, had been received from the India Office, in addition to an earlier one consigned to the Chamber by order of Viscount Cross in November last. It was ordered that a catalogue of the specimens contained in the second supply, together with notes prepared for the Chamber by Mr. Charles Bailey, should be published in the next number of the *Monthly Record*, and that the whole of the samples should be handed over to the Manchester Technical School for the use of students and of the public.

NEW MEMBERS.

The following were elected members of the Chamber, viz.:—Messrs. T. J. Bolland and Co., M. T. Corby (Tangyans Limited), Alfred Emmott (Oldham), E. J. Lovell, J. B. Reynor and Brothers, and L. Schmolder.

THE important city of Adrianople has only two silk-spinning factories and three mills driven by steam-power; and even these are not prosperous as the money necessary for working them properly has to be borrowed at high rates of interest.

THE island of Metelin (the ancient Lesbos), with a population of 120,000, has 110,000 to 120,000 sheep and goats. The shearings take place in May and June; the long wool fetches 85 to 90 francs per 100 kilos., and that shorn in August fetches only 70 to 80 francs.

In order to develop the manufacture of cloth at Constantinople, the Minister of War has sent for two English specialists, who, after a careful examination of the existing factories belonging to the State, have presented a report upon the improvements which ought to be introduced. His Excellency Hassan Pacha, president of the Factory Commission, has transmitted this report to the proper quarter.

SOUTH AMERICAN COTTON.—A letter from Pernambuco of the 11th inst., received by the last mail, says:—"Although the dry weather prevalent at the beginning of the year also caused some damage to the cotton trees, the area under cultivation, both here and in the neighbouring provinces, has, however, been so much increased that we may confidently expect a good yield this season. Entries from the 1st of September up to date amount to about 4,000 bags."

RAMIE GATHERING IN CHINA.—In Northern China ramie is gathered as follows:—When the plant is ripe the stalks are cut off and laid in sheaves. They are then retted in water, and afterwards the bark with the fibre is removed by hand. Another method is followed in the Southern provinces. The peasant removes the bark at once in a very simple and peculiar manner. He takes hold of the stalk with both hands, at a distance of about 20 centimetres from the ground, in such a way that his hands are removed a few centimetres from each other; he pushes vigorously forwards and backwards, and thus breaks the stalk with both hands. He then puts his left hand at the broken place and draws down the bark towards the root, where it falls off of itself; in the same manner he frees the upper part of the stalk from the bark with his right hand. The bark and fibre which are thus obtained are longer than if the stalk had been cut off, and thus the value of the fibres is increased.

SOME CURIOSITIES OF THE TRADE OF CANTON.—Mr. Alabaster's report on the trade of Canton for the past year contains references to some odd features of the export trade. Eighty thousand pounds of human hair, valued at £319, appear in the returns, and the Consul wishes it did not, for, as the greater part of it comes from the heads of beggars, criminals, and dead persons, it is not pleasant to think that it is worn by ladies at home, even though it goes through long processes of purification before it is made up into wigs, chignons, waterfalls, &c. The demand for what are called old silk embroideries is unabated; in fact, the majority of these garments are not old, but soiled, and the Chinese must look on the purchasers much as we should regard collectors of discarded tea-gowns or worn-out tennis suits. "It is true, much of the embroidery is very beautiful, but the association of ideas is not pleasant." Woollen blankets, as an article of import, are increasing; white blankets are naturally not greatly in demand in a country where soap and water are rarities, and blue, being suggestive of a funeral pall, are not in favour; but every passenger by night boats seems to have a red blanket. Otherwise woollens are used chiefly for uniforms and table and chair covers. Gloves are not in demand, for the long nails are endangered by them.

THE Russian Ministry of the Imperial Domains has lately been devoting special attention to silk culture in Russia. For this purpose two model schools have been established. Experienced men have also been despatched by the Government to the Grimala, Bessarabia, and other districts to advise and assist breeders of silk worms.

THE Cottbus Chamber of Commerce for Lower Lusatia estimates the production of cotton in Cottbus for 1889 at 25,000,000 marks; in Spremberg at 15,000,000 marks, and in Peitz at 2,000,000 marks. The sales were principally in the home markets, as the export trade is crushed by the protective policy of most foreign countries.

COTTON MANUFACTURE IN BRAZIL.—Orders have recently been placed in Lowell, Massachusetts, for cotton machinery to be used in a mill now being erected at Monte Carlo, Brazil. This machinery, after arriving at Rio by steamer, will have to be carried 300 miles by rail, and then a further 300 by mules, so that it will have cost a good deal in carriage before it finally reaches its destination. The mill is being built for the manufacture of cotton cloths, shirtings, and striped goods from native cotton of dark brown colour.

AN attempt is being made by some Devonshire ladies to revive the Devonshire lace industry. Some of these ladies made two pilgrimages to Devonshire to perfect themselves in the art of pillow-lace making, and are teaching the lace makers to copy fine old Flemish and Italian patterns. It was suggested that the extreme fineness of the Honiton lace, making its production so slow and laborious, and its price so high, as well as the poor patterns used by the lacemakers, were the cause of the decline in the demand for Devonshire lace. The lace-working ladies are, therefore, attempting to utilise the knowledge of the handicraft to be found in Devonshire in working better patterns suitable for coarser thread. An emporium for the sale of the villagers' work has been opened in Princes-street, Hanover-square, London. Specimens may be seen there, and also other decorative art work produced by country workers.

REFERRING to the habit which has for some years past prevailed in Manchester on the part of spinners and manufacturers of putting their production upon the market through more than one agent, a correspondent sends to the *Manchester Guardian* the following observations. He says:—"Owners of cotton in Liverpool know better than giving half a dozen brokers the same lot of cotton to sell. If producers wanted to lower prices they could contrive nothing so effectual for that purpose as to let two or more commission agents offer their production on 'Change.' Buyers know the goods are in, say, three or four hands, and each agent is haunted with the dread that if he does not sell one of the other men will. So each agent in his interview with the spinner or manufacturer, unconsciously perhaps to himself, 'bears' prices until the poor fellow gives way and accepts what is offered. Limited companies have found out that this not the way to make a dividend, and so they more and more confine their production to one channel." These remarks are well worth consideration. They certainly go to show that the present system tends to make spinners and manufacturers serious competitors against themselves.

THE subject of poisonous dyes has had a long rest, but now a leading medical journal once more invites attention to a case in which illness is believed to have followed upon the wearing of socks dressed or dyed with some poisonous material. The matter is thought to deserve serious attention, to which we say "agreed;" a wide field of investigation is believed to be opened up by it, of which we have no doubt whatever, and many important manufacturing industries are said to be concerned in it, which is unquestionable. But when it is claimed that legislative interference is necessary we beg to differ. Cases which have occurred, attributed to such a cause, are not numerous; none of them have been conclusive. It is idle to think of any extension of the principle of the existing laws regarding adulteration, where there are no definite grounds to go upon. Doctors themselves have proved the old proverb by disagreeing very decidedly as to whether any dyestuff was injurious. Many years ago, an advertisement appeared for some time in the papers asking for authenticated cases of poisoning, or for specimens of the materials alleged to have caused them, but nothing followed. When the medical profession has done its part by proving how much of serious skin complaints is due to the bodily condition of the person affected, and how much to the socks or other garment, at once jumped at as the reason why of sickness, it will then be time to ask Parliament whether there is just cause for legislative interference.—*Warehouseman and Draper.*

AN IMPERIAL WEAVER.—The Empress Dowager of China has decided to learn the art of weaving cloth, in order that the Court may gain some insight into the industries of the people. A set of native apparatus for clothmaking has accordingly been ordered, and on its arrival it will be set up in the Palace at Peking, under the charge of an aged eunuch. In taking this step the Empress is really reverting to a very old custom. All Chinese women, of whatever rank, were for many centuries trained as cloth weavers.

SILKWORM DISEASE IN CHINA.—The total silk crop in China last year was 25 to 30 per cent. larger than the previous one, a fact which warrants the belief that the silkworm disease in North China it not spreading, and that there is no necessity for adopting the measures for its extirpation which were in contemplation last year. That the disease exists has, however, been abundantly proved; but, according to the last consular report from Shanghai, experiments have shown that the Chinese silkworms are constitutionally much stronger than their European congeners, and that even when the worms are diseased eggs may be produced, when under like circumstances it would be almost impossible to obtain them from European silkworms. It is feared by experts that in districts where silkworm disease spreads silk will in time cease to be produced. Meanwhile, those who urge the necessity of preventive measures such as have been taken in Japan state that the quality of Chinese silk is deteriorating and that of Japanese is improving. In addition to the advisability of extirpating disease by selecting the best silkworms and securing the survival of the fittest, improvements in the method of reeling silk have been strongly recommended, but hitherto little or nothing has been done by the Chinese government to introduce these improvements, which would not only benefit the people, but augment the revenue. The foreigners who have established filatures at Shanghai are conferring a benefit on the country generally, and it is believed that good Chinese silk properly reeled in these filatures is the best in the world.

Letters from our Readers.

The Editor does not necessarily endorse the opinions of his correspondents.

QUERIES, ETC.

THE "RICTOR" IMPROVED GLASS CLOTH TESTER.—Can you or your readers inform me in what the speciality of this glass consists, and where it can be obtained?—G. (Manchester).

ANSWERS TO CORRESPONDENTS.

H. R. E. (D—G—E—, New York).—Your favour duly received, for which we are obliged. In reply we have to say that our time is so fully and urgently engaged as to completely preclude us from accepting your commission.

J. C. (St. Petersburg).—(1.) We have been unable to procure an original copy of the paper which you desire. An esteemed contemporary, *The Chemical Trade Journal*, is, however, republishing it this week, and a copy by the courtesy of the editor will be forwarded to you. (2.) The book is not yet published; we will forward it as soon as it appears. Any notices that have been given are anticipatory, and from imperfect copies.

G. F. P. (Halifax).—Our account of the firm to which you allude was, as we stated, a reprint from the *Times*, and the criticism in our column of topics was based upon the article. Both appeared in our issue of August 23rd. Beyond this and the fact that the Company has been registered we know nothing.

L. W. S. (Nottingham).—Are communicating with you privately.

J. H. H. (Newtown).—Regarding the examination required to be passed for a Factory Inspectorship, we have written to the Home Office and are awaiting reply.

S. M. R. (Bombay).—We shall have pleasure in complying with your wishes. Have posted you a copy.

S. E. H. (Bolton).—Thanks for your favour.

Textile Markets.

COTTON.

MANCHESTER, FRIDAY.

The trade has now nearly settled down to its normal state, after the recent confusion. Cotton has tumbled down about 1d. per lb. from its top point,

and this has taken out of it nearly all its recent artificial inflation. The present conditions will require from spinners the exercise of unusual caution, as the market now being left to be influenced by natural circumstances, purchasers will require to carefully weigh and balance against each the force of these factors, and decide whether they tend towards a further decline or to an advance from the present position. In our leader of last week we sufficiently expressed our view of the situation, which has undergone no material change in the meantime. The Liverpool stock will be declared to-morrow from actual count, but no very material change from the estimates is expected to be revealed. Should an unexpected deficiency, however, be shown, there will be no cause for alarm or excitement regarding prices, as it must be remembered that there can be no approach to a scarcity of either the raw material or its products at home or abroad, whilst it is quite possible that spinners may have at their mills a sufficient amount over their average holdings to counterbalance any deficiency in Liverpool.

COTTON.—There has been a fair demand for the raw material during the past week, American having been steady in the early part of the time, and developing a hardening tendency as the week has gone on. Sellers have thought this sufficiently marked to justify them in asking an improvement upon the official figures, which it is stated buyers at times have conceded. Part of this strength has to be attributed to the improvement in futures, which, though weak and declining from $\frac{1}{2}$ to $1\frac{1}{2}$ points for the various positions with the exception of September-October, improved on Saturday, advancing from 2½ to 3½ points, owing to unfavourable crop news and somewhat heavy buying. Since then there have been several fluctuations, the result on the week being that futures have gained 8 points for Septembers, and 4 to 6 for other positions. Spots are unchanged. In the notable speciality, Sea Island, a reduction of 1d. has taken place. Egyptian has been dull and holders have pressed sales, prices declining ½d. Brazilian has been in moderate request at unchanged rates. Rough Peruvians are unchanged, but medium roughs have been pressed for sale, and a decline of ½d. to ¾d. has occurred. Smooth sorts are unchanged. Indian cotton has been in good request, but in prices little variation has occurred, the only changes being that Bengal has advanced ½d. and Broach been reduced ½d.

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

	Import.	Forw'ded.	Sales.	Stock.	Actual Export
American	68,947	42,807	40,280	236,920	1,795
Brazilian	2,192	863	1,090	39,000	—
Egyptian	3,054	2,125	1,910	33,440	116
W. Indian	—	1,821	2,370	11,620	52
E. Indian	7,904	8,096	9,060	250,690	1,587

Total. 82,097 55,712 54,650 571,870 3,550

The following quotations are from the same source:—

	G.O.	L.M.	Mid.	G.M.	M.F.
American	5 $\frac{1}{8}$	5 $\frac{1}{8}$	5 $\frac{1}{8}$	5 $\frac{1}{8}$	6 $\frac{1}{8}$
Pernam	—	6	6 $\frac{1}{8}$	6 $\frac{1}{8}$	6 $\frac{1}{8}$
Ceara	—	—	6 $\frac{1}{8}$	6 $\frac{1}{8}$	6 $\frac{1}{8}$
Paraiba	—	—	6 $\frac{1}{8}$	6 $\frac{1}{8}$	6 $\frac{1}{8}$
Maranhm	—	—	—	—	—
Egyptian	—	—	6 $\frac{1}{8}$	6 $\frac{1}{8}$	7 $\frac{1}{8}$
Ditto, white	—	—	—	—	—
Fr. F.P. G.F. E.G.F. Gd. F.G. Fine	—	—	—	—	—
M.G. Broach	—	—	5	5 $\frac{1}{8}$	5 $\frac{1}{8}$
Dhollerah	3 $\frac{1}{8}$	3 $\frac{1}{8}$	4	4 $\frac{1}{8}$	4 $\frac{1}{8}$
Oomra	4 $\frac{1}{8}$	4 $\frac{1}{8}$	4 $\frac{1}{8}$	4 $\frac{1}{8}$	4 $\frac{1}{8}$
Bengal	—	—	3 $\frac{1}{8}$	3 $\frac{1}{8}$	4 $\frac{1}{8}$
Tinnivelly	4 $\frac{1}{8}$	4 $\frac{1}{8}$	5 $\frac{1}{8}$	5 $\frac{1}{8}$	—

YARNS.—The holiday stoppages of the Oldham mills have given spinners a strong pull on the market. Yarns, particularly welfts, have been scarce, and difficult to buy at last week's rates. Spinners are succeeding in retaining the principal portion of the recent fall in values in their own hands, manufacturers as yet having got only an insignificant share. Hence the demand for yarns has not been large on home-trade account, and manufacturers finding the cloth inquiry slow are only purchasing to meet immediate requirements. Export yarns have only been in small inquiry, yet owing to scarcity have been firm in price. Two-folds are in an improved position, compared with what they have been a while back.

CLOTH.—Taken all round the position of cloth may be regarded as firm, as manufacturers only participated to a very limited extent in the upward movement forced by cotton speculators, and have practically got very little advantage in yarns since

prices collapsed. They, therefore, stubbornly resist the demands of buyers to break their quotations, and, in the hope of doing better, are holding aloof from selling unless their prices be conceded. The consequence is that only a small trade is passing in any department. Most export fabrics are quite firm. Best printing cloths are steady, whilst common ones are perhaps the weakest fabric in the market.

WOOLLENS AND WORSTEDS.

BRADFORD.

Prices of wool are firm, although the amount of sales has fallen off slightly. Botany wool and tops are not, from the sellers' point of view, in such a satisfactory position, and the same remark applies to yarns. The Continental demand is rather slow, and although the outlook is considered good for the moment, a waiting policy is being maintained by buyers here. Mohair yarns are firm. Botany spins are a shade dearer. Piece goods move very slowly, both in the home and foreign markets. The current quotations are considered low, but manufacturers, although they have tried to obtain an advance, have failed to do so.

LEEDS.

There is a healthy tone here. The firmness of wool prices at the recent sales will not, it is thought, keep back business for some time to come, even though cloth may be quoted fractionally higher. High-class tweeds continue to meet with a large amount of support, and the prices paid show no weakness. Low makes, however, are not in such a firm position, and buyers have by far the best of it just now. Printed Meltons have not been in such demand of late, but the goods will probably move off again with the briskness which has characterized this end of the trade for some time past. Serges keep well to the front, and the popularity of worsted coatings which has been on the wane some time now promises to wax.

ROCHDALE.

There is a better feeling in the flannel trade, and the prospects for future business have improved considerably. The wholesale houses in Manchester and elsewhere are more inclined to pay better prices in order to secure delivery, and during the next few weeks it is anticipated that matters will assume a still more cheerful aspect.

GLASGOW.

Messrs. Robert Ramsey and Co., in their report dated September 23rd, say—

WOOL.—There has been a better tone in the wool market this week. More enquiry has been experienced, and some fair transactions have taken place, both in white-faced and black-faced wools. There is still, however, an absence of any speculative demand, consumers only buying as they require. Prices are without change, but firm.

FLAX AND JUTE.

DUNDEE TRADE REPORT.

WEDNESDAY, 24th Sept., 1890.

The market is still flat. Jute in all positions is weak, and all kinds of jute goods are easier to buy.

Yarns are dull to-day, and can be bought at about ½d. per pound lower all round. Common cops are done at 1s. 2½d. for 8lb.

Hessians are very quiet. There are orders, but shippers look on, expecting still lower rates. This accumulation of orders in buyers' hands may some morning lead to a sharp advance, but in the meantime they stand aside and allow the market to droop.

Flax is at last moving up in price. A rise of quite 30s. a ton is established on almost all kinds. Good brown flax is specially firm, and tows are quite 30s. dearer.

Flax yarns are all firmer, especially the better class of warps. Tow yarns are also the turn dealer, and spinners refuse to book forward, except at a sharp advance.

Linens are in good demand. Forfar, Fife, and Brechin are all busy, and sellers ask a slight advance.

Arbroath goods are in demand. Some large orders for heavy linen goods are booked to-day at a small advance.

The Dundee fancy jute branch is fairly active. For twines, ropes, and cord the demand is greater than the supply. The trade here seems to have concluded that the practical effect of the change in the tariff is to abolish the duty on jute, which is equal to £3 a ton against Dundee on some special kinds of paddings, and on goods over 60 inches the change is likely to be about ten per cent. more against Dundee.

DRY GOODS.

MANCHESTER.

NEW STYLES IN THE UNDERCLOTHING TRADE.—SHIRTINGS.—THE DALE STREET WAREHOUSE COMPANY.—FANCY FLANNELS IN THE STATES.

Although during August there was a lull in most departments of the Manchester trade, the results when examined have turned out to be satisfactory. In no class of goods is this more noticeable than in ladies' and children's underclothing, the production of which is carried on in this city on a much larger scale than many people imagine. Children's fancy costumes in various materials have gone off well. A "very special" "lead" in underclothing has been made this autumn, and the distributors catering for this trade have certainly forged ahead not only on the local ground but in districts far afield. Most of the representative houses do a little in these goods, but it is the specialists who have "made the running" and to their efforts it is that Manchester may be said to owe its present position as a centre for underclothing. In shirtings the turnover is good. Some firms are doing very well, but others find matters somewhat dull. The efforts that are constantly being made to produce new and attractive styles have, so far, been very successful, and the energies of those engaged in the business have been turned to other directions. Thus a stair carpet of cotton has been produced, and a most serviceable material it is. Boys' suitings, exceptionally thick in texture and perfectly fine, have also been made. They are all cotton, look very well, and are intended to supersede the old-fashioned Regattas, drills, and satens. The Dale-street Warehouse Company, Limited, has purchased the business formerly carried on by Messrs. J. Pickup and Co., of Lever-street, this city, and the stock, which consists of underclothing of various descriptions, will be offered on Tuesday next. The Dale-street Company (better remembered as Messrs. Robt. Faulkner and Co.), is one of the oldest firms in the trade, and is a thoroughly representative general house. Its departments include dresses, shawls, and wool handkerchiefs, laces, gloves, ribbons, and other fancy goods. The concern is a well-known one, and the efforts of the management to keep in line with the foremost of their competitors meet with the sympathy of many friends of the house throughout the country. With reference to the fancy flannel trade, we understand that some of the leading Scotch houses contemplate erecting mills in the States. There has been such a vast amount of vaguely-worded rumours concerning projected schemes of this kind, that one hesitates to broach a similar topic, especially as the reports current are very indefinite, while lacking confirmation. In this instance, however, the names of the firms—those of Lambie and Higgins and Wm. Anderson and Co.—have been freely mentioned.

HOSIERY AND LACE.

NOTTINGHAM.

Levers machines still continue to be only partially employed, and if there is any improvement at all in the trade it is not noticeable to many. Bobbin nets are slow, and quotations although firmer do not leave a satisfactory margin to manufacturers.

Cheap torchons are not inquired for to any appreciable extent. Lace curtains keep moving well and prospects are good. There have been some fair orders received from shipping houses. Hosiery is quiet. Locally, considerable attention is being paid to the progress of the dispute in the Calais lace trade, particulars of which were first given in this country by *The Textile Mercury*.

LEICESTER.

Spinners are busier, owing to the time limits which customers keep imposing. The accounts as to the hosiery trade are conflicting, especially in the fine cashmere department. Elastic webs are in moderate request. Prices of raw material have increased, and this affects considerably the position of manufacturers.

Joint Stock and Financial News.

NEW COMPANY.

JOHN HETHERINGTON AND SONS, LIMITED.

Registered by Rowcliffes, Rawle and Co., 1, Bedford-row, W.C., with a capital of £250,000 in £20 shares. Object, the purchasing, leasing or otherwise acquiring the businesses of machine and tool

makers, iron and brass foundries, millwrights, machinist contractors, and all the other manufactures and businesses now carried on by John Hetherington and Sons at Vulcan Works, and by John Hetherington and Co. at Ancoats Works, both of Pollard-street, Manchester. The first subscribers are:—

- J. M. Hetherington, Vulcan Works, Pollard-street, Manchester 1
- J. McQueen, Vulcan Works, Pollard-street, Manchester..... 1
- C. W. Haworth, Leigh Cottage, Oldham.... 1
- J. Nasmith, 5, Brook-road, Heaton Chapel.. 1
- J. Hurst, 20, Ashton New-road, Manchester 1
- G. Brown, Heateley Heath, Lynemow, Cheshire 1
- J. W. Thomas, 75, Livesey-street, Manchester..... 1

There shall not be less than three nor more than seven directors. The first are J. M. Hetherington, J. McQueen, C. W. Haworth, and J. Nasmith. Qualification, 100 shares. Remuneration, £850, divisible.

Gazette News.

ADJUDICATIONS.

- Alfred Lawson, Hollinwood, Oldham, manufacturer.
- Francis R. B. Heaps, Oxford-road, Macclesfield, silk commission agent.

RECEIVING ORDERS.

- Alfred Lawson, Hollinwood, Oldham, manufacturer; Oldham.
- Samuel Wilson, Upper-road, Batley Carr, Dewsbury, rag merchant; Dewsbury.
- Francis Heaps, Oxford-road, Macclesfield, silk commission agent; Macclesfield.
- John Johnson, Spear-street, Manchester, manufacturer; Manchester.

PARTNERSHIPS DISSOLVED.

- Julius Allman and Co., Deansgate, Manchester, patent agents.
- Coulthurst and Sutcliffe, Waterloo Shed, Trafalgar-street, Burnley, cotton manufacturers.
- Wilson and Holland, Pendle-street Mills, Nelson-street and George-street, Manchester, and Charles-street, Bradford; manufacturers.
- Hoemle and Lord, Manchester, yarn and cloth agents.
- John Speight, Son, and Co., Bradford, staff manufacturers.
- Marsh, Akam, and Co., Dalton Mills, Keighley, wool combers; J. T. Akam retiring.

NOTICES OF DIVIDENDS.

- Frederick Charles Simpson (trading as F. C. Simpson and Co.), 4, Britannia-street, Leeds, wholesale and export clothing manufacturer; 3s. 1½d., first and final.

Patents.

APPLICATIONS FOR PATENTS.

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

Where Complete Specification accompanies Application an asterisk is suffixed.

15TH TO 20TH SEPTEMBER.

- 14,491. E. BREADNER, 4, Corporation-street, Manchester. Apparatus for supplying rooms with filtered and moistened air.*
- 14,503. W. DENT, J. PICKLES, R. WHITAKER, and T. SCROFIELD, 8, Quality Court, London. Producing plain or partially plain selvages in twilled fabrics.*
- 14,535. E. C. MARC, 4, South-street, Finsbury, London. Machine for obtaining fibrous material from ramie and other plants.
- 14,538. J. WILKINSON and J. SHACKLETON, 8, Quality Court, London. Shedding motions of looms.
- 14,620. J. Y. JOHNSON, 47, Lincoln's Inn Fields, London. Manufacture and production of new substantive dye-stuffs, and of copper compounds thereof on the fibre. (*Badische Anilin and Soda Fabrik, Germany.*)
- 14,621. B. WILCOX, 47, Lincoln's Inn Fields, London. Rosaniline derivatives or leuco bodies of the tri- or di-phenyl-naphthyl-methane series, and colouring matters therefrom. (*Farbenfabriken vorm. F. Bayer and Co., Germany.*)
- 14,630. T. MITCHELL, 321, High Holborn, London. Linoleum, etc.
- 14,641. J. L. F. PINTO, 46, Lincoln's Inn Fields

London. Apparatus for indicating the attendance of workpeople, and the wages due to them.

14,665. M. PULLEN and T. M. PULLEN, Commercial-street, Halifax. Circular knitting machines.

14,699. W. H. TOWNSEND, 34, Southampton Buildings, London. Oil cloth and other fabric printing presses.

14,786. T. ASPINALE, junr., 2, Newall-street, Featherstall, Littleborough. Shuttle for taking out the weft when necessary from cotton, wool, silk, linen, and other cloths, in case of faults.

14,797. J. THORP, of I. and J. HAYES, Limited, and W. ALLEN, 1, St. James'-square, Manchester. Yarn guide traverse motions.

14,811. W. and A. MALLINSON, 8, Quality Court, London. Needle pointed cards of hardened and tempered steel, and apparatus for producing same.

14,813. J. C. SMITH, 323, High Holborn, London. Circular knitting machines.

14,836. J. Y. JOHNSON, 47, Lincoln's Inn Fields, London. A sulpho-acid for dyeing and printing. (*Badische Anilin and Soda Fabrik, Germany.*)

14,839. O. HOFFMANN, Temple Chambers, London. Process and appliances for washing, bleaching, and dyeing fibrous materials.

14,866. G. RAMSDEN and J. HEY, 58, Low-street, Keighley. Swifts used in connection with machinery for preparing yarns or threads.

14,897. W. P. THOMPSON, 6, Lord-street, Liverpool. Dyeing, bleaching, washing, or otherwise treating cops of yarn or the like, and apparatus therefor. (*F. Kornfeld, Austria.*)

14,901. C. L. L. BRIDRICH, Temple Chambers, London. Machines for making nets from twine.

14,903. P. H. DIETRICH and J. C. DIETRICH, Temple Chambers, London. Embroidering machines.

SPECIFICATIONS PUBLISHED.

1889.

- 15,439. COMNICK, Bobbins, etc. 8d.
- 16,257. CHORLTON and SCOTT. Woven wire fabrics. 8d.
- 16,584. SCOTT and MACKIE. Spinning frames. 6d.
- 17,223. LAKE. (*A. Leonhardt and Co.*) Colouring matter. 4d.
- 17,395. GARROWAY. Caustic soda. 4d.

1890.

- 3,928. DOARDMAN. Spinning, etc., fibrous substances. 8d.
- 8,541. HART. Textile fabrics. 8d.
- 11,873. LAKE. (*Leonard Weldon Dyeing Machine Co.*) Yarn dyeing machines. 6d.

SECOND EDITIONS.

1880.

- 4,420. ROTHWELL, A. and C. H. Weaving reversible fabrics. 6d.

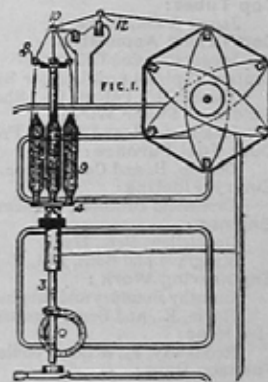
1882.

- 6,039. WALTON. Mosaic fabrics. 1s. 1d.

ABSTRACTS OF SPECIFICATIONS.

6,765. April 23, 1889. **Spinning.** T. HALL, Bradley Mills, Huddersfield.

Combined reeler and twister.—The threads are drawn from the cops 9 by the rotation of the reel, the said cops being mounted upon a disc 4 carried by a rotating spindle 3, and the threads passing through thread guides 8 also carried by the spindle and afterwards through the guides 10, 12 to the reel. The thread guide 12 is traversed in the usual manner. Both the spindles 3 and the reel are driven through change gearing so that the speeds may be varied as desired. For stopping the machine automatically when the hanks of twisted yarn are completed, the spring belt shipper rod, normally held in position by a catch, is released by means of a finger carried by a block moving on a transverse screw which is operated at each rotation of the reel by a ratchet arrangement. (8d.)



6,777. April 23, 1889. **Dyes.** J. E. BRADFORD, 9, Cardigan-road, Leeds, Yorkshire.

Dyes from natural products.—Relates to the production of colouring matter from the orchella lichen. Consists in employing oxygen, or air to which oxygen has been added, instead of air only, for treating the ammoniacal solution of the orchella weed. The process is carried out by means of apparatus described in Specification No. 6,778, A.D. 1889. (6d. Drawings.)

6,778. April 23, 1890. **Dyes.** J. E. BEDFORD, 9, Cardigan-road, Leeds.

Dyes from natural products.—Relates to apparatus for the production of colouring matters from the orchella lichen. Consists of a chamber in which are supported a number of inverted trays or shelves, which are supplied with oxygen, or air mixed with oxygen by a pipe. The gas escapes from each tray to that above it by a hole, the depending lip of which is not as deep as that of the tray itself. A shaft rotated by suitable means and carrying stirrers is mounted in the vessel, passing through holes in the trays provided with deep lips to prevent escape of gas. In operation the vessel is filled with the ammoniacal extract of orchella weed, oxygen, or air mixed with oxygen, admitted to the trays, and the vessel is heated. [64d. Drawings.]

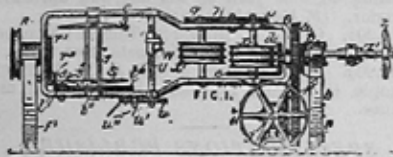
6,792. April 13, 1889. **Drying, carbonising, and cleaning wool, etc.** J. L. H. G. STROOS and G. J. M. A. CHARLES, Verviers, Belgium.

The material, which, in the case of carbonising, is first treated with acidulated water, is elevated between two endless bands, and fed into the drying apparatus by an endless band. The apparatus consists of a shaft containing rotating perforated cylinders with perforated paddles or blades. Two sides of the shaft are formed of moveable plates, which are kept nearly in contact with the cylinders by springs, and the material passes out on an apron underneath pivoted plates. Hot air ascends through the shaft and escapes through wire gauze, carrying with it dirt and impurities contained in the wool. [64d. Drawings.]

6,798. April 23, 1889. **Looms.** J. MORTIMER, The Neville Works, Elland-road, Leeds.

Shuttles.—Strips of hard wood or metal are secured in longitudinal recesses in the bottom of the shuttle. [64d. Drawings.]

6,803. April 23, 1889. **Ropes or Strands.** M. H. DAY, Tuxteith-street, Brockline, Massachusetts, U.S.A.



Laying and reeling.—A flyer G is rotated on standards F, F'

by gearing *e*, E, K, J, and a driving pulley H, and receives and lays together strands from a fixed layplate Z and collecting tube Z'. The flyer contains drawing pulleys *x*, *x'*, a reeling guide W, and a receiving reel T. The pulleys *x*, *x'* are connected by gearing *o*, *p*, *q*, and driven by gearing *s*, *d*, *e*, and a stationary wheel *t*. The reel T is rotated by gearing *u*, *v*, *w*, *x*, *y*, *z*, the central wheel *z* being fixed on a spindle carrying a pulley R, which is retarded frictionally by a stationary rope. The guide W is traversed by engagement with a right and left handed screw U, which is rotated by gearing *u*, *v*, *w*, *x*, *y*, *z*.

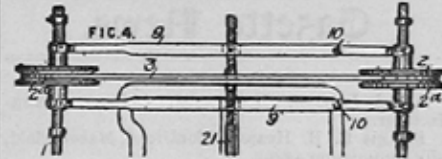
Collapsible reel.—The heads *s*, *s'* have slots in which the ends of segmental plates are received to form the barrel T, the plates being pivoted to one head; when in position the plates are separated by spaces, but when the loose head is removed they fall together and occupy less space. [64d.]

6,813. April 23, 1889. **Driving belts and roller coverings.** A. M. CLARK, 53, Chancery-lane, Middlesex.—(W. C. Edge; Newark, New Jersey, U.S.A.)

Driving belts are formed of knitted wire fabric, preferably with the unribbed side against the pulleys. The joints may be lapped.

Coverings for dandy rollers of paper-making machines, etc., are formed of knitted wire fabric, with the ribbed side against the body of the roller. They may be in the form of seamless tubes. [64d. Drawings.]

6,905. April 25, 1889. **Belt gearing.** P. BRIMFELT, 54, Shepard-street, Bury.



For driving the friction motion and weaver's beam of yarn sizing machines and other machinery, mechanism is employed comprising the shafts 1 with expanding belt pulleys, and a belt 3 of triangular section, the usual cone drums on the shafts being dispensed with. The pulleys consist of two adjustable discs 2, 2s with interlocking bevelled vanes or arms, and the adjustment is effected (for varying the speed of the machine) by means of forked levers 9 centred at 10 and operated by a right and left hand screw shaft 21 turned by a han-

wheel. A modification is described in which one only part of each pulley is adjustable. [64d.]

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" (Pamphlet sent free on application)

J. Meredith-Jones & Sons, LATE JONES & ROBEY, CAMBRIAN LEATHER WORKS, WREXHAM, NORTH WALES, England.

SOLE MANUFACTURERS OF THE CELEBRATED



REGISTERED BRANDS OF

WELSH ROLLER LEATHER,

Also CALF & PERSIAN ROLLERS.

Foreign Warehouses.

MR. N. N. WADIA, TANDRO, BOMBAY.
MR. D. H. COLLINS, MILK ST., BOSTON, MASS.

Telegraphic & Cable Address: CAMBRIAN, WREXHAM.

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

Auctioneers:

Rushton, Edward, and Son, Blackburn, and Manchester.

Salisbury & Hamer, Blackburn and Manchester. Unsworth, Geo., Manchester.

Belting:

Greenwood, John, and Co., Ltd., Todmorden.

Reddaway, F., and Co., Pendleton.

Rosendale Belting Co., Manchester.

Sampson and Co., Stroud.

Bobbins, Spools, Shuttles:

Kay, John, Rochdale.

Livesey, Henry, Limited, Blackburn.

Wilson Brothers, Todmorden.

Boilers:

Galloways, Limited, Manchester.

Calenders:

Hoyle, E., and Sons, Limited, Halifax.

Riley, J. H., and Co., Bury.

Card Clothing:

Whiteley, John, & Sons, Halifax.

Cement, Mineral Fusible:

Fox and Williams, Manchester.

Chemicals:

Grimshaw Bros, Clayton, Manchester.

Cop-Tubes:

Jagger & Co., Oldham.

Cop-Tubing Apparatus:

Jagger and Co., Oldham.

Cutters (Spiral) and Ledger Blades:

The Smith's Patents Co., Sheffield.

Gold and Silver Wire:

Makinson, E. and W. G., Preston.

Dust Fuel Furnace:

Donkin, B. and Co., London.

Emery Filleting:

Dronsfield Brothers, Oldham.

Engines:

Goodfellow, Ben., Hyde.

Musgrave and Sons, Ltd., Bolton.

Engineering Work:

Bransby Foundry and Engineering Co., London.

Hoyle, E., and Sons, Limited, Halifax.

Ire Hose:

Reddaway, F., & Co., Pendleton.

Furnace Bars:

Bransby Foundry and Engineering Co., London.

Hydraulic Presses:

Dickinson, Wm., & Sons, Blackburn.

Hoyle, E., and Sons Limited, Halifax.

Hydro-Extractors:

Broadbent, Thomas, and Sons, Huddersfield.

Indicators:

Orme, G., and Co., Oldham.

Jacquard and Card Cutting Machinery:

Devoe & Co., Manchester.

McMurdo, James, Manchester.

Knitting Machinery:

Harrison, W., Manchester.

Lattices, Pegs, Jacquard Slips, &c.:

Livesey, Henry, Limited, Blackburn.

Stone and Burnett, Preston.

Looms etc.:

Butterworth and Dickinson, Burnley.

Dickinson, Wm., & Sons, Blackburn.

Dugdale, John, and Sons, Blackburn.

Hacking and Co., Bury.

Hall, Robert, and Sons, Bury.

Hutchinson, Hollingworth, and Co., Dobercross, Oldham.

Livesey, Henry, Limited, Blackburn.

Pemberton and Co., Burnley.

Platt Brothers and Co., Limited, Oldham.

Schofield and Kirk, Huddersfield.

Shaw, Wright, Stockport.

Machinery (Cotton):

Bethel, J., Manchester.

Curtis, Sons and Co., Manchester.

Dobson & Barlow, Bolton.

Guest and Brookes, Manchester.

Hetherington, John, and Sons, Manchester.

Holden, G. H., and Co., Manchester.

Horrocks, John, and Son, Manchester.

Howard and Bullough, Accrington.

Hurst, W., Rochdale.

Lees, Asa, and Co., Limited, Oldham.

Lord Brothers, Todmorden.

Platt Brothers and Co., Limited, Oldham.

Stubbs, Joseph, Manchester.

Tatham, John, and Sons, Limited, Rochdale.

Taylor, Lang and Co., Stalybridge.

Machinery (Dyeing, &c.):

Dickinson, Wm., & Sons, Blackburn.

Heppenstall, E., Huddersfield.

Riley, J. H., and Co., Bury.

Machinery (Silk):

Curtis, Sons and Co., Manchester.

Dobson & Barlow, Bolton.

Guest and Brookes, Manchester.

Holden, G. H. and Co., Manchester.

Horrocks, John, and Son, 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.

Riley, J. H., and Co., Bury.

Machinery (Woolen and Worsted):

Curtis, Sons, and Co., Manchester.

Dobson & Barlow, Bolton.

Guest and Brookes, Manchester.

Hetherington, John, and Sons, Manchester.

Holden, G. H. and Co., Manchester.

Horrocks, Jno., and Son, Manchester.

Lees, Asa, and Co., Limited, Oldham.

Platt Brothers and Co., Limited, Oldham.

Stubbs, Joseph, Manchester.

Sykes, John, and Sons, Huddersfield.

Tatham, John, and Sons, Limited, Rochdale.

Taylor, Lang and Co., Stalybridge.

Oil:

Wells, M. & Co., Manchester.

Oil Cans and Oilers:

Jagger & Co., Oldham.

Royle, W., Atherton.

Patent Agents:

Bosshardt, F. & Co., Manchester, Oldham, and Stockport.

Thompson, W. P., & Co., Manchester, Liverpool and London.

Pickers, Picking Bands, &c.:

Greenwood, John, Todmorden.

Picker Steepers:

Green, James, Blackburn.

Pistons:

Lancaster and Tonge, Pendleton.

Roller Leather:

Meredith-Jones, J., and Sons, Wrexham.

Shuttles:

Kay, John, Rochdale.

Livesey, Henry, Limited, Blackburn.

Pickles, Robert, Burnley.

Walton and Halstead, Hebden Bridge.

Wilson Brothers, Todmorden.

Greenwood, John, Todmorden.

Sizing and Filling Preparations:

Adley, Tolkin, and Co., Blackburn.

Eastwood, James, Manchester.

"Gloy" Manufacturing Co., London.

Grimshaw Brothers, Clayton, Manchester.

Smoke Consumers:

Greaves, W. McG., Manchester.

Steam Traps:

Lancaster and Tonge, Pendleton.

Tambouring Threads, Braids, &c.

Makinson, E. and W. G., Preston.

Technological Handbooks:

Bell, George, and Sons, London.

Temples, etc.:

Blezard, James, and Sons, Padiham.

Lupton Brothers, Accrington.

Tools (Machine):

Hetherington, John, and Sons, Manchester.

Ventilation:

Blackman Ventilating Co., London.

Renshaw and Co., Manchester.

Rothwell, John, Farnworth.

Warping Machinery (Sectional):

Bethel, J., Manchester.

Wire, Gold and Silver:

Makinson, E. and W. G., Preston.

Wire Heads:

Barlow, H. B., and Co., Cornbrook, Manchester.

Yarn Assorting Balance:

Thomas, G. and Co., Manchester.

Yarns, Coloured:

Makinson, E. and W. G., Preston.

Yarn Testing, &c., Machine:

Wallwork, Henry, and Co., Manchester.