The

Textile Mercury:

A Representative Weekly Journal for

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

In all Branches of the Textile Industries.

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Articles, Correspondence, Reports, Items of News, on the 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 forpublication, 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 ineligible MSS., if accompanied by the requisite postage stamps, but will not guarantee their safe return.

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Current Topics.

THE PROSPECTS OF CALICO PRINTERS.

Calico printers are and have been for a long time in bad straits. Although the amount of printing done during the past few years has been great, and has necessitated a considerable amount of overtime being worked, yet the profits have been almost *nil*. This state of affairs can be traced to several causes. Of these the foremost has been the great amount of competition, and consequent cutting of prices, which, however much it may have benefited the buyer of the prints, has certainly had the reverse effect on the calico printer, who has been compelled to accept prices that could not possibly yield a profit, and were very likely to result in loss. This has been done not so much in order to get the work, as to stop rival printers from getting it, which is without question an exceedingly bad plan of doing business. Every commercial transaction should leave a profit, be it great or small, and to work at cost price, or less, solely to keep mills going, or to prevent some rival getting the order, is one of several short cuts to bankruptcy. Another cause of low prices is that the acceptance of these has been generally left in the hands of salesmen, who have little or no knowledge of what it costs to print a piece of cloth, and who generally go by guess-work. Now it is a very difficult thing to calculate the cost of printing a piece of cloth, which varies so much according to the pattern, number of colours, and other little matters; and we question very much whether there is a calico printer who could give within 10 per per cent. the cost of printing, say, 1,000 pieces; and when, as sometimes happens, there are two or three changes of colour in the 1,000 pieces, the calculation becomes yet more complicated. A dyer is much more favourably situated in this respect, as he can calculate within 2 per cent. the cost of dyeing a given quantity of yarn. The buyers of the calico printers' wares have not been slow to avail themselves of this state of affairs. They have frequently little scruple in blandly asserting, with or without foundation, that "——— and Co. will do it for so much." They are always ready to find faults, and to claim for them. They compel the printers to find the rollers (a most expensive item) for even small sample orders; and then, when repeats come, have no hesitation in sending these elsewhere if they can get the work done cheaper; while the original printer is not allowed to use his roller for printing for other buyers, as a case recently tried in the Lancashire Chancery Court illustrates. We do not mean to affirm by this that a printer ought to have the liberty to print from the patterns and designs supplied to him by a merchant when the latter keeps faith with him; but in the event of the said merchant taking his repeat orders elsewhere, the printer should certainly be absolved from any further obligation to keep a contract which has already been broken on one side. It is only by such action that he can recoup himself for an outlay which has not been covered by the printing of the original sample. Now, what is the remedy for all this? Clearly the only possible remedy lies in a union of calico printers, which may take two forms—either a voluntary one, binding each member of the union not to work below certain prices; to be careful not to accept over the head of the original printer what are undoubtedly repeat orders; to resist unjust claims on the part of buyers, and so on; or it may take the form of a syndicate to buy up at fair prices all the works now in existence, which would then be in a position to quote terms to the buyers. Such a syndicate has, we believe, been proposed, but for the moment the idea has been dropped, in consequence of several firms asking too much for their works. This is bad policy, as no more should be asked or paid than a fair value. Such a syndicate would be all powerful; it would be able to effect a great saving in the provision of rollers, in the multiplication of unsalable patterns, and in other ways, while there should be no insurmountable difficulties in the way of its formation. It lies with calico printers themselves to decide whether they shall have their profits for ever wrested from them, or shall wrest a little from their customers in return for all their expenditure of capital and labour.

RETAILERS AS COMMERCIAL PRINCES.

Vast business operations and corresponding wealth are no longer confined to the banker, shipper, or the wholesale merchant. Modern developments in the textile world have brought into existence a class of retailers—drapers, that is, on a large scale—the extent of whose annual turnover, measured in pounds sterling, would astonish those individuals who are classed under the general head of "city magnates." But drapers, mercers, merchants, warehousemen, or by whatsoever name they may desire themselves known, like members of other departments of trade do not gratify public curiosity by divulging the secrets of their business. One cannot therefore, except in a general way, form an idea as to the volume of the transactions carried on by these traders, so that the desire for information concerning such vast organisations as that of Debenham and Freebody, Marshall and Snelgrove, and greatest of all, William Whiteley, must perforce remain unsatisfied. In the north we have the Kendal Milnes, the Andersons, and the Wilsons; in the south the Jones's, and across the Irish Sea, the Pims, the Arnotts, the Cannocks, and others claiming rank with the *élite* of the drapery world. We know that these names represent vast wealth, but that is all. Lewis and

Allenby, the famous silk mercers, of Regent-street, London, are also amongst the largest of the retail firms, and as their business has just been converted into a limited company, an idea may be formed of the character of a fairly representative retail trade by examining the figures given in the prospectus. The share capital contracted for by the vendors, consists of 3,000 preference shares and 8,220 ordinary shares, which have been allotted as follows, viz., the 3,000 preference shares and 2,220 of the 8,220 ordinary shares to the members of the late firm and their nominees as fully paid; and 6,000 ordinary shares, credited with £6 paid and leaving an uncalled liability of £4 per share, to the senior partner of the late firm and chairman of the company. The share capital amounts to £200,000. The premises of the late firm acquired by the company are valued at £97,000. The fittings, fixtures, furniture, stock-in-trade, book and trade debts, cash in hand, and sundry small assets, as valued and computed on January 31, 1890, after deduction of current trade liabilities, are estimated at the net sum of £81,788 13s. 1d. Messrs. Lewis and Allenby have done much to encourage the use of British silks, and at Spitalfields they practically control the output of certain looms.

THE FALSE PACKING OF EAST INDIAN COTTON.

This is an old trouble, as anybody interested in the trade who remembers the time of the American cotton famine, well knows. False and fraudulent packing was then carried to such an extent that the aid of the law had to be called in to repress it, and this it did effectually, the statute to which the trade was particularly indebted for the result being the "Cotton Frauds Act." Latterly, to some extent, and in other forms, the evil has made itself manifest again, and is causing trouble. Already one Committee has had the matter in hand, but apparently without attaining satisfactory results. But however that may be another representative committee is being formed by the directors of the Liverpool Cotton Association to join which the following spinners have been invited: Messrs. Albert Simpson (Preston), J. F. Wynne (Oldham), and James Stott (Oldham). We trust that their efforts will lead to some improvement.

THE BLACKBURN HOLIDAYS.

We are sure the operatives of Blackburn will be congratulating themselves upon the advantageous change they have made in their holiday arrangements when they contrast them with the old ones, notwithstanding that the present season's experiences may not have been the most favourable in the matter of weather. We are pleased to know that on the part of the employers the new arrangement was most loyally observed, not one mill, so far as we can learn, continuing to work, nor one employer asking his operatives to do so. On the other hand, we are equally pleased to recognise the satisfactory manner in which the operatives themselves have stood to their agreement, allowing, with the most trifling exceptions, the old holidays to pass over without absenting themselves from work. This is as it should be, and we have the strongest conviction that the new arrangement will, on both sides, be recognised as a decided advantage in the course of a few years' further experience of it. The Corporation has done well to abolish the old agricultural or pastoral fairs of Easter and Michaelmas, which were antiquated survivals of industrial pursuits in the districts that are quite out of joint with those in existence at present. Two main holidays in the year—Christmas and that of July just instituted—divide the year very equally, and afford an opportunity for the enjoyment of both seasons such as has never been the lot of the Blackburn factory operative in past times. To those who could only afford the Whit-week holiday under the old arrangements it will be a great gain in many respects; whilst to those who could not struggle through the long period from Whit-week to Christmas without taking another in July or August it will prove highly economical, because the new one will, in nearly all cases, quite suffice for all requirements in every respect. Again we say, both parties are to be congratulated upon the change.

"WHERE THE PEOPLE WENT TO."

The fondness of the Blackburn operatives for a "trip" is unsurpassed. And this is undoubtedly a very praiseworthy trait in their character, as its influence cannot fail to be refining and elevating. The pure fresh air of the seaside and the mountains will invigorate their bodies, refine their tastes, and enlighten their minds. They usually go far enough to get quite beyond the circle of factory chimneys and the reach of factory smoke, which enables them to see that there really is something in the world besides their spindles and looms. Quite possibly the fact may penetrate their heads that they can very soon get outside the range of the sound or the sight of both, and that in fact all the world lies beyond. This has a healthy effect in reducing the dimensions of exaggerated sentiments of self-importance which are apt to spring up in the minds of those who stay too much at home. The railway companies serving the town have had a busy time, but knowing pretty well from previous experience the task with which they had to cope they made preparations accordingly, and have discharged it in the most satisfactory manner and without accident. From the midnight of Friday week until far on into Saturday evening the Blackburn station was thronged with the people departing to near and far places: from the Lancashire watering-places to those of Devon, Cornwall, the Isle of Wight, the Channel Islands, and the Metropolis. The northern resorts fared equally well, the Lakes, Edinburgh, Glasgow, and the Clyde being patronised probably as never before. And there is no doubt that wherever the Blackburn people went they would make the fact known, as there is no superabundance of modesty or quietness about them when on pleasure bent, but an abounding joyousness and altitude of spirits. And withal, this is not manifested in a blamable manner, nor in such a way as will not make them very welcome visitors on their next appearance. They pay their way and spend their money freely, and these are qualities that everywhere command the respect of those who cater for the public pleasure, whether it be lodging-house keepers of railway companies. We trust they may all have many a pleasant time in store like that of the past week.

HOW TO GET GOOD WOOL.

A French contemporary directs attention to the influence on the quality of the fleece of the food which the sheep eats, and dwells on the following four points:—(1) To obtain the right quantity of good wool the sheep must be well fed; (2) if the sheep receive too much food, or food which is not sufficiently nutritive, the wool lacks strength, is destitute of grease, and becomes in consequence flabby, rough to the touch, dry and harsh; (3) regularity in the distribution of the food is very important: faults in this matter affect the quality of the wool; (4) there is a difference of opinion about the action of certain foods on wool. All, however, agree in ascribing a marked influence to fertile pastures. The wool of sheep that enjoy such pastorage is abundant; the fibre is long and is characterised by its softness, whiteness, lustre, and strength. Sturm, who is a high authority on the subject, has proved that all the foods which promote perspiration produce a fine wool.

EGYPTIAN COTTON STATISTICS.

The difficulty of getting accurate cotton statistics is no new experience to spinners or manufacturers, but this has mostly been in connection with the American crop. Not much surprise, however, was felt in trade circles at now finding the accuracy of the recently published official estimate of the Egyptian crop called in question, which has been done by a correspondent of the *Egyptian Gazette*, who writes from Ziftah, and protests strongly against the official estimate of the acreage. He says that the area sown with cotton in Egypt is much greater than that given in the returns as published by the Government. Instead of about 850,000 acres, he thinks that quite 1,000,000 acres have been planted. The Statistical Bureau, he states, gets its information from the village sheiks, who are generally afraid and unwilling, for trivial reasons, to give the correct figures, wilfully erring on the lower side. Still the correspondent thinks that the area planted with white cotton is greatly over-estimated. It is not probable, however, that whichever way may be the facts, the result will be much different. The same influences have no doubt been operative in connection with former crops, and as the cotton is sure to come forward eventually the result has only led to the erroneous conclusion that the product per acre has been over-stated, and the same may be the case in this instance.

FRAUDULENT IMITATIONS OF TRADE MARKS IN CHINA.

We trust that the wicked practice of fraudulently imitating a neighbour's trade mark, which in this country is now nearly stamped out under the ban of public opinion and the penalty of the law, will not seek refuge in our colonies and dependencies. From a passage in a report of Mr. Hughes, our Consul at Shanghai, it would appear, however, that there is some risk that this will be the case. Mr. Hughes says:—

> The trade [in cotton goods] is chiefly in the hands of British merchants. The pieces of shirtings are as a rule stamped in England with registered marks, which have become known in China as the trade mark of the importing firm. Lately, however, it has been discovered that some unmarked shirtings have been imported and stamped in China with imitations of favourite trade marks, so that a merchant who has taken years to establish the credit of his trade mark, and whose goods commanded higher prices, is at once deprived of the advantages earned by the high character of his goods, and their long-established reputation. The fraud is said to be not uncommon, but only one instance has actually come to my knowledge as yet. The goods were stamped with the imitation trade mark at another port, and it is hoped that the fraud will be exposed and the perpetrators punished.

We sincerely trust that merchants who may find that their trade is falling off in some unaccountable manner in these goods, will cause the strictest investigations to be made, and if they find it to be owing to this contemptible and degrading fraud, that they will punish the perpetrators as far as the law permits. In doing so they will receive the sympathy and approval at least of every honest man, and any that may from other sources be withheld will not be worth the having.

"WHEN THE BOOT IS ON THE OTHER LEG."

Operatives in the cotton trade can be quite as hard as their employers, if not more so; even their leading officials can advise the spinners to resist attempts at extortion, when it comes from piecers to spinners. "Demos," who it is well known is a notable trades-union leader in Bolton, writing to a local journal, says:—

The mania for striking is spreading, and has at length affected the little piecers in our spinning mills. Several strikes on a small scale have occurred within the past few days, but generally speaking, the results cannot have been satisfactory to the strikers. In most cases the spinners immediately affected have applied to their Association for advice and instructions; and I would strongly recommend all spinners who may have demands made upon them by their piecers for more wages to adopt the same course. Wherever it is found that the piecers are not paid full rates in accordance with the average of the district, the Council has at once advised that an advance should be conceded; on the other hand, where average rates are paid, but yet objected to, the society will not sanction any advance being given, and, if necessary, will support the men in their opposition. . . . The spinners are the employers of the piecers, and any advances in wages would in the first place have to be made at the expense of the former, though ultimately the employer would be called upon to make it good by an advance in the piecework prices. In no case ought the spinners to pay more for piecing than the following, which I am assured on competent authority are the average rates for the town:—

		Per week.
Mules containing	750 to 880 spindles each	21s.
do.	882 to 1,050 ,,	22s.
do.	1,052 to 1,100 ,,	23s.

Demands in excess of these rates should be resisted, as little difficulty will be experienced in supplying the places—especially of side-piecers—of those who leave work. The rule hitherto has been for piecers' wages to be advanced or reduced at the same time, and at the same rate per cent. as have those of the spinners; it has worked admirably, more particularly as regards the piecers themselves, who by this arrangement have been saved the trouble and annoyance of fighting the wages question on their own account. I have no doubt the spinners will keep this arrangement intact, remedying, of course, any inequalities which may be found to exist between the rates paid and those just given above.

This is instructive, very! In comment we can only say,

Strange that such difference there should be
'Twixt Tweedledum and Tweedledee!

THE INTELLIGENT AMERICAN AGAIN.

The American Civil War—surely one of the noblest wars on record—seems to have levied an over-draft on the virtue of the great Republic of the West. But this is only in accordance with the usual course of history; otherwise any student of contemporary American affairs might well say in his leisure what David said in his haste, and give up all hope for the nation dwelling under the Stars and Stripes. Our transatlantic cousins seem to have an inordinate capacity for believing statements that their Puritan ancestors would have labelled with an unpleasant name, and of propounding such statements for their own gratification. Harmless exaggeration of the Mark Twain order one can appreciate and laugh over, but the other description of truth perversion can only be regarded as untruth pure and simple, and that, too, with intent the most reprehensible. Ignorant voters in the States have for a long time been misled by unscrupulous Protectionist *doctrinaires*, one of whose principal political weapons has been the circulation of false statements concerning this country, with the object of exciting the fear and animosity of those citizens whose power of penetration may not be sufficiently keen to enable them to fathom the motives which actuate the noisy wire-pullers at whose shrine they bow down and worship. We are surprised to find such a respectable journal as the *Manufacturers' Gazette* (Boston) printing nonsense like the following:—

The Cobden Club was organised to benefit England, and to ruin our industry. The head of this Club is the British Government. Among its members are twelve English Cabinet Ministers, which is three-fourths of the whole Cabinet, the Prime Minister, the Lord Chancellor, the President of the Council, the Minister of Finance, the Secretaries of State, Colonies, Home, Foreign Affairs, and Postmaster-General, with also 200 members of Parliament. The whole power and wealth of the English Government is back of this Club. Nearly all of the great manufacturers and landlords and business men are members. They call America their great competitor. A branch of this Club is organised in New York, composed of importers, college professors, lawyers, ministers, and editors, who are paid to damage our industries, and distribute free trade literature. This Club gives premiums to our college students for essays advocating free trade. Some of our most widely circulated papers are subsidised for the same purpose.

The whole power of mendacity and ignorance is behind the writer of the extract undoubtedly, and we would recommend the editor of our contemporary to think twice before endorsing any such statements as those emanating from this individual. And while on the subject we may add the remark that the Cobden Club seems to be a good deal more widely talked of abroad than it is at home. The influence of the Club is not recognised by hundreds of thousands of Englishmen, and the sooner our American friends bury the bogey they have raised in connection with the question, the better will it be for the credit to which they are entitled as men of common sense.

ANOTHER INSTANCE.

The above remarks have been in type for several weeks, and we had really intended to distribute the matter again without printing it, having become rather weary of the attempt to "moralise" a continent. (We venture to coin the word for the occasion, America being a country that has contrived to become "civilized" without having undergone the process expressed by the new verb.) But on Tuesday the mail brought us the July issue of the *Textile Record*, of Philadelphia—Philadelphia, the City of Brotherly Love, the old home of the God-fearing Quakers! And the *Textile Record* itself brought us the following choice misrepresentation of fact and perversion of comment:—

"The consideration of the tariff bill in Congress has had about as much attention in Europe as in the United States. In every industrial centre in the Old World the schedules of the bill have been eagerly scanned, and the probability of the adoption of the measure anxiously discussed. Several times it has been the subject of inquiry in the British Parliament, and the British and Continental newspapers have given it close consideration. An American reader of these journals might have found much to amuse him in the comments made upon the bill by some of these newspapers. All of them bitterly denounced the measure, and while some of them satisfied themselves by indulging in lamentation over the menace offered to European industry, others fiercely demanded that the various Governments should engage in the work of retaliation. The *Textile Mercury*, of Manchester, England, for example, urgently pressed for imposition by England of 'import duties upon American productions quite as high as those levied in that country upon the manufactures of England,' and it commends this plan 'to the Cobden Club as being one much more likely to accomplish their objects than the spending of the vast sums of money in the United States for the spreading of their views amongst the American electors.'"

After reading this, it will appear as almost beyond belief that the above extracts are taken from a note in the *Textile Mercury*, in which the McKinley Bill was never once mentioned nor referred to! (*Vide T.M.*, June 21st, p. 420). A reference to the note in question will shew that, in the course of a comment on Mr. Blaine's demand for reciprocal advantages for the United States in return for the free admission of sugar, we wrote that the United States Secretary of State—"loves reciprocity. Well, the hint is plain. Let us at once proceed to impose import duties upon American productions quite as high as those levied in that country upon the manufactures of England"—this is where the *Textile Record* stops, but we continued—"and then we shall have the hon. gentleman hastening over here to propose a treaty of reciprocity." And the next sentence reproduced by our contemporary is similarly mutilated by the omission of the final clause. We commended the plan "to the Cobden Club as being one more likely to accomplish their objects than the spending of the vast sums of money in the United States for the spreading of their views amongst the American electors, *with which the Republican party affects to credit them.*" But while the American editor's 'cuteness suggested the omission of the tell-tale final clause, his scholarship failed to shew him that the sentence as mutilated is redundant in definite articles. Therefore such of his readers as have eyes to see will suspect the little trick, and may, perhaps, be reminded thereby of having read in their cheap pirated editions of Tennyson that

"A lie that is half a truth is ever the blackest of lies."

But perhaps American publishers who steal the laureate's works omit such uncomfortable little observations from their reprints, after the same manner as the *Textile Record* does.

Articles.

THE FACTORY INSPECTORS' REPORTS.

This annual document has just made its appearance for the year ending 31st October, 1889. One fact must be obvious from these figures, namely, that it's contents must to a great extent have grown stale and antiquated, and become useless for any purposes save historical ones, owing to the long time that has elapsed since the matters to which it refers were noted, and the changes that may and probably have occurred in the time that has since elapsed. We see no reason why the report, for anything it contains, could not have been issued on the 1st December last, or at the very latest by the 1st of January in the present year. It is eight months after the latest date of the matters referred to in its pages, and very much longer for a great proportion of them. How does this compare with *The Textile Mercury*, issued promptly every seven days, and that without the aid of governmental machinery? Moreover, the contents consist only of the district inspectors' reports and a running comment thereon by the Chief Inspector Mr. Alexander Redgrave, which occupy about 56 pages, whilst the remaining 160 pages consist of tabular statements of the prosecutions undertaken by the district inspectors and the results that attended them. These, we presume, will be entered into each inspector's register at the time of their occurrence, and therefore cannot form an obstacle to the earlier appearance of the report. Neither can the editorial work entail a great amount of labour, as the contributions of the staff of inspectors occupy 50 of the 56 pages devoted to the reports, only six being left to be otherwise provided for, and these are occupied by the very brief remarks of the Chief Inspector. As it is fair to presume that "Her Majesty's Inspectors of Factories" can spell correctly and write grammatically, their "copy" should not occasion much trouble, and we therefore don't see that any delay should arise from this source. It is not a general opinion in these districts that

any of the Government offices are short-handed in the matter of clerks, and therefore we cannot assume that delay arises from this cause. Where then can it arise? There is only one more possible place and we do not think it is there: that is, with Her Majesty's printers. Surely then, the public are justified in the expression of an opinion that these reports ought to be supplied very much nearer to date than is the case in this instance, because, as thus issued, they are, for all practical purposes, nearly valueless.

We now turn from criticism of the superfices of the report to its contents, and immediately find that there is quite as much cause for complaint. The report, as a whole, is introduced by four lines from Mr. Redgrave, and the first of the collection is that of Mr. Superintending Inspector Coles, whose districts were Lancashire and the North of Ireland, and who retired from duty some months ago, after a service of 38 years. There is no date to Mr. Coles' report, and it consists mainly of a few remarks upon the Cotton Corner of last year, and a reprint of the Spinners' circular issued in September last, calling upon the trade to adopt short time in order to defeat the corner men. Surely it is too much to be called upon to read this ancient history, when the trade is practically battling with another attempt of a like kind, though happily not so severe in character. Mr. Coles offers no suggestions for obviating these troubles. Of course it would be too much to expect that he should do so as any part of his official duty. A brief notice of an Irish humidifyer, and an equally brief reference to the Manchester Technical School, constitute the remainder of his contribution.

The report of Mr. Henderson, the active and experienced superintending inspector of Scotland and the North of England, comes next, and is much more elaborate, as all who know him would expect it to be. Mr. Henderson briefly reviews the condition of all the leading industries that fall within his cognizance in the performance of his duties. Of these we are only interested directly with his remarks upon the textile trades. So far as these partake of the character of a market report, they are neither of interest nor value to manufacturers, however much they may be to the official minds in London. There are some remarks, however, upon the decay of the flax trade of Scotland and the expansion of that of jute, which are interesting, and to which we may call attention in an early issue. A similar observation will apply to his statement regarding the social conditions of the workpeople in the latter trade.

We now come to the ordinary inspectors. Mr. Godfrey Faussett, who has the Eastern Counties under his charge, gives a few interesting particulars of the state of the textile trades of Norwich and neighbourhood, which it is needless to observe are of much less importance now than they were a century or two ago. We are not immediately concerned with the reports of inspectors whose districts contain no textile industries, and therefore pass them over. Mr. Johnson, whose district consists of a great portion of the West of England, has a few complimentary observations upon the conduct and general bearing of the Bristol cotton operatives during the strike in which they were engaged last year. The next report calling for notice is that of Mr. Jones, who has the Manchester district under his charge. This consists of less than a page of matter, mainly devoted to the unfortunate state of the fustian cutting industry, with which we were all familiar last year. From Mr. Hoare, whose district includes North Wales, we learn that the Welsh woollen trade was more active and healthy, but that the little woollen mills were gradually dying out, as was to be expected. He further tells us that the Welsh women are forsaking their ancient industry of hand-knitting, and are extensively adopting the knitting machine. In that we think they are wise, though, perhaps, the disciples of Mr. Ruskin will think otherwise. The report of Mr. Cameron, the inspector for Belfast and district, deals with the condition of the linen and other Ulster industries in a manner decidedly leaving much to be desired, as the style of the report is stilted, and the sentences involved and decidedly lacking in clearness. We have neither time nor space in which to analyse his matter to get at his meaning. Mr. Woodgate, who reports for Dublin and the west and south-west of Ireland, is an improvement upon Mr. Cameron. He gives us some interesting particulars of the re-opening of the Cork flax mill last year, which we recorded in *The Textile Mercury* at the time, the number of workers employed, and the re-commencement of the cultivation of flax in the neighbourhood to supply its requirements. He also notes the introduction of a Dutch fan into the scutching room of the Cork mill for ventilating purposes, and it is also stated that the firm have likewise procured a man from Holland to superintend the operations of this room. We are afraid this may give rise to a new grievance in the trans-channel island, but trust it won't. There are a number of other interesting items in Mr. Woodford's report, which upon the whole is one of the most interesting of the entire collection, and we compliment him upon the fact. There are a few other items calling for comment, which, however, must be deferred this week.

In conclusion, we venture to say that the report is open to criticism for its shortcomings. In the 150 pages of the reports of offences tabulated, those of all the industries under supervision are jumbled up together, whilst in fairness to each they ought to be classified. The number of establishments under inspection ought to be stated in a similar manner and then it would be possible to see in which trades the laws were least regarded. The report does contain a summary of the nature of the offences committed, and a tabular statement of the accidents and the nature of them that have occurred during the year with which the report deals, but here, again, there is no classification and the table is consequently of very little value. Surely with very little more trouble the inspectors could classify the information they report, because that which they gather or which is supplied to them in compliance with the requirements of the law will contain all the information necessary to enable them to do this. We shall hope to see an improvement in these reports. Of course in offering these criticisms it is hardly necessary to say that we are aware that most probably the inspectors' reports, as printed, are incomplete, those portions being given which it is thought the public may be interested in knowing, whilst other matters of a more purely administrative character are withheld. In our comments we have allowed for this.

TENTERS AND THEIR WAGES.

That there has been a great advance in the earnings of weavers during the past thirty years is a fact well known to every one interested in cotton manufacturing. In the years between 1850 and 1860 there were comparatively few three or four-loom weavers, and in the case of the latter it was incumbent to have a "tenter," a boy or a girl, who should assist the adult weaver. There were hardly any half-time tenters at that period. Few weavers were able to manage three or four looms before they were from eighteen to twenty years of age, and it exceeded the ability of almost the best to keep up a full production from four looms without the assistance of a tenter. At that time the average earnings were 5s. per loom per week, and a place at which that was exceeded was regarded as a remarkably good one. There were far more in which an average of 4s. 9d. per loom was the case than there were of the former. The wages of the tenter were, however, always 5s., 5s. 3d., or 5s. 6d. per week, not varying with the varying earnings of the weaver. The improvements in spinning and weaving machinery that have taken place in the interval between then and now have enabled the weavers to earn from 5s. 6d. to 7s. per loom per week, and, in many cases, to take charge of from four to six looms, with or without tenters. We observe, however, from the report of a meeting held in the Co-operative Hall, Kirkham, in connection with the strike at the mill of Messrs. Walker, Moss, and Co., that there has been a grievance about the wages paid to tenters in their mill. Mr. Luke Park, Secretary of the Preston Weavers' Association, which has just taken the Kirkham weavers under its wing—a feat about which it seems mightily elated—stated that "with this matter they had nothing at all to do." He understood, however, that a deputation of the weavers who had waited upon Mr. Moss had agreed that 5s. per week should be paid to the tenters, "but it was a matter they must settle amongst themselves." He, however, was kind enough to inform them that in Preston in some cases they were paid 5s. 6d. a week, which we take was meant as a hint that they had made a good bargain for themselves in getting off with 5s. per week. It is safe to infer from this that the Kirkham weavers have up to now been paying less than 5s.—probably 4s. 9d. or 4s. 6d. per week. How very generous these people have been to the children of their poor and, perhaps, struggling neighbours! This little incident reveals the existence of a curious physio-pyschological fact that could scarcely have been suspected by many persons who have seen how exceedingly virtuous and generous operatives have been represented to be by their leaders—a virtue, the attribution to them of which they have in nowise repudiated. The fact to which we refer is that there is very little difference in the nature of a weaver and that of his employer. Though the former is ready to charge his employer with being animated by a grasping avarice under the influence of which he becomes unjust, it is found, as seen in the Kirkham instance, that the weavers themselves are no better when the opportunity offers, but make such hard bargains with defenceless children that the employer, against whom they have been inveighing for weeks past for what they allege is his unjust treatment of them, has to step in to compel them to act more justly towards *their* employés.

But we will leave this point and go to the general question. It is fair to assume, in view of the admissions of Mr. Luke Park, that the wages of tenters in Preston range from 5s. to 5s. 6d. per week, which is exactly the figure we have given above as the rate prevailing in East Lancashire 30 to 40 years ago. We should like to ask the question here how it is that, with an advance in the aggregate earnings of weavers amounting to from 15 to 30 per cent., their tenters remain without the slightest improvement? Surely such determined sticklers for the fullest fraction of the Standard List of wages

and such strong opponents of injustice as the great body of the weavers must be assumed to be, have not all these years, during which this improvement in their own wages has been in progress, been denying a share of it to the large body of helpless boys and girls who constitute the "tenters" of the manufacturing districts! If so, we shall be bound to conclude that they have done it because they were helpless. This fact, if fact it be—and we are sorry to think it is one—will convict the weavers of Lancashire of the grossest inconsistency of character when advancing their claims for the extremest of justice for themselves. But what about the Weavers' Unions? Have the officers of these institutions never recognised that the tenters have had claims upon them? We are afraid not, according to Mr. Luke Park. And why have they thus been ignored? Is it not because they are the servants of the weavers and not of the principal employer, and because, being too young to offer effective resistance, they can with impunity be treated with injustice? We are afraid the answers to these queries would have to be in the affirmative, and if so, both weavers and Unions and their officers stand convicted of injustice and of winking at it.

GOLD AND SILVER TEXTILE THREADS AND THEIR MANUFACTURE.

The use of the precious metals in the manufacture of textile fabrics dates from the most distant times. From the historic evidence accessible, it would appear that it was almost coëval with the beginning of weaving. As to whether or not the fictile art had been discovered before the invention of weaving there is no particular evidence, but that gold and silver were beaten out into extremely thin plates, cut into strips, and used as filling in weaving, in the very earliest times, we have the evidence of the writer of the Book of Exodus to shew. In the 29th chapter we read: "They made the ephod of gold, blue, and purple, and scarlet, and fine twined linen. And they did beat the gold into thin plates and cut it into wires to work it in the blue, and in the purple, and in the scarlet, and in the fine linen, the work of the cunning workmen." These wires were inserted into the cloth along with the woollen and linen threads. There are numerous other statements in the Bible shewing the prevalence of the use of the precious metals for purposes of this kind.

The ancient classic writers also offer abundant evidence of the very general use of gold and silver for the purposes stated. Homer mentions a golden girdle and an upper garment that Penelope made for Ulysses, which was the subject of universal admiration. A contemporary of Homer, Pisander, speaks of the Lydians as wearing tunics adorned with gold. Virgil has many references to the use of these metals for the same purpose, and we gather from him that the practice was habitual in Phœnicia, Licia, and other parts of western Asia. But of all the peoples of that part of Asia, the Persians excelled in the lavish use and display of the precious metals in their textiles. Darius, King of Persia, in the war with Alexander the Great, when advancing to oppose the progress of the latter, was arrayed, according to Quintus Curtius, in a magnificent robe adorned with golden hawks, and amongst the vast multitudes which preceded him on this occasion, was a band of the ten thousand, called the "Immortals," whose dress was carried to the very height of barbaric splendour, some wearing golden collars, and many others cloth variegated with gold.

Amongst the Greeks and Romans the practice of inter-weaving the precious metals with their fabrics was not extensively adopted until the later periods of their history. In the time of the Roman Empire, many of the Emperors indulged in these luxuries to a very great extent, and in all probability the patricians followed their example as far as their means allowed. This, indeed, is made evident by numerous references that could be adduced from Roman writers, but it would extend this article to an undue length even to enumerate them. We may, however, mention one instance, that in which the poet Claudian describes some robes prepared by Proba, a Roman matron, who lived near the end of the fourth century. These robes were to express her affectionate congratulations on the elevation of her two sons to the consulship, and were presented for the ceremony of their installation:—

> With joy elated at this proud succes,
> Their venerable mother now prepares
> The golden trabeas, and the cinctures bright
> With Seric fibres shorn from woolly trees;
> Her well-train'd thumb protracts the length'ning gold,
> And makes the metal to the threads adhere.

Maria, the daughter of the Consul Stilicho, and and wife of the Emperor Honorius, appears to have indulged lavishly in these rich garments. She died soon after her marriage, about A.D. 400. In February, 1544, the marble coffin containing her remains was discovered at Rome, and in it were preserved a garment and a pall, which on being burned yielded 36 pounds of gold. These garments had been presented by the father of the deceased as a dowry on her marriage, and were probably woven by her mother, Serena. It may go without saying that this magnificent robe, had it been preserved, would have been a unique example of the luxuriance of the textile arts in those early days. Serena is also stated by Claudian to have woven robes of a similar description for the Emperor Honorius, and probably for use on the same occasion.

In more modern times gold and silver textiles of considerable beauty and elegance have been manufactured amongst the various nations of Europe. They were, however, mainly for ecclesiastical purposes, and specially for service in the gorgeous ritual of the Roman Church. The leading cathedrals of the Continent in connection with that faith—such as St. Peter's at Rome, that of Notre Dame at Paris, and others of less importance—have large treasures of these kinds of fabrics, which are shewn to visitors to-day. In the countries over which the Reformation spread it is quite probable that all such cloths and garments would share the fate of that of the Empress Maria, referred to above, and would be burnt for the precious metal they contained. The Protestant churches dispense with their use altogether, or with only the slightest exceptions, which occur amongst the Ritualistic section of the English Church, which seems disposed to go back upon the old lines.

The use of cloth of gold and silver amongst the nobility and wealthier classes of the western nations reached its climax in the reign of our Henry VIII. in the meeting which has since become known to history as that of The Field of the Cloth of Gold, where a display was made perhaps never equalled except by some of the Babylonian or Persian monarchs of old. This ostentatious display, which was followed soon after by the disestablishment and disendowment of the Church, when its treasures of costly fabrics along with those of other descriptions would be transformed into money, seemed to close the era of barbaric splendour and to form the prelude to one of more refined taste, in which the precious metals were much more sparingly and tastefully used. It is very rare now, except in Court circles or amongst the military and naval professions, that we ever find anything in the way of such costly textiles, and these are mostly in the form of braids and laces.

From this rapid review of the use of these metals in the textile industries, it will be obvious that the methods of manufacturing threads from silver and gold must have been known in the earliest historic times. So far as can be gathered they appear to have been beaten out into thin sheets by gold beaters, and these cut into very narrow strips, just like the gold plate in use amongst manufacturers in the cotton trade, though it is hardly likely that it could be done with the same uniform regularity as at present. Numerous examples of this type of gold thread have been recovered from sepulchres and otherwise handed down from very ancient times. There are also samples shewing the use of gold thread, in which the narrow strip of plate has been twisted, sometimes upon itself, while sometimes it has been used to cover other threads of cotton, or silk, or flax. In a few rare instances a rather finely-drawn solid wire has been used, but it may be inferred from the great rarity of this style that wire-drawing as an art, as it now exists, was unknown. Indeed, it is not until the year 1360 that wire-drawing on the present plan by machinery was first heard of, and that was at Nuremberg. It took 200 years for this method to travel to England, it being introduced into this country in the year 1560.

(To be Continued.)

Reviews of Books.

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

ELEMENTARY TREATISE ON THE FINISHING OF COTTON GOODS. By JOSEPH DEPIERRE. Manchester: George Thomas and Co., 1890. Price, 30s.

This is an English translation of a work originally written in French, which has passed through two editions in France and one in Germany. It is a volume of 480 large octavo pages, copiously illustrated both with engravings and patterns.

Part I. deals with finishing in general. The author lays stress upon the point that the finish of a piece of cloth ought to shew off to advantage the real quality of the goods, and not be a falsification or imitation of a quality superior to that of the goods. He has something to say of the practice of weighting, which he strongly condemns, and evidently thinks English finishers are acting wrongly in weighting their goods as much as they do, because such weighting, he says, is not demanded by the buyers of the cloths. To this, however, we must demur, having known of cases where the buyers have preferred the weighted to the pure goods, and obviously their preferences must receive attention. Finishing is quite of modern origin; very little if any was done before 1820, and it is but briefly referred to in treatises published before 1850. In 1851, however, the practice of finishing and weighting came into vogue in England and set the fashion for the rest of the world. Chapter II., which deals with the substances used in finishing, might very advantageously have been considerably extended, while much is said that might very well have been omitted. A long list of plants in which starch occurs is not required, neither is an historical account of Queen Elizabeth's edict on the use of blued linen. These are interesting in their way, but they are of no technical value.

The account of the various starches is also far from being thorough. China clay, barytes, mineral, and Epsom salts, although of so much importance, are dismissed in less than two pages, while ultramarine occupies some five pages, which is out of all proportion to its use in finishing. Antiseptics are dealt with briefly.

Chapter III. occupies some 200 pages, and deals with the machinery used in finishing. This is a satisfactory performance, the author shewing evidence of being well acquainted with finishing machinery, although, as might be expected, he is better acquainted with French than English types. Filling mangles are first described, then follow the drying machines, wherein most of the forms now in use are described, but the author omits the cylinder drying machine, which for spotted figured goods is much used, and is growing in favour among finishers. Stentering frames are next described, and the peculiar motion used in producing the elastic finish is elaborately explained by the aid of several diagrams. The stenters illustrated are all of French or German patterns, which differ much from English models, and should, therefore, be of particular interest to English readers. Stretching machines and rollers are next described, and under this head is noted Birch's scutcher, which is somewhat out of place here, as its object is not to stretch, but simply to open the cloth. Damping mahines follow, and are adequately dealt with. Calenders are described very fully, many of the best English makes being illustrated. Under this head is given one description of a water mangle, a machine which enters very extensively into English finishing, but apparently is not used on the Continent. The chapter then goes on to describe beetles, presses, raising machines, and folding and measuring machines. Chloring and blueing takes up the first chapter of the second part, which deals with the production of the various kinds of finishes. This part gives a very good account of French and German methods of finishing, and is copiously illustrated by patterns, and on this account will be found of value. Of English finishes and the methods of producing them nothing is said. In England the present tendency is to rely on manipulation of machinery to produce certain effects, and to use as little stiffening, and this of as simple a composition, as possible; while on the Continent the opposite seems to be the rule, the composition of the stiffenings being more complex and the cloths not being manipulated so much.

The volume is well got up, and altogether reflects great credit on the author. We can recommend it to those of our readers who desire to know more about the Continental methods of finishing, and hope that sooner or later an English author will give us a similar work on English methods.

Letters from our Readers.

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

THE SPINNING OF MEDIUM AND FINE YARNS IN INDIA.

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

SIR,—Several friends, with whom I include myself, have read the letters of your Bombay correspondent, which appeared in your issue of June 28th, with a considerable degree of interest. The point on which this is based is the statement that at the new Union Mills 50's and 60's yarns are being produced with success on a commercial basis. The impression hitherto has been in this country at least that such yarns as these could not be spun in India on modern machinery. If, however, the statement of your correspondent is correct, it simply relieves us from another illusion as to what India can do, and shews us that obstacles, which on this side were believed to be unsurmountable have been overcome. Your correspondent makes no statement on one point in which I and my friends would like some enlightenment, and that is the cotton from which these yarns are being produced. It is almost safe to presume that it is not native cotton, but has really been imported from Egypt. Still, presumptions are not safe things, and I should like to have some light on the subject from a source that can afford it, as it will be well that we on this side should know as soon as possible the risks our trade at home has in the future to encounter.

When it is considered, however, that India was the original home of cotton manufacturing, and that its productions in the way of cotton fabrics, if we may trust historical statements on this subject, have been the finest that have ever been made, and that these have been made from native cottons, I really do not see why she should not again enter the field of competition against us in the finest goods, and even produce these from the growth of her own cotton fields. I am well aware that as our cotton machinery is at present constructed it would not be easy, indeed hardly possible, to spin 50's, 60's, or 70's yarns upon it with the short-stapled article produced in India, but if fine yarns could be spun by the hand process, it strikes me it would be no difficult matter to so modify our machinery that equally good if not better result could be easily obtained. This, however, is entering into another matter. The purpose of my writing is to put the inquiry contained above.—Yours faithfully,

MANCASTRIAN.

NEW ZEALAND FLAX.

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

SIR,—We notice the correspondence in your Journal, anent the question of the future of New Zealand flax, and as we have now perfected an inexpensive machine for the extraction of the fibre, we will be glad to examine and report upon the fibre of any specimens sent to us for the purpose.—Yours, &c., J. H. LAMPREY, for

JNO. B. FEYER, Secretary.

2, Victoria Mansions, Westminster, London.

ANSWERS TO CORRESPONDENTS.

A. P. (Bolton), A. M. S. (Bradford), W. R. S. (Heaton Norris), W. H. (Preston), Guiseppe—(Milan), G .A. (Chemnitz), A. L. Binns (Philadelphia).—Communications received.

R. T. (Brighouse).—Received with thanks. We congratulate you on the results and not least on your own success. Will write you at more length shortly.

A. F. B. (Leeds).—You may send on anything you may think suitable, and if we concur with your views it will be admitted. Regarding the work mentioned it will probably be as you desire; but of this more hereafter.

J. H. H. (Newtown).—We will try to obtain the information you require in the course of the next fortnight. What about your successful Eisteddfod essay; has it been published? If not, don't you think it would do you good in the direction in which your thoughts seem tending? We think so.

GERMAN CHAMBERS OF COMMERCE.—The German *National Zeitung* states that the Imperial Administration has now under consideration a scheme for the formation of German Chambers of Commerce in foreign countries. The Minister for Foreign Affairs intends to establish, in the first place, Chambers of Commerce in the principal commercial centres, and particularly in Rotterdam, Antwerp, Paris, London, Zurich, Milan, Budapest, Odessa, Riga, and eventually at Salonica and New York.

THE NEW DUNLAP TAPESTRY.—The New York *Carpet-trade Review* says:—"James Dunlap, of Philadelphia, had been experimenting on the printing of tapestry carpets on the pile threads after the carpet was woven, whereas the pattern of a tapestry is now produced by printing the yarn on a drum before it is woven. The writer has witnessed the new printing process employed by Mr. Dunlap and has carefully examined a number of samples of tapestry printed by his machine, and it would seem that Mr. Dunlap has discovered a perfect process for printing tapestries on the cloth, a process first attempted many years ago, but abandoned. The samples shew the same effects in figure and colouring as are seen in tapestry carpeting as now made. The pile threads are coloured through to the back of the fabric, and the colourings have the same lustre and bloom as in the present goods. Each colour in ground and figure is clearly defined, and there is no spreading of colour in the samples shewn. Mr. Dunlap rubbed a piece of the new goods with soap and water thoroughly without any of the colour coming out, in order to prove that the colours were fast. He claims that he has demonstrated beyond doubt that he can produce tapestries by his process equal to any now made, and at a reduced cost. He is building ten looms for weaving the plain white tapestry cloth, and says all the machinery will be in operation by August 1st, and that the new goods will be put on the market during that month. The process is the sole invention and property of Mr. Dunlap, and is the result of two years of constant experimenting. The new printing machine is now in the mills of John Dunlap and Sons, Eleventh and Cambria streets, Philadelphia, of which firm Mr. Dunlap is a member."

Designing.

NEW DESIGNS.

DHOOTIE BORDER.

From Madras. Numbers at the side denote colours. All the light type dark green; No. 1, blue; 2, red; 3, purple. Two borders of this design at each selvage, one inch each in breadth. Entire width of cloth 38 inches, made of 40's twist, warp and weft, 40 reed, or 40 ends per inch, 40 picks, or what is termed a square cloth. Length, 4 yards; weight, 12 ounces. The range of colour in these Dhooties is limited, except in one series, which, beginning with green, passes through light blue to a lilac hue. A dull brick red, chocolate brown, and a black or grey, like Indian ink, complete the list, except now and again a little yellow. Another series has a cream ground almost in every case, with a bronze or copper green imposed and turquoise blue. No other colours are used, but a lilac hue occurs in a few specimens. Important lessons may be drawn from a study of Oriental patterns. There is nothing in the way of colour combination so rich and beautiful as the carpets, scarves, counterpanes and Dhooties of Indian manufacture.

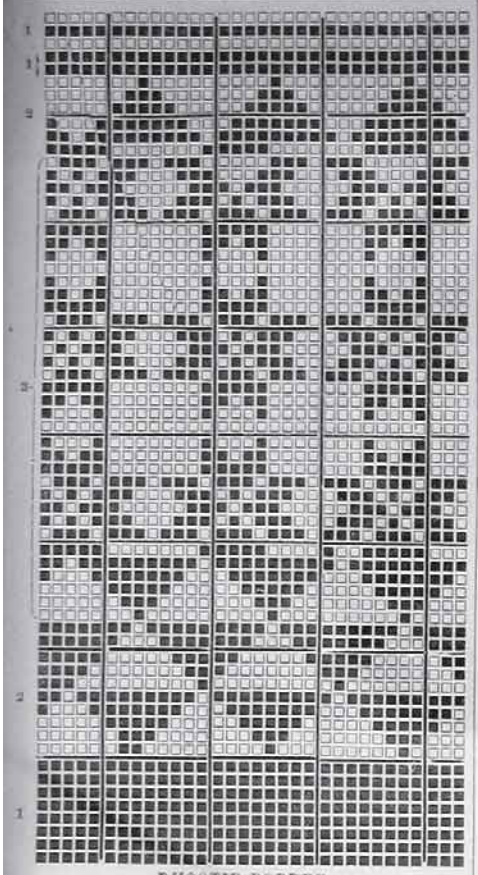
DRESS FABRIC.

A very neat light cloth, soft to handle, may be made in a 72 reed, or 72 ends per inch of 24's twist, 56 picks of 20's weft per inch; four ends of silk in the warp and weft to be 36's two-fold spun silk. The warp must be drawn two in a heald, two healds in a dent; five shafts, four for matting and one for the silk, this shaft to be the nearest to the reed. The pattern we give may be considered a basis to work from, being 70 ends, and 48 to round, 66 ends of black, chocolate, dark brown, dark blue, or any shade of myrtle on the shafts marked in the draft plan 2, 3, 4, 5, and four ends, four in a heald, one heald in a dent, of white, crimson, scarlet, or maize spun silk on shaft marked 1. In checking great care must be used in putting the four picks of silk in the proper sheds. We give for this purpose the treads marked 1, 2, 3, 4 in the pegging plan and 44 cotton picks on the other treads, making 48 to the round; but no matter how the materials may differ in grist of yarn for warp and weft, set of reed, and picks, or whether the squares of the pattern are large, small, or squares within each other, one thing must be borne in mind—the weft ought in every case to square the warp pattern, whatever that may be; the whole effect and object of so doing is to obtain a very neat cross on the angles where the silk of the warp and weft meet. Light colours, shades, tints, and hues may be used for the ground, provided the silk line, vertical and horizontal, is a good sharp contrast, or warp silk may be one colour and the weft silk a contrast. Any other material, such as linen, worsted, or mohair, may be used for weft. This make of cloth is worth notice.

THE ARRANGEMENT OF FIGURES.

(*Continued.*)

Before proceeding to treat on the "Sateen Arrangement of Figures," attention should be directed to means for producing variety in drop patterns, reversed figures, etc. Now, in these systems of arrangement usually one figure is placed in two positions, either reversed or otherwise, and thus it may be said that half the



DHOOTIE BORDER.

FIGURE 23.

figuring capacity of the loom employed is wasted. That this is true in a greater or less degree all will readily admit, but it must be remembered that the object of placing figures as indicated is to distribute as evenly as possible the figure employed over the surface of the fabric and thus prevent an uneven structure or streakiness in the design, the presence of either rendering the fabric unsalable. Bearing these facts in mind, there is still no reason why drop patterns or opposing figures should not differ to a small extent from each other, but the variation must be very limited, since the object should be not to give the idea of two distinct figures, but of variation of one effect.

Figure 22 is supplied as an illustration of reversed figures slightly modified, the dark portion being inserted to assist the analysis of the pattern. Here it will be noticed that the modification simply consists in a slightly different flower being used, all other parts being exactly reversed. Such variation, however, may safely be carried much farther than is shewn in this example, and will very often give such a result as amply repays all extra work necessitated from the conditions mentioned being observed.

THE SATEEN ARRANGEMENT OF FIGURES.

Since this system of arrangement has been very fully demonstrated by many writers, our duty will simply consist in briefly indicating the methods adopted and at the same time calling attention to any peculiarities of treatment which any special author may have adopted.

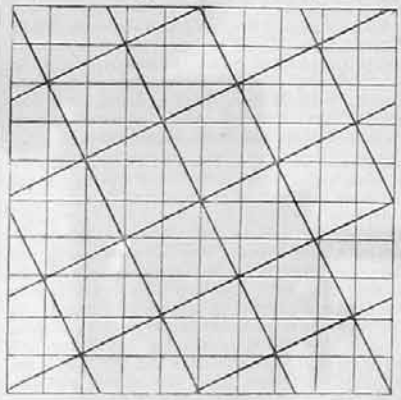


DIAGRAM C.

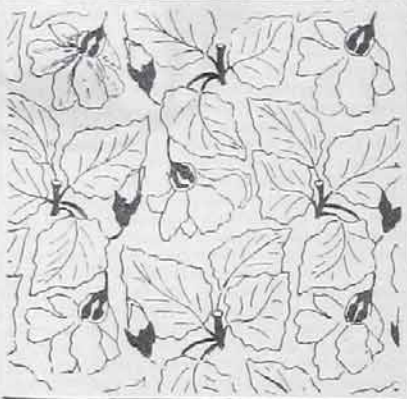


FIGURE 22.

An effective way of dealing with this subject is that demonstrated in *Diagram C*, this system, we believe, being first adopted by Mr. George Washington, and fully demonstrated by him in a lecture on "The Sateen Distribution of Figures," delivered before the Yorkshire College Textile Society.

The squares marked out in thin lines represent the units of space upon which the design is to be developed. In this case the 5-end sateen is being dealt with so that five squares by five squares will be the repeat. Now proceed to put down the 5-end sateen, but instead of counting the spaces count the points where the perpendicular and horizontal lines intersect. Having decided the sateen positions, join them in the two directions as indicated by the thick lines; thus the space, five units by five, will be found to be divided into five equal parts.

On this being accomplished, it is very evident that any given figure on being placed in each of these squares will be arranged in sateen order, and thus equal distribution will be ensured, since it is very apparent that each figure is considerably overlapped by its neighbours. The advantage of this will be fully realised on consulting *Figure 23*, which is simply a diagonal figure arranged in a square. Here we notice that each distinctive portion of the figure comes into line with the same portion of its neighbouring figure, and, therefore, unless the figure shews a very marked diagonal effect and itself consist of what may be termed an all-over effect, distinct and very objectionable lines across will be developed. The remarks made respecting the variety producible by reversed figures are equally if not more applicable to the sateen arrangement of figures, since there are here at least five repeats of the figure in one repeat of the design.

In our next article on this subject our remarks on the sateen arrangement shall be concluded, and we will indicate as briefly as possible systems of producing and arranging figures which are occasionally useful to the textile designer.

WOOLLEN MANTLE CLOTH.

Figure 22, properly developed, will make a very creditable mantle cloth. For a light summer fabric about 30—36 sk. dark woollen should be used with, say 50—56 threads per inch, 4, 5, or 6-end makes being used for the ground. The figure will shew best if developed by means of an extra weft, say 30's mohair, shading being resorted to to denote the various portions of the figure. If the expense of such a cloth be too great, the sett should be closer, the 4 or 5-end sateen (warp up) used for the ground, and the mohair weft brought on the surface when required to form the figure. In the finishing of such cloths as these it must be remembered that uneven shrinkage is likely to take place, therefore means must be taken to overcome this by paying special attention to the selection of materials, tentering, cutting, etc.

Figure 23 will come out well in either all silk, or cotton warp, and silk or mohair weft.

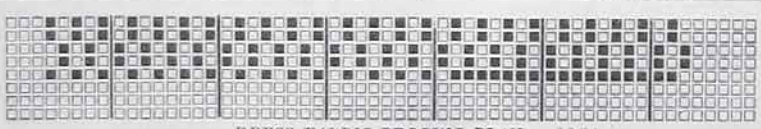
WOOLLEN OR WORSTED TROUSERING.

The following is a suggestion for applying colour in a stripe form for trouserings :—

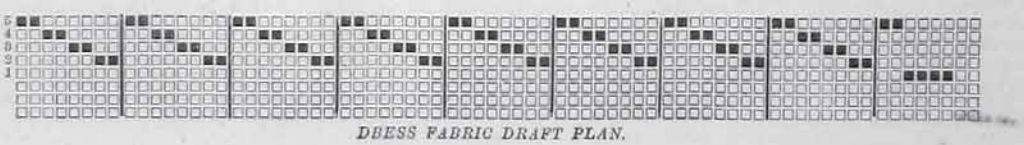
Warp.

12	threads	black,	12	threads	black,
4	,,	white,	4	,,	grey,
12	,,	black,	12	,,	black,
4	,,	white,	4	,,	grey.

For the white and grey, complementaries to different intensity may be employed with the black ground, or, again, the ground may be complementary to the stripes, the stripes in this case being varied by their difference in luminosity.



DRESS FABRIC PEGGING PLAN. 1 2 3 4

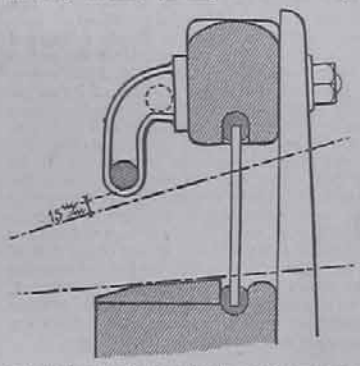


DRESS FABRIC DRAFT PLAN.

Machinery and Appliances.

A CONTINENTAL SHUTTLE-GUARD.

The shuttle-guard question has of late received a considerable amount of attention on the Continent, and has resulted in several inventions. One of these we present to our readers, in the accompanying illustration. It consists of two guides attached to the slay-cap, in which a round bar of iron can move freely, so as to be able to assume two positions, as shewn in the illustration. The lower one of these is, of course, the protecting one, and the upper one the one in which it is off guard. When the loom is at work the rod occupies the lower position; when it is stopped and the weaver wants it out of his way, it is easily lifted into the upper position, as shewn in the dotted circle, by means of a handle, when it is quite out of the way of anything he may want to do in the shape of piecing his warp threads, putting in the headings, or



any of the numberless little requirements that necessitate his having a free hand. When the loom resumes working the rod at once falls back of itself into the lower position by the movement of the slay. The advantages claimed for this guard are: its simplicity and perfect working; that the protection it affords is quite independent of the workman; that the latter is not inconvenienced in any way; that there is no wear for hinges and springs; and that bolts and screws are avoided. It can be easily applied to looms of every kind and breadth; it occasions no opposition from the workpeople, who quickly get accustomed to it, and in many cases are said to have requested it to be applied after seeing it on neighbouring looms. The brackets which carry the rod are attached to the slay-cap, near the shuttle boxes. A good working height is indicated in the illustration. If, however, there would be any risk of contact in this position with the temples, it can easily be raised, without impairing its efficiency. One way of attaining a proper adjustment might be by lowering the temples somewhat, should the other plan not afford all that is required. To assure a more convenient and more certain mounting, each guide is provided on one side with a slot intended to receive a small bolt with a hexagonal nut, and on the other side with a hole destined to receive a wooden screw. For wide looms it is advisable to add a third guide, this being attached in the middle of the slay-cap; this will prevent the vibration or deflection of the protector rod in the middle. An alternative arrangement is to provide two rods. From this description our readers will be able to form their own opinion as to its value.

JOINING STRIPS OF LEATHER BELTING.

A great drawback to the use of leather belting is that owing to the strips of leather being of limited length, a number have to be joined together in order to form one belt. The hide of one animal yields only about 48 per cent. of its weight in leather suitable for the manufacture of belts. The suitable strips that are cut out are joined according to the ordinary method, by first cutting their extremities obliquely, and then uniting them—a plan which is far from preserving for the belt all the strength desirable. M. Levard-Drieux, a French inventor, has devised a new system in which the junction offers a surface of cohesion equal to double that obtained by the method just mentioned. In this system one of the two strips to be united is cut in the form of a double slope, and the other is notched on the same pattern, but in hollow relief. There are thus two surfaces joined instead of one, and the joint, it is said, offers far more resistance. Before they are put to use the straps are submitted on all their length to a very strong tension, which makes them incapable of further stretching.

The Baumwoll Spinnerei and Weberei, Bozen, Austria, have placed orders for their new mill, comprising cotton mixer, scutchers, slubbing, intermediate, roving frame, and self-acting mules, with Messrs. Taylor, Lang, and Co. Stalybridge, through their agents, Messrs. Robert Hibbert and Sons, Manchester.

Fusible Cement.—Messrs. Fox and Williams, of Manchester, manufacturers of fusible cement, have, on account of the increase in their business, been compelled to take additional premises. These are at the Spread Eagle Works, Trentham-street, Chester-road. We have been afforded the opportunity of inspecting the same, and were pleased to observe that they offer every facility for giving a greatly increased production. In our previous reference to this cement we omitted to state that for consolidating, solidifying, and securing shaken engine beds and walls, it is unequalled. It stops most completely and permanently all oscillation, and being unaffected by damp, water, oils, or acids, it is reliable under every contingency likely to occur. The only exception is heat, which, however, must reach 300 degrees before it can affect the cement. The process of manufacture is exceedingly interesting. The materials, in carefully adjusted proportions, are melted together over a furnace until they are thoroughly incorporated and a given temperature is attained, when the mass is poured into moulding boxes, and allowed to cool. It is then turned out in the form of solid slabs or blocks, 12in. by 12in. by 2in., of which there are 100 to the ton, equalling 16¼ cubic feet. In this form it is easily packed and rendered transmissable to all parts of the world. Full particulars and directions for use are supplied. Messrs. Fox and Williams also make a special metal or cement for the use of iron-founders and others for filling blow-holes or other defects. This is melted and run into the defects, and when cold can be turned, bored, or filed to a high polish. For the usefulness of the first-named cement, Messrs. Fox and Williams have the testimony of a large number of the leading firms of the country.

New Industries in Brazil.—According to the Italian *Bolletino delle Finanze*, the Government of the State of Rio de Janeiro has decided to grant to all new establishments of spinning and weaving which shall be formed in that State, a gratuitous concession of land for building mills, and is moreover endeavouring to obtain for them from the central Government the free importation of all such machines, utensils, materials, tools, etc., as are necessary to carry on these industries. The municipality of the capital of that State has also undertaken to exempt from taxation for the next ten years all industrial establishments, of whatever nature, which shall be formed in the town.

Bleaching, Dyeing, Printing, etc.

FINISHING OF COTTON CLOTHS.

The following recipes are translated from foreign sources; they will give our readers an idea of the methods and materials used by Continental finishers in the production of various finishes:—

SHIRTING FINISH.

22 lb. farina,
16 lb. starch,
15 lb. China clay,
15 lb. barytes,
6 lb. tallow,
¾ lb. soap,
1 lb. cocoanut oil,
½ lb. stearine,
½ lb. soda crystals,
2½ gallons water.

Boil the soap, soda, stearine, cocoanut oil, and one-sixth of the tallow, with the water, then add the other ingredients and enough water to make up to 50 gallons. Use warm, mangle in this, dry in the stove, or on stenter, damp and calender.

DULL FINISH FOR WHITE GOODS.

Boil

10 lb. starch,
20 lb. farina,

in 6 gallons of water. Mix

50 lb. pipe clay,
50 lb. China clay

in 40 gallons of water, mix well, take 16 gallons of the mixture with the starch liquor, then add

2 lb. stearine,
1 lb. soap,
2 lb. cocoanut oil

boiled in 2 gallons of water. Blue to shade; make up with water to 40 gallons. Mangle cloths in water mangle, stiffen on stiffening mangle, dry, damp well, and calender on 3-bowl calender, two nips, without friction.

GERMAN SHIRTING FINISH.

25 lb. starch,
1 lb. stearine,
2 lb. bleached palm oil,
½ lb. soda ash,
2 lb. chlorids of magnesium,
1 lb. glucose.

Make about 15 gallons of mixing. Mangle through stiffening mangle, dry on cylinders, damp well, and work on Dutch mangle.

BEETLING FINISH.

4 lb. starch,
¼ lb. wax,
2 ozs. paraffin,
½ oz. spermaceti.

Make about 7½ gallons mixing.

BLACK FINISH.

18¾ lb. starch,
29 gallons water,
20 lb. mineral.

Boil; then add

6 ozs. verdigris,
14¾ lb. logwood liquor, 20° Be.,
4¼ gallons water,
3¾ lb. farina.

Mangle on stiffening mangle, dry over tins, damp well, and calender.

MIXING FOR PRINTS.

35 lb. farina,
25 lb. starch,
8 lb. glue,
8 lb. dextrine,
30 gallons water.

Boil, cool, add 17½ lb. chloride of magnesia water to make 40 gallons of mixing; starch on back-filling mangle, dry over cylinders, damp, and calender slightly.

Marsh, in the *Chemical News*, states that concentrated and Nordhausen sulphuric acid, glacial acetic acid and dry propionic, butyric, and valeric acids do not redden dry litmus paper. It is, therefore, to be inferred that the conversion of blue into red litmus requires the presence of water.

ANILINE BLACK.

Adolphe Lehne in the *Färber Zeitung* gives the following process for dyeing an aniline black on cotton, half silk, or China grass, as being ungreenable and not rubbing. The fabric or yarn is first passed into the following bath :—

400 parts starch,
5,000 parts water,

boiled together, and then mixed with

600 parts chlorate of soda,

previously dissolved in

3,000 parts water,
100 parts copper sulphide, 30 per cent. paste,
1,200 parts aniline salt dissolved in 2,000 parts water.

The goods are passed through this mixture two or three times, being wrung out between each passage, and well worked to get the colour in as evenly as possible. They are then hung in a warm place for two days, when they will have acquired an olive green colour. They are now treated for ten minutes at 160° to 170° Fahr. in a bath containing

60 parts bichromate of potash,
56 parts sulphuric acid,
100,000 parts water,

then well washed in cold water and soaped for fifteen minutes at 170° Fahr. in a soap liquor made with

400 parts hard soap,
25 parts glycerine,
100,000 parts water,

washed, and dried.

RECIPES FOR DYERS.

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

PALE SKY ON COTTON.

For 100lb. cotton. Wash the cotton well, then dye in a bath of

3½lb. alum,
1oz. marine blue S,
½oz. magenta.

Work at from 150° to 160° F.

TERRA-COTTA RED ON CLOTH.

For 100lb. cotton, work the cotton for half-an-hour in a bath of

2½ lb. gambier,
1½ lb. bluestone.

Lift, wring, and enter in a bath containing

1½ lb. bichromate of potash.

Give about 10 turns, lift, wring, and dye out in a bath at 180° F. containing

2 lb. alum,
5 oz. chrysoidin,
10 oz. ponceau B.

Lift, rinse, and dry.

GRENAT RED ON WOOL.

Mordant by boiling for one hour in a bath of

2 per cent. bichromate of soda,
1½ per cent. sulphuric acid.

Wring and dye in a boiling bath of

3½ per cent. cloth red R,
½ per cent. acetic acid.

Lift, wring out, and dry.

FAST PALE BLUE ON COTTON.

For 100lb. cotton, mordant the cotton by working for one hour in a warm bath of

2 lb. tannin,

and then allow to steep overnight. Then fix in a warm bath of

½ lb. tartar emetic,
½ lb alum.

Dye in a bath of

1½ oz. methylene blue,
1½ oz. new blue D,

each dissolved separately in water, the New Blue D with the assistance of a little acetic acid.

SLATE GREY ON WOOL.

Mordant the wool by boiling for 1½ hour in a bath made with

2½ per cent. bichromate of potash,
2½ per cent. tartar.

Wash, and dye in a bath made with

1½ per cent. logwood extract,
1½ per cent. alizarine.

Enter the wool at about 150° to 160° F., work half-an-hour, then gradually raise to boil, work to shade, lift wash well, and dry.

MULBERRY ON WOOL.

For 100lb. wool, mordant by boiling for 1¼ hours in a bath containing

1½ lb. bichromate of potash,
½ lb. sulphuric acid.

Dye, after rinsing, in a bath containing a decoction of

40 lb. logwood,
18 lb. sander's wood.

Dye for one hour at the boil, then add 8lb. alum, and boil again for half-an-hour. Lift, work for 10 minutes in a bath containing

½ lb. tin crystals.

Wash well, and dry.

DIAMOND BLACK ON WOOL.

For 100 wool, mordant by boiling for one hour with

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

Wash, and dry in a bath made with

2 lb. diamond black,
2 lb. acetic acid.

Work at 120° F. for one hour, then heat to boil, and work until the dye is fully fixed. Lift, wash, and dry.

WALNUT BROWN ON SILK.

For 10lb. silk, dye in an old soap bath, broken by addition of a little acid, with

3 lb. turmeric,
1¼ oz. orange G,
½ oz. acid magenta,
½ oz. brilliant green,

for half-an-hour at boil ; wash, brighten with a little acetic acid, and dry.

OLIVE ON COTTON.

For 100lb. cotton, work the cotton in a warm bath containing

10 lb. fustic extract,
5 lb. quercitron extract,
2½ lb. logwood extract.

Then lift, wring, and fix in a bath containing

2 lb. bichromate of soda,
5 lb. bluestone.

After working in the cold for about 20 minutes, raise to boil, lift, wring, re-enter into the dye bath at 150° F., and work again to shade. Lift, rinse, and dry.

MAIZE ON SILK.

For 10lb. silk, prepare a bath with

½ lb. naphthol yellow,
¼ oz. orange G,
2 oz. sulphuric acid.

Enter the wool at 120° F., work a few minutes, then gradually raise to boil, work to shade, lift, inse, and dry.

RUSSIAN GREEN ON WOOL.

For 100lb. wool, prepare a bath with

1¾ lb. light green SF,
½ lb. naphthol yellow S,
2 lb. patent blue B.

Dye for one hour at the boil, lift, wash, and dry.

WASTE OIL ACIDS FOR BLEACHING, ETC.—In the refining of shale and petroleum oils for lubricating purposes, large quantities of waste acid and alkaline liquors are produced, resulting from the treatment of the crude oils with sulphuric acid and caustic soda. These are mostly thrown away, as it is rather difficult to recover the acid and the alkali from them. Two Russian inventors are proposing to utilise these liquors in various ways in the textile industries —for carbonising wool and other animal fibres, to remove vegetable fibres, for bleaching, etc. It is rather doubtful as to whether these waste products will give useful results. The large quantity of oily matter, etc., which they contain must materially interfere with their use, and to rid them of such can only be done by neutralising the acid and alkali they contain, which operation robs them of their valuable constituents.

OLEINE *v.* SOLUBLE OIL.—There is a very great deal of confusion among technical writers, and in many cases among users, as to the various oily products sold under the names oleine, alizarine oil, Turkey red oil, soluble oil, etc. Strictly speaking, soluble oil is nothing more than a solution of castor-oil soap made with soda, or better, with potash. Unlike soap made from olive oil, tallow, and other fats, castor-oil soap forms with water a clear oily liquid, which is soluble oil pure and simple, and is largely in use by calico printers, dyers, and finishers. Oleine, alizarine oil, etc., are made from castor oil, by first treating the oil with sulphuric acid, and then neutralising the product with soda or ammonia. Some people make a distinction according to which has been used, but practically there is no difference. This sulphated oil is sometimes, but erroneously, called soluble oil—its proper name is oleine. It is used principally for dyeing and printing with alizarine, but it is used along with other colours and also in finishing.

A NEW BLEACHING COMPOUND has been patented in Germany which contains turpentine as its principal constituent. The composition is known as "Ozonin," and consists of—

Hard soap,	125 parts
Turpentine,	200 ,,
Caustic potash,	22·5 ,,
Water,	40 ,,
Hydrogen peroxide,	90 ,,

The hard soap is dissolved in the turpentine, then the potash is dissolved in the water mixed with hydrogen peroxide, and then with the soap mixture. In the course of a day a stable mass is obtained. Some useful properties are claimed for this substance.

DIRECT DYEING COTTON COLOURS.—The use of benzopurpurin, chrysamine, etc., is now very well known, and little need be said about the process of application. At present only reds, yellows, blues, and browns are known. Whether other colours will be ultimately brought out remains to be seen ; but by mixing them together in various proportions other colours can be obtained. Thus, *Orange*, by 10 parts of benzopurpurin 1B, and 2 parts of chrysamine R. *Stone*, 6 parts benzopurpurin G, 3 parts chrysamine, and 1 part benzopurpurin 1B. *Drab*, with 2 parts benzoazurin G, 6 parts chrysamine G, 2 parts benzopurpurin 1B. *Leather colour*, with 2 parts chrysamine R, 7 parts benzopurpurin 1B, 5 parts benzoazurine G. *Chocolate*, with 1 part each benzoazurine G, benzopurpurin 1B, and chrysamine G. Many other shades of green, and grey, slate can be obtained in a similar manner.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

NEW YORK, JULY 5TH.

Mr. Gibson's *Haberdasher*, the liveliest of all our dry goods journals, reports Mr. Theo. W. Stemmler as saying, that it looks to him as though Congress wished to drive every importer out of business, prohibit all imports, and put up a Chinese wall of exclusiveness about this country which should exclude the rest of the world. Exactly, Mr. Stemmler. That's just what Mr. McKinley said he would like to do if he were able—and, judging from appearances, says the *Haberdasher*, he is still pretty firm on his pins. If the McKinley Tariff Bill passes the Senate with its present woollen clauses retained, many firms on your side will send no more flannels to America. They are not going out of business, for it is pretty confidently asserted that if duties are raised two leading Scotch manufacturers will instantly establish mills in this country. Rumour says that anyone who should name Anderson and Whytelaw as the manufacturers in question would not be far out of the way. That's what protection is for—to build mills and pay wages *here* rather than in Scotland, England, or Ireland.

The woollen industry is in a most unsatisfactory condition, and development is extremely slow; the increase in the number of wool cards in the country is less than a hundred a year, while the number of shut-downs since June is one of the largest known. The wool grower has done his best to help along matters by adding something to the duties on wool, but wool has already dropped abroad since January 1st more than the proposed increase, so the grower is no better off than last year, while the manufacturer is injured by the increased advantage

given to the foreign manufacturer who gets his English and Australian wool just so much cheaper. The measure of this advantage is shewn in the price of foreign "worsteds," which, in spite of the very heavy increase in duty, are being sold here freely at a very slight advance, not more than five per cent. over the old figures, whereas the duty on the Australian wool from which they are made is to be increased by the McKinley Bill ten per cent. and many materials formerly used are altogether prohibited.

In addition to these misfortunes the heavy imports of woollen manufactures are to be reckoned. Although the McKinley Bill has raised the duty on so-called "worsteds," and although Treasury decisions have shut out lap waste, garnetted waste, and other items whose value swelled the annual imports of "manufactures" by millions yearly, the imports for the eleven months ending May 31, 1890, are valued at $49,346,244, making it extremely probable that the fiscal year, ending June 31, 1890, will surpass '89's record of $52,564,942 and shew the largest importation of woollens on record since 1873, when they reached $52,419,591, or 1866, when they reached $58,719,756.

This advance abroad in prices of wool is in part caused, of course, by the demand for goods for America to be rushed over here before the new tariff comes into effect. It is extremely doubtful if there will be any immediate spurt after the adoption of the new tariff. The history of 1867 is repeating itself. At that time the Bill was dragged along as it is now. The imports of woollens for 1866 were the largest in the history of the country, and for two years the land was glutted. In consequence the anti-tariff boom collapsed, and it was not till years afterwards that the price advanced. In January, 1866, fine Ohio was quoted at 70c.; in January, 1868, it had fallen to 48c., and it was not till April, 1872, that the sudden advance to 80c. took place. As far as the imports of goods are concerned we are repeating history, though, of course, in proportion to the population the imports for the current year are far behind those of the great importing year of 1866.

Recent schemes, which have been fostered by the dominant political party in Washington, are well calculated to make the thoughtful student of our national history pause. Republicanism in this vast aggregation of states has been, as Europeans know, accompanied by corruption of the worst kind in high places, and many of our leading public men have almost proclaimed their vices from the house tops. It is difficult to avoid drawing gloomy conclusions as to the future course of events, when one examines into the fierce strife now in progress between the various parties and factions of which the country is composed. Our Civil War, be it remembered, was not commenced on account of slavery alone. It was a war for political empire between North and South, of protection *versus* free trade. The slavery question, of itself, would not have produced war. The political rottenness at Washington and in other centres of activity at the present time is, of itself, as dangerous an element in the constitutional body as any of the burning questions that formerly set men's minds aflame. The stuffed ballot box, the shot-gun, the bayonets of the regulars—all these additions to legitimate electioneering methods have been employed in recent years, and some, if not all, will come to the front again. And now we are threatened with a "Force" Bill, designed for the purpose of perpetuating the power of the Republican party, whose vast funds derived from the subscriptions of wealthy Protectionists have hitherto been used with such signal success. It remains to be seen whether the Democrats possess sufficient power to baulk this latest villainy on the part of their opponents.

Mr. Herd, of Messrs. Fenton, Connor, and Co., Belfast, has been here to make new arrangements with the firm of Fred'k Hazelton and Co. on account of the retirement of Mr. Charles Carr. The new arrangements are most satisfactory to the contracting parties, and the firm of Fenton, Connor, and Co. will in future be represented in this market by Messrs. Fred'k Hazelton and John Emison. Mr. Hazelton has been known in the market for many years. Mr. Emison has been connected for many years with the York Street Flax Spinning Co., just opposite his new quarters in Franklin-street.

Pawtucket, R.I., proposes to celebrate the centenary of cotton manufacturing in the States. The industry was carried on in a spasmodic kind of fashion for 30 years previous to 1790, but it was not until December of that year that Samuel Slater, of Belper, England, succeeded in putting in motion three cards and a 72-spindle frame at Providence, on behalf of Messrs. Almy and Brown. "Little Rhody" has from two to three million spindles at work to-day.

The firm of Hood, Foulkrod, and Co., Philadelphia, has commenced business. The value of the stock is estimated at $1,000,000. The transfer papers of the new firm cover 700 large pages and contain over 180,000 words.

I have already referred in previous issues of the *Mercury*, to the unsatisfactory condition of the silk trade here, from the manufacturer's point of view. Since writing these remarks reductions in wages, followed by strikes, have taken place in Paterson and elsewhere. Employers assert that lower prices have been accepted of late for silk than has ever before been known in the history of the industry in this country, and they state that unless the operatives agree to reductions the mills will have to be closed. Among the establishments where reductions in wages of from 10 to 20 per cent. were made early in the month were those of Hamill and Booth, Nightingale Bros., Johnson, Cowdin, and Co., P. and L. Bannigan, Pelgram and Meyer, the Wm. Strange Co., Doherty and Wadsworth, all at Paterson, and several others. In fact reductions have been the rule at all the mills, and in nearly every case there has been an amicable arrangement. On the 9th inst., 50 ribbon weavers at Fichter and Martin's mill, at Bethlehem, Pa., went out on a strike against a 10 per cent. reduction in wages, and these have proved to be the most stubborn of any who have recently struck, the leaders refusing to believe in the dullness of the business and the necessity for a reduction. It will be perceived from this that even with the high duties at present in force, the American manufacturer feels compelled to cut down the earnings of his operatives. If protection does not mean highly remunerated labour, one of the chief arguments in its favor falls to the ground.

Messrs. A. and M. Warner, of New York, manufacturers of piano and table covers, have addressed a printed memorial to the Senate Finance Committee concerning the duty on silk plush. They are backed up by sixty firms. On the raw material, from which they and kindred firms produce their wares, the present duty is 50 per cent., but the McKinley Bill proposed to make it equal to 160 per cent. The effects of the proposed increase, say Messrs. Warner, will be to ruin their business and that of every similar manufacturer in the country.

News in Brief,

FROM LOCAL CORRESPONDENTS AND CONTEMPORARIES.

ENGLAND.

Brighouse.

Mr. W. Tunstall, manager to Messrs. Blackburn, Smith, and Co., Wood Vale Mills, of this town, has been awarded the first prize in the honours grade of the City and Guilds of London Institute's examination in cotton spinning. Mr. Tunstall now holds three first class City and Guilds certificates for Cotton Spinning. He was in 1886 ordinary grade first-prize man and silver medalist, and in 1890 honours grade first-prize man and silver medalist. As a City and Guilds teacher of cotton spinning, he conducted classes during the past session at the Huddersfield Technical School, the Bridge End Guild, Brighouse, Southend Board School, Elland, and the Mechanics' Institute, Halifax. He and his students have this year taken three out of six medals and £5 out of £10 awarded as prizes for the subject, including both the first prizes.

Burnley.

The weavers of Messrs. Smallpage, Parsonage Mill, who struck work on Thursday week, resumed on Saturday morning last.

Blackburn.

The death is announced of Mr. T. Lewis, secretary of the Blackburn Trades' Council.

It has been stated during the week that Mr. Thos. Fenton intends shortly to resign the secretaryship of the Operative Spinners' Association, on account of ill-health.

Bolton.

The bleachers, finishers, and dyers of Bolton and district have recently been agitating for weekly pays. Four firms have acceded to their request, and four others will commence after the next making-up day. Several other firms have promised to follow if the practice seems likely to become general. At a meeting of the committee a resolution has been passed thanking the firms who have made the concession.

Bury.

Mr. John Piers, of Bury, has accepted an engagement as manager of a large Bombay spinning and weaving establishment, and left England to take up his duties.

Heywood.

Mr. James Redman, of Todmorden, a well-known teacher under the City and Guilds of London Technical Education scheme, was on Sunday last the donee of a present subscribed for by the past and present students of the cotton class held in connection with the Heywood Co-operative Society. It consisted of an illuminated address in album form, and a walking stick mounted in silver and suitably inscribed. The proceedings commenced with tea at the British Workman Coffee Tavern, after which Mr. William Chadwick took the chair and called on Mr. William Crossley to move the address, which was supported by several old students. Mr. Crossley then made the presentations, which Mr. Redman suitably acknowledged. The matter had been kept a close secret, and was consequently a complete surprise to Mr. Redman.

Horbury.

A fire broke out on Wednesday afternoon at Ford Mills, in a large shed occupied by Messrs. R. and H. Broadhead, of Wakefield, manufacturers of mungo and shoddy. Friction in the running part of the machinery was the cause. The building was enveloped in flames in a few minutes, and all the fire brigade could do was to confine the fire to the shed, which was soon gutted. The damage is considerable.

Huddersfield.

On Wednesday, the 23rd inst., the machinery and effects of Messrs. John Littlewood and Sons, Victoria Mills, Honley, were sold by auction. Most of the machinery, being old, was knocked down at a very low figure.

Heckmondwike.

An extensive range of mill property was offered sale at the Freemason's Hall, on Monday evening, before a large company. The property comprised the manufacturing premises until recently occupied and used by the firm of Fairfax, Kelly, and Sons, carpet manufacturers and yarn spinners, which has recently been dissolved on the retirement of the partners from business. The owners were the executors of the late Mr. Ralph Kelley. Lot 1 of the manufacturing premises was Crystal Mills, in Union-Street, Heckmondwike, and it included several stone buildings of from two to four storeys, the total floor area being about 9,000 square yards. There is also a boiler-house, boiler, engine, and all requisite fittings, spinning-shed, dye-house, and reservoir. A start was effected at £3,000, and at £4,360 the lot was withdrawn. Lot 2, Union Mills, was another extensive block of property, adjoining lot 1, and bounded on one side by Beck-lane. The buildings and fittings include the requisites of an extensive factory, and the ground area is about 3½ acres. The auctioneer got a bid of £2,000 to begin with, and the lot rapidly advanced to £4,750, but then the competition ceased, and the property was withdrawn. Messrs. George Tinker and Sons, Huddersfield, were the auctioneers.

Manchester.

After providing the interest on the Debenture Bonds and dividend on the Five per cent. Preference Shares, an interim dividend for the half year will be paid on the Ordinary Shares of Messrs. A. and S. Henry and Company at the rate of 8 per cent. per annum. In accordance with the articles of association, the dividend on the 20,000 Vendors' Shares has been carried to the reserve fund, which now stands at £45,000.

Macclesfield.

Mr. J. O. Nicholson, silk manufacturer, of this town, has become the Gladstonian Liberal candidate for the Leek division of Staffordshire.

Meltham.

On Wednesday morning, about a quarter to one o'clock, a fire broke out in the Upper Sunny Bank Mill, occupied by Mr. Alfred T. Woodhead, manu-

facturer. A millhand was at work along with others, in one of the rooms, when he saw some "fly" ignite at a gas jet and immediately set fire to material in the spinning mills. A jet of water was got into play, but it was of very little use, and forty minutes elapsed ere a brigade got to the spot. A good supply of water was obtained from the mill dam, but the fire, which had got a good hold, was not completely extinguished till four o'clock. The damage is put down at between £5,000 and £6,000, partly covered by insurance.

Nottingham.

The Town Clerk has received from the Drapers' Company, London, a cheque for £3,000, the generous contribution of that company towards the cost of the new buildings for technical instruction to be erected in the rear of the University College, and facing Bilbie-street. This department will be under the charge of the Professor of Mechanical Engineering and Technology, recently appointed, viz., Mr. William Robinson, M.E., M.I.C.E., late chief assistant at the Technical College of the City and Guild's Institute, Finsbury.

Oldham.

The alterations which have been made in the steam engines of the Borough Spinning Company have cost about £2,000.

The directors of the Equitable Spinning Company have decided to put in four new boilers to replace the ones now in use.

We are assured there is no truth in the statement that Mr. Thomas Henthorn (of the Moorfield Spinning Company) has been appointed salesman of the Beal Mill Company.

North Moor Spinning Company is placing in four new steel boilers, two of which are each being supplied by the Oldham Boiler Works Company and Messrs. Tetlow Bros., Hollinwood.

A considerable number of Oldham spinning companies are replacing their old boilers with new ones of larger dimensions and of stronger make. This course has been taken with a view of obtaining increased boiler power and more economical working.

By the fitting up of the premises of the West End Mill Company with sprinklers, the cost of insurance has been reduced from £1,000 per annum to £333, while the Hey Spinning Company has effected a saving for protecting the mill in a similar manner of £90 to £200 a year in insurance.

There is a disposition in connection with some of the Spinning Companies in this district to repay some portion of the share capital, in order that a larger percentage of dividend might be received, thus working the concern with more borrowed capital. The number of advertisements in the local newspapers, however, shews that loan money is not quite as plentiful as it was a short time ago.

The new secretary and salesman of the Eagle Spinning Company (Mr. W. H. Waller), has commenced his duties. His father will take the management of the same concern. This is the second instance of this kind in this district where father and son occupy the principal positions, the other being the Somerville Mill Company, where Mr. James Smith (late of the Fern Spinning Company), is the manager.

We have previously reported that it was intended to erect a spinning mill in the neighbourhood of Glodwick. The preliminaries are going forward, and we learn the land has been taken. An architect has prepared plans to shew how the land can be utilised to the best advantage. The names of two Oldham managers are prominently mentioned in connection with the undertaking. The proposed company, it is stated, is to be known as "The Pearl."

The result of the examination in cotton at the Oldham Lyceum shews that five students have passed first class in honours, and three second class; while in the ordinary stage three have passed first and ten second. The returns of the students attending the class held in connection with the Educational Department of the Industrial Co-operative Society are—three first honours and five seconds; two first ordinary and seven seconds.

At a special meeting of the shareholders of the Oldham Estate Company, held on Tuesday evening, a resolution was passed empowering the directors to take steps with the view of forming a company to build a spinning mill on land belonging to the company, and to report the progress made at a future meeting. It is intended to launch the new venture, if sufficient support can be obtained, early next year.

It is reported that the directors of the Parkside Spinning Company have in view the building of an additional mill, and intend recommending the shareholders to give them the requisite power to carry out the necessary work. The company has already land which can be utilised for this purpose, and the directors are making preparations for the project by having a large water lodge constructed.

In its past quarter's transactions the Cotton Buying Company has done a business of 32,920 bales, which shews an increase of 4,000 over the corresponding period of last year; the sum on which bonus is being paid is £524,000. During the quarter 1,227 more shares had been applied for and granted, which will give stability to the company It seems that no definite steps have as yet been taken by the directors in regard to sending a gentleman out to America to represent the company, but the directors are collecting all the possible information relating to the subject.

Some weeks ago irregularities were found in the accounts of a salesman of an Oldham Spinning Company, which were attributed to his having been induced to enter into speculations in "futures." Since then considerable discussion has taken place in commercial circles as to the extent this practice is indulged in by those who have the management of these concerns. The statement has been made that there are very few managers in the Oldham district who do not more or less indulge in speculating in "futures." It is also stated that circulars are sent to officials of mills from Liverpool firms with the view of inducing business in this direction. The practice is being strongly condemned, and no distinction is made by some between gambling on the Stock Exchange, on the turf, and in "futures."

Pudsey.

Two local leading families in Pudsey were united by marriage on Wednesday afternoon. The bride was Miss Sarah Ann Hinchliffe (Sissie) Walker, second daughter of Mr. Matthew Walker, of Swinnow House and Union Mills, and the bridegroom was Mr. Frederick Haley Jones, eldest son of Mr. G. A. Jones, of Hillthorpe and South Park Mills. The wedding presents, which were very numerous and costly, included a very handsome silver tea-urn, the gift of the workpeople of Messrs. G. A. Jones and Co., and a set of silver dish covers, the gift of the workpeople of Mr. Walker.

Sowerby Bridge.

At a late hour on Friday evening, the 18th inst., a shocking fatality occurred at the Gentlemen's Club, Rybourn-buildings, to Mr. Daniel Clay, aged 42, worsted spinner, of Oakleigh. Mr. Clay went to the Club on Friday evening in his usual health, and at 10-25 left to go home. The steward spoke to him at the top of the staircase as he was leaving. In a few minutes afterwards Mr. Frank Clay found the deceased at the foot of the stairs insensible. Dr. Brown was sent for at once, but when he arrived Mr. Daniel Clay was dead, his skull being fractured. It is supposed he missed his footing on the stairs and fell to the bottom.

Stockport.

At Stockport on Tuesday a young man named William Charles Neil was charged with conspiring to defraud a number of persons in Stockport, Derby, Pudsey, Nottingham, and other places. It is alleged that a man named Hunter, who is now serving ten months for fraud, started a business at Portsea and Plymouth, and that Neil worked with him. They obtained goods from various firms in the woollen trade, but the goods were never paid for. They were transferred from the shop to the warehouse, repacked, and sent to a place in London. The defence was that Neil was engaged by Hunter at a weekly salary. He was committed for trial.

Walkden.

Mr. Edwin Rothwell and Mr. Wm. A. Rothwell, manufacturers, Walkden, who have recently dissolved partnership, have this week commenced running their Linnyshaw and Boatshed Mills as separate concerns.

Yeadon.

The monthly meeting of the Yeadon and Guiseley Chamber of Commerce was held at Yeadon, on Monday evening, Mr. Jonathan Peate (the president) occupying the chair. A deputation from the local trades' union had a conference with the Chamber as to the price that should be paid for the different stages in the width of a piece, and, after discussion, the following terms were agreed upon: Above 68in. to 81in. inclusive, 6d. extra; above 81in. to 90in. inclusive, another 6d. extra; above 90in. to 99in. inclusive, another 6d. extra; above 99in. to 108in. inclusive, another 1s. increase; and a further rise of 1s. for every 9in., or portion of 9in., beyond 108in.—Mr. Murgatroyd introduced the question of the formation of a board of conciliation, to consist of an equal number of representatives from the trades' union and the Chamber, for the purpose of acting in cases of disputes between masters and workpeople. The President spoke in favour of the formation of such a board, and instanced the settlement of the gas strike at Leeds by the action of the Leeds Chamber of Commerce as a proof of what good could be done by a board of conciliation. Other members also supported the proposal, and the representatives of the trades' union promised to bring the question before that body.

SCOTLAND.

Alyth.

The recent report that the new proprietor of the Woollen Manufactory had resolved to extend it is already being realised, Mr. John Carver having prepared plans for very considerably extending the mill, chiefly on the south-east side. As the water power will not be sufficient to drive the machinery, steam will be used. When completed, the factory will afford employment to a considerable number of hands.

Aberdeen.

In consequence of a general depression in the linen trade, the employés at Broadford Works have been given a longer holiday than usual this year. The spinning, heckling, and weaving departments left off work on the night of the 17th inst., at six o'clock, and will not commence again until Monday. The finishing and the machine-sewing departments ceased work on the 18th at 12 noon, but began again on Wednesday last. For some time past the orders for yarn have been small, and a lengthy holiday has been granted in accordance with similar proceedings in Dundee and other cities in the south. This is the largest cessation of work at any one time which has taken place at Broadford Works for years.

Glasgow.

The death is announced of Mr. Robert Hay, at the age of 51, of the firm of Messrs. Wilson Bros., lace manufacturers. The deceased gentleman was well known and highly esteemed.

Inverness.

The erection of a new tweed mill has been begun here. It is to be specially constructed for the manufacture of Cheviot and Saxony tweeds, for which in recent years there has been an active demand in the North.

Paisley.

Up to Monday the amount collected for the purpose of erecting a bronze statue to the memory of the late Sir Peter Coats was £2,100. The committee in charge of the fund for the erection of a statue of the late Mr. Thomas Coats have about the same amount in hand.

IRELAND.

Belfast.

The following is the Belfast Harbour Commissioners' statement of goods imported and exported from the port of Belfast for periods or three months ending 30th June, 1889, and 30th June, 1890, respectively. The imports of linen this year were 611 tons, as compared with 602 last year, while as regards exports and tonnage this year was 9,055, as compared with 6,904. The imports in linen yarns shew a decrease of 74 tons, but the exports shew a large increase, the figures being:—1889, 1,734 tons; 1890, 2,189 tons.

Legal.

ENGLISH COTTON MACHINERY IN INDIA: LIBEL ACTION.

An important libel action, *Tatham and others* v. *Benson*, was tried on Saturday at the Manchester Assizes, before Mr. Justice A. L. Smith and a special jury. Mr. Yates was for the plaintiffs, and Mr. Bradbury for the defendant. Mr. Yates stated that the action was brought by Messrs. J. Tatham, H. Livesey and Co., Thomas Holt, and James Scott and Co., to recover damages generally and severally, amounting to £5,000, from the defendant, William Benson, for what he thought was about as malicious and bad a libel as it was possible in a trading community for one person to publish upon another. James Scott and Co. were merchants and engineers who had a place both in India and in this country, and whose business was and had chiefly been to erect cotton mills and fit them with machinery in India. They did not make the machinery themselves, but they bought it from well-known firms in this country who made the different classes of machinery for a spinning mill. In the year 1883 a firm of Indian bankers (whose names he would not attempt to pronounce) desired to start a cotton mill at Jubbulpore. James Scott and Co. obtained a contract to supply and fit those mills with

machinery, and in the contract the firms from whom the machines should be obtained were specified. The machinery was to be of the very best class, and was to be fitted up by the contractors in a very proper manner. Benson, the defendant, was a rival in trade. He was a man who did the same sort of work as Messrs. Scott and Co., and he thought the jury would have no doubt when they heard the facts, that the report which had been given on the machinery was the result of spite on his part against his rivals, because they had been fortunate enough some two years before, to obtain a very large contract over his head. After the contract was signed to erect the mill in Bombay and supply it with machinery, some two years were spent on the work before the mill was started. Something afterwards went wrong in the working of the mill, and the result was the defendant either asked himself, or got himself called in, or was called in to report upon the machinery in the mill, and he made a report, about which complaint was made there. In that report he said generally that the job was a cheap job, that the work was jerry work, and that the machines were second-hand, and that the whole thing was of the cheapest and commonest description. He was an expert, or was supposed to be one, and when the jury were told that there was not one single word of truth in it from beginning to end they would see how malicious was the report he made. The defendant got that report printed. Fifty copies of it were printed in Bombay and some were sent home to his son and other people, and altogether he got the report spread as much as possible. When the jury considered how suspicious was the native character in India they would understand what immense mischief might be done and had been done by that report. The immediate result of it was that an action was commenced first in Jubbulpore and then in Bombay against James Scott and Company for breach of contract, the claim being for £56,000 sterling. That action took 130 days, and it cost £30,000, of which Messrs. Scott was £10,000 out of pocket, although they were successful in their action. The chief witness of the plaintiffs in that action, on whom they relied throughout, was Benson, who now pleaded that the report was a privileged communication, and that the words in the report, without the alleged meaning, were true in substance and in fact. He challenged the defendant to prove that now, and he warned him that he had his evidence taken on oath at Bombay and also his evidence taken upon commission here. The report was said to be a privileged report. How it was privileged he could not conceive. It was false to the defendant's knowledge if it was false at all.

The Judge: Whom was the report made for?

Mr. Yates replied that it was made for the bankers in Bombay. The result of the 130 days' trial was that Messrs. Scott were successful all along the line in every court, but had not been able to recover their £10,000 out of pocket.

James Scott, one of the plaintiffs, was called, and said he had erected cotton mills in India to the extent of £1,500,000 sterling. Benson was a traveller for the Junction Ironworks, Manchester. He was in India in 1882 when witness was there, and they frequently met there. With regard to the contract for the Jubbulpore mill, he swore that he followed that contract absolutely. The machinery was of the best material, and of the most improved construction, and was obtained from the firms to whom he was limited in the contract. The defendant's report had done him immeasurable damage in India. He had lost two very important contracts in consequence of it. When once the native mind was disturbed, it was scarcely ever possible to regain their confidence. They were not intelligent enough to understand such disputes, especially with regard to machinery. In his evidence at Bombay the defendant admitted he had sent copies of his report to his son and to a Mr. King and Mr. Howarth in England. The report had no foundation of truth. In January, 1887, he met Benson at the door of the Waverley Hotel, Bombay. The latter accosted him and said: "I have been down to Jubbulpore, and I am writing out a report. I will make it hot for you for taking that Ambica order out of my hands." Witness said to him, "Be careful what you do. Tell the truth and I don't care," and left him. Benson got £270 for making his report.

Cross examined: He was not aware that, far from desiring to injure Livesey and Co., Benson was trying to get orders for them. If that was so, it would not alter his opinion, and he said the same with regard to the other firms.

Robert Livesey, a member of the firm of Henry Livesey and Co., Limited, said that firm supplied the looms and the machinery for the looms at the Jubbulpore mill. They were of the best quality, with all the latest patents and improvements. There were no better machines at that time. The name of the firm was cast upon all the goods.

James Spencer, of the firm of James Spencer and Co., Hollinwood, gave similar evidence with reference to his part of the contract.

Thomas Holt, reelmaker, said he was about the largest reelmaker in England. He supplied his usual quality of reels for the Indian mill. His name was cast on them all.

This concluded the plaintiffs' case, and the Judge said he thought the occasion of the publication of the report to the bankers who employed the defendant was privileged, but he did not say that with regard to what happened afterwards, although the publication to the son and King and Howarth resulted in no damage in this country. He should rule that the latter publication was not privileged.

Mr. Bradbury said that the defendant's position in that action was a very difficult one. He was not in a position to place before the jury the evidence which he ought to be able to place before them with regard to the machinery. He was simply called on by a company which was dissatisfied with the conduct of the plaintiff in the matter of the machinery, and he made a report accordingly. All these people were in India, and this placed the defendant in a position of great difficulty. All he could do was to go into the box and tell the jury that this was an honest report, made by him to the company which employed him to make one. It would not be possible to call any great corroboration of his story, but it must not, therefore, be assumed that his story was false. The defendant was simply a traveller for a firm in Manchester, and he had no motive to injure the plaintiffs. He was called in by a certain company to report upon the mill. It was all very well to say that the report was not true, but if, as he contended, the report was made honestly he was entitled to a verdict. He suggested to them that Mr. Scott was actuated by a spirit of revenge, and a desire to injure and punish the defendant for making the report. It was not because they had made a bad report upon Scott's machinery that they must be mulcted in damages. It would have to be shewn conclusively that the defendant knew the report to be false when he made it.

Mr. Charles Wilkinson, cotton spinner, Stockport, was called, and said that he gave evidence on commission for the purposes of the trial in India. He examined the machinery at Jubbulpore. With regard, he said, to the clauses in the contract—"brand new," "best material," and "highest class of workmanship and finish"—these were points upon which there were many different opinions in the trade. He, for instance, would not place the machinery of one firm in the same class as that of another.

The Judge said that in the contract certain firms were mentioned as those by whom the machinery might be supplied. Messrs. Scott, therefore, would not break their contract if they used the machinery of any of these firms.

Resuming his evidence, witness said he had read the report, which was accurate in a sense. He thought it was an honest report, though he might qualify this by saying that it was not the kind of report which he himself would have made out.

Cross-examined: Was it a true report? I don't think I could exactly define it as a true report. I think it is mistaken in some details.

Answering further questions, witness said he knew Benson slightly. He did not think the machinery was second-hand.

Was everything in the mill "done on the cheap?" I don't know what the prices were.

But in your judgment, looking at it as a cotton spinner, was everything in the mill "done on the cheap?" Apart from the contract it is not a job I should have accepted myself.

Were there "no patents and improvements in the looms?" They were just an ordinary plain loom.

Such a loom as H. Livesey and Co. were turning out every day here? Yes.

Do you know they only make one quality? I think they make two. I am not quite sure.

Mr. Benson, the defendant, was then called. He said that previous to being asked to examine the machinery at the mill he had not known the Jubbulpore people. He did not suggest that he had some ill-feeling towards Scott. He remembered the Ambica matter. He never tendered for the contract. It was offered to him, but there was so many people wanting commission from it that he threw it up. It was not true that he saw Scott in Bombay and told him that he would make it hot for him because he had beaten him over the Ambica contract.

Mr. Bradbury: You don't put Mr. Scott's name in this so-called malicious report? I know nothing wrong against Mr. Scott. I have known him 15 years. The report, witness continued, contained his honest opinion, and he could not truthfully alter it. The mill looked like a place of ruin to him when he first went in. Some parts of it were working, others were standing.

Cross-examined: His side was beaten in India.

And you still plead that this report is true in substance and in fact? Yes.

The Judge, in summing up, said the jury must consider whether the plaintiffs had made out that this report was written with an indirect motive. He thought there was a good deal of hot blood on both sides.

The jury found for the plaintiffs, and assessed the damages at £750.

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

Sir,—The public will assume that the defendant in this action was my traveller, I being the owner of the Junction Ironworks and a manufacturer of cotton spinning machinery, as it is stated in the Manchester papers reporting the trial that the defendant was traveller for the Junction Ironworks, Manchester. I desire to state that Mr. Benson does not, and never did represent me. I purchased the Junction Ironworks about two and a half years ago; the libel in question occurred several years ago, when the defendant was a traveller for the late Junction Ironworks Company, Limited, from the liquidator of which company I made the purchase.—Yours, &c.,

SAMUEL BROOKS.

Union Ironworks, West Gorton; Junction Ironworks, Newton Heath, July 21st, 1890.

TWEEDALE v. ASHWORTH BROTHERS.

In the Chancery Division of the High Court of Justice, on Wednesday, Mr. Justice Chitty delivered judgment in this action. We extract the following report from *The Times*:—

This was an action brought by the plaintiff, a manager in the employ of Messrs. Howard and Bullough, machine makers, of Accrington, against Messrs. G. and E. Ashworth, machine makers, of Collyhurst, Manchester, in respect of alleged infringements by the defendants of a patent granted to the plaintiff for the invention of improvements in flats and in fasteners for securing the card clothing thereon and thereto. The action was tried on *viva voce* evidence, and the trial occupied four days.

Mr. Justice Chitty now delivered a considered judgment, in which he said that it was admitted that the plaintiff's specification was clear and intelligible, and it was unquestionable that his invention was a very meritorious one. The defendants, however, had no intention to infringe, and he held that they had not infringed, the plaintiff's patent. He therefore dismissed the action; but as the validity of the plaintiff's patent had undoubtedly been put in issue by the defendants, but nevertheless been maintained by the plaintiff, he at the request of the plaintiff, with a view to his future protection, certified under section 31 of the Patents Act, 1883, that the validity of the patent had come in question.

Mr. Rigby, Q.C., Mr. Romer, Q.C., Sir Arthur Watson, Q.C., Mr. Goodeve, and Mr. Bousfield appeared for the plaintiff; and the Attorney-General (Sir Richard Webster, Q.C.), Mr. Ashton, Q.C., Mr. Moulton, Q.C., and Mr. J. C. Graham, appeared for the defendants.

Technical Education.

THE RESULTS OF THE CITY AND GUILDS EXAMINATIONS.

The following are among the results already to hand of the recent examinations held by the City and Guilds of London Institute for the promotion of technical education:—

BOLTON.

The classes in Cotton Weaving, held under the combined auspices of the Mechanics' Institute and Co-operative Society, have recorded the following satisfactory results:—

One student takes 1st Class Honours and a £2 Silver Medal.

3 students take 1st Class Honours.
4 " 2nd "
11 " 1st Ordinary.
9 " 2nd "

This equals 50 per cent. of those presented. The above is encouraging to the formation of a technical school here, which, it is hoped, will soon be proceeded with.

BRIGHOUSE.

The following passed in Cotton Spinning from Mr. W. Tunstall's class:—

Honours Grade.
1st Class.
L. Gaskell. T. Hirst.

2nd Class.
R. Whiteley.

ORDINARY GRADE.

J. H. Creighton (*1st Class*), and G. Aspinall and S. Hirst (*2nd Class*).

ELLAND.

The following is the pass list in connection with the Cotton Class held at the South End Board School, and conducted by Mr. W. Tunstall, of Brighouse :—

HONOURS GRADE.

2nd Class.

S. Ackroyd.	Joseph Greenwood.
James Bates.	Charles L. Wray.
J. F. Crabtree.	James A. Whiteley.

ORDINARY GRADE.

1st Class.

Henry Booth.	Geo. Lumb.
Thomas Cooper.	Alfred O. Sledding.
Randolph H. Furniss.	A. O. Haigh.

HALIFAX.

The Mechanics' Institute Cotton Class, shewing a 100 per cent. pass list, every man succeeding :—

HONOURS GRADE.

1st Class.	*2nd Class.*
Arthur Firth.	Joe Cook.
E. P. Scarborough.	H. Osborne.
G. H. Wade.	Ed. Sykes.

ORDINARY GRADE.

1st Class.

J. M. Bowman (4th prize, Bronze Medal).	John Gledhill.
	Austin Hancock.
Alfred Brooks.	F. B. Smith.
E. T. Crossley.	T. R. Robinson.

2nd Class.

Oswald Haigh.	J. H. Thomas.

Mr. J. M. Bowman is the son of Dr. F. H. Bowman, author of the valuable work on "The Cotton Fibre." The class was conducted by Mr. W. Tunstall, of Brighouse.

FARNWORTH.

The Weaving Class held at the Grammar School and taught by Messrs. John and William B. Crompton has again had very satisfactory results in point of passes, 75 per cent. of the students who sat having passed. Below is a list of names.

ORDINARY GRADE.

1st Class.

Benjamin Richardson.	Daniel Smalley.
James Watson.	William W. Martin.
William Lees.	Charles Whatmough.
Charley Berry.	William Gilbert.
Joseph Lawton.	Albert Brooks.
J. A. Smith.	Henry C. Walsh.

2nd Class.

Jesse Crawshaw.	Peter Vickers.
George Barritt.	William Pitchforth.
G. F. Seddon.	Frank Lees.
H. Wolstencroft.	Thomas Hargreaves.

Cotton Spinning Results (Teacher, Mr. R. Cunliffe) :—

ORDINARY GRADE.

1st Class.

W. L. Ibbotson.	Joseph Longworth.
P. Gettins.	John Dyson.
William Hill.	John Nuttall.
	Thomas Longton.

2nd Class.

W. H. Crowther.	Robert Shorrock.
	John T. Ibbotson.

Mr. John Lloyd, a Farnworth student, who last year obtained the Silver Medal and £3 in Ordinary Grade, Cotton Weaving, has this year taken Silver Medal and £2 in Honours Grade, Cotton Weaving. He has been studying under Mr. Crompton in his class at the Bolton Mechanics' Institute.

GLOSSOP.

In Mr. Thornley's Cotton Spinning Classes, the results are as under. Nine students presented themselves for examination.

ORDINARY GRADE.

1st Class.

Frank Hindle.	Wesley Rowbottom.

2nd Class.

W. E. Sidebottom.	G. W. Braddock.
Walter Winterbottom.	Edward Winterbottom.
Thomas Cryne.	Rowland Booth.

HONOURS GRADE.

2nd Class. Joseph Harrop.

HYDE.

There were twelve candidates the results being :—

ORDINARY GRADE.

1st Class.

James Edwards.	Philip Marshall.

2nd Class.

Frank Hart.	John E. Walker.
Samuel Shepley.	Albert Turner.
	Thomas W. Sankey.

HADFIELD.

The results were phenomenally favourable, the candidates being all experienced men. Seven were examined, of these four passed 1st Class and three 2nd Class ; there being no failures. The pass list is as follows :—

1st Honours, Edward Mayhew.
2nd ,, Matthew Bailey.
1st Ordinary, David Gummersall
,, ,, Enoch Marsh.
,, ,, Charles Wylde.
2nd ,, Joshua Nuttall.
,, ,, John Bradbury.

Probably this lot will compare favourably with any other in the kingdom.

HUDDERSFIELD.

The following is the list of successful candidates in cotton spinning from the Huddersfield Technical School :—

HONOURS GRADE.

1st Class.—Geo. Dewhirst.

2nd Class.

Willie Cliffe.	John G. Hayley.
Joshua Crowe.	Herbert J. Lister.
Allen R. Dyson.	Oswald Moorhouse.

ORDINARY GRADE.

1st Class.

Jno. Eastwood (1st prize £2 and silver medal).	
Albt. Firth.	Zaccheus Sugden.
Chas. Fox.	Samuel Whitely.
	Jno. W. Mitchell.

2nd Class.

Jas. F. Hardcastle.	Wm. Hy. Shaw.
Albert E. Longden.	John Siswick.
	Walter Mitchell.

Mr. W. Tunstall, of Brighouse, was the teacher of the class.

The following are the results in Wool Dyeing :—

HONOURS GRADE.

2nd Class.

Wm. H. Houghton.

ORDINARY GRADE.

1st Class.

Jas. Brierley.	Ephraim Thornton.

2nd Class.

Saml. Howgate.	Chas. E. Rothery.
Tom Kaye.	Thos. Walshaw.
Jno. M. Richardson.	Robt. F. Whalley.

The results in Coal Tar Products are :—

ORDINARY GRADE.

2nd Class.

Herbert L. Burgess.	Joseph Turner.

LEICESTER.

Among the successful competitors were the following local pupils :—Framework knitting : First-class certificate, honours grade, first prize Institute's silver medal and Framework Knitting Company's prize of £3, Maurice A. Porter ; first-class certificate, honours grade, Alfred Palmer ; first-class certificate, ordinary grade, first prize Framework Knitting Company's prize of £2 and Institute's silver medal, Harry Hubbard ; first-class certificate, second prize Institute's bronze medal and Framework Knitting Company's prize of £2, Thomas M. Butler ; second-class certificates, ordinary grade, John Flowers, Samson Smith, Matthew H. Clarke, Ernest Lee, Johh Barnes, and Maurice Whiteley.

RADCLIFFE.

The results of the examinations held at Radcliffe, shews two 1st and seven 2nd Class passes in the Ordinary Grade in the weaving section, and the 2nd Class Honours, and two 2nd Class Ordinary in the spinning section of cotton manufacture.

To be continued.

Miscellaneous.

THE TEXTILE INDUSTRIES OF THE WEST OF SCOTLAND.

The *North British Daily Mail* has been making a roving survey of the industrial centres of the West of Scotland, from which we make the following extracts relating to textile centres, in continuation of that on Dumfries, which appeared in last week's *Textile Mercury* :—

ANNAN.

At one time the cotton manufacture employed about 300 hands in Annan, and part of the old cotton mill still stands at the west side of the town on the bank of the Annan. This business, has, however, almost completely disappeared ; and even the handloom weavers, of whom there were a large number, have ceased their work, though some of them still survive.

The only representative of the old cotton industry is the wadding manufactory of Messrs. Douglas and Co., at Douglas Place Mill, a portion of the old cotton mill. This has been carried on successfully for about ten years. The principal material produced is what is known as patent wadding, consisting of cotton wool made into the familiar webs with backing of size. To produce this the raw cotton, after undergoing certain preparations, is passed through a kind of carding machine, which delivers it in a long loose web of uniform thickness and width. The backing is formed by passing this web over a trough of size, when the one side is coated, and then over a travelling table, where it is gradually dried by heated air. An ingeniously-arranged table with hinged sides receives it, and here it is cut to yard wide and rapidly folded, the machine giving out a piece every two minutes. From 150 to 200 pieces are produced daily. There are three kinds of this wadding—the pure white or bleached, the grey or natural colour of the cotton, and the black, dyed a dark slaty colour. Another product is known as "pound wool," which is simply the cotton wool carefully cleaned and carded, and in some cases dyed and put up into pound packets. The dyed qualities are the delicate pinks and blues used by jewellers for lining the dainty-looking boxes in which they pack their goods. For the bleached and fancy goods the finest American cotton is used. A water-wheel, giving out from 30 to 35 horse-power, drives the machinery, and when the Annan runs low a gas-engine is used. Near the gas-engine is a retort for supplying hot air to the drying apparatus.

AYR.

In the early part of the century Ayr had a share in the wave of prosperity which passed over the country in connection with the cotton trade, and about 60 years ago there would be something like 500 handlooms employed in the town. Five agents made it their sole business to keep up the connection between the Glasgow manufacturers and the weavers, and there were others who also found partial employment in this. In some cases the weavers were proprietors of the looms, and in others they rented them. About 40 years ago the weaving began to decline, and it came down very rapidly. Some of those thrown out of this employment got work at winceys and silk, but this, too, fell off, and now a dozen or more looms in Wallacetown and Prestwick engaged at these and lappets represent the last remnants of the handloom weaving in the district.

Messrs. James Templeton and Son, wool spinners, Kyle-street, near the railway station, are the representatives of an industry which has been in the same family for three generations. They make woollen yarns for the Brussels and tapestry carpet trade, and supply principally manufacturers in Glasgow and England. The wool is got mostly from home markets, in the rough, and is carried through the various processes of scouring, carding, and spinning. From 200 to 250 persons are employed, and there are two steam engines for driving the machinery and for pumping water from the river, a pure supply of this being got at some distance above the town. At first the business was started in another part of the town as a carpet factory, but this was burned down in 1876, and the present premises were then erected purely as a spinning factory. The principal building has an area of 120ft. by 50ft., and is of brick, four storeys and attics in height, besides which there are several one-storey buildings used as engine and boiler rooms, preparing house, wool sheds, and yarn rooms. Special precautions are taken against the danger of fire on the premises. Opposite the middle of the main building at the back, and at some distance from it, is a square brick tower with iron staircase and landings, and communicating on each flat with the main building by iron bridges or gangways, by which on an alarm of fire each worker may at once escape by the shortest possible road. Up one side of this tower is led an iron water-pipe, and on each flat there is piping and a hose attached, so that it only requires the turning of a cock to have a plentiful supply of water to quench any outbreak.

Mr. Wm. C. Gray's Newton Carpet Works cover about two acres of ground at Newton-head on the east side of the Prestwick-road. About 230 hands are employed, and an engine of fifty horse-power is used to drive the power looms and do other work. Besides weaving ordinary carpets of the Kidderminster and Scotch class in widths Mr. Gray has several specialties. He has looms which produce seamless art squares, bordered, twelve feet in width, and of any length. His fabric the "Istakhr," patented in this country and the United States, has much of the rich look of a Brussels carpet, with the advantage of being produced in seamless widths of twelve feet, bordered. His "Anglo-Indian" is a registered specialty, with Eastern designs, and is reversible. He has also the "Ayranian," a two-ply

reversible similar to the "Istakhr," but of less expensive character; and the "Royal Kensington," a well-known production of the factory. Mr. Gray takes in the raw spun yarn and does his own dyeing. The weaving is principally done on power looms, but there is also a section of the factory in which hand looms are wrought. The factory, which was started in 1876, has twice supplied fabrics for Royal use, Prince Albert Victor having had the "Royal Kensington" in his rooms at Cambridge, and the Queen having accepted an "Anglo-Indian" carpet as a jubilee present. Business connections have been established all over the kingdom, in the United States, and the Australian colonies.

The lace industry has been introduced in Ayr, and there are two large factories in the Newton-head district. In the Ayr Lace Factory of Messrs. S. Butler and Co., about 60 hands are employed, and there is an engine of 60 horse-power. The looms are all of modern construction, and the firm produce curtains, window blinds, bed-covers, and generally all articles that can be made on lace machines. In Alison-street Lace Factory there is carried on, in addition to the lace manufactory, the making of Madras curtains. Between fifty and sixty hands are employed here, and there is a steam engine of thirty horse-power.

GATEHOUSE OF FLEET.

Gatehouse of Fleet is one of many pretty little towns in the south of Scotland. At the close of last century cotton mills had been erected and other manufactures introduced, and for some time there was no more promising place in the locality. But early in the present century business in the town began to decline, the cotton mills were stopped, and the other industries disappeared. The population has considerably declined, and now stands at something over 1,200.

But the town is not without its industries. About twenty-three years ago the largest of the cotton mills was turned into a bobbin factory, by a firm who, after twenty years, gave up business. The place stood idle for some months, when three years ago Messrs. Holme and Co. took up the same business and now employ from twenty to thirty hands. The old mill, somewhat modified, is well adapted for its present purpose. Power is got from a water-wheel, thirty feet in diameter. The floors of the two upper flats and attics have been removed, leaving a great yawning chasm above the first floor. On this and the ground floor, each about 90 feet by 30 feet, there is ample room for the various lathes, saws, and other machines. The wood is got from the surrounding district. It may be explained here that the term "bobbin" in connection with these factories has a very wide signification, including, besides the familiar reel on which the sewing thread is usually wound, spools of various shapes and sizes, some even extending to a foot or two in length. One of the most common forms is a tapering cylinder of about four or five inches in length, rounded off almost to a point at one end, and having a trumpet-shaped expansion at the other. This is much used in woollen mills. In the making of such an article four or five operations are necessary. The wood is first cut at a circular saw into pieces of the proper size. These are then taken to a rapidly revolving horizontal drill, in front of which a man or boy sits, and with a box of the pieces before him, pushes them smartly on to the drill, and bores them at the rate of several in a minute. By this bore they are next slipped on to a lathe spindle, when a workman with a few deft runs of gauge and chisel gives them the proper contour. A few touches with a narrow tool make the slightest indentions necessary to prevent the yarn slipping off, the close set of ruts on the broader sloping part being made all at once by a special tool with a saw-like series of points. The spool or bobbin is then ready for dyeing (if necessary) and varnishing or otherwise smoothing the surface. One method of performing this last operation is to put some hundreds into a barrel fixed on an axle, and turning it round rapidly cause them to rub against each other so as to remove any small projecting pieces of wood fibre or roughness in which the wool might be caught. The rapidity with which the various operations of cutting, boring, and turning are performed is one of the marvels of dexterity arising from long practice, and the men, who work generally by the piece, each pass many hundreds of pieces through their hands in a day. Another building, which was formerly the low cotton mill, is used principally for seasoning the bobbins. In one part of it the various patterns used in different mills and for different purposes are kept labelled and numbered, these varying sometimes by very minute differences, and amounting to some hundreds in number. A steam boiler, 6 feet in diameter by 25 feet in length, is kept for steaming the wood in the rough, and above it is the drying loft.

About half a mile to the north of the town is Messrs. Henry Bertram and Sons' Barleigh Mill. The buildings are situated on a sloping bank, the Barleigh Water, a small tributary of the Fleet, forming a pretty little waterfall within the grounds, and driving a water wheel about 15 feet in diameter, from which power is got for the machines. The place and its surroundings have a quaintly rural appearance that would delight an artist. Steam power is also used occasionally to supplement the water power, but the principal use of the steam at ordinary times is to heat the drying and seasoning loft. Bobbing making is an old industry on this spot, but the mill had stood unemployed for fifteen years, and was practically a wreck when the present firm took it five years ago. They make principally thread bobbins for Belfast, Leek, Manchester, Leeds, and other places. In the manfacture of these there is more of the use of mechanical shaping tools. Large trees are cut across at a circular saw into slabs the thickness of which is the length of a bobbin. These slabs are put under a revolving hollow cylinder, with a saw edge round the bottom, and one movement of a lever plunges this through the slab and cuts out a smooth cylinder bored through the centre. These are in turn placed on a rapidly revolving lathe, when one stroke of a chisel with sloping edges cuts out the place for the thread, and the bobbin is finished with the exception of the dyeing and "rumbling" in the barrel to smooth the surface. Fifteen persons are employed here, and the wood used is principally birch and ash got in the district.

Bobbin making is prospering in Gatehouse, and there is every prospect of it increasing.

To be continued.

Telegraphic advices, dated Calcutta, July 24th, state that the Upper India Chamber of Commerce has protested against factory legislation on European lines as likely to be harmful. The Chamber expresses the hope that ample time will be allowed for the consideration of any further amendments in the Indian Factory Acts. It states that the capital sunk in mills in the North-West Provinces is 170 lakhs.

ANOTHER INDIAN COTTON MILL.—The foundation-stone of the Central Provinces Gofton Mills was laid at Rajnandgaon, India, on the 30th ult., by the Commissioner of the Chhattisgurh Division. After the ceremony the company returned to the Raja's Baldeo Baug, through the town. The Raja with his usual hospitality entertained the whole party for two days. The Raja is the chairman of the company, and Messrs. Geffert, Kolasker and Co. are its agents.

STRIKE RIOTS IN SPAIN.—At Malaga, on Tuesday, a number of women employed at a cotton goods manufactory, who were on strike, made noisy demonstrations against the men going to work in the factory, and threw stones at the doors and windows. The women were finally dispersed by the Civil Guard. Telegrams from Barcelona report that labour disturbances occurred on Tuesday at Valls, in Catalonia. Some of the workmen who recently struck at that place having resumed work, a number of others who were still holding out created a riot. The authorities were powerless to cope with the strikers, who were very turbulent, and smashed the windows of the manufactory where work had been resumed. The Civil Guard finally appeared on the scene and restored order.

Textile Markets.

REPORTED BY OUR OWN CORRESPONDENTS.

COTTON.

MANCHESTER, FRIDAY.

Lancashire is not often at this period of the year long out of one holiday before it enters upon another. Almost immediately Whit-week is over, we come upon the series of district holidays that run pretty well on to the end of September. With the new arrangements latterly introduced some order has been imparted to these institutions, and they will probably go on in a more gratifying manner than has hitherto been the case. Blackburn and Darwen have led off the present season with the holidays, which commenced with Saturday last and concluded on Wednesday night. This is a new institution for Blackburn. It was tentatively and imperfectly tried last year, and this year it has been a complete success, every mill in the town having been closed. Occurring simultaneously with the older established holidays of Darwen, it has given the whole of that busy district a changed aspect. Shops were closed for want of work and the streets were unusually quiet, whilst probably 120,000 inhabitants out of 160,000 or 170,000 migrated for a short time to fresh fields and pastures new. The Lancashire watering places, the Isle of Man, Wales, Westmoreland, Scotland, Devonshire, the Metropolis, and the Isle of Wight have had contingents of factory workers thrown amongst them during the past week. They work hard, spend freely, and then commence to work hard again, and perhaps in so travelling abroad they have made a praiseworthy and possibly the best use of the money they possessed that they were likely to do. Other districts will quickly follow suit. There is no other feature of interest in the general condition of the trade.

COTTON.—We are approaching the crucial period of the present cotton season, and, as might be expected in the known circumstances of the trade, there is a good deal of suppressed excitement. Futures have accordingly been very unstable, fluctuating considerably, and closing last evening six points higher on the week for the current month and four for August. In August the crisis, such as it may be, is expected to come off. August-September and September are unchanged, whilst new crops are three points lower. The spot market has, to a large extent, reflected this excitement, especially in the after-part of the week. American has been very active, and a large business has been done at hardening rates, quotations shewing $\frac{1}{16}$d. per lb. advance, middling now being quoted at 6$\frac{3}{8}$d. per lb., but it is hard to find even at 6$\frac{15}{16}$d. This grade is exceedingly scarce, while good middling is not by any means plentiful. Weft descriptions continue to attract buyers principally, speculators having taken a considerable quantity during the last few days, but twist is neglected and freely offered. Brazilian has been in improved request, and a good business has been done at hardening prices, quotations of the higher grades being raised $\frac{1}{16}$d. to $\frac{1}{8}$d. per lb. Egyptians have also been in good demand at firmer prices, and owing to the small supply offering in the current grades, quotations of good fair are advanced $\frac{1}{16}$d. Rough Peruvian is in moderate request, and the best qualities are steady, but the lower grades are very freely offered. Smooth sorts are in demand at fully $\frac{1}{16}$d. per lb. advance. African remains unchanged. The inquiry for East Indian has improved, and a considerable business has been done at generally unchanged rates, but the quotations of Broach are raised $\frac{1}{16}$d., and of Bengal reduced $\frac{1}{16}$d. per lb. 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 ..	7,386..	41,371..	50,330..	430,470	272
Brazilian ..	4,303..	2,071..	2,650..	44,580..	340
Egyptian ..	1,448..	4,201..	2,820..	47,060..	400
W. Indian ..	880..	928..	1,250..	9,470..	195
E. Indian ..	10,450..	6,021..	7,070..	237,130..	585
Total..	24,467	54,592	64,120	768,710	1,732

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

	G.O.	L.M.	Md.	G.M.	F.M.
American	6$\frac{3}{8}$*	6$\frac{7}{8}$*	6$\frac{3}{8}$*	6$\frac{3}{4}$	6$\frac{15}{16}$
				M.F.	Fair.
Pernam				6$\frac{7}{16}$	6$\frac{7}{8}$
Ceara				6$\frac{3}{8}$	6$\frac{3}{4}$
Paraiba				—	6$\frac{3}{8}$
Maranham				—*	—*
				Fair.	G.F.
Egyptian				7	7$\frac{3}{16}$
Ditto, white				—*	—*

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

* Nominal.

YARN.—Spinners are between the upper and the nether mill stones; on the one side, cotton continues to harden, and on the other, manufacturers and merchants refuse to pay advances. Hence the trade in yarn is poor, continuing for most sections unimportant. In many instances in medium counts spinners are asking for $\frac{1}{16}$d. to $\frac{1}{8}$d. advance upon the rates of last week, but their progress in selling is very slow. So far as realisations go they have lost a considerable portion of their margin by the recent upward movement. The business put through has only been very moderate in amount in both sections of the market.

CLOTH.—Cloth in all directions is maintained at full rates, and buyers, where they are compelled to do business, find it necessary to pay slight advances upon preceding transactions. This has had the effect of checking the volume of demand

so that business, on the whole, is not extensive, except in a few special lines of China goods, in which a considerable business is reported. Other descriptions are steady at firm prices. Manufacturers, however, remain fairly well engaged, and can afford to wait.

WOOLLENS AND WORSTEDS.

BRADFORD.

Lustre wools are inquired for to a very limited extent. Demis are in fair demand, however. Mohair and alpaca are unchanged. Botany tops are in slightly better request. Yarns are quiet. Shippers are buying twofolds very cautiously. Demi-single wefts have been bought more freely by manufacturers. Pieces are not moving off at all well.

ROCHDALE.

There is a fair amount of activity here, although machinery is not employed to its fullest capacity. The recovery in prices of wool has made the position of manufacturers firmer, although no advances are being paid to them. The wholsale houses operate very slowly, thus throwing upon millowners the burden of keeping stocks so as to have the goods ready for immediate delivery at any time. This has long been a source of annoyance, not only here, but in other centres of production also, and suggestions have been made for united action being taken. This, however, is a course set with almost insuperable difficulties.

LONDON.

Messrs Schwartze and Co., in their report dated 24th July, say:—

The third series of London sales of Colonial wool, which commenced on the 24th ultimo, closes today, the catalogues having comprised:—

	Bales.		Bales.	
Sydney	49,073	against	81,073	In the corresponding series of last year.
Queensland	15,827	,,	19,011	
Port Phillip	50,298	,,	46,677	
Adelaide	14,498	,,	8,623	
Tasmania	18,204	,,	11,850	
Swan River	13,477	,,	12,871	
New Zealand	109,876	,,	118,229	
Cape	41,621	,,	29,338	
Total	312,874	,,	327,672	

The quantity held over from the preceding series amounted to 97,000 bales, the new arrivals to 364,000 bales, of which 59,000 bales were forwarded direct, 35,000 bales to the interior, and 24,000 bales abroad. The total of first-hand wool actually available was, therefore, 402,000 bales, of which 290,000 bales have been sold (140,000 bales for home consumption, and 150,000 bales, including 10,000 bales for America, for export), leaving 112,000 bales to be carried forward to next series.

The sales open with a decline of about 10 per cent. for merino and 5 to 7 per cent. for crossbred, and for about 8 or 10 days this price level prevailed, the general feeling among buyers being one of uncertainty as to the further tendency of the market. Gradually, however, the conviction that the lowest point had been touched gained ground and supported by more cheerful reports from the Continental market, the tone improved, the foreign trade especially abandoning its reserve for a more active policy. As a consequence rates advanced again, and, speaking generally, the opening decline may in substance be said to have been recovered, prices at the close standing about on a par with the closing rates of last series.

Australian Grease.—Superior Western wools, though in small supply, held no favoured position except where American competition supported them. The comparatively best prices were realised by good medium Port Philip and Sydney wools which not only regained the ground lost at the outset but at the best time sold ½d. above the May level. The bulk of New Zealand grease and Adelaides also participated in the improvement, but not to the extent of Port Philip and Sydney wools.

Scoureds.—Good combing sorts recovered the opening fall of 1½d. to 2d., and then retained their position to the end, while inferior sorts fluctuated more strongly than any other class. Fully 2d. to 2½d. cheaper at the outset they more than regained this fall, but declined again about 1d. per lb. at the end of the series.

Crossbreds.—The finer grades sold satisfactorily and evenly throughout, but for coarse kinds the market was rather irregular. At the lowest point they were a full 1d. below May, but regained the best part of this fall later on.

Capes.—Greasy wools fell at first ½d. to ¾d., rose then 1d., but became ¾d. to ½d. cheaper again at the close. Snow whites and scoured ruled in the early part fully 1d. below May, but subsequently regained this decline.

The announcement that the series would be materially shortened, and a large quantity held over gave the market an impetus, and for a time prices for not a few wools ruled somewhat above last sales. The spurt spent itself, but though the last week of the series was not the best as far as the tone in the sale-room is concerned, prices, except for faulty and inferior sorts, showed no very material change, and may be still quoted on the average as about on a par with May closing rates.

The following shews the supplies and deliveries of Colonial wool as compared with last year:—

	1890.	1889.
Held over from December	5,080 bls.	5,000 bls
Imports for three series	1,142,000 ,,	1,138,000 ,,
	1,147,000 bls.	1,143,000 bls.
Forwarded direct	229,000 bls.	271,000 bls.
Sold in London	806,000 ,,	863,000 ,,
	1,035,000 bls.	1,134,000 bls.
Held over	112,000 bls.	9,000 bls.
Home Consumption:—		
Forwarded direct	131,000 bls.	114,000 bls.
Bought in London	369,000 ,,	396,000 ,,
	500,000 bls.	510,000 bls.
Export:—		
Forwarded direct	98,000 bals.	157,000 bls.
Bought in London	437,000 ,,	467,000 ,,
	535,000 bls.	624,000 bls.
Total deliveries	1,035,000 bls.	1,134,000 bls.

The total deliveries, it will be seen, shew a decrease of 99,000 bales, but as the direct imports of Colonial wool to the Continent and America exceed those of last year by 117,000 bales (240,000 bales against 123,000 bales) there is in the actual quantity that has reached the hands of the trade not a decrease, but a surplus of 18,000 bales.

The next series is to commence on Tuesday, the 16th September.

The following are the quantities held over and fresh arrivals up to date—

	Held over.	New arrivals.
Sydney	41,000 Bales.	13,231 Bales.
Queensland	5,000 ,,	7,785 ,,
Port Phillip	19,000 ,,	15,214 ,,
Adelaide	9,000 ,,	643 ,,
Tasmania	4,000 ,,	318 ,,
Swan River	400 ,,	14 ,,
New Zealand	22,000 ,,	46,669 ,,
Cape	11,600 ,,	32,842 ,,
	112,000 Bales.	116,716 Bales.

The net total available, including the held over wools, will probably amount to about 270,000 bales. Bank rate 4 per cent.

GLASGOW.

Messrs. Ramsey and Co. in their report dated 22nd July, say:—

Wool.—The wool market continues fairly active. A good consumptive demand exists, without, however, any appreciable alteration in prices. The public sales take place here this week.

Sheep Skins.—The supply has been considerable and of good sorts. Long wools are now out of season and not so much looked after. Shorlings and lambs are keenly competed and dried skins are selling freely, with rather advancing prices all round.

FLAX AND JUTE.

DUNDEE TRADE REPORT.

Wednesday, July 23rd, 1890.

Yesterday was the last market day before the holidays. Next week almost all the Dundee works will be silent.

Notwithstanding the rise in the Exchange, the Serling price for jute is not higher, and a fair business is passing at about last week's prices.

Flax is without change. Tows remain very cheap, and difficult to sell.

Jute yarn was more enquired for last week, and in some cases a slight advance was paid. This week, while there is some business passing, the buyers are less eager, and there is a disposition on the part of sellers not to miss good orders. The finer qualities remain very firm. For example, the best 7lbs. are 1s. 9d, to 1s. 9½d., while *common* 9lbs. are being offered at the same price. For 8lbs. common cop, 1s. 4½d. is the price.

Dundee Hessian, in 10½oz., 40in., are quoted at 2 7/16d., with buyers at a shade less. Fine wide goods are held for the extreme difference.

Flax yarns are very quiet, and rather easier prices are possible.

For common tows one hears of very cheap sales.

Dundee fancy goods are quiet. Only the best makes are well sold and are busy.

Twines, ropes, and cords, are still being wanted. This trade extends.

Arbroath is busy in heavy linen goods.

Brechin and Forfar looms are all running, but there is a keen competition for home trade orders.

There will be no market here next week.

HOSIERY AND LACE.

NOTTINGHAM.

Business is duller than usual, although at this period the extremest quietness generally prevails. Stocks of fancy laces are too large in view of the limited character of the demand which is quite insufficient to take off the production of the machinery at work in this neighbourhood. Foreign lace keeps entering English markets in great quantities, much of it having been manufactured by machinery produced in Nottingham. In cotton laces, Valenciennes are the most popular styles. Plain cotton nets are unchanged. The hosiery trade is not brisk. There is, however, a fair amount of activity in some of the branches, and the fact of the increase in the American tariff having been put off from July 1st until August 1st gives those manufacturers who are making orders for that market a better chance of completing their deliveries in time to avoid the excess charge. Shipping business generally has fallen off considerably, whereas in some departments the home demand has been maintained. There is a moderate demand for plain white and brown cotton hose and half-hose, but prices are scarcely remunerative. The indelible black goods are still in fair request. Fancy goods are more asked for in the home market, as also are cashmeres, silk, and merino goods. There is a fair business doing, both in the foreign and home trade, in pants and shirts of the better class goods, and there are a good many underclothing suits selling, but machinery for the production of this speciality is far from being fully employed.

LEICESTER.

Yarns are firmer, worsted and lambs' wool varieties being unobtainable, except at list prices. Cashmere yarns are not so stiffly held, but there is no alarming tendency downwards. Hosiery is only purchased in a hand to mouth fashion. Some firms are again on night shifts. The heavy goods trade in some special lines shews an improvement, though some of the older makes in this branch seem to have completely died out. The underwear trade is also fairly well employed just now. Makers of Cardigans report better trade, particularly in special lines. The stock trade is fair.

DRY GOODS.

MANCHESTER.

There is not much to report this week. The publication of Westhead's report shewing results of the half year's trading to June has satisfied the curiosity of the commercial public, which had long been awaiting eagerly some information on the subject. Regret is expressed that after working so hard as they have done the new directorate should have incurred a loss of £1,407 10s. 1d. The opinion is expressed that the next balance sheet will be more favourable, as heavy expenses have been incurred during the period of reconstruction, and these will not figure in the next accounts. In the lace section of the local trade the demand for curtains is still noticeable. Common and medium qualities are chiefly in in request. Carpets are quiet. The new looms which have been spoken of recently in various quarters will shortly be at work in this country, and fresh designs at possibly lower prices than those at present quoted may be looked forward to.

THE KIDDERMINSTER CARPET TRADE.

Business in all branches of this trade continues quiet so far, at any rate, as this district is concerned, although manufacturers do not complain that it is unusually quiet for the time of the year. The present month and August are generally recognised as about the quietest in the year, and machinery during these months is principally engaged in the production of patterns for the autumn and on repeat orders. The sale of stock belonging to the estate of Messrs. W. B. Purdey and Company, Limited, took place on the premises in Vicar-street on Friday last week, and attracted a large number of carpet buyers from all parts of the country. The lots brought under the hammer included about 350 pieces of Brussels and Wilton body, border, and stair carpeting and also a considerable quantity of bedsides. Competition for the lower goods was rather keener than for the better class, although the prices realised all round were quite as satisfactory as could be expected considering a forced sale. Best Wiltons fetched per yard from 2s. 10d. to 3s. 3d., and lower qualities from

2s. 5d. to 2s. 10½d.; Brussels, five-frame, from 2s. 5d. to 2s. 10½d.; four-frame, 2s. to 2s. 2d.; three-frame, 1s. 11d. to 2s.; two-frame, 1s. 8½d. to 1s. 9d. Bedsides sold at 1s. 10d. to 2s. Altogether the sale is expected to realise about £2,400. The machinery and plant was previously purchased by Messrs. Arthur and Alfred Whittall, at present of the firm of W. Whittall and Company, who are starting next month on their own account, Mr. George M. Whittall, who is known as the pioneer of the Australasian carpet trade, continuing the old business alone.

During the present week the number of limited carpet companies has received another addition. This time it is the old-established firm of Woodward, Grosvenor and Co., who have decided to convert their concern into a limited one. Messrs. Woodward, Grosvenor and Co. are large makers of Brussels and Royal Axminster carpets, and have always held a good position in the trade. The share capital is £90,000, divided into £30,000 in £10 preference and £60,000 in £10 ordinary shares, and there is also £25,000 debenture stock in sums of £100, carrying interest at 5 per cent. Most of the capital has been privately subscribed, and it is intended to confine the remainder, as far as possible, to old friends of the firm. The directorate includes Mr. G. W. Grosvenor and Mr. H. T. Mountford, who act as managing directors.

The objects of the new Carpet Manufacturing Company, Limited, have, it is stated, been so far satisfactorily achieved, and the letters of allotment were posted to shareholders on Tuesday last.

Tariff News.

CUSTOMS TARIFF OF THE PHILIPPINE ISLANDS.

Note.—Kilog.=10 Hectogrammes=2·204lb. avoirdupois.
Litre=·22 Imp. gallon.

The following is a statement of the rates of Customs duty now levied on imports into the Philippine Islands:—

Classification of articles.		Rates of Duty now leviable. Pes. Cts.
Cotton for wicks and other uses..	Kilo.	0·06
Ribbons pay duty according to materials of which composed.		
Hemp, flax, or jute, raw	100 kilos.	11·00
Yarn, twisted, of hemp, flax, or jute, of two or more threads ..	Kilo.	0·15
Yarn, of cotton of all kinds, and raw cotton for weaving.....	,,	0·10
Yarn, of silk or silk waste, twisted or not, of one or more threads..	,,	1·50
Yarn, of wool, combed or carded..	,,	0·35
Oilcloths for flooring and packing.	,,	0·04
Oilcloths of other kinds	,,	0·08
Small wares of silk or of silk mixed with other textile materials, the latter not to exceed 50 per cent. of the weight	,,	1·40
Small wares of wool or of wool mixed with other textile materials, the latter not to exceed 50 per cent. of the weight.....	,,	0·70
Small wares of any other kind ..	,,	0·40
Sacks.....	Hundred	0·40
Sacks of cloth will pay according to the quality of the tissues.		
Sacks of abaca, hemp, flax, or jute, up to 10 threads counted in a square of 6 millimetres will be admitted at 85 cents. per kilo. according to the Royal Order of 19th March, 1880.		
COTTON TISSUES.—*See Notes. D., E., and F,*		
Tissues, plain, twilled, loom-worked, unbleached, dyed or printed, having up to 25 threads inclusive in warp and woof in a square of 6 millimetres.....	Kilo.	0·10
Tissues, plain, twilled, loom-worked, unbleached, dyed or printed, having 26 to 35 threads inclusive	,,	0·16
Tissues, plain, twilled, loom-worked, unbleached, dyed or printed, 36 threads and more ..	,,	0·22
Tissues, open up to 30 threads....	,,	0·22
Tissues, open up to 31 threads and more	,,	0·34
Tissues, embroidered and quilted..	,,	0·25
Tissues, cotton velvet, plushes....	,,	0·26
Tissues, tulle lace and crochet stitch	,,	0·70
TISSUES OF ABACA, HEMP, FLAX, OR JUTE.		
Plain up to 17 threads inclusive..	,,	0·10
Plain, from 18 to 36 threads.....	,,	0·22
Plain, 37 threads and above.....	,,	0·56
Plain, twilled, figured, or damasked	,,	0·20
Lace, gimp lace and crochet stitch	,,	2·40
TISSUES OF WOOL AND HAIR.—*See Notes D., E., and F.*		
Plain, twilled, or figured, such as alpaca, merinos, muslins, damasks, and reps	,,	0·50
Coverings of hair, long or short, such as flannels, blankets, etc...	,,	0·20
Cloths, soft wools, cashmeres, and other drapery	,,	0·40
SILK TISSUES.—*See Notes D., E., and F.*		
Tissues of silk, floss silk, waste silk, and raw silk, plain, twilled, and figured, including velvets and plushes	,,	2·40
Tulles, embroideries, and gimps of silk and waste silk	,,	4·00
Tulles, of india-rubber, with a mixture of other materials, and waterproof clothing, machine-made	,,	0·40
Candles, of spermaceti, paraffine, and stearine	,,	0·05
Glass and crystal plate, silvered or not.....	100 kilos.	1·508
Glass, ordinary forms in any kind of articles	,,	0·60
Glass, crystallised and crystal worked in any kind of articles, including beads, etc.	,,	3·00
Wines, sparkling.....	Litre	0·10
Wines, other.....	,,	0·05

Note D.—Tissues with admixture will pay duty as follows:—

1. Tissues of linen, wool, and silk which contain only a mixture of cotton in a portion of the warp or woof, will be considered, for the payment of the duties, as being of linen, wool, or silk without admixture.

2. Tissues of wool and silk or waste silk, of which the warp or woof is one of these materials will pay one-fifth of the weight as silk and four-fifths as wool

3. Tissues of linen and silk of which the warp or woof is one of these materials, and those of cotton and silk having the warp or woof entirely of cotton, will pay four-fifths of the weight as tissues of linen or cotton, according as the case may be, and a fifth as silk. Plushes and velvets which pay three-fifths as cotton and two-fifths as silk are excepted.

4. Tissues of linen and wool, having warp or woof of one of these two materials, will pay three-fifths of the weight as woollens, and two-fifths as linen tissue.

5. Tissues of linen and cotton, having the warp or woof entirely of cotton, will pay half of the weight as tissue of cotton, and the other half of linen tissue.

6. Tissues of wool and cotton, having the warp or woof of one of these two materials, pay three-fifths of their weight as woollen tissue, and two-fifths as cotton.

7. Tissues which contain a mixture of two or more materials in the two parts of the tissue will pay three fifths of their weight for predominating material, and two-fifths for that which is subject to the lowest duties.

8. Tissues which, having all the warp or woof of linen, wool, silk, or cotton, contain in the other part of the cloth (woof or warp as the case may be) two or more of these materials, will pay according to the preceding rules as composed of linen, wool, silk, or cotton, and of the material which in the other part of the tissue pays a lesser duty.

9. Hosiery, lace, and tulles with admixture pay according to the material of which chiefly composed.

Note E.—Ready-made articles of clothing, except millinery, will pay for the total of their weight a duty fixed for the stuff of which they are composed on the exposed side with an addition of 50 per cent. of the same duty. Are considered as ready-made articles of clothing, not only those completely finished but also those half sewn or simply tacked.

Note F.—Stuffs, hand or machine embroidered, and those which contain a mixture of fine or imitation metals, will pay the duty corresponding to the quality of the tissue to which they belong, together with an addition of 50 per cent. of the same duty.

The following articles are free of import duty:—

Silk cocoons, tow, felting for ships, cords and cables for vessels.

Joint Stock and Financial News.

NEW COMPANIES.

GREENFIELD MILL COMPANY, LIMITED.

Registered on the 11th inst., with a capital of £10,000, in £50 shares, to carry on business as bleachers and dyers, manufacturers of waste for gun cotton, and other purposes, bleaching and dyeing materials. The subscribers are:—

	Shares.
N. Buckley, Droylsden, cotton spinner	1
*A. Buckley, Ashton-under-Lyne, cotton spinner	1
*W. H. Buckley, Ashton-under-Lyne, cotton waste dealer	1
*J. Ashworth, Dukinfield, hat manufacturer	1
R. Redford, Greenfield, near Oldham, hat manufacturer.....	1
J. Green, Ashton-under-Lyne, cashier.....	1
H. Haigh, Greenfield, engineer.....	1

The number of directors is not to be less than four nor more than seven; qualification, five shares; the first are the subscribers denoted by an asterisk, and Mr. J. Redford; remuneration, £30 per annum, divisible. Solicitors, Messrs. Lord and Son, Ashton-under-Lyne.

WOODWARD, GROSVENOR, AND CO., LIMITED.

Registered by Emmet, Son, and Stubbs, 14, Bloomsbury-square, W.C., with a capital of £90,000, in £10 shares. Object, to acquire the businesses now carried on at Kidderminster, and 102, Newgate-street, E.C., under the style of Woodward, Grosvenor, and Co., Stour Vale Mill Company, of weavers and manufacturers of and dealers in carpets, rugs, and other floor coverings, plush, and other fabrics. The first subscribers are:—

	Shares.
G. W. Grosvenor, Broome-house, Stourbridge	1
H. Mountford, The Larches, Thurlow-park-road, West Dulwich, S.E.	1
J. Mountford, Roden-avenue, Kidderminster	1
M. Waite, 37, Lorne-street, Kidderminster..	1
R. Moule, 115, Chester-road, Kidderminster	1
J. Lighton, Engadine, Aldrington-road, Streatham-park, Surrey	1
H. C. W. Mountford, The Larches, Thurlow-park-road, West Dulwich, S.E.....	1

There shall be one ordinary director, but not more than three. The first shall be G. W. Grosvenor and H. Mountford (joint managing). Qualification, 100 shares. Remuneration, £1,000 each.

SYDDALL BROTHERS, LIMITED.

Registered by C. Doubble, 14, Sergeants'-inn, Temple, London, E.C., with a capital of £30,000 in £5 shares. Object, the purchasing or otherwise acquiring of the business of bleachers, dyers, printers, and finishers, and other ancillary businesses, heretofore carried on by James Syddall, at Chadkirk, Romiley, in the county of Chester, under the style or firm of Syddall Brothers. The first subscribers are:—

	Shares.
J. Syddall, Orange Tree House, Romiley, Chester	5
J. L. Syddall, Roseleigh House, Chadkirk, Chester	5
R. J. Syddall, Roseleigh House, Chadkirk, Chester	5
J. L. Syddall, Roseleigh House, Chadkirk, Chester	5
J. Whittaker, Bredbury Vicarage, Stockport, Chester	5
L. E. Syddall, Roseleigh House, Chadkirk, Chester	5
M. A. Drinkwater, The Crescent, Brinnington, Stockport, Chester	5

There shall not be less than three nor more than five directors. The first are J. Syddall, J. L. Syddall, and R. J. Syddall. Qualification, 100 shares. Remuneration to be determined in general meeting.

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.

14TH JULY TO 19TH JULY.

10,930. I. THOMIS, M. PRIESTLEY, and J. PRIESTLEY, Sunbridge Chambers, Bradford. Operating healds in looms.

10,951. W. Tyler, 323, High Holborn, London. Circular knitting machines.

10,991. J. Buckley, 8, Quality Court, London. Spinning and doubling machinery.

10,995. J. J. Mann, 4, St. Ann's-square, Manchester. Cutting pile fabrics.

10,999. W. de C. Pideaux, 15, King-square, Bristol. Combs or cards.

11,005. A. Gratz and B. Gratz, 154, St. Vincent-street, Glasgow. Treating textile fabrics, and manufacturing bagging from jute butts.*

11,006. E. Tweedale, Central Chambers, Halifax. Mountings of rollers of roving, spinning and twisting frames.

11,044. M. L. W. Martinot, 53, Chancery-lane, London. Apparatus for washing or bleaching.*

11,049. J. Reixach and W. Driver, 24, Southampton-buildings, London. Finishing velvets, plushes, seals, Astrachans and other pile fabrics.

11,050. L. Woodward and C. R. Woodward, 24, Southampton-buildings, London. Manufacture of ribbed fabrics and machinery to be used for this purpose.

11,076. E. L. Thwaite, 25, Fountain-street, Tranmere, Birkenhead. Ornamenting fabrics.

11,094. F. Lehner, 18, Buckingham-st., Strand, London. Artificial silk and thread.

11,100. A. H. Wardle, 6, Bream's-buildings, London. Dyeing hanks of silk and other yarn.

11,151. T. J. Crossley, Middleton Junction, Chadderton, near Oldham. Jacquard machines for cross border weaving.

11,259. C. W. Keighley, T. B. Keighley, and W. Netherwood, Commercial-street, Halifax. Cutting woollen, cotton, velvet, or other corded fabrics.

11,302. L. Bollman, Vienna, II. Obere Donaustrasse, No. 93. Looms and fabrics.

11,306. J. T. Reid, C. E. and A. Edmeston, 45, Southampton-buildings, London. Apparatus for bleaching, dyeing, or washing textile fabrics, warps, and yarns.

SPECIFICATIONS PUBLISHED.

1889.

13,023. Moret. Removing grease from textile materials, &c. 6d.

13,473. Pullen, W. and M. Looped, &c., fabrics. 11d.

13,626. Ambler and others. Cleansing wool, &c. 11d.

15,350. Sills. Knitted jerseys, &c. 4d.

15,706. Lange. Thio-oxydiphenyl-amine. 4d.

20,477. Wilkinson. Looms. 6d.

20,566. Wallis and Longden. Lace machines. 8d.

1890.

8,033. Lake (*Gessner*). Pressing cloth, &c. 11d.

6,697. Birtwistle. Looms. 6d.

8,090. Pennock & Bradburn. Bleaching powder, &c. 4d.

8,130. Tattersall. Sizing machines. 6d.

8,246. Banner. Stocking frames. 6d.

ABSTRACTS OF SPECIFICATIONS.

3,517. Feb. 27, 1889. **Knitting**. J. A. Barfoot, Canning-place, Leicester.

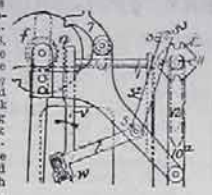
Straight-bar machines.—In Cotton's shog-bar frames for the production of Cardigan jackets and similar goods, the machine needle bar is shogged at the end of every traverse of the thread carrier. For this purpose the shogging wheel is driven at twice the ordinary rate by an auxiliary cam, acting upon the pawl-carrying lever. To cause the machine needle-bar to be shogged during the pressing of the frame needles instead of the machine needles, a pawl is put out of action for a short period by a projecting pin on an arm, carried by a ratchet wheel, which operates a wheel N and shafts. [11½d. *Drawings.*]

3,529. Feb. 27, 1889. **Dyes**. B. Willcox, 47, Lincoln's-Inn Fields, London.—(*Farbenfabriken vorm. F. Bayer and Company; Elberfeld.*)

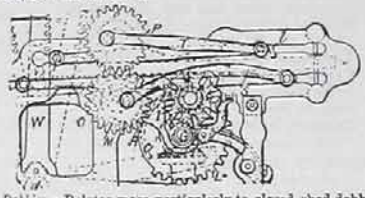
Indulines.—Relates to the production of indulines and induline-like dye-stuffs soluble in water. Consists, firstly, in melting dye-stuffs, viz., nigrosines, aniline-black, and saffranine, or azo-compounds, viz., azobenzene, azoxybenzene hydrazo-benzene, or their homologues, with meta- or para-phenylenediamine, or with tolylene-diamine, in the presence of ammonium chloride at 100° to 150° C. Consists, secondly, in oxidising meta- or paraphenylenediamine with weak organic oxidising agents, such as chloranil, dichloronaphthoquinone, quinone, and naphthoquinone chlorimide. The products are greenish-blue to blue-black dye-stuffs. Consists, thirdly, in heating at 100° to 230° C. meta- or paranitranilin* or nitrotoluidine with aniline hydrochlorate or its homologues, with or without a chloride of iron, a condensing agent, and benzoic or oxalic acid, or ammonium chloride. When chloride of zinc or of calcium is used as a condensing agent, a greater yield, but a duller colour is obtained. In this process, secondary and tertiary amines may be used, if hydrochlorate of aniline or toluidine be added to the melt, and the products are blue to blue-green colours. The Provisional Specification also refers to the production of indulines soluble in water by heating hydrochlorates of amidoazo compounds with aniline hydrochlorate, or its homologues, in presence of glycerine. *Patent opposed. Case not yet decided.* [6½d.]

3,544. Feb. 28, 1889. **Looms**. J. Cowburn and C. Peck both of Albert Mill, Silk-street, Eccles, Lancashire.

Change-box motions.—Relates to improvements in the apparatus described in Specification No. 6,399, A.D. 1888. The discs f, from which the boxes receive motion, are operated through pinions g from racks v worked up and down by arms t on a rock shaft s, a rod w connecting one of the arms with a crank on the tappet or other suitable shaft on the loom. The racks are, at the required times, pushed into gear with the pinions g by needles 1, which also operate the pivoted locking levers 7. The needles are operated by a card chain 12, the barrel 11 of which is carried on a rocking frame 10 operated by a tappet, and is provided with a nogging wheel 18 turned by a stud s_3 on a rocking arm s_2. For weaving goods in which one portion of a pattern is repeated several times whilst another occurs only at wide intervals, the barrel 11 is operated one way or the other, or is stopped altogether by mechanism, in which two nogging wheels are employed, operated by two studs, such as s_3, the studs being put in or out of position by the action of a tappet chain having links of three different heights, and operated at times by rack and pinion mechanism from one of the needles. When the loom is turned back the pattern chain and discs f are also reversed. [1s. 4d.]



3,581. Feb. 28, 1889. **Looms**. E. Hollingworth, Dobcross, near Huddersfield.



Dobbies.—Relates more particularly to closed shed dobbies, and consists in providing a spaced toothed wheel L on a shaft G driven continuously by bevel gearing through a vertical shaft from the crank shaft. The wheel L operates intermittently a spur-wheel M on a shaft which carries toothed wheels O gearing with others P on a shaft above. To crank-pins on the faces of the wheels O, P are connected the rods S, T, which operate the knives. Catches or hinged clappers l on the latter act on the usual draw-hooks. The action is to give a dwell to the shed during picking, and to allow more time for the changes of the pattern cylinder; a plate R acting on a rim c locks the parts during the dwell. The invention is applicable when either bell-crank or vertical jack levers W are used; in the latter case, the star-wheel I of the pattern cylinder is operated by the pin of a crank which is mounted on a shaft between the shaft G and pattern cylinder. In a modification, the shaft G is driven through elliptical or eccentric gearing from the crank-shaft. [11½d.]

3,621. March 1, 1889. **Knitting**. J. A. Barrage, 3, Lisson Grove, Mutley, Plymouth.

Parallel machines.—For splicing, when making plain circular fabric, a fixed thread-carrier is provided to work with one row of needles only in addition to the ordinary shifting thread-carrier, which works with both rows of needles alternately. A second fixed thread-carrier may also be provided to work with the other row of needles. [6½d.]

3,628. March 1, 1889. **Nitro and amido compounds**. A. Bano, Park-road, Leeds.—(*Dahl and Co.; Barmen, Germany.*)

Relates to the preparation of dinitrodibenzyl-benzidine and dinitrodibenzyltolidine, and the reduction of these compounds to diamidodibenzyl-benzidine and diamidodibenzyltolidine respectively. Consists in heating paranitrobenzyl chloride and benzidine (or tolidine) in the proportion of two molecules of the former to one molecule of the latter at 100° C. for three or four days. The product, after separation of unaltered benzidine by boiling with dilute hydrochloric acid and filtering, is reduced by means of tin and hydrochloric acid at 90° or 100° C. to the corresponding diamido compound, the tin being subsequently eliminated by means of zinc. In the Provisional Specification is described the preparation of dye-stuffs by tetrazotising the above diamido compounds, and other diamines as well as similar derivatives obtained from stilbene, and combining these products with amido phenols, naphthols and their sulpho acids. Also the preparation of compounds by the action of paranitrobenzylchloride upon a phenol, naphthol or monamine or a sulpho acid thereof is described, and the preparation of colouring matters by diazotising these products and combining them with amines, etc., or by combining them with tetrazo compounds. [6½d.]

3,680. March 1, 1889. **Warping, dressing, drying, and beaming yarns**. F. and H. Sucker, Grünberg, Germany.

Warping.—The threads from the creel pass between two bars on a lever worked by cords from segments above, and through a specially formed reed, for producing the lease. They then pass over adjustable tension bars to a measuring roller, and thence to the warping drum, to which a counting appliance is fitted. The drum is formed with removable flange segments mounted adjustably on laths. When the required length of threads have been wound and cut between two sets of segments, the drum is pushed endwise a distance equal to the width of the band severed, and the process is repeated for the next section. When the full width has been cut the yarn is preliminarily beamed on a roller.

Dressing and Drying.—The threads are passed through a dressing trough beneath an adjustable immersion roller, and between covered pressure rollers. The trough may have a false bottom, the space between which and the trough contains water heated by a perforated steam pipe; or it may contain a flat steam pipe with serpentine channels formed therein. The threads pass around a split drum containing a fan for preliminary drying, and thence over rollers in a drying chamber containing a partition formed with adjustable slots. The threads pass gradually downwards to the lower and warmer portion of the chamber (which is supplied with air heated by hot pipes), and is wound several times round a drum containing a fan. In the mechanism for driving the various parts, friction disc apparatus and driving cords tightened by special arrangements are provided for adjusting the speed to give the required tension to the threads.

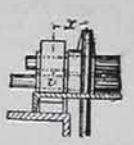
Beaming.—From the drying chamber the threads pass over rollers and tension bolts, or over iron tension pipes mounted on an adjustable double-armed lever, to the beam. [1s. 3d. *Drawings.*]

3,689. March 2, 1889. **Spinning, etc., frames**. W. Taylor, 19, Hill-street, Oldham.

Driving tin rollers.—Improvement on the invention described in Specification No. 2,265, A.D. 1887. The two tin rollers are driven by a cord from a doubled-grooved pulley mounted upon the hob of a loose pulley upon one of the tin rollers, the cord passing round the double-grooved pulley, a four-grooved pulley, and three double-grooved pulleys, the bearings of the last-mentioned of the pulleys being adjustable by means of a screw, in order to regulate the tension of the cords. The speed is regulated by the size of the first-named double-grooved pulley. The invention may be applied to frames having only a single tin roller. [6½d. *Drawings.*]

3,695. March 2, 1889. **Waste fibres**. J. D. and C. Tomlinson and J. Porter, both of Soho Iron Works, Rochdale.

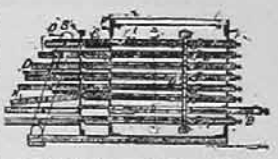
Breaking or opening waste fibres.—In machines having more than one cylinder, the cylinders, either singly or in sets, are rotated alternately in opposite directions, so that both sides of the lap will be operated upon in passing through the machine.



In order to stiffen the *feed rollers* these are weighted on the inside of the journals i, so that the distance between the points at which the weights are applied is reduced by twice the distance x. This system of weighting may be applied to the top or bottom roller or both. [8½d.]

3,760. March 4, 1889. **Punching jacquard cards**. S. Tebbutt, Rugby-road, Leamington.

Relates to apparatus in which the draft is first read on or transferred to bars B connected by strings to the needles which select punches for employment in separate apparatus. The bars are shaped as shewn, and pass through a lifting sley S, back and front plates P_1, P_2, and a spindle sley M. Elastics E_1, E_2 are connected to the bars and to the spindles. The bars are lifted by levers or keys K, which are pivoted on bars D, and are operated according to the pattern; the lifted bars are drawn forward by the elastic E_1. The workman at the punching machine end now, by the usual means, draws the needle carrier towards the punch carrier for selecting the punches. The sley M is then moved back to the position shewn in dotted lines and the sley S is raised, whereupon the bars return to their former positions. [8½d.]



3,764. March 4, 1889. **Finishing fabrics**. A. and R. Brearley, Queen-street Mills, Batley.

The fabric, after being dewed or damped, is passed for the purpose of raising the nap or pile under a rotating beater with flexible wings and over an ordinary rotating rigid beater, whence it passes to the tentering and drying machine. A brake roller is provided before the dewing apparatus and guide rollers. The front roller of the tentering or drying machine is replaced by a disc or wheel near each set of hooks. In the Provisional Specification is described a preliminary operation of raising the nap or pile by passing the fabric over rollers covered with brass filleting. [8½d. *Drawings.*]

3,884. March 5, 1889. **Cotton-openers, etc**. B. Willcox, 47, Lincoln's Inn Fields, London.—(*J. C. Potter; Pawtucket, Rhode Island, U.S.A.*)

Feed regulators.—The regulating levers, between which and the feed roller the cotton is fed, are mounted upon a knife edge carried by an adjustable bracket, and are connected to the belt-shifting mechanism by means of a lever system, situated beneath the feed trough, and outside the front wall of the machine. Each lever is supported at the ends from the middle of two levers immediately above, the top row of levers being connected by links to the regulating levers. Any suitable belt shifting apparatus may be used. [11½d. *Drawings.*]

3,909. March 6, 1889. **Looms**. R. L. Hattersley and J. Hill, both of Keighley.

Shedding and change-box mechanism.—For reducing the length of pattern chain required in weaving handkerchiefs, shawls, and like bordered goods the sets of alternate lags c and c^1 are formed to produce two distinct patterns. The lag cylinder carries two ratchet wheels e, e^1, operated one at a time by catches f, f^1, the latter being put in or out of action by levers h, h^1, operated by the fingers k_1, k_2 of a lever k_3. The chain is advanced two lags at a time, the pattern being determined by the catch in action. The lever k_3 is operated through a rod l and special connections from indicating levers in the change-box mechanism. The latter is provided with other levers and rods for operating the usual catches attached to the box lever. The Provisional Specification states that the change of pattern may be controlled by a supplementary pattern surface, operated from the dobby pattern cylinder, and that the catch of the shuttle-box cylinder may be put out of action by a lever when desired. The bowls over which the heald straps pass are arranged in two series, one above the other, the flanges of one series being opposite the grooves of the other, thereby affording space for an increase in the strength of the straps. The under levers, for returning the healds, are connected by springs arranged in two series, the lower of which are attached directly to such levers, whilst the upper are attached to supplementary levers operating the others. [11½d.]

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.
Rossendale 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, layton, 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.

Fire 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:
Devoge & 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., Doboross 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 (Woollen 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.

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:
Moredith-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, Tolkien, 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 Healds:
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.

INDEX TO ADVERTISERS' NAMES.

The Roman numerals after the names refer to the Advertisement pages. In the case of Advertisements not appearing in the current issue, the date of their last appearance is given.

* This advertisement appeared last week, July 26th; it will appear again next week, August 2nd.