

The Textile Mercury:

A Representative Weekly Journal for

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

In all Branches of the Textile Industries.

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The Textile Mercury.

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Current Topics.

THE PIONEER BALE OF THE AMERICAN CROP OF 1890-91.

A small but interesting event occurred in Liverpool yesterday week. This was the arrival of the pioneer bale of the growing American crop. It was consigned to Messrs. Pferdmenzes, Preyer, and Co., and has been on view in the saleroom of Messrs. Buchanan, Wignall, and Co. The cotton classes over Good Middling, and is very dry, bright, and good in colour, and of fair staple. The arrival of the first bale always shews the new crop to be within measurable distance, and may be accepted as a warning to "bulls," "bears," and every other kind of cotton speculator that he must bring all his operations to a focus, and complete them also within a measurable time. When stocks are running down and prices running up, the first bale is a welcome signal to the harassed spinner that relief is approaching, and that mother Nature is once more about to relieve him from the toils the enemy has thrown around him. Last year it was welcomed in this light by great numbers; this year, fortunately, better provision has generally been made, and the cotton hunger is not so great.

LABOUR TROUBLES IN SPAIN.

Spain got its share of labour troubles last May, and although the movement subsided there as elsewhere after some disturbance, it does not yet appear to have exhausted its malefic energy. Judging from last week's advices from Barcelona, a new development appears to have taken place called the Manresa movement, which it is feared will be more serious than that of May last, as this is no question of wages or hours of labour, but a combination in favour of discharged workmen to compel their employers to re-engage them. The extreme social danger of such a claim can hardly be exaggerated. The individual misery and the loss to the country, should the movement become general, are incalculable. By no possibility could any organised industry be carried on, and the claim, if in any sense successful, would only be the prelude to a further claim that the community should guarantee work to labourers upon their own terms, and if work could not be found that they should have the terms—that is, the pay—without the service. Advices last week from Barcelona stated that 2,500 workmen in that city had decided to support the Manresa movement, and struck work to give effect to their determination. The movement threatened to extend through the province. Of course it was said, and apparently with some authority, that the political element entered to some extent into the present agitation, and that an arrangement was likely to be

more difficult than under a Liberal Government. In a country like Spain it would not be very surprising to find that this was the case, as unscrupulous politicians are not unknown characters in the Iberian peninsula, and it is not likely that such would fail to avail themselves of any discontent from whatever cause arising, if they could by any means turn it to their own advantage. We draw attention to this movement in Catalonia on the ground that a straw shews which way the wind is blowing, and that note may be taken of it by manufacturers at home.

DRY GOODS KINGS.

To employ a method of description essentially American, we may speak of the Rylands's, the Arthurs, the Cooks, and other firms of that class well known in the United Kingdom as "Dry Goods Kings." The firm of Rylands and Sons, Limited, may be taken as the greatest of these, and the following facts concerning this vast undertaking are commended to the notice of some of the American trade journals, for the purpose of comparison with those of Claffins, who are the Rylands's of the States. The paid-up share capital of Rylands's amounts to £1,500,000; amount paid in advance of calls, £304,295; and 4 per cent. debentures, £900,000; a total of £2,704,295, or, say, 13,521,375 dols. Now, the H. B. Claffin Co.'s capital is only 9,000,000 dols., of which the old Claffin management retain 6,000,000 dols., 3,000,000 dols. being issued to the public. Messrs. J. V. Farwell and Co., the second dry goods firm in Chicago, run these figures pretty closely, while it is claimed by Chicago men that Messrs. Marshall, Field and Co., the leading distributors of the "Windy City," have a million dollars more capital than Claffins. In any case, it will be perceived that the Rylands's, of Manchester, stands head and shoulders higher than the greatest of the American concerns, reckoning their paid-up capital alone; while, if the £500,000, not paid up on their 100,000 £20 shares be included, 2,500,000 dols. must be added to the 13,521,375 dols. referred to above. Messrs. A. and S. Henry and Co., Limited, are quite as wealthy as the richest of the United States dry goods houses, and in Glasgow the Arthurs, with their £1,500,000 capital, operate over a much wider field than any Transatlantic house. If we searched amongst the manufacturing firms, such as the Listers, Crossleys, and Tootals, Claffins and Marshall Fields could again be overtopped. Nothing illustrates more strikingly the industrial enterprise and wealth of our little Island than the facts to be gleaned from a study of these matters. We have given statistics in dollars for the purpose of facilitating comparison with American firms. It is interesting, by the way, to note that here in Manchester the larger dry goods houses far exceed in the magnitude of their operations the greatest of the London

firms. Rylands's turnover is more extensive than the combined turnovers of half a dozen famed houses in the South we could name. The present Fore-street Co., the successors of the wealthy Morrison, Dillon and Co., shrink into comparative insignificance when contrasted with Rylands's, their capital amounting to £120,000 debentures and 30,000 shares at £11, or a total of £150,000. £140,000 represents the paid-up capital of Messrs. Davas, Routledge and Co.; £300,000 will cover that of Pawsons, including debentures; and £600,000 the combined capital of John Howell and Co., Limited, Howell and James, and Foster, Porter and Co. It would prove an interesting task if some of our London friends, whose modesty is not a strongly-marked quality, would add up the figures given, and subtract them from those representing the capital of the concern which has been built up by the energy of Lancashire brain and brawn. The remainder would still be greater than the capital of any London limited dry goods house.

OLDHAM SPINNERS AND THE "KETTLE FUND."

At most of the mills owned by limited companies in Oldham and district there is a fund known by the somewhat curious title of the "Kettle Fund," which for some little time now has caused the relations between the workpeople and management not to be of the pleasantest kind. This "Kettle Fund," as it is called, originated in this way. Owing to the distance at which many operatives resided from their work, it became a matter of necessity that they should bring their meals with them in the morning, obtaining hot water and the warming of their provisions during the day where best they could at houses adjoining the mill premises. Up to a few years ago this was the plan adopted, which also practically is in vogue today, with the exception of the obtaining of hot water and the cooking arrangements. From a desire to meet the convenience of the workpeople, and also to prevent the wasting of much time in these matters in having to leave the mills, every accommodation which was likely to meet the requirements of the hands was provided at the mills, at a charge of say one penny per week. In some instances the cost of the necessary apparatus and the requisite attendance to keep it in working order, was taken from the fund, while in other cases it was borne by the proprietors. As the funds began to accumulate, it became a question as to what purposes they should be devoted to, they being under the control of the management. From time to time grants were made to indigent and sickly workpeople, and also to any who had been so unfortunate as to meet with accidents whilst following their employment. Thus by the contribution of a "copper," they were able to give a helping hand to a needy and deserving fellow-operative. And here we have a good illustration of the power of the co-operation and combination of trifles. While the workpeople scarcely felt the charge—for which they obtained, it may legitimately be presumed, an equivalent value in return—yet if the sums so dispensed came out of the employers' pocket it would mean much, which is exemplified in the clown's story that if every one gave him a penny he would be rich, but if he gave every one a penny he would be poor indeed. But in addition, donations were also granted from this fund to the annual trips of the workpeople. Under these circumstances, then, the reader will naturally be led to inquire how it is that dissatisfaction exists in connection

with the fund. Well, the great objection is that the charge is deducted from their wages before they leave the office, and another is that the workpeople have no voice in the management of the fund. The first objection, we believe, is receiving the support of the Operatives' Association. Only last week at one mill this was the crucial point which led to the spinners tendering their notices. Protest was made against the deduction, if not against payment; and it is related that the manager was so annoyed at the workpeople's conduct that he ordered the service connected with the hot-water apparatus to be "cut off," thus compelling them to get their requirements attended to elsewhere. At another concern, we hear that the management gave the hands liberty to get their hot water where they thought proper, and we are informed that for this privilege they are paying a premium in the shape of a great charge for their liberty, without any prospect of a return from the money expended. It is obvious that all along the management at these concerns has been actuated with the purest motives in the interest of the workpeople, while at the same time looking to their own convenience. The ungrateful conduct of the workpeople will make the managers study the comfort of the operatives less, and curtail the facilities which are given in the preparing of the meals—that is, in allowing the piecers, tenters, etc., to leave their work for this purpose before the stoppage of the engine for meal hours. It is extremely regrettable, that, over so trifling a matter, the friendly relations of the employer and employes should be disturbed. The former really derive no gain from the fund, and are prepared to dispense it to the latter's benefit. It would seem to be only another instance of the foolish exactions the workpeople are making, and in which they appear to be encouraged by their unions.

THE COTTON INDUSTRY IN THE FEUDATORY STATES OF INDIA.

An event occurred on the 30th June which marks an epoch in the commercial history of the Central Provinces of our great Eastern dependency. On the date mentioned the foundation stone of the first cotton mill was laid in the Feudatory State of Raj-Nandgaon, in Chhatisgarh. There are already indications that in the last-named division the cotton industry will in future develop considerably, as ninety-one lakhs pounds of yarn are already consumed there annually. One-third of this demand will, it is anticipated, be supplied by the new mill. The ceremony of laying the foundation-stone was performed by the Commissioner of the division, Mr. A. H. L. Fraser, after which the Raja, a studious and enterprising young Chief, whose State is the most rising of the fourteen Feudatory States in Chhatisgarh, addressed the assembly. The origination of the enterprise is due to Mr. Kolaskar, who induced the young Raja to take shares in the mill to the extent of one and a quarter lakhs of rupees, besides which the ruler of the State gave the site for the building. The company proposes to lay down in the first instance 10,000 spindles, and 100 looms if it is deemed necessary. The markets in the Chhatisgarh division for the manufactured material are close at hand; the raw material can be brought from anywhere at a less cost for railway freight than the manufactured goods, so that on this head the concern is as well off as other mills in the Central Provinces. Fuel is cheap and abundant, and so is labour and water, while the opening of the Bengal-Nagpur line furnishes access to markets in populous regions, beyond the

limits of the State in which the mill is situated. The Raja (Balram Dass) is the chairman of the Board of Directors, who are men of high character and substantial means. Messrs. Gaffert, Kolaskar and Company are the agents. Mr. Gaffert will be stationed at Raj-Nandgaon to superintend the erection and management of the mill, while Mr. Kolaskar will reside at Raipur, where the head offices are to be situated.

THE BARNESLEY LINEN TRADE.

The linen trade of Yorkshire has been a declining one ever since the Marshalls removed their plant to the States, and Barnsley, the principal centre of the industry in the neighbouring county, has not been holding its own. The power-looms in the town number 1,118, and there are not 100 hand-looms. These figures are very small, and could doubtless be exceeded by single firms in the North of Ireland, such for instance as the York-street Flax Spinning Company, the successors of the famous Mulhollands. Roughly speaking, the Barnsley trade has risen, progressed, and decayed, all within the comparatively brief space of a century, the first linen having been woven in 1772 by Joseph Beckett, brother of Sir John Beckett, of Leeds. The loom on which the original piece was woven was set up in Beckett-square. The causes which have led to the decline of Barnsley as a linen centre are worth studying. Scotch and Irish competition, some will say, has produced the results seen to-day. But why have the sister countries been able to wrest from Barnsley the connection it at one time possessed? It is probable that the labour conditions imposed upon the Yorkshire employers have had a good deal to do with the changes referred to. Scotch manufacturers have utilised female labour largely. Barnsley operatives united for the purpose of preventing their masters from doing so. As a consequence, Scotland could turn out a cheaper article, and the Barnsley weavers had to seek other channels of employment. The progress of the coal, iron, and glass trades in Barnsley have no doubt weakened the hold of the linen industry there, but it is certain that the action of the operatives themselves in insisting on such a high "list" is one of the principal reasons for the changes mentioned.

THE RUSSIAN WOOL TRADE.

According to a recent estimate, the Empire of the Czar possesses about 50 millions of common sheep and 15 millions of merinos, of which 38 millions of the former and two millions of the latter belong to European Russia. Sheep are found in almost all parts of the Empire, but in greater numbers in the South than in the North. Thanks to the immense pastures which are available and to the temperate climate which makes it possible to keep the flocks in the field for the greater part of the year, the breed with fine fleeces predominates, especially in the kingdom of Poland. Since 1860 the breeding of this class of sheep has exhibited a marked decline, owing to the increased cultivation of land caused by the construction of new railways, and to the competition of foreign wools. During the last few years it has been proved that fine-fleeced sheep are likely to spread in the Northern part of the Caucasus, which abounds in pasture-land. It may be safely predicted that it is Central Asia which will be in the future the centre of the wool-growing industry of Russia, thanks to the vast tracks of land suitable for the rearing of flocks of sheep and other animals. The annual production of wool in Russia is estimated at about

10 millions of puds, which represents approximately six puds for each sheep. If 7 roubles 50 copecks be taken as the average price of a pud, the annual income from this article amounts to 75,000,000l. (£3,000,000). The exports of Russian wool fluctuate. In 1885, 1,300,000 puds were exported; in 1886, 2,150,000 puds, and in 1888, 1,270,000 puds. The ports from which the wool is exported are Rostow on the Don, Odessa, Riga, and Libawa. The largest quantity comes to England, but France, Germany, and Austria are also good customers. Russia also imports wool in much smaller quantities, but of considerably greater value. In 1888, for example, the wool exported was only worth 13 millions of roubles, whilst that imported was worth 24 millions. This is owing to the circumstance that Russia exports raw wools of inferior quality, whereas other countries supply it with wools of superior quality, washed, spun, and dyed. In the woollen industry, as in many other things, Russia buys back her own products for three times as much as she has sold them for, for the simple reason that instead of working them up at home they are sent abroad in a raw condition.

INCREASE OF COTTON SPINDLES IN GERMANY.

The *Frankfurter Zeitung* publishes a statistical paper on the growth of the cotton trade in Germany during the last two years. From the middle of 1888 to the middle of 1890, 513,500 new spindles were introduced into German cotton mills; of which 40,000 fell to the share of Leipsic, 36,000 to Forchheim, 30,000 to Augsburg, 30,000 to Bayreuth, 30,000 to Mittweida, and 30,000 to Eilenberg. These figures, however, are at the best nothing more than a mere approximation, as there are no official returns on the subject, and manufacturers have not as yet adopted any regular system of statistics. In this respect Germany is behind Austria, where the Association of Cotton Spinners, which represents all but an insignificant minority, publishes annually a tabular account of the number of spindles.

A COSTLY CARPET.

Public attention has been directed recently to the fact that the importation of Eastern carpets is growing in volume yearly, and the case of *Brunton v. Maple*, which was tried the other day, furnished, in a curious fashion, information with regard to the value of some of the costly fabrics which are brought to this country from the Levant. The facts of the case were shortly as follows:—In the early part of last year the plaintiff was anxious to have the Persian carpet in question cleaned. It had been bought in 1881 by her husband from a Mr. Donaldson for £1,000, and was a unique specimen of its kind. Eventually, in the month of July last, the carpet was removed by Messrs. Maple, and was returned in September greatly damaged by fire, and almost worthless as a work of art. It seemed that the carpet was handed by Maples to a Mr. Anderson, who, in his turn, sent it on to a man named Ireland to clean. Ireland, who lived in two rooms with his wife and four children, took it home and cleaned it there with benzoline, hanging it up in the room afterwards to dry. Fumes were given off from the carpet, and one of Ireland's children having struck a match to light the fire, an explosion took place, and the carpet was damaged by fire, the overmantel, which was worth £30, being entirely destroyed. Two of Ireland's children unfortunately lost their lives in the accident, being burnt to death. A verdict was given for the plaintiff, the damages being

assessed at £1,000. The carpet was probably made in the 15th or 16th century; and as fashionable people consider that fabrics of this description increase in value as they advance in age, Mrs. Brunton, doubtless, felt correspondingly grieved at the result of the negligence of those with whom she entrusted her property.

"LIVELY TIMES IN THE COTTON TRADE."

By the above it is not meant that trade was exceeding brisk, as at first sight might be inferred. In fact, it was quite the reverse, as the incidents narrated in the following paragraph (which we extract from a report in the *Blackburn Times* of an interview with a Preston octogenarian) refers to the year 1826, probably up to that time the most disastrous one the trade had ever experienced since its foundation in this country. The old gentleman referred to is Mr. William Dewhurst, of Falwood, Preston, a native of Bolton-by-Bowland, who went to reside at Accrington in 1821, being then 15 years of age, and who afterwards became one of the most influential inhabitants of the town for several decades. Mr. Dewhurst's recollections are of a chatty and pleasant character, but there is only one of these that will be of general interest to our readers, namely, his personal observations on the loom-breaking riots of that year in East Lancashire, of which there will not now remain many living witnesses. The mob entered the town mainly from the direction of Burnley. The information given on this point is condensed by the reporter into the following paragraph:—

After breaking the looms at Sykes's, the mob proceeded to Woodnook, then to Walmesley's at Oswaldtwistle, and on to Whiteash. Mr. Dewhurst saw the windows of Whiteash smashed and followed the crowd to Blackburn. On the road they met some dragoons of the Queen's Bays with Joseph and Edmund Peel riding in front, on their way to Accrington. At Blackburn Mr. Dewhurst witnessed the havoc wrought at Dandy Factory. He was, indeed, perched on the churchyard wall in Darwin-street, but thought it prudent to retire when the soldiers commenced firing. It was a very dry summer and the rioters made their way to Houghton's factory by the side of the stream. One of the soldiers was ducked in the canal, but this only enraged his colleagues and their firing soon put an end to the riot, though not before blood had been shed. The power-loom riots led to a company of soldiers being stationed at Accrington. They were located in the Old Workhouse behind the Black Bull Inn, at the bottom of Union-street, and remained there over twelve months. Many rows took place between soldiers and civilians who used to assemble in or around the Black Bull Inn. On one occasion, after breaking pots and windows at the inn, the soldiers turned into the barracks for bayonets, and rushing wildly down Union-street, attacked every civilian in their way. Mr. Hepple, the corn miller, had a narrow escape. He was walking along the street when one of the infuriated red-jackets attacked him with the bayonet. Mr. Hepple was able to avoid the blow, and the Sergeant-Major came up in the "nick of time." The disturbance resulted in a general flogging at the barracks. The very spot on which the soldiers were flogged is now covered by the Wesleyan school in Accrington.

"Dandy Factory" was the old cotton mill which stood close by the Parish churchyard wall in Blackburn, and the proper name of which was "Jubilee Mill," it having been built in the jubilee year of George III. It was a conspicuous object to persons entering the town from the station until within a few years ago, when it was pulled down, having become quite obsolete and unsuited to modern requirements. About 1841 or 1842 a large part of it was destroyed by fire, a fireproof portion of seven storeys high being almost all that was saved. The last tenant was a gentleman well known in Blackburn, Mr. James Beads, who, though possessing both knowledge and enterprise, failed to make its working pay. It had many other historic associations con-

nected with the earlier developments of the cotton trade.

THE SILK INDUSTRY IN CUNEO, ITALY.

The *Annali di Statistica*, issued by the Italian Government, give the following figures regarding the silk factories in the province of Cuneo, or Coni, in the north-west of Italy. There are 67 establishments—45 for spinning only, 6 for throwing, and 16 for spinning and throwing combined. The spinning factories employ 3,907 persons. The two most important ones, at Rocca de Baldi and Carru, employ respectively 280 and 266 persons. The throwing factories employ only 419 persons. The remaining factories in which both spinning and throwing are carried on employ 3,684 persons. The largest establishments are the factory of Keller, at Villanovetta, with 4,320 spindles and 477 operatives; the factory of S. Craponne, at Alba, with 7,000 spindles for throwing and 369 operatives; and the factory of the successors of Sinigaglia, at Busca, with 12,000 spindles and 338 operatives. One of the most important centres is Raccogni, which has 10 factories, employing about 1,000 hands.

THE QUIMBOMBO PLANT.

"What is the Quimbombo Plant?" Really we don't know; but if we may accept the authority of a said-to-be well-known American engineer, Mr. Ludlow, it is a plant that he has discovered growing in Mexico, which produces a fibre very much like silk, and much finer than ramie. This plant differs from the ramie in so far as the fibre can be separated by machinery, thus saving the great expenses which are always connected with manual labour. The fibre is long, strong, and of a silky touch, and can be manipulated in the same manner as cotton. Other advantages are that the fruit can be used and furnishes an excellent food. The raising of the plant is very simple, and only little attention needs to be paid to its cultivation. All this says an American newspaper. Thus we find that it is the last new competitor for the favour of textile manufacturers. Next, please!

COTTON MILL SHARES IN JAPAN.

Though we have ever been ready to admit that the Japanese are remarkably clever, and apt pupils in imitating Western civilisation, yet—like the people of Oldham—they cannot find a good thing without "over-doing it." This week's arrival of the *Times of India* contains in its commercial summary the statement that: "In Japan trade is so bad that many of the mills are obliged to stop, and a recent telegram states that mill shares of \$100 are being offered for five." We wonder whether the Japs have mastered the art of speculation, and whether "bulls" and "bears" have been imported into the island. It almost looks as if this was the case. We should say that it would have been better for them to have had a prohibitory duty laid upon these animals before their introduction was effected. They must, however, console themselves with the reflection that they cannot have the blessings of civilisation without the disadvantages, of which speculators, in most people's estimation, are regarded as one. Possibly the state of the mill share market may lead to a discovery of its advantages, and to some enterprising Jap finding out an easier way of making money than was ever known under the old civilisation of the island. But even this discovery might prove to be not without disadvantage should the people adopt speculation as a profession and cease to pursue their industrial crafts. No man knoweth what the end will be, but time will unfold it in due course.

DOMESTIC TRAINING OF THE MILL GIRLS OF SAXONY.

The yearly report of the Factory Inspectors of the Kingdom of Saxony, which has just been issued, gives the following figures relating to the textile industry in that country. The number of factories and workshops amounts to 2,363, of which only 1,444 are supplied with steam power. These establishments employ 135,348 persons, of whom 63,063 are males and 72,285 females. Of these about 18,000 are under 16 years of age. The activity of business in 1889 caused a considerable increase in the number of females employed at night. It appears, however, that no complaints have been made about injury to health. One benevolent factory owner, who thought it improper for his female employes who resided at a distance to have to go home late at night, offered them lodgings at the works, but met with no response, as the young persons whom he sought to benefit did not like to be compelled to be in the house at ten. Another attempt to promote the social happiness of the work-people merits special notice. As factory girls are apt to be undomesticated, and therefore to make incompetent wives, Herr Dietel, of Cossmannsdorf, has opened a school for sewing, knitting, and other home duties. There is one serious drawback, however, to the success of this praiseworthy movement—the lessons are given from 8 p.m. to 10 p.m. The brisk state of business has, of course, led to the erection of new works. In the district of Plauen alone, £50,000 has been expended on combed-yarn weaving-sheds and dye-works.

Articles.

WEAVERS AND OVER-TIME WORKING.

The meddlesome character of two trades-union officials connected with the cotton trade, who have the most limited knowledge of the manufacturers' positions, and of the interests of the weavers, has again been manifested during the past week. The men to whom we refer are Messrs. David Holmes, of Burnley, and Joshua Barrows, of Padiham. It appears that in the rising town of Rishton, where there are a number of weaving sheds owned by some of the shrewdest and most enterprising manufacturers in the trade, conditions have arisen which rendered it very desirable that the manufacturers should push on the delivery of some current orders in order to avoid the risk of having them cancelled for non-delivery in the time contracted for. It is known by everybody in connection with the trade—excepting perhaps the said delegates and a few weavers, who know much more about the points of a football game than they do about the commercial side of the industry by which they earn their bread—that during the execution of an order for cloth, the conditions may vary so much that it would be a great advantage to a merchant to get out of the contract, if possible. When this is the case, very often little hesitation is shown about making the endeavour, though the merchant's success may involve the manufacturer in a loss ranging anywhere from £50 to £500. These sort of incidents have come within the knowledge, and too often within the experience, of every manufacturer who has been connected with the trade for any length of time. The manufacturer's agent generally gets to know when these dangers "for late delivery of orders," as it is called, are impending, and informs his client. The latter then puts forth every effort he can to get the work done in time. Almost the only one he

can make is to call upon those of his employes, weavers over whose work the law takes no cognizance, to work over-time. These are very rarely more than one quarter, or, at most, one-third of his staff of weavers, while all the rest have to turn out at the legal time. It will be apparent to any thinking man, that a manufacturer would not run the whole of his gearing throughout his establishment for the purpose of the little profit that can be made from the labours of 25 to 50 or 60 weavers, working say from half-past five to half-past seven. In all such cases it would be easy to demonstrate that a positive loss and not a profit is the result. This shows that, when it is done, it is on the principle of taking the least of two losses. This we have no doubt whatever is the explanation of the over-time working which appears to have taken place at Rishton just recently, and which seems to have aroused the indignation of the officials of the local weavers' union, who convened a meeting, which was held on Tuesday evening last, to protest against the working of over-time in the mills there. A Mr. Christopher Heap presided, and there was a large attendance. It was explained that the men employed at Messrs. Eccles Bros'. Wheatfield Mill had been working overtime, and that more recently those employed at Mr. Whittaker's Britannia Mill had been called upon to do the same. Several meetings have been held to discuss the matter, and on Tuesday night the weavers at Messrs. Eccles' mill left at half-past five and refused to work overtime.

We find no statement in the report from which we gather this information that Messrs. Eccles' weavers ever waited upon those gentlemen to ask an explanation of the necessity for departing from the usual practice of all weavers ceasing work at 5-30, nor of how long it might be expected to continue. Any body of sensible weavers would have done so, and then have judged whether it would not have been in accordance with both their interest and duty to have gone willingly to the assistance of their employer in order to help him to get out of a position into which he had got through no fault of his own, but simply by the changed circumstances of the market, of which "smart" merchants are never slow to take advantage. Perhaps, however, we are expecting too much from the silly and inexperienced youths who form the majority of weavers in a shed when the girls and women weavers have left. But supposing this to be the case, surely the principal officials of the local Weavers' Association will be men of mature years, with a little more experience of life and its responsibilities, and capable of appreciating the exigencies of the circumstances that have, in the view of their employers, rendered their working over-time desirable, and that they might have made such an inquiry as that indicated above. But no; they forthwith call a meeting to support the foolish weavers in their action. Another act of indiscretion and imprudence is seen in their summoning Messrs. Holmes and Barrows, of the Northern Counties Weavers' Association to their aid. These stormy petrels were only too ready to respond in the affirmative to the invitation. They attended and addressed the meeting, urging upon the weavers the importance of resisting any attempt on the part of the masters to make them work over-time. "If the Rishton weavers gave way the evil might spread to Great Harwood, Blackburn, and, indeed, over the whole county. Over-production put the men in a disadvantageous position, and they ought not to encourage it. They held that 56½ hours' work was quite sufficient for a week."

A number of weavers, probably mostly composed of feather-headed young fellows as indicated above, might go wrong through want of the capability of thinking; and even owing to the imperfect development of the same faculty in their elders, the officials of the local association, a similar result might ensue, but for two men who have so long been occupying responsible and leading positions as the two persons referred to above, to give expression to the views we have quoted, demonstrates beyond all cavil whatever that they are totally unfitted to continue in charge of the considerable interests of the operatives, which have been inconsiderately reposed in them. Are there not a few sensible men to be found in the large body of weavers who can act more rationally, and take a more intelligent view of the welfare of the great industry in which they are engaged? If so, it is their duty to step at once to the front, and put forth every effort to make a change by the election of wiser representatives. To shew how foolishly rash and impolitic is Mr. Barrows especially, we need only add his declaration that he was determined to make an effort to get back the 10 per cent. in wages which was taken from weavers in 1878—a statement that was greeted with applause. We are pleased to think that Mr. Barrows' determination on this point does not count for much, but that other representatives of the operatives' interests, more capable of reflecting upon the serious importance of such a movement than he is, will have a voice in its initiation if ever it should take place. We wonder whether the weavers conceive that if their employers lose, say, £250 on a cancelled contract which might have been avoided by their weaving overtime for a few evenings, it will add to the ability of the latter to pay them good wages or render them more disposed to concede the demand Mr. Barrows has kindly intimated he will do his little best to get made upon them? Of course it would be inconsistent to look for wisdom in the conclusion of proceedings that have been marked by folly from the beginning, and we are therefore not surprised to find that, on the motion of Mr. N. Bentley (president of the Great Harwood Weavers' Association), a resolution was passed protesting against the system of over-time now in operation in Rishton, and pledging all present to use all the means in their power to put an end to it.

GOLD AND SILVER TEXTILE THREADS AND THEIR MANUFACTURE.

(Continued from page 57.)

In modern, as well as ancient times, India has been the great field of manufacture and also of consumption of textile fabrics made more or less from the precious metals. Since, however the country has come almost entirely under the dominion of England, both the consumptive demand and the manufacture have greatly fallen off, owing to the disappearance of the Courts of the native princes. These set the fashion of wearing such costly garments as those of which we have spoken, which penetrated through the ranks of the ruling and wealthy classes. Quieter styles now prevail, though the taste for adornment of this kind is apparently so deeply ingrained in the people that it will never be eradicated, or at least not for a very long time, to come. It thus comes about that in our manufacture of fabrics for Eastern markets, and particularly for those of India, we have to pay

some regard to their requirements in this respect. The result is that British manufacturers have to put "headings" of coloured yarn and gold plate or thread into their shirtings, jaconets, mulls, dhooties, and other fabrics intended for Eastern consumption. In view of the fact that Lancashire makes an enormous quantity of these goods in which more or less of gold thread and plate is used, it might almost go without saying that one result would be the rise of the manufacture of these articles in our midst. Such has been the fact, and though the industry is not a large one, as in the nature of the case it could not be, still it is an interesting one.

Assuming that our readers will regard it in this light, we propose to describe as clearly as we can the process of the manufacture both of gold plate and thread, as we had the pleasure of seeing it in the factory of Messrs. E. and W. G. Makinson, of the Wellington Works, Wellfield-road, Preston. This firm are gold and silver wire drawers, and manufacturers of gold and silver plate and thread of every description used for "heading" purposes, tambouring threads, braids, etc.

Of course there is gold and silver plate and gold and silver thread. We intend to express by this familiar formula the fact that there are various qualities of these articles, and that a manufacturer will not, knowingly and willingly, give away an amount of gold and silver for which the customer will not pay. Therefore any hard bargaining will simply end in a reduction of the quality. On the other hand, a quality for which a good price is paid will be of corresponding excellence, if made by a conscientious manufacturer. If our readers will carefully follow our description they will see that nothing can be gained by beating down the prices of the manufacturer, as he always holds the power of compensating himself without much risk of discovery taking place. As a rule there is not the slightest need for the buyer to do this, as a manufacturer usually produces several qualities, varying in price to meet the requirements of different chasers, and in each case fair value is always given.

It is often stated that the Hindoo workman of the ancient royal cities, where the manufacture of gold and silver thread was generally carried on, can and did make better articles than do his European competitors. There is a basis of truth in this, but it will not be found where the superficial observer might be inclined to look for it—namely, in any difference of skill in the one over the other. It really lies in the quality of the materials employed for the purpose. The Hindoo rarely, if ever, draws his wire from any other metal than pure silver, coated with pure gold, whilst his rival in Europe is compelled to use various alloys of silver, owing to the exigencies of competition.

The manufacture of gold and silver thread begins with the process of melting together the proper proportions of silver and copper which are to constitute the base of the articles. These consist of pure commercial silver and electro-refined copper, which are usually purchased from dealers in those metals. They come in blocks weighing from 80lb. to 100lb., as in these weights we suppose they are not liable to be easily pilfered while in the possession of the merchant. These are cut down to small pieces of $\frac{1}{2}$ lb. to 1lb. for the convenience of the smelter. Given quantities are next weighed out to him, along with the proper proportion of pure copper to give the alloy required. It is at this point where first the quality of the product is decided, this being

according to the price to be received for it. When a manufacturer requires a very high quality, or the material is wanted for the fulfilment of a Government contract, the Goldsmiths' Hall standard alloy will be made, which contains to each pound Troy of silver 9dwt. of copper. There are various grades of better quality than this until pure silver is reached. On the opposite side almost any quality can be had until the alloy gets down to equal portions of silver and copper. After this the downward movement is still continued, the quality being stated by naming the percentage of silver that it contains. The degradation goes so far that sometimes it has been found on assaying the thread that not more than 1dwt. of silver has been found in 1lb. of the alloy. We state these facts for the benefit of our readers in order that they may understand that the articles of which we are writing can be purchased at almost any price, and yet be no bargain. We must, however, distinctly state that they must not assume that the low qualities of plate and thread here referred to are manufactured by Messrs. Makinson for ordinary heading purposes.

In the next process the molten metal is run into cylindrical moulds to form bars about $\frac{3}{8}$ inches in diameter. The rough tops of these are cut off, and each bar is next heated to a red heat and hammered well under a steam hammer, in order to thoroughly consolidate the metal and increase its ductility. This being finished, they are pointed and drawn through heavy draw-plates to reduce their diameter. They are next annealed and polished, and are then ready to receive their coatings of pure gold. These consist of layers of pure gold leaf, which are carefully weighed to obtain the proper proportion, and laid on with great evenness, so as to secure a uniform covering on the bar. Owing to the wonderful capability of gold in the way of attenuation, the film thus laid on the bar of metal will still cover it all when it has been drawn out into the finest wire and flattened into "gold plate" as we usually know it when manufactured for heading purposes. Of course, it will be obvious that if manufacturers allow their judgment to be influenced by the cheap plate and thread placed in the market by French and German competitors, especially by the latter, which is offered at say 1s. 5d. to 1s. 6d. per oz., they will be purchasing something that contains little or no silver as a base, and exceedingly little gold as a cover. We have not space in the present article to go into the details of the manufacture of these cheap plates and threads, but must content ourselves stating that *two grains of gold* are often made to cover *3,000 square inches of surface*. In these cases the base is copper thinly covered with an electro deposit of silver; the wire produced therefrom is flattened and twisted round a yellow cotton thread, which is next submitted to a process in which it receives almost the thinnest possible coat of electro-deposited gold, as just stated. It will thus be obvious that if manufacturers, in their keen desire to economise and save a few pence, purchase such articles as these to put into goods that are to be bleached and finished they lay the foundation of ruinous claims for damages.

Most English manufacturers pursue the old plan of fire gilding, in which the bar of silver or alloy, covered as described above, is laid on a charcoal fire and heated to a red heat. It is next raised and burnished while hot with agate burnishers which incorporates the covering with the base beneath. The same process is followed in the production of silver plate and silver threads, there being usually a fine copper base in this

case. After the coating process has been completed the plated bar is waxed and drawn through a coarse-gauge steel draw plate, the holes of which are conical. After passing a number of these the wire is so reduced that it will wind upon a drum into coils. These coils are annealed and successively pass through finer draw plates until reduced to a wire of about $\frac{1}{16}$ inch in diameter. The drawing up to this stage is termed "disgrossing." It is now passed to the next stage, that of fine drawing, in which the reduction is continued until a length of 1,000 to 1,400 yards is obtained from one ounce of metal. In the finer sizes the length extends to over 2,000 yards. In the later stages the steel draw plates cease to be used, the wire being drawn through perforated jewels—rubies, sapphires and diamonds being used for this purpose—held in brass discs. At every stage the material has to be most carefully handled or the work would be spoiled. In the various annealing processes is this care especially necessary, as if over-heated the gold would "sink," or amalgamate more perfectly, and by leaving the surface the golden line would be lost. The wire has also to be lubricated by bees' wax, otherwise the gold would, to some extent, be taken off and would adhere to the orifices through which the wire passes.

After the last drawing the wire is again annealed preparatory to being flattened by a passage between highly-polished steel rollers, which it leaves in the form of a metallic ribbon and is then termed gold plate. From these rollers it is wound upon a small bobbin, and measured in the process. These are the bobbins so familiar in our weaving sheds.

When, however, it is destined to be transformed into gold thread, the plate received from the flattening machine passes to the covering or "spinning" process, as it is called. In this the bobbin of plate is placed loosely upon a hollow tube, through which a thread of dyed silk slowly passes. The thread of plate is carried upon an arm of steel wire, which, in its revolution, covers the silk thread with plate with the greatest nicety. The draught upon the silk, and the revolution of the arm carrying the plate, are so nicely adjusted to each other that the silk thread is beautifully covered without overlap. Of course these can be altered to suit requirement.

We have not left ourselves space to comment at any length upon the risks attendant upon the purchase of the inferior qualities of plate imported into this country from Germany, which, we regret to say, often finds its way in an illicit manner into our weaving sheds, to be discovered only when the manufacturer is called upon to make allowances for its not having withstood the processes of bleaching or finishing. The manufacturer who buys the cheapest plate he can find voluntarily runs this risk, and therefore puts himself outside the pale of sympathy. But the case is different where he buys the best and still suffers. This occurs from the fact that where good plate is used, and it is desired to compel care in its use and to prevent the weavers from wasting it, there is a custom of compelling them to buy it at so much per bobbin, say 4d. Each bobbin will head about, say, eight pieces, and accordingly 4d. per piece is added to the proper wages for weaving it. In the event, however, of the weaver purchasing an inferior article outside for half this money, he will be able by its use to pocket the difference, which may be from 9d. to 1s. per week, whilst the fraud will pass undetected until the manufacturer is confronted with a quantity of spoiled work, as pointed out above. There are

only two ways of avoiding this—namely, taking care to buy a good quality of plate or thread in the first instance; and in preventing the introduction of the mischievous fraud we have described, which there is reason to believe has at times been more or less widely prevalent in the weaving districts. The firm of Messrs. E. and W. G. Makinson, in which we have learnt most of the particulars here given regarding this manufacture, is one of the oldest engaged in it, and we have every confidence in stating that thorough reliance may be placed upon its productions for being of the quality represented, whilst, if they be consulted as to the quality of plate or thread it may be desirable to use to stand certain severe processes and to come out untarnished, their advice may be implicitly relied upon.

Technical Education.

THE RESULTS OF THE CITY AND GUILDS EXAMINATIONS.

(Continued from page 65.)

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

CRAGG VALE.

Results in Cotton Spinning:—First Class Honours: Walter S. Smith (last year's medalist and money prize-man); Second Class Honours: Charles Hellewell, Sam Greenwood, and Cyril Mellor. First Class Ordinary: G. Wilde; Second Class Ordinary: W. T. Pickup, O. Woolridge, M. Dennison, and J. A. Clegg. Teacher, Mr. John Beswick, Junr.

DUKINFIELD.

The following is the pass list of the Cotton Spinning Class held at the Astley Institute and taught by Mr. John Woolley:—Ordinary Grade: Allen Harrop, Harry Smith, Joseph Walker, Fred Makin, and Harry Fletcher (1st Class). William Chapman, Charles E. Warhurst, John William Heap, Thomas Jones, and Fred Swindells (2nd class).

DUNDEE.

In this centre, 68 students of jute manufacture, taught by Mr. T. Ferguson, have gained certificates. The following are the winners of the prizes and medals, the prizes being given by the London Clothworkers' Company, and the medals by the City and Guilds of London Institute:—*Jute Spinning*: Honours grade, Andrew Fleming, first prize of £3 and silver medal. Ordinary grade, Robert R. Davidson, first prize of £2 and silver medal; John Egbie, second prize of £2 and bronze medal; William Robertson, third prize of £1 and bronze medal. *Jute Weaving*: Honours grade, Andrew Fleming, first prize of £3 and silver medal; Charles Derutter, second prize of £3 and silver medal. Ordinary grade, Thomas Lowdon, first prize of £2 and silver medal; William Waddell, second prize of £2 and bronze medal; Alexander Rattray, third prize of £1 and bronze medal.

GUISELEY.

The following are the names of five students who have passed second class in the ordinary grade in *Woolen and Worsted Spinning*: Ernest Winterburn, Egbert Slater, George H. Brook, Fred Hobson, and John Rhodes.

MANCHESTER.

The textile classes of the Manchester Technical School show the following results:—*Cotton Weaving*: William Myers, first-class honours, first prize of £3 of the Clothworkers' Company and the Institute's Silver Medal; John W. Tegg, first-class ordinary grade, first prize of £2 of the Clothworkers' Company and the Institute's Silver Medal; Samuel Watson first-class ordinary grade, second prize of £2 of the Clothworkers' Company, and the Institute's bronze medal; Samuel Holt, first-class ordinary grade, third prize of £1 of the Clothworkers' Company, and the Institute's bronze medal. — *Bleaching and Printing*: James Robinson, first-class honours grade, first and a silver medal; John Miller, first-class ordinary grade, second and a bronze medal; Frederick Davenport, first-class ordinary grade, third and a bronze medal. — *Coal Tar Products*: Ernest Bente,

first-class honours grade, second prize and a silver medal.—*Cotton Dyeing*: C. H. Batty, first-class ordinary grade, second and a bronze medal. The following is a summary of the total number of certificates obtained in all classes: Honours, first-class, 85; honours, second-class, 37; ordinary first-class, 69; second-class, 151.

ROWERBY BRIDGE.

Mr. John Beswick, jun., certified teacher of the Sowerby Bridge, Ripponden, and Cragg Vale Cotton Spinning Classes, has gained the Institute's Silver Medal and £2 money prize, and first-class certificate in Honours. He has before gained £3 and Bronze Medal in Cotton Manufacturing, and four first-class Honours Certificates and Teachers' Certificate. In this class 98 per cent. have passed. The following are the names:—First Class Honours: John Beswick, jun., Thos. Hoey, J. W. Carter, and Edwin Hardman, the latter has also been granted a Teachers' Certificate. Second Class Honours: T. Beswick, J. Beswick, sen., Herbert Wolfenden, and John Hanson. First Class Ordinary: Wm. Hartley, Arthur Haigh, Joe Beswick, A. R. Dearden, F. S. Ryder, H. Barratt, and John Gaukroger, Second Class Certificates: Joe Dyson, Bea Foster, F. Holroyd, W. H. Hellewell, Jno. Bates, and C. H. Mitchell.

Mr. Beswick, the teacher of these classes, has been with Messrs. C. E. and F. Ramsden, cotton spinners, Sowerby Bridge, for the last 14 years, in various capacities, and in his last year's four Cotton Classes he passed 90 per cent. all round, including one medalist. He is now barred from further competition for prizes.

STALYBRIDGE.

The following is the pass list of the Cotton Spinning Class held at the Mechanics' Institution, and conducted by Mr. John Woolley:—Honours Grade: W. H. Cook (1st Class). E. H. Buckley and W. Hopwood (2nd Class). Ordinary Grade: J. H. Britner, J. T. Draycott, and James Griffiths (1st Class). J. W. Morris, J. L. Gudger, James Bradbury, W. A. Stuart, Charles J. Corrigan, and Samuel Gudger (2nd Class).

To be continued.

Designing.

NEW DESIGNS.

In our contemporary, the *Boston Journal of Commerce* has appeared the following query:—"Will some of your Chatterers inform me why, in weaving some classes of plain goods, the bottom warp, when the shed is open, is depressed more below the centre than the top warp is raised above?"

Since this is a question which interests all overlookers, no matter what the class of work they are engaged on, we think a brief intimation of the principles underlying the subject would prove interesting.

The first thing to be considered is the effect produced by the arrangement mentioned. Now on reference to *Diagram A* it will at once be seen that the effect of depressing the bottom



DIAGRAM A.



DIAGRAM B.

half of the shed more below the centre than the top is raised above is simply to throw all or most of the strain upon the bottom half of the warp, leaving the top portion slack, it being very evident that the line *A C B* is shorter than *A D B*. In the particular case under consideration, viz., the application to plain cloths of this principle, the reason for adoption lies in the fact that from certain of the threads being slack the reed-marks, which otherwise would appear very distinctly, are rendered undistinguishable, thus materially adding to the value of the piece.

Then, again, if this principle of shedding be adopted, the pick just entering the shed will be beaten up over the preceding pick carrying the

threads with it as shewn in *Diagram B*, and thus it is at once seen that more weft can be introduced. True, the conditions in plain cloths are exactly reversed in the succeeding pick; still the advantage gained is probably not wholly lost, while in ordinary woollen cloth manufacture the raising of the back rest, which is equivalent to throwing the top section of the shed slack, is commonly resorted to simply as a means for getting in more weft.

This system of shedding cannot be resorted to in the case of tender warps, so the overlooker must always use his discretion in this matter, or trouble may ensue.

Another method of getting in more weft is what is known as "crossing the shed" before the pick is beaten up. In all looms, whether for woollen, worsted, cotton, or silk, means are provided for effecting this, and in most cases both systems mentioned are utilised.

GAUZE FABRICS.

Though the number of designers who have practically dealt with gauze or leno fabrics is very limited, yet the knowledge once acquired may be so useful that all should endeavour to obtain a grasp of the subject, when with a little practice all difficulties will disappear. With this idea before us, we propose furnishing from time to time examples in this class of design with suggestions for application, etc., which we hope will prove of service to manufacturers, and which at the same time will, we hope, clear the way for the uninitiated.

In *Figures 24* and *25* are shewn two examples which we will endeavour to analyse and then apply. The doubling plans are attached, and *Designs 170* and *171* along with their pegging plans shew the principle of indication on point paper.

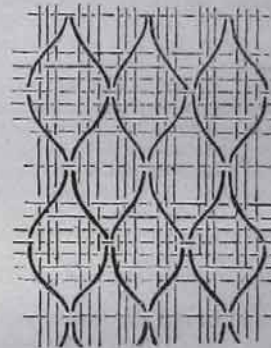


FIG. 24.



DRAFT FOR FIG. 24.



FIG. 25.



DRAFT FOR FIG. 25.

The first thing to be noticed is the fact that the thick solid black threads are the ones evidently acted on by the doup, since they cross in each case three of the thin threads actuated by ordinary shafts. On reference to the doubling plan the method of accomplishing this is clearly demonstrated. The three thin threads are drawn on two ordinary shafts, 1 and 2, while

the thick thread passes first through the doup, then crosses the thin threads and passes through the ordinary shaft used in conjunction with the doup for the formation of gauze. In both the drafts supplied, it will be noticed that the ordinary shaft, working in conjunction with the doup, is placed at the back, while the doup occupies the foremost position. This system of working is by many not considered the best, since when the ordinary shaft is raised there is a danger of the slip of the doup becoming entangled in the warp and causing breakages. As a rule therefore better work will result with the doup and doup shaft being placed together in the front. It may now be not uninteresting to compare the point paper plans with the actual patterns as sketched in Figures 24 and 25; before doing so, however, note should be made of the arrangement of the picks. First then notice Figure 25, where we have given the effect of plain combined with a single gauze crossing, which is the cause of isolation of the single pick, since here the doup thread is crossed into its false position, to return to its original position the next pick and weave plain for seven picks, an uneven number of plain picks always being introduced between the crossings when a clearly defined effect is sought after. On turning to Figure 24 we have represented the same division of picks, seven and one, but here there is nothing to produce this grouping; so that the design as sketched here is hardly true, except when a narrow stripe of this figure is combined with Figure 25, in which case the effect is exactly as sketched, while if a broad stripe of Figure 24 be used the grouping of the picks is entirely lost. The three threads, however, are always grouped together by the thick thread passing from side to side. It may now be asked: how is it that the thick thread is bent out of its course and not the three thin ones, since in many gauzes equal divergence occurs? The answer to this is that the thin threads interweave with the weft in such a manner that their stability is much greater than that of the thick thread, and as a natural consequence the thick thread bends as required and thus produces the effect sketched.

Then again it should be remarked that if in weaving the shed is formed from the bottom, if Figure 24 be woven right side up much more lifting will be required than if the cloth be woven wrong side up; so in describing the lifts etc., we will treat the subject just the reverse of what is denoted by our sketch.

On consulting the first sketch (Figure 24) it will be at once seen that the only threads raised for the first pick to pass in are the doup or crossing threads; therefore, the doup must be raised. If the manner in which the pegging plan for Design 170 acts upon the doup, shafts, etc., is realised, as indicated by the arrows, there will be no difficulty in seeing that as marks indicate rises, the doup will thus be raised and produce the desired effect. For the second pick, the crossing thread and two out of the three

thin threads are down while the third of the thin threads must be raised, so in order to accomplish this, shaft 1 must be raised as indicated in the pegging plan. For the third pick, shaft 2 will be raised; for the fourth pick, shaft 1; and for the fifth pick the doup shaft as indicated, thin raising the crossing thread on the opposite side of the three thin threads. The manner in which the effect represented in Figure 25 is worked out will be understood on reference to Design 171, and also the draft and pegging plan. Here the stationary and crossing thread work plain for seven picks, but for the eighth the doup thread crosses to the opposite side of the thread with which it has been forming plain and back again for the ninth pick to form plain again; thus the effect represented in Figure 25 is obtained.

DRESS FABRICS, ETC.

The two patterns of gauze just described may be combined in stripes varying in width as required, in either cotton, or cotton and silk, or silk and worsted. A good effect will be obtained by using for the fine threads fine silk (say 2/60's or 2/80's), while the thick crossing threads may be worsted (say 2/30's or 2/40's). Again, excellent patterns may be produced by using cotton warp and silk or lustre weft, combining with the gauze an ordinary stripe plain or satin ground with a weft figure developed. Designs of this type will claim our attention in future numbers, and we shall also direct attention to the many methods adopted for producing gauze effects with ordinary healds.

FANCY STRIPE.

We give another example of a scroll figure suitable for a fancy dress stripe. For details of colouring, etc., see *The Textile Mercury*, July 19th. The repeat of this figure may occur after two or more plain shoots are passed between, or the junction of the bottom with the top can take place without any interval of plain cloth or sateen. The design is purely suggestive, but if entertained would be found highly ornamental as a stripe.

NEW GALATEA STRIPE.

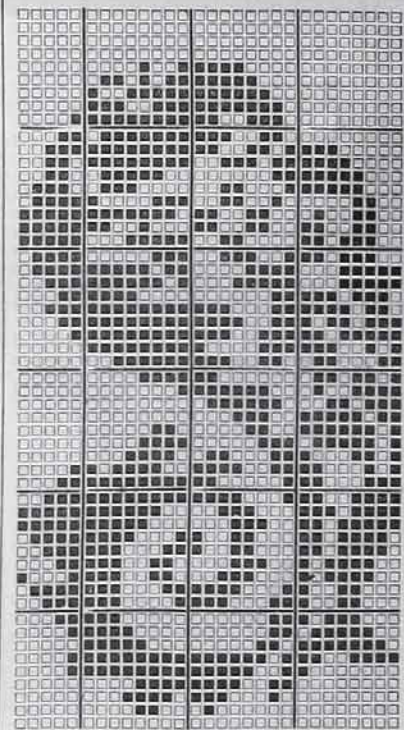
Fast colours; 80 ends on the inch, 24's warp, 20's weft, 56 picks per inch; weft all very dark blue, nearly black; warping and draft: 60 dark blue, on 1, 2, 3 shafts; 3 white, three in a heald, on fourth shaft; 6 dark blue, on 1, 2, 3 shafts; three of very bright green on fifth shaft; three in a heald, 6 dark blue, on 1, 2, 3 shafts; three white, three in a heald, on fourth shaft; three dark blue on 1, 2, 3 shafts; three white, three in a heald, on fourth shaft; three white, three in a heald, on fifth shaft; 6 dark blue on 1, 2, 3 shafts; three white, three in a heald, on fourth shaft; three dark blue on 1, 2, 3 shafts; 3

yellow, three in a heald, on fourth shaft; 3 of bright green, three in a heald, on fifth shaft; 6 dark blue on 1, 2, 3 shafts; three white, three in a heald, on fourth shaft; total ends in pattern, 78. See pegging plan; the fourth and fifth shafts are next the reed; all the warp, three in a dent.

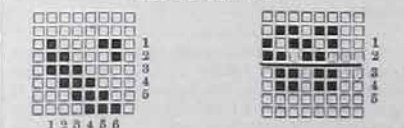
TARTAN CHECK.

First Pattern.—A tartan check in a 72 reed, two in a dent, 30's twist for warp, and 24's for weft, 60 picks per inch. The weft, whatever may be the counts or picks, must, however, be arranged so as to square the warp pattern, 6 shafts. Pattern and draft: 144 silver grey, straight over on shafts marked 1, 2, 3, 4, 5, 6; then 12 dark brown on 1, 2, 3, 5, 1, 3, 1, 2, 3, 5, 1, 3, shafts; 6 slate on 4, 5, 6, 1, 2, 3, shafts; 6 of tan on 4, 5, 6, 1, 2, 3 shafts; 6 very light slate or white on 4, 5, 6, 2, 4, 6 shafts; total 174 ends. The checking same as the warp pattern and the round to follow the draft. To prevent any misconception we give full details (see pegging plan). The horizontal spaces are the shafts marked 1, 2, 3, 4, 5, 6; the vertical spaces are the treads marked at the bottom 1, 2, 3, 4, 5, 6, known as the round; the silver-grey weft must square the silver-grey in the warp by repeating the 1, 2, 3, 4, 5, 6 treads; the dark brown weft on 1, 2, 3, 5, 1, 3, 1, 2, 3, 5, 1, 3 treads; 6 slate, 6 tan, 6 white wefts all on 4, 5, 6, 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6, 2, 4, 6 treads. It would be as well to have warp and weft of one count, say 24's, and 72 ends per inch with 72 picks.

Second Pattern.—144 coral, 12 royal blue, 6 primrose, 6 dark brown, 6 peacock green; weft checking same as warp pattern, but crimson in place of peacock green. We have been very particular in giving full details for the make of this tartan cloth, as it is very likely to be in great demand at the back end of the season. More combinations of colour draft and weave will be given in a future issue.

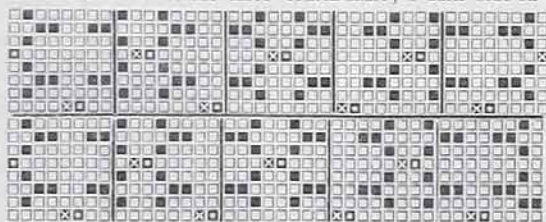


FANCY STRIPE.

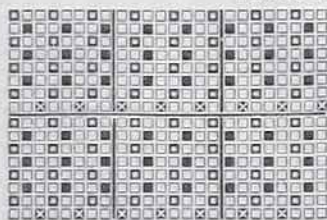


TARTAN CHECK.

GALATEA PEGGING PLAN.



DESIGN 170.



DESIGN 171.

PEGGING PLAN FOR DESIGN 171. PEGGING PLAN FOR DESIGN 170.

INDIC E DOUP.

Bleaching, Dyeing, Printing, etc.

FIXING TANNIN.

The use of tartar emetic for fixing tannic acid in mordanting cotton which is to be dyed with the basic aniline colouring matters is so universal, that dyers often forget that there are other metallic salts, such as the acetates of tin, zinc, alumina, and iron, the chlorides of tin, and oxalate of antimony, which are equally serviceable. There is a little difference in the tint of the tanned cotton after it has been fixed in these various salts; with tartar emetic, oxalate of antimony, and other antimony preparations, the fibre has a light chamois colour, with zinc salts a brownish yellow, with acetate of alumina a faint grey, with tin white or very faintly yellow, and with iron various shades of blue grey.

Tannin itself does not properly fix these colours on the fibre, and when it is used alone there is a loss of colouring matter, as some of the tannin is dissolved off the fibre when in the dye-bath, and this throws down some of the colouring matter as a precipitate. Further, the colour fixed on the fibre is neither so bright nor so fast to washing and soaping as when the tannin is properly fixed on the fibre by a fixing agent before dyeing.

As a rule, the cotton, after passing through the tannin bath, is simply wrung and then entered into the fixing bath; which is not the best although it is the quickest system to pursue. The cotton should be dried before, and then the tannin is fixed on the fibre before any of it has had time to become washed off, whereas when it is passed direct into the fixing bath some of the tannin comes off the fibre, and entering into the fixing bath forms, with the fixing agent, an insoluble precipitate, and thus a dirty, cloudy bath results, which is not desirable, especially as some of this precipitate may get on to the fibre in a very loose form, and lead to giving coloured fabrics that rub badly.

When the tanned cotton is dried first, a cleaner fixing bath is obtained, which can be used longer and its contents more completely absorbed. It must be borne in mind that the various mordanting and dyeing baths are not completely exhausted of their valuable contents; if these baths be kept as simple in composition as possible and every care be taken to prevent undue soiling, they can be retained in use by keeping their strength up by additions of small quantities of concentrated liquor as may be required. In this way dyeing can be done in a much more economical manner than is always possible with the methods at present in vogue.

Of the mordants named above, acetate of zinc gives the cleanest baths, then follow oxalate of antimony, tartar emetic, tin chloride, alumina, and iron. Iron mordants, owing to their giving dark shades, are not useful in dyeing with the basic aniline colours, as they have too great an influence on the shade of the dyed fabrics, blues being made darker, reds turned into maroons, and so on. In some cases this property may be rendered very useful, as in dyeing a maroon with magenta, a chocolate with Bismarck brown, a mode with auramine, etc. Dyers do not avail themselves of this as much as they might. For violet, saffranine, and methylene blue, tin chloride forms the best fixing agent, and gives the brightest shades. Next follow tartar emetic and oxalate of antimony. Zinc acetate produces yellower shades with these colouring matters than the other fixing agents, and it has a similar yellow effect on malachite green; for this colouring matter antimony oxalate or tartar emetic forms the best fixing agent. For auramine acetate zinc will be found to give good results.

A NEW YELLOW colouring matter, made from toluylendiamine, oxalic acid, glycerine, and chloride of zinc, has been patented in France. It dyes wool and silk in acid baths a fine yellow with a green fluorescence, while cotton mordanted with tannin is dyed an intense yellow.

OIL MORDANTS.

Various oily and fatty mordants have been used in dyeing for a long period, more especially in connection with the production of colour from madder and other natural dyewares. The Hindu dyers are very successful in obtaining good reds from madder, part of their process consisting in steeping the cotton in milk, and there is no doubt that the fatty and casein matters in the milk are the active ingredients. In Europe, Turkey-red and madder dyers were well acquainted with the fact that by using oil the colours were rendered more brilliant, and the oil they used was the commonest then obtainable—namely, olive oil. This oil is the product of a characteristic European tree, the olive tree (*Olea Europea*), which grows very luxuriantly on the shores of the Mediterranean. The oil varies much in quality, being dependent partly upon the climate of the place where it is grown and partly upon the care taken in extracting it from the fruit. The best is used for edible purposes, and comes into this country from Spain and Italy. The inferior qualities of olive oil are used for soap making, lubricating machinery, wool batching, and other purposes. These qualities are all imported from the Mediterranean States, Spain, Italy, Candia, Zante, Tunis, Mogador, etc. Perhaps the best-known variety of olive oil is that of Gallipoli, a town in Italy. (There is also a town of the same name in Turkey.) The oil obtained from these places is generally of poor quality, and contains much free acid; the writer has found as much as 25 per cent. in some samples.

By exposure to air, olive oil becomes rancid, owing to the development of free fatty acid. This rancid oil is generally considered to be superior to the good fresh oil for dyeing purposes; in France it is known as *huile tournante*. Olive oil consists essentially of two bodies: olein (not to be confounded with oleine, described below) or glyceryl oleate, $C_{57}H_{103}(C_{18}H_{33}O_2)_3$, a compound derived from glycerine, $C_3H_5(OH)_3$; and the fatty acid, oleic acid, $H C_{18}H_{33}O_2$; and stearin, glyceryl stearate $C_{57}H_{103}(C_{18}H_{35}O_2)_3$, a compound of glycerine and stearic acid $H C_{18}H_{35}O_2$. There are also present small quantities of palmitin, glyceryl palmitate $C_{55}H_{101}(C_{16}H_{33}O_2)_3$. Olein is a liquid oil present in nearly all oils; stearin and palmitin are solid fats, and it is the separation of these in a solid form that causes olive oil to congeal in cold weather. On being boiled with a solution of caustic soda, olive oil undergoes saponification, the glyceryl is separated out in the form of glycerine, while the oleic and other fatty acids combine with the alkali to form soap (sodium oleate $Na C_{18}H_{33}O_2$ and stearate $Na C_{18}H_{35}O_2$). Cold solutions of soda do not produce complete saponification, but an emulsion is formed due to the combination of the free acid present in the oil with the alkali to form a soap, and this helps the remaining oil to emulsify better; the more rancid the oil is the more of this soap is formed, and the better and more complete is the emulsification. It is on this account that rancid oil is preferred to fresh oil for dyeing.

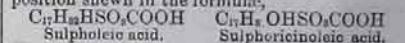
Although our knowledge of the chemistry of dyeing Turkey-red has considerably increased of late years, yet the part played by oil in its production—beyond the practical fact that the colour when oil is used is brighter and faster than when the oil is omitted—is not very clearly made out. There is no doubt that the oil, or probably the fatty acid of it, enters into the composition of the colour lake that is found on the fibre. Some old authorities have considered that the fatty acid of the oil becomes combined with the alumina and then this fatty compound combines with the alizarine to form the colour lake. If this were the case soaps ought to answer the same purpose as the oils, but as a matter of fact they do not; soap cannot replace oil in the Turkey-red process. Probably by the combined action of the air and alkali the oil undergoes a certain amount of decomposition, glycerine is liberated, the fatty acid becomes oxidised in a manner not properly understood, and this oxidised acid has a stronger affinity for both alizarine and alumina than the simple fatty acid, and forms with them the brilliant

red lake on the fibre that is characteristic of Turkey red.

The use of olive oil for dyeing is gradually becoming obsolete, if, indeed, it is not already so, having been replaced by a preparation of castor oil known as oleine, Turkey red oil, alizarine oil, and sometimes (but erroneously so) as soluble oil. Although they have only lately come into extensive use, yet these were proposed to be used by Runge as long ago as 1834, but then without success.

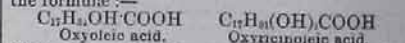
These oils are prepared by acting on the oil with sulphuric acid, then washing the product with water, and afterwards neutralising the oil with caustic soda or ammonia, when a clear oil is obtained, which mixes with water in all proportions. These sulphated oils are sold of various strengths, usually containing 25, 50, or 75 per cent. of oil acid. Generally the price at which it is sold regulates the strength; it is best to buy the strongest, and to dilute it down with water as may be required. They vary somewhat in their degree of miscibility with water; some mix perfectly with it, forming a clear solution, while others give a whitish emulsion. These latter generally contain a slight excess of acid or alkali, while those that dissolve clear are usually neutral or faintly alkaline. Dyers prefer an oleine that contains a slight excess of acid, but for finishers' use a neutral oil gives the best results. Castor oil consists almost entirely of a body known as ricinolein, a compound of ricinoleic acid $HC_{18}H_{33}O_2$ and glycerine; there are also small quantities of palmitin or stearin, and of a nitrogenous principle, to which its medicinal properties are probably due.

From the researches of Frémy, Runge, Müller, Jacobs, Liechti, Suida, and others, although the chemistry of the sulphated oils is by no means clear, yet it is evident that oleine consists essentially of three substances:—1st, unaltered oil; 2nd, sulpholeic or sulphoricinoleic acids, according as olive or castor oils have been used in making it; 3rd, oxyleic or oxyricinoleic acids, as the case may be. These acids exist in the oil as alkali salts. The sulpho acids have the composition shown in the formulae,



Sulpholeic acid. Sulphoricinoleic acid. These bodies are soluble in water; when heated with it they undergo decomposition into sulphuric acid, and into the crystalline insoluble oxyleic or oxyricinoleic acid. The sulpho acids, especially the sulphoricinoleic acid, have a strong solvent action on oils. This combined with its readier solubility is probably the reason why oleine prepared from castor oil is preferred to that prepared from olive oil.

The oxyleic and oxyricinoleic acids are bodies which are insoluble in water. They have the formulae:—



Oxyleic acid. Oxyricinoleic acid.

They are present in small quantities only in oleine, and the amount depends on the temperature at which the operation is carried on; the higher it is the more is formed. Their alkaline compounds dissolve in water, forming cloudy, soapy-looking solutions, which are unaffected by boiling. The value of oleine as a mordant probably depends on the fact that they contain a large amount of unchanged oil dissolved in them, and hence in a form in which it can be readily taken up by the fibre, and thus be ready to combine with the alumina in subsequent operations of the dyeing process.

When dilute sulphuric acid is added to oleine the fatty acids are set free, and being lighter than water, rise to the top of the mass as an oily viscid body. The fatty acid obtained from castor oil, oleine, in this way is entirely soluble in alcohol, while that obtained from other oils is not. The value of oleine depends upon the amount of these fatty acids it contains. The best way of ascertaining the amount of these is to weigh out 10 grammes, dissolve in a little water, add sufficient dilute sulphuric acid to completely decompose the oil, and then a little concentrated salt solution, heating the mixture until the oil acids are fairly melted; then add 10 grammes of white wax, heating till the wax is melted and properly incorporated with the oil acids; then allowing to cool, collecting the cake, dyeing it, and weighing it, and deducting

the weight of the wax to get the weight of oil acid in the oleine.

RECIPES FOR DYERS.

BLACK ON WOOL FROM ALIZARINE COLOURS.

A: Red Shade Black.

For 100 lb. wool. Mordant by boiling for 2 to 2½ hours in a bath containing
3 lb. bichromate of potash,
2½ lb. tartar.

Dye in a bath containing
Alizarine blue WX 32½ lb.,
Ceruleine W 1½ lb.,
Alizarine orange W 3 lb. ¼ oz.

B: Reddish Shade.

Mordant as before. Dye with
Alizarine blue WX 32½ lb.,
Ceruleine W 1½ lb.,
Alizarine orange 2½ lb.

C: Blue Black.

Mordant as above. Dye in a bath containing
Alizarine blue WX 36½ lb.,
Ceruleine W 1½ lb.,
Alizarine orange W 1½ lb.

Enter the wool in the cold, work for half-hour, then gradually raise to boil and dye boiling for 1½ hours. Then lift, wash and dry.—*Montair de la Teinture.*

OLIVE ON ALIZARINE RED.—In a sealed paper just opened by the Rouen Society, M. Huntziger describes a method of printing olive on Turkey red. He prints on a colour made of ceruleine, caustic soda, and thickening; the printed goods are then passed for half a minute through a Mather and Platt steamer, and next exposed to the air for a night, afterwards washing in cold water. They are then dried, passed through a weak sulphuric acid bath, and washed in soap. To get the best results it is necessary to print on scarlet shades of red, obtainable from alizarines containing anthra and flavo purpurine.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

NEW YORK, JULY 19TH.

Nothing that is certain can be said with reference to the McKinley Bill. The following despairing utterance from the Boston *Journal of Commerce* is, however, significant:—

"The contest was lost when the Republicans went into power, and to renew it now is an utter waste of the ammunition used. Protection in its maddest form is dominant, and Napoleon with his Waterloo behind him may as well sheath his sword." More recent news from Washington indicates that the difficulties previously referred to still stand in the way. The Bill will doubtless be modified, but there exists no solid ground, in my opinion, for cherishing the belief that it will not pass. Those Republicans who distributed "soap" with such a liberal hand in 1888 want some return for their investment, and they will have it. The United States Protectionist is too astute an individual to part with "boodle" unless he can gain some advantage. When men openly give \$100,000 or more for election purposes, it is safe to rely that their party, if successful, intend to reciprocate.

The linen question still drags its slow length along. Mr. J. C. Allan, a Belfast enthusiast, whose letters advocating the establishment of linen manufacture in this country have been discussed widely in some quarters, has arrived at New York. Mr. Allan, it is said, desires to establish a large concern in some Eastern or North-western State, and the Minneapolis scheme was brought forward as a result of his suggestions. He thinks that if the Senate grants a 50 per cent. duty, he can find a capital of £60,000, and start a business with 2,000 to 3,000 hands.

The importation of foreign machinery threatens to be restricted by the new Customs Administrative Act, which comes into effect on August 1st. Under this law, the present duty

of 45 per cent. *ad val.* on machinery is extended to cover the cost of the packing—equal from five to twelve per cent. of the value of the whole invoice. While admitting that this law is the result of the great undervaluations practised under the present law, either by importing low-priced goods in expensive packages, or by charging, as packing, processes essential to the manufacture, importers protest against a duty on the covering of machinery, which is of no value for anything afterwards, excepting firewood.

This extra duty will seriously handicap the importer of foreign machinery, and add just so much to the protection now accorded the American machinist. The raw material which enters into textile machinery forms but a small part of the value of the product, the principal item in the cost being that of the skilled labour employed. According to the report of the Bureau of Statistics, the wages of machinists in Massachusetts in 1883 averaged 58½ per cent. more than those paid in Great Britain. As these proportions are probably maintained to-day, the claim of American machinery manufacturers that they require the maintenance of the present duty of 45 per cent. has been accepted by the tariff tinkers.

Considerable alterations are being made in cotton mill plant. One of the most prominent firms of mill architects and engineers report that they are kept busy on this kind of work, although there is little new construction. In machinery the most noteworthy feature continues to be the substitution of the "English" revolving flat top card for the older styles, which goes steadily on. While American manufacturers have been perfecting their spinning machinery, the English have brought their carding to a high state of efficiency, and five or six years ago our manufacturers awoke to the fact that their carding system was antiquated.

The old Wellman top flat card was at one time largely employed; this was followed by the Foss and Pevey card, which produced more work, then combinations of the old roller and Wellman cards were brought out. Within the last three or four years the generally recognised superiority of the "English" revolving top flat cards has caused them to be largely adopted. The old top flat card was a small producer, having only about one-quarter the capacity of the "English" card.

Apart from the cards there is little cotton machinery imported. The mules employed for spinning fine soft yarns are usually of foreign make, it being claimed that the temper of the parts is superior to those made here, but as the spinning in this country is now done so largely on frames which are essentially American, the importation of mules is not extensive. The amount of foreign preparatory machinery, such as slubbing, roving, and fly frames, is very small.

Importers of worsted machinery complain of dull trade. The combs used in the mills are mainly of English manufacture of the "Noble" type, only a few French combs being in use. Preparatory machinery is also quite frequently foreign. In buying machinery sentiment has considerable sway. Some textile manufacturers say squarely, "we are Americans and want American machinery;" others are not particular, but buy what they think will prove most suitable.

The mules for woollen and worsted spinning, unlike those employed in cotton mills, are largely of American manufacture.

The imports of foreign dry goods into the port of New York for the week ending July 17th, 1880, and since January 1st for the last three years were as follows:—

	1888.	1889.	1880.
Entered at port.....	\$2,991,370	\$2,682,587	\$3,978,202
Thrown upon market..	2,892,568	2,677,149	3,886,888
Entered for consumption	2,370,119	1,946,248	2,890,855

IMPORTS OF DRY GOODS SINCE JANUARY 1.

	1888.	1889.	1880.
Entered at port.....	\$72,640,044	\$75,573,608	\$86,126,592
Thrown on market....	71,411,018	75,620,402	88,694,990

From the above it will be seen that the imports of foreign dry goods at this port for the week amount to \$3,978,202, shewing an increase of \$523,145 as compared with last week, and an increase of \$1,415,615 as compared with the corresponding week last year. The total of goods marketed for the week has been \$3,880,898, or

\$97,304 less than the imports. The total imports since January 1, 1880, have been \$86,126,592, against \$75,573,566 for the same time in 1889, or an increase of \$10,582,814.

Mr. James Roberts, of Philadelphia, is extending his mill for the purpose of enabling him to pay attention to the production of silk warp Henriettas, laburnums, silk striped suitings, mohairs, and alpaca umbrella cloth. Europe has been drawn upon for suitable machinery to fill the new premises, the United States being still dependent upon the Old World for such necessities, notwithstanding the tariff.

The *Dry Goods Economist* has been discussing wool manufacturing in Victoria. "*Australia Felix*," according to the *Economist*, is situated in New South Wales! Melbourne men will not feel flattered at this classification.

BOMBAY MILLS AND THE INDIAN FACTORY ACT.

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

SIR,—Having seen a copy of a letter written to the *Textile Mercury*—(T. M., June 14th, p. 409)—and afterwards inserted in the *Bombay Gazette*, by Mr. Isaac Whittaker, I would esteem it a favour if you would give publicity to this reply, in order that certain erroneous and inaccurate statements may be put straight and the true state of affairs placed before the public.

Mr. Whittaker speaks of the "lamentable" amount of ignorance existing in England on Indian affairs. Well, to those at home who know anything of mill affairs in Bombay—and there are plenty to be found—the lamentable lack of accuracy in the somewhat random statements of your correspondent will easily be apparent. In the first place, he states that the Bombay manufacturers are willing to concede one day per week as holiday, that day to be Sunday, except when a native holiday intervenes, in which case the hands would work on the Sunday. He further states that the natives enjoy 35 holidays in the year. Perhaps they do; let us suppose so. Now if this much-talked-of concession of a day a week takes place, the mills will be stopped 52 instead of 35 days in the year. From this it will clearly be seen that the employers will have conceded 17 days per annum over and above what their employes at present enjoy. So much for the day a week. Mr. Whittaker also boldly asserts that the motives which actuate the Chamber of Commerce at Blackburn are purely selfish. This he attributes to the fear of Bombay competition, simply because in Bombay they run a few hours longer. He also openly declares that, taking one consideration with another, the mill hands of Bombay work fewer hours than those at home. Let us see. During the summer months the Bombay mills run fully 13 hours per day, and in the cold season not less than eleven hours. So that we may reasonably take 11 hours as the lowest possible average per working day throughout the year. Deducting the 35 stopping days, there remain 330 working days and this multiplied by 11 makes a grand total of 3,630 hours to be actually worked each year. Even granting that the concession of this day a week takes place, it will still leave 3,443 hours to be worked each year. Now, then, what are our "stopping" days at home? I may be wrong, but calculate the "stopping" days at home, if we include Sundays, Saturday afternoons, Christmas time, Easter-tide, etc.—in fact, all the acknowledged holidays in the year—to reach a total of 90 or 92. However, take 90. This leaves 275 working days for the year, and allowing that for every six of these days we work 56 hours, this gives us 2,565 hours worked per year, clearly shewing that we work 1,065 hours less at home per year than they do in Bombay; and even after this proposed concession of a day a week we shall still be working 878 hours less each year. This is the total which Mr. Whittaker chooses to call "a few hours;" and it is bold enough to assert that in India they work less time than we do at home—a simply untenable position. He tells you, also, of the natives going home to their native country, some for one and others for even two or three months yearly. I may tell Mr. Whittaker, without fear of contradiction, that this does not occur annually, nor more than once in three years, with the same individual, and that the percentage of mill hands who go home at all is very small indeed. After this he says something about the hands going out to smoke, etc., as inclination leads them; but he refrains from telling you that at every means of exit sits a sepoy (a sort of mill policeman), whose duty it is to see their inclinations do not take them out too frequently; and be it said, to the sepoy's credit, that they dis-

charge their duty both conscientiously and impartially. Mr. Whittaker further tells you that the hands take their meals at their own convenience. This they certainly do. In the mule-rooms they squat on the floor, behind the reel, under a bench, in fact, in any corner into which a man can crawl, for in this respect the Hindoo is not a particular fellow, and if he gets his fill of curry and rice it is entirely a matter of indifference to him where he eats it so long as the shadow of no Christian crosses his food. But this eating his meal to suit his own convenience does not trouble his employer so long as the strap is in the meantime running on the fast pulley and the machinery kept going. These little, yet important, details are unmentioned by Mr. Whittaker. It sometimes occurs that, through the fear of jeopardising one's interests, matters of this sort are not discussed as openly or freely as they otherwise would be, and so sufficient ventilation is not given to the subject.

Then, again, he speaks of the clerk and his boy. Certainly this institution does exist to some small extent, but one must not lose sight of the fact that the two together do not get more than half the wage of a cheap clerk in a mill in Lancashire. Your correspondent then explains that a man, wife, and child can sustain themselves on four or five rupees a month. Suffice it to say that ten rupees would be nearer the mark, and there would be no today for the husband even at that. He is again wrong when he states, with regard to the Mussulmans, that they are in the month of May allowed to leave the mill one hour earlier to pray. The simple fact is this, that they fast each day during this month from early morning to evening, and as the time for breaking fast occurs about 5.30 p.m., why, nothing is said if some of them go home. Mr. Whittaker talks glibly of leaving matters of this sort to the governing body of India, assisted by the intelligent natives. He seems not to know that the bulk of freedom enjoyed by these people to-day was first brought about through intervention at home. Who, I should like to know, can show a better right or a fuller capacity for conferring privileges on these people, consistent with their requirements, than our legislators at home, and who could be better able to open up these grievances than our Chambers of Commerce? I think my opponent will see things differently after he has been here a little longer. Having been here barely 12 months, everything is new to him, and for this reason his letter should be looked at with some reserve. I will conclude by saying that to people who have any knowledge whatever of the long hours worked and the low price paid for labour in all other countries, America excepted, it is really marvellous how the old country in these times of keen competition, and working, as she certainly does, against such great and ever-increasing disadvantages, still contrives to maintain the proud distinction of being the first commercial nation in the world.—Yours, etc.,

Bombay, July 10th, 1890.

ALL the weavers at Prossnitz, in Moravia, are (or were) on strike. If a loom was observed to be working the strikers rushed in and out the warp.

The cloth factory and finishing works of Theodor Beyer, of Brünn, have been completely destroyed by fire.

The silk weavers of Como are in such great distress in consequence of the bad state of trade in their special department, that the Town Council has found it necessary to distribute relief.

FOLLOWING the example set by the miners, an international congress of men engaged in the spinning and weaving industries, it is stated, will be held shortly, very possibly in Berlin.

The official forecast of the Bengal jute crop to the end of June states that the weather has been generally favourable and an average crop is expected in most districts, while the crop is not likely to fall below three fourths of the average in any district.

BOMBAY. Cotton Mill Shares, says the *Times of India*, continue in the same dull and neglected position, and the latest telegraphic news from Bombay and China confirms the opinion that the cotton-spinning industry still has a very bad time before it. The China market is unsettled, and the demand for Hong-Kong continues on a very unsatisfactory scale.

In the course of the resumed debate on the McKinley Tariff Bill in the Senate, on Tuesday, Mr. Plumb proposed an amendment providing that wherever a manufacture of any domestic articles with which imported articles compete may be controlled by any single party or firms, which would thus possess arbitrary privileges, the importers of such articles shall receive the goods at a rate of duty half of that imposed by law.

News in Brief,

FROM LOCAL CORRESPONDENTS AND
CONTEMPORARIES.

ENGLAND.

Accrington.

Mr. Samuel Bury, J.P., one of the most extensive cotton manufacturers in Accrington, died late on Tuesday night at his residence, Bank House, Accrington. The deceased gentleman, who was 81 years of age, had been ailing some time. He was head of the firm of Bury Brothers, who for many years have run three cotton mills at Accrington. Mr. Bury was a Baptist in religion and a Liberal in politics. Mr. Bury, we believe, originally commenced life in connection with the calico printing trade, leaving that for the grocery business, in which he acquired a commercial training that admirably fitted him to command a success in the cotton trade that others not privileged in the same way failed to obtain.

Ashton-under-Lyne.

The question of managers acting as directors of Limited Companies, in addition to their other duties, has been much talked about since the Guide Bridge meeting was held. The more prudent shareholders show a willingness to allow the matter to pass over, as they feel confident that Ashton has a paucity of men who are fit or qualified to act as directors, and it would tend to interrupt the progress of trade if men who are managers were not allowed to act as directors of other companies. At least two of the directors of Guide Bridge hail from Stalybridge, one of whom is a schoolmaster and also mayor of the town. While Stalybridge does not progress so much of itself, yet it sends its chief magistrate to sit on the board of one of the largest companies that Ashton can boast of.

Blackburn.

As anticipated in our last issue, it is now authoritatively stated that Mr. Thomas Fenton, the secretary of the Operative Spinners' Association, will shortly resign owing to ill-health.

Brookhouse Mills (Messrs. Hornby's) and Belle Vue (Messrs. Fielding's) which have been closed a few days for machinery repairs, etc., commenced work again on Monday morning.

The half-yearly meeting of the Blackburn Powerloom Weavers' Protection Society was held on Wednesday night in the Good Templars' Hall, Northgate, Blackburn, and was well attended. Mr. R. B. Dodgson (president) occupied the chair, and the auditors read the half-yearly report, which stated that the income was £778 11s. 7d., and the expenditure £275 18s. 6d. The increase in the funds of the society was £163 8s. 9d.

The quarterly meeting of the Blackburn Chamber of Commerce was held on Wednesday afternoon. The President (Alderman H. Harrison) spoke on the subject of Indian Factory Legislation, and quoted a paragraph from the *London Times*, in which it was hinted that the Government of India meant to carry out the Factory Acts just as if nothing had been said in this country on the matter. It was going to be a question of money with the Indian manufacturers. They in this country did not wish to hamper the Indian manufacturers, but they could not permit them to work their women and children 60 and 81 hours a week, considering the Factory Acts in England. He noticed that the Manchester Chamber of Commerce, before taking action in the matter, had decided to address a letter to the Bombay Chambers of Commerce asking how far restriction in India was desirable. He was surprised at the Chamber taking this course. The Bombay Chamber, as was to be expected, replied that no restriction was desirable. Of course they could not interfere with adult male labour, and did not wish to do. Mr. Hibbert said he was not at all surprised at the action of the Manchester Chamber, as he considered that that Chamber had always looked better after the interests of the merchant than the producer. The President moved that the two letters which were sent from the Chamber some time ago to Lord Cross with respect to the above question, and the answers to those letters be printed, and copies forwarded to all the associated Chambers of Commerce in the country, with a view of properly putting the position of affairs before them. Mr. Barker seconded, and the resolution was carried. The President drew attention to the proposed visit of Mr. Stanley to Blackburn at the invitation of the Literary Club, and asked for the feeling of the meeting as to whether the Chamber should participate in any way in the proceedings.

It would be a good means of making his acquaintance by presenting him with an address, and then they could expect him to give them a little information as to any possible means of carrying on trade with Africa. Mr. Jos. Watson (secretary) intimated that the Corporation intended doing something in the matter, and it was then decided that the President should see the Town Clerk (Mr. Gains) before the Chamber made any arrangements.

Bolton.

A fire broke out on Tuesday morning in the scutching room of one of Messrs. Crosses and Winkworth's fine series of mills at Bolton. It was extinguished by the local fire brigades in a short space of time, the damage only amounting to a few hundred pounds. When the fire broke out a young woman, who was working in the room, found herself hemmed in by the flames. She was terrified with her position, and had to be rescued by the other hands.

Booths.

About three o'clock on Tuesday morning a fire broke out in the top floor of the certified warehouse 968, Booths, belonging to the Liverpool Warehouse Company, in which was stored a number of bales of cotton, the property of Messrs. Sherwood, Thompson, and Co. The local fire brigades were soon in attendance, but the fire was not got under until damage had been done to the amount of about £2,000.

Burley.

At the Burley Police Court, on Wednesday, Messrs. Crook Bros., Mr. Samuel Greenwood, and the Keighley Green Mill Company were each fined 10s. and costs for breaches of the Factory Act.

Bradford.

At the meeting of the Council of the Bradford Chamber of Commerce on Wednesday, the president reported correspondence between the Customs officials and the Chamber with regard to the seizure of four bales of woollen yarn, which had been imported from Belgium by a member, owing to infringement of the Merchandise Marks Act, the correspondence having resulted in the release of the four bales. He said he thought that the obtaining of the release of the bales was a distinct achievement for the Bradford Chamber, as he was given to understand that no goods which had been seized under this Act had ever previously been returned. In the case in question there was undoubtedly a distinct infringement of the Act, but the Council succeeded in making it clear to the Customs authorities that the infringement had been unintentional. Mr. McLaren said it could not be too distinctly understood that yarns might not be imported without the name of the country of origin being marked in some way upon the goods.

Cleckheaton.

On Saturday the employés of Messrs. R. and C. Goldthorp, of Pyenot Hall, met after working hours for the purpose of making a present to Mr. H. B. Goldthorp, whose wedding took place on Tuesday. Mr. W. Ball, the cashier, presided, and Mr. F. Blackburn, who has been in the service of the firm for forty years, formally made the presentation. Mr. Goldthorp suitably replied. The gift consisted of a silver tea and coffee service and flower-stand, valued at £63. Mr. Goldthorp married Miss Briggs, daughter of Alderman Briggs, Holton Castle, Sunderland. The employés at Pyenot Hall Card Works had a day's holiday in celebration of the marriage.

At a meeting of the Local Board held on Tuesday, the clerk read a letter from the Mayor of Sheffield and a circular from the same town, the latter being addressed to the "Mayor of Cleckheaton," with reference to the proposed American Tariff Bill. It was stated that if the bill was passed, it would practically exclude almost all kinds of English manufactured goods from America. It was hoped that the Board would take action to procure an expression of the opinion of the inhabitants of Cleckheaton on the bill. At a public meeting in Sheffield, at which there was a unanimous protest, politicians of all shades of opinion approved of opposition to the bill. Mr. Knowles moved that the communication be sent on to the Chamber of Commerce. Mr. A. S. Roberts said he thought the Board ought to protest along with the Chamber of Commerce. Mr. H. Law remarked that it was time something was done, and Mr. Ball said the matter was touching Sheffield manufacturers very closely. Mr. Law: It is not so touching them more closely than Bradford. They cannot send anything from Bradford. The question should be taken up in some form or other. Mr. Crossley: I have a lot of machinery that has been boxed up fifteen months, and some making, but we cannot send it nor make any more. Mr. Law: Put it down, and keep it working for six weeks, and send it then. You will get it in easily enough. Mr. Law

proposed that the Board should, in conjunction with the Chamber of Commerce, protest against the bill. Mr. Crossley seconded the motion, which was carried.

Gulsey.

Messrs. J. J. L. and C. Peate, Nun Royd Mills, have commenced to enlarge their already large weaving shed. Mr. John Binns, their engineer, has prepared the plans and specifications; he was also the architect for the existing building.

Messrs. Leeming and Son, Bradford, have supplied Mr. John Smith, Low Mill, with three looms, fitted with 24 shafts, and actuated by Wilkinson's patent shedding motion, 4 boxes at each end, and an arrangement for levelling the head shafts for facilitating taking-up of broken ends, etc.

Kidderminster.

Messrs. H. and M. Southwell, Limited, of Bridgnorth, are about making extensive alterations to their works. The building contract, which amounts to about £3,000, is already placed, and important additions to their plant are intended.

It is understood that the few shares offered to the public by Messrs. Woodward, Grosvenor, and Co., have been eagerly taken up, as it was expected they would be, and that the allotment took place on Wednesday.

A well-known figure in the local carpet trade passed away last week in the person of Mr. Joseph Dugard, who for about twenty years had been in the employ of Messrs. Smith and Sons, first in the office and of late years as traveller.

Leigh.

Messrs. Bancroft and Co., of Todmorden, have now taken over the Co-operative Shed, Leigh, upon lease, and they commenced work on Monday morning. After the present orders are finished the winding and warping will be dispensed with at this mill, but the hands will be found other employment.

London.

Mr. W. Carnelley, the chairman of the Messrs. Rylands and Sons, Limited, having just completed his business jubilee in connection with the firm, was presented on Wednesday evening in the buyers' room at the London House with a testimonial by the London staff. Mr. G. W. C. Kirkham, one of the directors, occupied the chair. The presentation consisted of a silver tea and coffee service and silver tray and an illuminated address which bore the signatures of upwards of 100 subscribers. A presentation by the Manchester staff will take place at the Manchester establishment next Saturday.

Manchester.

Messrs. James F. Hutton and Co., 29, Dale-street, announce that Mr. Reginald William Hutton, son of the late senior partner in the firm, has been admitted a partner.

The monument that has been for some time in course of erection in the Southern Cemetery in memory of the late Mr. John Rylands is now completed. It is hexagonal in plan, is raised upon two granite steps from the level of the enclosure within which it stands, and is 28 feet in height, of which the solid base measures three feet. This lower portion has panelled faces, inscribed with a series of Scripture texts, so chosen and arranged, when read to the right, as to exhibit in consecutive order the great characteristics of the Christian life. From the six upper angles of the panelled base rise six square pillars, fluted in front, terminating with caps and richly carved corbels on each side supporting a moulded cornice, the several divisions of which bear ornate scrolls, respectively inscribed with the words "Faith, Joy, Peace, Mercy, Love, Hope." Above the cornice, and directly over the pillars, are six angelic figures, kneeling or half-seated, four of which bear the symbols of the Christian warfare, as described by St. Paul. At a higher level, and recessed from the line of these emblematic figures, are smaller columns, supporting the cupola, at the angles of which are the forms of six angels standing, four with trumpets, as if to announce to the four quarters of the world the glad tidings of Christ's salvation. Of the other two, one represents Faith, triumphantly holding to the Cross; the other Hope, leaning upon an anchor, and directing a rapt upward gaze to heaven. The space between and above the pillars forms a vaulted dome, on the interior arch of which are starry and other emblems. In the open space beneath the dome, and resting on the centre of the base, is a large block of granite, containing the inscription:—"John Rylands, of Manchester. Born 7th February, 1801. Died 11th December, 1888. In loving memory." The monument is placed to the rear of the grave, the space of which is level, protected by a granite kerb, and planted with flowers. The rest of the enclosure is paved with slabs of polished red

granite, the whole being surrounded with a granite edging and an enriched railing of bronze. With the exception of the granite block, the memorial is executed in white Sicilian marble, the hardest procurable. The whole monument has been designed and its erection superintended by Messrs. Heathcote and Rawle, architects, of Manchester. The sculpture is from the studio of Mr. Boulton, Cheltenham, and the rest of the work has been executed by Messrs. Pateson, of Manchester.

The monthly meeting of the Chamber of Commerce was held on Wednesday. Mr. Henry Lee, president, occupied the chair.—*Labour Conciliation*: The president reported that a small committee appointed to take steps with a view to ascertaining the practicability of forming a permanent Board of Conciliation which should command the confidence of employers and employed had made some progress in their work, and that their efforts would be continued during the forthcoming month, but that the stage had not yet been reached at which a report could be usefully presented.—*Indian Merchandise Marks Act: Bleached Cotton Yarn*: A question as to the loss (if any) suffered by yarn in the process of bleaching, and as to the category in which bleached yarn should be placed, having been addressed to the Chamber by the Bengal Chamber and submitted to the Yarn Sectional Committee, a report was read from the Committee recommending that bleached cotton yarn should be put under the head of dyed cotton yarn as regards the variation to be allowed under the Indian Merchandise Marks Act, and that the allowance for shrinkage in the process of bleaching should be the same as that agreed upon for dyed yarns, viz., "not exceeding 2½ per cent. from the standard hank of 840 yards." A copy of the Committee's report had already been transmitted to the Bengal Chamber of Commerce. The report and this proceeding were approved by the Board.—*The Rating of Machinery Bill*: The present Parliamentary position of this bill was referred to. The bill has passed the second reading, and is in the Committee stage, where a rather determined opposition to it has sprung up from certain representatives of agricultural constituencies.—*Words as Trade Marks*: In a communication from the Board of Trade it was stated, with reference to the apprehended registration of certain word marks which in the opinion of the Board of the Chamber could not properly be registered, that the Board of Trade has no power to review a decision of the Comptroller to register a trade mark, except in cases provided for by section 69 of the Patents, Designs, and Trade Marks Act, 1883, as amended by section 13 of the Act of 1889. In addition to the representations made to the Board of Trade on this subject, the reasons against registration of the marks in question had been put before the Comptroller, who had signified his willingness to suspend registration; but no final decision had been announced.—*New Members*: Messrs. Heap and Owen, calico printers, Nicholas-street, were elected members of the Chamber.

Nelson.

On Tuesday evening, at a special meeting of the Nelson Weavers' Association, it was decided to support labour candidates, to be selected by the Trades Council, at the forthcoming Town Council election. It was also decided to contribute ten guineas to the fund for providing the Sunday school children of the town with a treat on "Charter Day," but to take no part in the procession on that day.

Oldham.

Mr. T. J. Crossley, of Chadderton, has patented an improvement in jacquard machines, which can be used in cross border weaving.

Mr. Thomas Jones, of the Cromford Mill, has been appointed mule overlooker at the North Moor Spinning Company.

The machinery at the Rugby Mill is being placed down in as expeditious a manner as possible, and spinning operations will shortly be commenced.

Mr. J. T. Marsh, formerly in the employ of Messrs. Radcliffe, of Bolderstone, has been appointed manager of the Bolderstone Mill Company, of which several Shaw gentlemen are directors.

Messrs. Howard and Bullock, of Acorrington, are placing in some ring frames at Messrs. A. and A. Crompton's Park and Woodend Mills, Crompton, in place of throstles.

All the shares in the Royal Mill Company have been applied for. The capital is £80,000, divided in 8,000 shares of £10 each. Besides taking over a mill now at work, it is intended to erect one capable of holding 70,000 spindles.

Messrs. Asa Lees and Co. are supplying the whole of the machinery for the Baumwool Cotton Spinning Company, Mittweida, Saxony. The mill will contain about 27,000 spindles and preparation. The King of Saxony honoured the company by putting the first cotton into the opener.

Mr. W. F. Dixon, architect, of Oldham, has been appointed to prepare the plans for the alterations which are proposed to be made in the premises to be taken over by the Royal Mills Company, and also for the new mill which they intended to erect. The directors will proceed to register the company next week.

The Earl mill is beginning to rear its head although only two or three months have elapsed since it was conceived. No time has been lost in getting into the work of erecting the mill. The cellar is now completed, and what is practically the first storey is being proceeded with space. Good weather is what is most desired to secure good progress being made.

The fire claim of the Bankside Mill Company has been settled for £1,400. An effort is being made to resuscitate the company by converting it into a co-operative concern. "New blood" has been imported into the Board, and it is hoped the future career of the company will be more gratifying to the shareholders.

About 55 of the towel looms lately worked by Mr. Dean Stanley at Ashton are now in operation at the Albany Mills or shed of Mr. J. Jackson, Shires Watersheddings. Should the industry of towel weaving become successful in the town of Oldham, then a new industry will have been created, and Ashton-under-Lyne will once more be taught the lesson that if they don't look after the people of Oldham will. We wish the industry every success. Perhaps some day the Oldham Lyceum will open its doors for a weaving class, and pay as much attention to it as it does to the subject of machine drawing at present.

Preston.

On Saturday last the workpeople at Sedgwick-street and Moor Brook Sheds, Messrs. J. K. and A. Smith, Limited, had a free trip to Blackpool, given by Mr. Arthur Smith, the junior member of the firm, in celebration of his marriage which took place on the 2nd inst., on which occasion the workpeople of the firms presented him with a handsome writing-table and a dressing-case.

Rochdale.

A meeting of the creditors of James Hall and Rachael Hall, trading as James Hall and Sons, Irwell Bleachworks, New Bridge, Radcliffe, was held at the office of the Official Receiver at Bolton on Wednesday. The debtor's statement of affairs shewed unsecured liabilities £2,908 17s. 2d., secured liabilities £2,519 4s. 10d., and liabilities as per list D £900, the last named being a liability to Eliza Hall, of James-street, Radcliffe, upon a marriage settlement of 15s. per week made by James Hall. The assets included £243 15s. 2d. paid into the bank, and the stock in trade, machinery, buildings, etc., was valued at £11,643 cost price, it being estimated to produce, after the payment of a mortgage, a surplus of £4,085 13s. 8d. Other items brought the total assets up to £4,358 13s. 4d., and there was a surplus on paper of £549 16s. 2d., after the payment of all claims, but the receiver said there was a question as to whether the estate would realise that or not. The act of bankruptcy was an assignment to trustees for the benefit of the creditors. Mr. Nabb, of Bury, was appointed trustee with a committee of inspection consisting of five of the largest creditors. No offer was made on behalf of the bankrupt.

Skipton.

At the half-yearly meeting of the Skipton Mechanics' Institute, on Friday evening, it was stated that already the Building Committee of the new Mechanics' Institution had received about £700, and that promises of subscriptions had been made to the amount of over £1,200. The latter amount was necessary before the land which forms the proposed site of the new institution could be conveyed, but as soon as that is reached the committee will commence building at once. The secretary of the committee (Mr. A. Birtwhistle) stated that in the new Mechanics' Institute they hoped to get a good technical school, in addition to the commodious reading-rooms and library. There were good prospects for the new institution, and he felt that with a little activity on the part of the committee and members of the present institution it would form a great educational centre for the town.

Tyldesley.

A chimney about 200 feet in height which has been erected at the mills of Messrs. G. Wright and Co., Tyldesley, was completed yesterday week. Many persons have made the ascent during this week.

Whitefield.

Messrs. Halliday and Constantine, who are closing their Whitefield Mill, are now working up, and expect to finish in 10 to 14 days. They are moving some of the machinery to the Upper Mills, Golborne,

near Newton-le-Willows, and the remainder they intend to put up for sale by auction. On the 12th ult. they gave all their hands at Whitefield a free trip to Morecambe Bay, which was enjoyed very much, in spite of the wet. Although they have known for several weeks that Messrs. Halliday and Constantine were working up, they have stopped with them (when most of them could have had other places), and finished their warps, which speaks well for the good feeling which exists between the firm and their hands.

SCOTLAND.

Dundee.

The heritable subjects on the north side of Blackness-road, some time possessed by the late Mr. Hermann Ree, and used as a power-loom factory, were last week exposed to sale in the office of Messrs. Shield and Kyd, solicitors. The property was put up at the reduced upset price of £1,200, and it was knocked down to Mr. Hendry (of Messrs. Hendry and Pollock) for Messrs. Urquhart, Lindsay, and Co., for £1,650.

A new chimney—said to be the highest in Dundee—has just been erected by Messrs. Walker and Sons at Calderum Works. It is built of brick, resting on a bed of concrete 30 feet square and 7½ feet in depth, and rises to a height of 227½ feet. The smoke from the furnaces of eleven boilers will ascend the chimney, and it is estimated that the draught will be greatly improved, while the discharge of the smoke at so great an altitude will prevent the inconvenience felt by those in the neighbourhood of low chimneys.

Paisley.

It is currently reported that Messrs. J. and P. Coats, of Paisley, are about to turn their business into a limited liability company, with a big capital.

South Arthurlie.

Mrs. Heys, widow of the late Mr. Zechariah Heys, calico printer, South Arthurlie, died on Thursday at her residence at Moorhouse, Barrhead, at the age of 98.

Tarbolton.

Mr. William Gregg, silk manufacturer, has been again favoured with an order to supply her Majesty with several dozen of his silk handkerchiefs. Her Majesty's partiality for these goods is causing considerable benefit to the handloom weavers there.

Letters from our Readers.

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

THE PRINCESS LOUISE AND NOTTINGHAM LACE.

(TO THE EDITOR OF THE TEXTILE MERCURY.)

Sir,—A short notice is now going the round of the Press, viz., that the Princess Louise is at work upon a book on lace, to be illustrated by herself. If the notice is to be trusted, might it not contain within it a germ of benefit to the depressed lace trade of our good old town, if taken up in a proper manner? The book is sure to circulate well, amongst our leaders of fashion, at least, and if our Chamber of Commerce, or some other representative body or individual, competent to speak for the lace trade, were to move in the matter, and place themselves in communication with Her Royal Highness, they might render assistance that might be highly appreciated by her, and perhaps prove valuable to our town in bringing the beautiful fabric again into general use. Surely nothing could be better than that some of our best local designs should form the basis of the promised illustrations.—Yours truly,
Beeston, Notts. JOHN H. ANDERSON.

ANSWERS TO CORRESPONDENTS.

"J. C." (Dromara, County Down).—Received, but too late for notice this week. Hope to deal with it in our next issue.

"J. W. H." (Stalybridge).—The writer of the letter to which you refer has only been in Bombay a comparatively short time—less than twelve months—and can hardly yet have made himself acquainted with the facts of the case. His views, as expressed in the instance to which you refer, are very different from some very recent previous ones, and it is only charitable to hope that with more light they will change again.

Miscellaneous.

MESSRS. DOBSON AND BARLOW'S CENTENARY.

The centenary of the establishment of Messrs. Dobson and Barlow's textile machinery making firm was celebrated at Bolton on Saturday week. The following account of the proceedings was unavoidably crowded out of our last issue:—

No local event has been more happily consummated than the centenary celebration of the establishment of the famous firm of Messrs. Dobson and Barlow. The gigantic excursions organised at the expense of the firm, and in which all their employes participated, on the 5th ult., were followed on the 19th by a demonstration unique in the annals of Bolton, when the workmen feted their employers. The neighbourhood of Kay-street and Waterloo-street was gay with bunting; and the works themselves were transformed into a gala ground. Ample preparations had been made. The "grand stand," prepared for the heads of the establishment, with their families and chief officials, was covered with an awning, which was barely sufficient to temper the rays of a glorious July sun. The capacious yard afforded ample accommodation for an assemblage of over 4,000; a gallery opposite the stand commanded a fine view of the proceedings. Everywhere flags, banners, streamers, and mottoes served as reminders of the great event. The band of the 2nd Volunteer Battalion Loyal North Lancashire Regiment discoursed lively music. Under the management of Mr. W. H. Singleton, bombs and cannon proclaimed the general rejoicing, and large balloons carried into space the record of the celebrations. On the chairman's table were arranged the presentations, the two massive punch bowls being transformed into fit receptacles for a choice floral collection, whilst in front was the framed illuminated address. In large letters upon the stand were the words "Long life to Mr. and Mrs. Rushton and family," on the right hand flanked on the left with a similar expression of goodwill to Alderman and Mrs. Dobson and family; and "Success to the firm of Dobson and Barlow" was another conspicuous sentiment. The brief, happy speeches of Messdames Rushton and Dobson, in response to the bracelet presentations, were as unexpected as they were appreciated. The happy and unpremeditated coincidence by which the celebration fell upon the anniversary of the wedding day of Mr. and Mrs. Rushton was another contributing pleasure. Amongst many congratulatory communications received was a letter from Mr. Sam Mason, the English representative of the firm, and an official whose career marks a connecting link between the old and the new management. Writing from St. Ann's Place, Manchester, on the 18th, to Mr. Higginson, he said:—

It is an occasion of which we may all naturally feel proud, reflecting as it does equal honour on masters and men—honour to the masters for their generous consideration, which has prompted them to mark by an act of liberality the celebration of the centenary of the firm's existence, and honour to the men for their prompt appreciation of this liberality and the kind feeling and loyalty so eloquently expressed by the addresses and gifts to be offered to-morrow. These, I am sure, will be highly prized and handed down as heirlooms, to be looked upon with proud satisfaction as commemorating the kindly relations which now, and I trust will always exist, in our establishment, and enable it in all future time to keep the proud position it now occupies. You must all remember there is no facility in machine making, and the only way this foremost position can be maintained is by all pulling together, and concentrating the best energies of all concerned by strict attention not only to the principle of each machine, but accuracy of workmanship in every detail. I must ask you to convey to your chairman, Mr. Forrest, and committee, my sincere thanks for your invitation.

The following cable messages were received from foreign agencies:—

Milan.—Dobson's, Bolton.—Kindly remember me on such happy day. Accept my heartiest congratulations. Long live the firm Dobson and Barlow.—Your faithful agent, VIGANZI.

Milan.—Centenary opens a new era of prosperity for you. Happiness to the principals.—VALLAZZA.

Milan.—Accept best wishes for happy returns of such a day from your old employe, BIRAGHI.

Milan.—Frass, c/o Dobson's, Bolton.—Best wishes for centenary. Kindly convey them to the gentlemen of the offices and works.—VALLAZZA.

Bombay, July 19th, 1892.—From Bombay agent and fitters: Accept hearty congratulations for Centenary. Wish you prosperous future.

Boston, July 19th, 1892.—From American agents and fitters: Accept hearty congratulations for to-day's rejoicings. Best wishes for future prosperity.

Shanghai, July 18th, 1892.—From Pilkington and Coker (fitters): Hearty Centenary congratulations.

Lille.—Although deprived through illness in my family of the pleasure of being among my colleagues, your workpeople, your friends, and your families to celebrate the happy Centenary which gathers them all around you on the occasion of this auspicious anniversary, I heartily join my wishes to all yours for the prosperity and the success of your works.—MANN.

Mr. Mann's telegram to Mr. Forrest:—Shall be with you in spirit, esteemed colleagues.

From fitters at Villa d'Ogna and Ponte di Nona, Italy:—Sorry we cannot be with you to-day. Our heartiest wishes for the continued success of our firm.

Bradford.—Dobson's, Bolton.—Best wishes for to-day. Please accept our heartiest congratulations and wishes for continued success of the firm.—HAINO AND LINDRICH.

Oberlin.—Accept my very best wishes for largeness and prosperity; sorry cannot be with you.—MULLICHRE.

THE PRESENTATIONS

Consisted of a framed address to the firm, album addresses to Mr. T. H. Rushton, J.P., and Ald. Dobson, J.P., each of whom also received a solid-silver punch-bowl; and diamond monogram bracelets to Mrs. Rushton and Mrs. Dobson.

The address to the firm was executed upon vellum and mounted in a gold frame. In the centre of the top are the initials "D. and B." with an interwoven ribbon bearing the words "Established 1790, centenary celebration, 1890." At the bottom and in the centre is a drawing of a beehive with an interwoven ribbon bearing the motto, "Progress, industry, prosperity." On each side of the border are panels of ornamentation in relief, with ribbons bearing appropriate mottoes, while in the centre of the border are two miniature drawings of the spinning jenny, 1790, and the spinning mule, 1890. The corners of the address bear the monograms, "T. H. R." and "B. A. D.," 1790—1890. The addresses to Mr. Dobson and Mr. Rushton were in book form, couched in similar terms to the address to the firm. They are enclosed in maroon morocco bindings, with an outer casing of velvet, lined with white silk and fastened with small clasps. In the centre of each address is a monogram, cut out in brass gilt, the addresses also containing the recipients' coats of arms, painted in heraldic colours. On the next page are illuminated panels, in which are inserted the words, "Address presented in celebration of the centenary, 1790—1890." Following this is a monogram of Dobson and Barlow, whilst on the next leaf the address proper commences. This is surrounded by a water-colour sketch of Kay-street works. At the end of the address to Mr. Rushton is an etching of his residence, Halliwell Hall, the address to Mr. Dobson being similarly illustrated with an etching of the Doffcocks. The body of the addresses is in old English text. The punch bowls are very handsome and massively embossed. They stand upon bases of ebony and are inscribed as under: "Centenary celebration 1790—1890. Dobson and Barlow, Bolton. Presented to T. H. Rushton, Esq., J.P., by his employes as a mark of esteem, July 5th, 1890." On the reverse sides of each are the full armorial bearings of the respective gentlemen. The diamond monogram bracelets, which are enclosed in handsome maroon cases, are each inscribed with the name of the lady to whom presented, and also contain the words, "Centenary celebration, 1790—Souvenir, 1890."

SATURDAY AFTERNOON'S MEETING

Mr. Hilary S. Forrest, general manager, presided at the meeting, and was supported by the Committees (whose names are appended to the address below), together with other officials, foremen, clerks, &c., as well as Mr. Walter Hamer; Mr. George James Gordon, the representative for Portugal; and Mr. George Thomas, the Manchester representative in Norway, Sweden, and Turkey. Messrs. Rushton and Dobson, with their wives and families, arrived shortly before three o'clock and were received with every demonstration of popularity. Opening the proceedings, the CHAIRMAN called upon Mr. W. Pimblitt, the hon. sec., to read the report of the Committee, after which

The CHAIRMAN said they knew how unanimously their principals came forward a fortnight ago, and to-day the employes were showing how they appreciated their kindness by presenting addresses, etc. The pleasing duty he (the chairman) had to perform was to present to the firm the address of the employes, and he asked Mr. Rushton and Mr. Dobson's acceptance of the same. It would have given him great pleasure to dilate on the rise and progress of the works, but they hoped to have that history from the principals, and he must confine himself to presenting the address. He had no hesitation in saying he had always found their principals honourable business men, and although they had many cares on their shoulders they had always time to promote the welfare of their employes. Most of them knew that whenever they had any improvement to put before the firm they were willing to listen to them; and if found to be of advantage it was put forward; and what was best for them all, they were not forgotten. Amongst the large number of workmen employed there must necessarily be some on the sick list, and they were not forgotten by the principals. When the funds of the sick society were low they came forward generously with a large donation, which was the means of putting the society upon a firm basis again. (Cheers.) He was reminded of a coincidence in connection with the celebration of the centenary of the firm. They were now filling the mills of the Howe Bridge Spinning Co., and he understood that was the largest order ever given out at one time to one firm, and that alone spoke well for the firm of Dobson and Barlow, considering the strong com-

petition that existed. (Applause.) In conclusion, he expressed the following sentiments—First, how pleased all were to have Mrs. Rushton and Mrs. Dobson present—(applause)—secondly, a wish that the firm of Dobson and Barlow might still progress, and that its reputation as producers of machinery might be good to none—(cheers)—and thirdly, that the good feeling at present existing between their principals and themselves might for ever continue. (Applause.)

The Hon. Secretary then read the address, which will be hung in the offices, as follows:—

To THOS. H. RUSHTON, Esq., J.P., and Ben. Alf. Dobson, Esq., J.P.—Gentlemen,—We, the employes of the firm of Messrs. Dobson and Barlow, beg your acceptance of this address, the accompanying album addresses, silver punch bowls (with diamond bracelets for Mrs. Rushton and Mrs. Dobson), on the occasion of the centenary of the works. Such an event is unique in the history of industrial establishments, and we should have been wanting in appreciation had we not come forward and offered you some token as a memento of the occasion. It is not to mark alone, however, the completion of a century of practical life that we offer these articles; we request you to see in them proof of our high regard for your sterling qualities as employers of labour, and as possessors of those attributes which form the character of true English gentlemen. The history of the Kay-street Works is one of continual progress. Employing at its birth a few hands only, the establishment has become one of the most gigantic in the kingdom, and has obtained world-wide renown, bringing at the same time untold blessing to households in and around Bolton, and indirectly to humanity at large. As the record of the firm is one of success, so we trust the future has still greater progress and prosperity in store. We hope that the excellent relations which have existed between yourselves as principals and ourselves as employes will be maintained, and that with you and those so dear to you by family ties may ever remain all that is essential to real happiness. Accept as in the assurance of our esteem and goodwill, and our sincere acknowledgments of your noble generosity in connection with the Centenary Celebration.—We are, gentlemen, yours respectfully,
THE EXECUTIVE COMMITTEE.
Hilary Sheldon Forrest (chairman), Walter Higginson (vice-chairman), William Leekwood Bramley, Robert Crompton Tacey, William Henry England, Thomas Broadhurst, Thomas Hall, John Williams, Joseph Williams, Joseph Worsley, Robt. Hardman, James Lord, John Berry, Robert Hewitt Robinson, Edward Gilroy, Thomas Smith Thornton, John Price, Willm. Edward Foster, Edward Thompson, John Henry Gilbert Esq., Howcroft Halliwell, Frank Baxendale, John Henry Royles, Frederick Leathley, James Carson, Richard Bamber, Matthew Marsden, Henry Hardman, Brownlow, Robert John Cornett, Richard Carter Stanning (hon. treasurer), William Pimblett (hon. sec.) Bolton, July 24th, 1890.

Mr. T. S. THORNTON was next called upon to support the remarks of the Chairman, after which

Mr. W. HIGGINSON rose for the purpose of presenting an album address to Mr. Rushton. He said he was deeply sensible of the honour conferred upon him in selecting him to present the address to Mr. Rushton, to whom their presence that day in such large numbers must be a very pleasing and striking proof of the esteem in which he was held. Their principals were men worthy of honour, for they were ever creating and maintaining trade, which was what Lancashire men and Englishmen wanted. (Applause.) They were worthy of the support of workmen, for the latter should remember that whilst they were supporting their employers they were at the same time furthering their own interests—the interests of master and men being mutual. Not only Bolton, but England should be proud of gentlemen such as they had at their head, on account of their business energy, activity, and enterprise. (Hear, hear.) Addressing himself more particularly to the employes, he said it was necessary in these days of competition that they should not only have a practical, but also a theoretical, knowledge of their work, and be especially wished to impress this fact upon the minds of the apprentices. They all knew well that they had men in all parts of the civilised world where cotton spinning was carried on as an industry, and it was very necessary that men who were sent abroad should not only be practical workmen, but men of good education and good address. The better educated and the better society they could move in, and a better feeling and tie was created between the firm they went to work for and the old firm at home. They should be able to combine practice with theory, if they were to keep abreast with the times. (Hear, hear.) The address which he had the honour of presenting to Mr. Rushton had come spontaneously from the employes, and on that account he was sure that it would be cherished all the more. He then handed the address to Mr. Rushton, expressing the hope that he might live long, and that health, happiness, and prosperity might ever surround both him and all his connections. (Loud applause.)

THE ALBUM ADDRESS TO MR. DOBSON.

Mr. W. E. FOSTER rose to present an album address to Mr. Dobson. He said the address expressed the esteem in which they regarded him as one of their employers. When they looked at the proportions to which the works had grown and the enormous success that had attended the efforts of their employers they could not but be full of admiration. The gentleman to whom he had to make the presentation was possessed of wonderful energy and great business capacity. When he (the speaker) first came to the works, Mr. Dobson was working at the bench in the various departments. It seemed

to him that Mr. Dobson commenced his life as a working man, and that he had continued to be a working man all through his career. (Laughter and applause.) He had sat with Mr. Dobson on the Technical School Committee, and had therefore been an eye witness of the wonderful inspiration that he was able to give to any movement which was worthy of his attention. They could not, therefore, wonder at the rapid strides which had taken place in those works during the last 90 years, and it reflected great credit upon those at the head of affairs. (Applause.) Another fact worthy of remark was that the founder of those works was a Dobson, and all through the firm's history one of the family had been continually represented. The first Dobson could see that there was a great industry awaiting development; and the rising population and the great need for cotton goods awakened in his mind the necessity of launching out in that business. He lived in a day when a few Lancashire men were turning their attention to that fact—he meant Hargreaves, Arkwright, and Crompton, of our town—and no doubt Isaac Dobson caught their spirit and carried on the noble work which they had begun—a work which had been the means of revolutionising the whole industry and trade of this country and the world at large. (Applause.) It was only right, therefore, that the centenary of such an undertaking should be fittingly celebrated—and in future years, when they reflected on the events of that day, he thought it would be acknowledged that the manner of the celebration was in true keeping with the important event which it commemorated. (Applause.) He then handed the address to Mr. Dobson, saying it was with very proud feelings he did so. He trusted that the address and the sentiments it contained would be treasured by him and his family, and that the good feeling which was now in existence between him and his employes would long continue. (Applause.)

Mr. BROWNLOW next made the presentation of a silver punch bowl to Mr. Rushton. He remarked that the name of Rushton had been well known in Bolton for a long period. Mr. Rushton was a man who performed everything that he undertook in an honest and straightforward fashion, and he regarded him as one of the pillars of commerce—a bulwark of the trade of the country. In handing the bowl to him he expressed the hope that it would be a means of welding together the sympathies and interests of employers and employed, and inducing them to work with one mind for the prosperity of Messrs. Dobson and Barlow's firm. (Applause.)

Mr. T. BROADHURST next presented the punch bowl to Mr. Dobson. He hoped that at the next centenary the Dobson family would hold a good position in the town. In handing him the bowl he assured the recipient that no official and no foreman had ever asked any workman to subscribe a penny to the testimonials. The people had done it themselves. (Loud applause.)

At this period the band played a verse of "Auld Lang Syne," in which the company joined in singing, which was followed by volley firing and much cheering. Prior to the reply Mrs. Rushton came forward and placed a lily from the punch bowl in husband's button-hole, which was the signal for another outburst of cheering.

MR. RUSHTON'S REPLY.

Mr. RUSHTON, on rising, was received with plaudits. He said when the deputation first waited upon them to inform them that they thought the centenary ought to be celebrated in a fitting manner, the expressed desire gave them very great pleasure; because it showed what real interest they all took in the old firm. (Hear, hear.) It was very gratifying indeed to them to feel that what they (the firm) proposed was so heartily appreciated. Their great desire was that they should have a long day, a fine year, and a day of real enjoyment. (Cheers.) It was a very pleasing sight to see them all there devoting their Saturday to do honour to the firm, and it was an evidence of the real good feeling and true friendship that existed between everybody connected with the works. (Applause.) The beautiful address to the firm deserved and should have a very prominent place in the office, and in thanking them he was proud that his name should be inscribed upon it. (Hear, hear.) For the elaborate and handsome album, and the beautiful punch bowl he begged to thank them most sincerely. (Applause.) That day would ever live as one of the proudest of his life. He would say the proudest, but he had a recollection of the 19th July, 19 years ago, for strange to say they had selected the anniversary of his wedding day—(loud cheering)—on which to present himself and wife with those costly gifts. He was looking through the old books the other day, and he found one or two matters which he thought would be of interest as giving them the history and progress of the firm before any of them knew it. Of course, in 1790 it was on a very small

scale indeed, only a very few men being employed, but he found that in 1797 it was found necessary to have a valuation and a stocktaking, and that valuation, which included all the tools, utensils, and gear, came to £494 0s. 3½d. At that time there were 11 men employed, and the names of six of them were good in the works to-day—those of Chadwick, Douglas, Naylor, Scott, Spencer, and Stevenson. (Applause.) In 1800 they had another stocktaking, and the concern had doubled itself, the valuation being £850 1s. 7½d. At that time there were 23 men employed, or twelve additional, and of those 12 additional 11 names were good in the works to-day—Gleave, Gradwell, Graham, Hall, Harrison, Kirkham, Mather, Shuttleworth, Smith, Sumner, and Thompson. So that out of 23 men the descendants of 17 were employed to-day. That spoke well for the firm, and showed that the men were attached to it, and that relations between employers and employed were good. In 1811 the firm had increased fourfold, the valuation being £4,000, and it went on until 1846, when Blackhorse-street was not big enough, and they came to Kay-street. Therefore, as it said in the address, the history of the firm had been one of continual progress. He came there in 1863, and it was very pleasing after being over a quarter of a century amongst them that the same good feeling should exist now as when he was in the shops driving a file or barking his fingers with a hammer. (Laughter and applause.) Owing to the work of their representatives at home and abroad, and to the good work they had all been turning out, they stood second to none in the world. (Cheers.) As a proof of that there was the fact that some of their customers who had left them and gone elsewhere had since returned, as mentioned by the Chairman. If they only continued to turn good work out they might rest assured that the firm would be able to find them employment for some time to come, and even when trade was at its worst, and orders bad to obtain they would always have at least their fair share of the trade of the world. (Applause.) He thanked them again for their valuable presents, and said he was very pleased indeed to have his family present. They would never forget the scene then witnessed, and his two sons, one or both of whom he hoped might follow in his shoes—(cheers)—would see how their father was treated, and how they were all happy together, and when he handed those beautiful presents down to them and their descendants as heirlooms, he hoped it would be an incentive to them to do their utmost to see that the good feeling existing at present should exist in the future. (Loud cheers.)

AID. DOBSON'S REPLY.

Ald. DOBSON, who was received with equal cordiality with his partner, said he had been abroad for some weeks past, and had consequently not been quite in the swim—(laughter)—and known what had been going on. It was with very great gratification that he received copies of the Bolton newspapers in the fair country of Italy where he had a blue sky and a hot sun, and to read that they had been similarly favoured by good weather in their expeditions to Llandudno, Blackpool, and Morecambe. (Cheers.) With regard to that day's proceedings, Mr. Rushton had given them a few facts with regard to the growth of the concern. He had the honour to represent the fourth generation of his family who had been connected with the firm—(hear, hear)—and as Mr. Rushton had said with regard to his two sons, whom they hoped would do honour to the name their father bore, he had a fifth generation present—(cheers)—that he hoped might in time be considered worthy of employment by the firm. When they considered what the firm was 20 years ago, or rather less than that, when Mr. Rushton and himself took the helm, and when they considered what it was now he thought both his hearers and themselves had every reason to be grateful. It did not take Mr. Rushton and himself very long to master the fact that if they were to depend entirely upon the home trade there was no extension possible, and not work enough to keep the concern going. They met the consideration face to face, and determined to have their share of what was going on in other countries. He went abroad after consultation with his partner for the good of all concerned, and he was glad to say he had never gone to any country to tell them what the firm of Dobson and Barlow was without there being in the immediate future a great increase in the demand for their machinery. (Cheers.) As Mr. Rushton had told them they had nearly doubled the concern in the last 20 years, and nearly doubled the number of hands, and it was interesting to know as near as they could be calculated that there were between 15,000 and 20,000 people in the town dependent direct or indirectly upon the prosperity of the firm of Dobson and Barlow. (Cheers.) It was absolutely to the interest of Bolton townspeople

that they should look at the prosperity of that firm as something effecting them directly. He was glad to say that with some very striking exceptions the townspeople did feel that and were proud of the old firm, and he had no doubt with the co-operation of the workpeople and the energy Mr. Rushton and he were determined to put into the working of the concern that they would not rest where they were, for they would not be satisfied until they had proved without doubt that not only were they second to none, but that they were head of the whole. (Applause.) To do that they must have mutual co-operation, and if the men carried the same conscientiousness into their work as hitherto, he had no doubt the firm would be able to so direct it as to arrive at the desirable result of which he had spoken.

The question of Technical Education had been mentioned. As regarded practice, the English workman was a long way ahead. He was glad to say that if he wanted a job doing he should not take a theoretical man, but a practical man, and a Bolton man for preference—(applause)—but that did not alter the fact that they could raise their work very considerably by knowing exactly what they had to do, and to come at that desirable result they were obliged to study. They could not guess at it, and that which came intuitively to man who had been taught gave great difficulty to a man who had to arrive at it by the rule of thumb. They had talked about the feeling existing between the firm and its employes. No man in the place was more sensible of it than himself, or more earnestly wished that it might continue. He would go further and say it should be his object to endeavour in the future some time or other to so arrange matters that their interests should be united. He could not say anything more explicit than that at present, except that it was a matter Mr. Rushton and himself had spoken about dimly, and which in the immediate future they would give some shape to. If it was so, he hoped it might be so arranged that they might be one united brotherhood, working entirely to one end. (Applause.) He was extremely touched when Mr. Broadhurst said that there had been no solicitation with regard to those handsome presents. The spontaneity of the gifts would add a hundred-fold to their value, and whatever might come in the future it could not deny them the grand pleasure they felt that day that those gifts were the outcome of their spontaneous feeling. He assured them there would be two families having similar heirlooms. They were extremely handsome, and an honour to the possessor. He thanked them most profoundly from the bottom of his heart. (Loud applause.)

PRESENTATION TO MRS. RUSHTON.

The next presentation consisted of a diamond bracelet to Mrs. Rushton, Mr. Joseph Worsley making the presentation. He congratulated Mr. Rushton on having so noble a wife, and upon their having lived so prosperous a life. He wished them many happy returns of their wedding day. In Mrs. Rushton they had a sympathetic soul—a lady who was most loved where she was most known. He presented the bracelet as an evidence of the love and esteem of 3,000 sons of toil, and trusted she would be long spared to wear it.

MRS. RUSHTON'S REPLY.

Mrs. RUSHTON rose amidst very loud applause to acknowledge the gift. She said she hoped they would not think it out of place for her to say a few words in thanks to them for the beautiful present. How much she valued their beautiful gift she need hardly say. When she looked at it she would always be reminded of the sympathy and kind thought which flowed out from those amongst whom her husband had spent so many years of his life. She hoped the good will and closer ties of sympathy and friendship into which they had been drawn during this centenary year would flow on uninterruptedly. She thanked them most sincerely for their kindness to her. (Applause.)

PRESENTATION TO MRS. DOBSON.

Mr. EDWARD THOMPSON was then called upon to make the last presentation, viz., that of a diamond bracelet to Mrs. Dobson. He said they welcomed Mrs. Dobson amongst them with a right good will. It was a matter for congratulation to Mr. Dobson that although the firm had been in existence a century it still retained a direct lineal descendant of the founder at its head, and they hoped this would long continue to be the case. In handing the bracelet to Mrs. Dobson, he said he trusted it would remind her that her qualities as the wife of one of their principals, and as a lady were not forgotten. He hoped it would remind her of a pleasant afternoon at Kay-st. Works. (Applause.)

MRS. DOBSON'S REPLY.

Mrs. DOBSON, amidst loud applause, rose to acknowledge the present. She thanked them very much for the very handsome and unexpected present which they had given her. She had always taken an

interest in the works and everything in them. She would treasure the bracelet, coming as it did from Bolton people, and also on account of the anniversary of the centenary of the works. She thanked them all very much indeed. (Applause.)

On the motion of Mr. THOMAS HALL, seconded by Mr. R. C. TONGER, a cordial vote of thanks was accorded to the Chairman. The band played the National Anthem, and the immense gathering dispersed.

At the conclusion of the proceedings in Kay-st. Works the hands employed in the combing, winding frame, and gassing frame departments adjourned to the Fleece Inn, Bradshawgate, and partook of a most excellent repast in the large dining room. After the removal of the cloth the chair was occupied by Mr. Jos. Longshaw, and the vice-chair by Mr. Thomas Calvert. Songs and recitations were given at intervals by several in the company in a very acceptable manner, and round dances were heartily enjoyed. During the evening the toast of the firm of Dobson and Barlow, proposed by Mr. John Hill (foreman), and supported by Mr. Thomas Calvert (a workman), was enthusiastically received, and was duly acknowledged. The health of "Our Foremen" (Mr. John Hill and Mr. William Hamer) was proposed, and responded to by the gentlemen named. Mr. Dan Wood gave a spirited address, and Mr. W. Pimblett also spoke. Altogether the evening was thoroughly enjoyable, and closed appropriately with a vote of thanks to the chairman.

LONG FIRM FRAUDS AT STOCKPORT.

Henry Nalson, 28 years of age, a smartly dressed man, described as a dealer, took his trial before Lord Chief Justice Coleridge, at Chester Assizes, on Thursday, for being implicated in the long firm frauds at Stockport. Mr. E. H. Lloyd prosecuted, and Mr. Yates defended the prisoner. The indictment set forth that between the first of October and the fifteenth of November, 1889, the prisoner conspired with a man named Thomas Hunter and others to obtain from Joshua Preston, of Stockport, five coats, five vests, and five pairs of trousers, value £3 16s. 3d.; from Messrs. B. Wright and Sons woollen manufacturers, Bradford, a roll of cloth, valued at 37s. 11d.; from Messrs. James Harper and Sons, Leeds, a roll of doeklin worth £90; from Messrs. Armistead, of Nottingham, ten pairs of curtains; and from Messrs. J. and J. Banks, Pudsey, Yorkshire, 147 yards of cloth. According to the case for the prosecution, the prisoner was charged with obtaining goods from a number of firms by false pretences, and with conspiring with a man named Hunter who was sentenced at last Chester Assizes to 18 months imprisonment for being concerned in these frauds. In September, 1889, Hunter began business at Portsea, Portsmouth, and opened an account with the London and Provincial Bank on 23rd September, 1889, when he put in as his capital £200. On 30th September he took a shop and dwelling-house and commenced business. He received £3,000 or £4,000 worth of goods, and paid very little for them. Although he opened the shop he did not appear to do any business. It was simply a receiving house for goods. At the same time Hunter took another warehouse some little distance off. His mode of procedure seemed to be to send letters to various woollen firms asking for samples. These being forwarded, in most cases a cheque was returned in payment. In this way £200 was paid away, and having first got samples Hunter gave larger orders, the goods being supplied. Prisoner was with Hunter, and the case against him now was that he did not act in the capacity of a servant, but was conspiring with the man to defraud. The defence set up was that the prisoner had been engaged by Hunter only as a servant at a weekly salary.—The jury returned a verdict of guilty, and the prisoner, before sentence was passed, requested permission to point out that no evidence had been given showing that he had in any way profited by the transactions of Hunter. His Lordship said the prisoner had been convicted on the clearest of evidence of having taken part in these very extensive frauds. It was true, as prisoner had pointed out, that the evidence did not shew he had benefited by the frauds of Hunter, but at the same time the prisoner was aware that Mason and Lea had no existence, and his Lordship could not but believe after his relations with Hunter that the prisoner had shared in the plunder. From the invoices that had been given in evidence it could plainly be seen that the prisoner was not only an excellent writer but an educated man with good business capacity, which he might have turned to valuable account instead of defrauding honourable and unoffending firms in the way he had done. At the previous assizes a learned judge, for whom his Lordship had great respect, passed a sentence of 18 months' imprisonment upon Hunter, and inasmuch

as he did not wish to make any difference between the two—although he would not be doing his duty by letting him off with a lighter punishment—he now passed sentence of 18 calendar months' imprisonment.

ACCORDING to a report of the Austro-Hungarian Consul at Warsaw, the Russo-Polish half linen industry has sunk into absolute insignificance. Whilst five years ago about 1,500 looms were at work, in 1889 there were only about 150 looms employed in the manufacture of bed linen, and about 300 in that of table linen, all worked by hand.

Textile Markets.

REPORTED BY OUR OWN CORRESPONDENTS.

COTTON.

MANCHESTER, FRIDAY.

The position of the Liverpool cotton market is once again engaging a very considerable amount of attention. Luckily, as has often been pointed out in these columns, the Lancashire spinners are not so deeply compromised in it as they were last year. Those vitally interested are a number of the habitués of the Liverpool Flags. To these gentlemen a good deal of the recent activity has been due, they having been doing their best to rush the trade into a condition of excitement of which they might reap the advantage. To a large extent, however, their movement has been a failure, as, if the heavy sales of last week were reduced by the amount of speculative buying, it would come down to very moderate dimensions, hardly enough, certainly, to meet the requirements of even that section of the trade who are forced by their necessities to buy cotton to meet their current wants.

COTTON.—With the decline of the speculative inquiry which has been absent for a great portion of this week, business in American has fallen to very moderate dimensions. The impulse it gave to the upward movement of prices has continued, and quotations have advanced all round $\frac{1}{2}$ d. As throughout this season, spinners using grades below good middling have found it to continue very scarce. Brazilian has been in much better request at firm rates. The smallness of the present stock in Liverpool restricts business, as it is generally considered by those in the trade that the actual quantity here is nearer 15,000 to 18,000 bales, instead of about 41,000, as shown by the official circular. Egyptian is slow of sale, and only a small business has been done. Quotations are unchanged, but holders are free sellers, and would probably meet buyers a little if quantity was wanted. For rough Peruvian there has been a moderate demand at unchanged rates, but smooths are dearer, and quotations are advanced $\frac{1}{2}$ d. per lb. African is also $\frac{1}{2}$ d. per lb. dearer. East Indian commands a fair amount of attention, and a moderate business has been done at generally steady rates. The result of the week's work in futures is very little changed, a decline of $1\frac{1}{2}$ to 2 points for old crop positions, and only a partial advance of $\frac{1}{2}$ a point for new crops.

The following are the official quotations:—

	G.O.	L.M.	M.J.	G.M.	M.F.
American	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
	M.F. Fair. G.F.				
Pernam	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
Ceara	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
Paraiba	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
Maranham	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
	Fair. G.F. Gd.				
Egyptian	7	7	7	7	7
Ditto, white	7	7	7	7	7
	Fr. R.P. G.F. F.G. F.G. Gd. F.G. Fime				
M.G. Broach	—	—	—	5 $\frac{1}{2}$	5 $\frac{1}{2}$
Dholerah	4	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$
Oomra	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$
Bengal	—	—	3 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$
Tinnivelly	4 $\frac{1}{2}$	—	5 $\frac{1}{2}$	5 $\frac{1}{2}$	—

Nominal.

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	8,637	43,503	29,980	394,120	1,431
Brazilian	—	3,729	3,720	40,850	—
Egyptian	376	3,218	1,990	44,180	61
W. Indian	—	570	430	8,680	219
E. Indian	25,365	4,950	7,030	257,290	261

Total.. 34,378 55,970 43,150 745,120 2,022

YARNS.—With the hardening aspects of the Liverpool market before them, and along with that of the near advent of all the holidays in the spinning

district, spinners are in nowise disposed to accept anything less than the highest points of their quotations. The purchases of manufacturers, however, who are quite unable to get corresponding advances for their goods have been of limited dimensions. As a rule yarn prices are advanced upon last week's report from $\frac{1}{2}$ d. to $\frac{3}{4}$ d., but this is only obtainable for very limited quantities. On account of export there has been a moderate enquiry, and a fair business done on the basis of last week's rates where sellers could be found willing to accept contracts on that basis. Exceptionally a small advance has been paid where requirements were urgent.

COTTON.—Manufacturers continue moderately well engaged, especially in the important articles of India and China shirtings, in which nearly all the production is well sold in the best makes. The commoner sorts are, however, not so well in order. In printing cloths there has been only a limited business, and though a fair amount has been sold, there has been very little, if any, improvement in late rates. The heavier classes of goods are only in moderate request, but these being rarely in superabundant supply command full prices.

WOOLLENS AND WORSTEDS.

BRADFORD.

There is no change worthy of note in the wool market. Lustre and demi-lustre wools are in steady demand, but Lincoln's are quiet. Spinners are fairly well provided, and this fact causes a much duller feeling to prevail, while the firmness of prices is a further obstacle to fresh business. Yarns are in moderate request, but spinners are scarcely satisfied with the inquiry that prevails. Great efforts have been made to push trade in the shipping branch, and very low quotations have been given to buyers with this object. Pieces are chiefly being bought by the home trade houses, the foreign demand being slow, being from Eastern and American markets. The purchases of worsted coatings by the United States have fallen off considerably.

HUDDERSFIELD.

New business has been rather scarce during the week. Some colonial buyers have been in the market, and good orders for fancy cloths and worsteds have been placed. The demand from the Continent has been fair, but the South American trade is in an extremely depressed condition. Manufacturers do not, in fact, feel inclined to pay attention to this market just now, as even if orders are placed payments would be very uncertain.

ROCHDALE.

Stocks in the hands of retailers are low, and there promises to be a brisker demand from this class ere long. In the meantime the wholesale houses are purchasing more freely, and prices keep firm. The fannel merchants say that goods which should be delivered in October are now being placed into the retailers' hands. The goods are invoiced "October," and the accounts will likely not be paid before the middle of December, and then the usual discount will have to be made. This shows in what a state the trade is in. The manufacturers have a difficulty in securing orders, and yet, when they get them, they have to lay out of their money the time indicated. The only cheering feature about the trade is that prices may advance, as wool is moving upwards.

GLASGOW.

Messrs. Ramsey and Co., in their report dated 29th July, say:—

WOOL.—The wool market has been fairly active this week. At the public sales there was a full attendance, and with a steady competition a good proportion of the wools catalogued passed the hammer. All kinds of wool were firm at late rates.

SHEEP SKINS.—The supply has been quite an average for the time of the year, with a large proportion of good qualities. A dulness on pelts has rather checked further advance in prices, but the competition is still keen, and former quotations are well maintained.

FLAX AND JUTE.

DUNDEE TRADE REPORT.

THURSDAY.

Owing to the annual holidays, our correspondent's letter has not been received. For the same reason Messrs. Wilson and Berg's weekly market report was not issued until Thursday. It states that business has been almost suspended during the week, all the works being entirely closed. There is still a quiet feeling in the linen and jute trades, but the prospect of plentiful supplies of raw material at very moderate prices may be regarded as the hope.

ful feature. During the week the jute market has been easier, and a fall of 10s. per ton has taken place in the price of the new crop. A telegram from Calcutta received yesterday announces the jute sailings for July from that port to the United Kingdom to be 3,000 tons. Old crop is not in great demand, and prices favour buyers. There is no improvement to report in the market for flax and tow yarns, but more demand is looked for after the holidays. Jute yarns are steady, but without special activity. In the linen trade there is a steady business doing, and all the looms in the district are well employed. Jute goods have been in quieter request during the week, and prices are barely maintained.

MANCHESTER.

No change of importance can be noted in the local trade. Holidays seem to become more universal at this period, and many of the drapers are now away from home so that travellers experience difficulty in keeping up returns. The demand for fancy German linens has greatly fallen off of late, but this loss by the foreigner has not been followed by a gain to the home manufacturer of linens. The Germans have lost a portion of their fancy trade in flax fabrics, owing to the competition of our cotton manufacturers who are turning out cheap goods of tasty appearance and well designed, and which are preferred by many buyers to linen. There is very little doing in yarns just now, and linen threads are also extremely quiet.

HOSIERY AND LACE.

LEICESTER.

The wool trade is still quiet, users buying very little and only for present requirements; farmers prices are too high for dealers to do much at present. For demi-lustres staples are obtaining slight advances. Yarns are being bought more freely, lambs' wool and cashmere varieties being, as reported last week, largely sold. Worsteds are difficult to sell and spinners are placed in an awkward position. Plain hosiery is in good demand.

NOTTINGHAM.

Business generally is in a languid condition, and profits are cut down to the lowest possible level. Fancy millinery laces are in good supply. There is not much doing in satcen laces, Valenciennes still being the favourites in this class of lace. Silk Chantilly and Spanish scarves have been inquired for to a considerable extent. Hosiery manufacturers are busy with home trade orders.

SILK.

LONDON.

THURSDAY.—London Produce Clearing House quotations of best 4½ Tsaltie: August 13s., September 13s. 1d.; 5½ Tsaltie: August 11s. 9d., September 11s. 10d., October 11s. 11d., November 12s., December, 11s. 1d., February 22s. 2d., March 12s. 3d. per lb. Sales registered, nil.

DRY GOODS.

MANCHESTER.

Trade this week has improved slightly, and more activity was visible in the various departments. The publication of the returns of the local limited companies is generally the sign for the commencement of operations in earnest for the second half of the year. Ryland's pay 6½ per cent., carrying forward £27,900 5s. 6d. to the reserve fund, which now stands at the enormous figure of £360,750 17s. 6d. Velveteens are quiet, the demand having slackened. Complaints are made to the effect that a considerable amount of bad work is coming into the market. This is probably owing to the scarcity of skilled labour, consequent on the severe and protracted period of depression through which the velveteen industry has passed, and which compels cutters to draw upon only partially trained labour when there is a slight revival. The wages of fustian cutters, which were recently raised, tend now, it is said, in a downward direction. Navies and Maroons have proved favourite shades in velveteens. Mr. W. M. Wilson, formerly of Lee and Wilson, Tib-street, is now in business on his own account at the same address. Mr. Wilson is the representative here of the well-known lace house of Mills and Gibb. Mr. Helsby, who represented the Glasgow firm of McLaren, Sons and Co. for a considerable period, has commenced business in Acerrington. Mr. Robert Hardie, who represented the carpet and seal plush departments of Messrs. John Bright and Bros., Limited, is dead. The deceased gentleman was well known here, and was very popular.

THE KIDDERMINSTER CARPET TRADE.

Business in the Brussels branch of this trade has not been so quiet as at present for some time past, indeed, the same remarks may well apply to other branches of the manufacture. Still manufacturers are not uneasy. A quiet time must come occasionally, and there is no period when anything resembling a rush in business would prove more inconvenient than the present, when manufacturers all round are engaged in trying new patterns for the autumn season. Although there is perhaps rather more machinery standing dormant than is usually the case, this is not surprising considering the exceptional briskness which characterised the trade up to the end of June, and the enormous quantity of goods which were consequently turned out from the looms. On all sides the greatest confidence is felt in the future, and manufacturers look to considerably improved results next season, when the new price list comes more generally into operation.

The tone of the local wool market is sound and healthy, and the feeling is gaining ground that values of carpet wools have touched the lowest point. In consequence of the slow demand for yarns, spinners are hardly yet in the market to replenish their stocks, and simply buy to cover current requirements. With an extension in operations it is thought that prices must move upwards. For other yarns, made from piece wools, the demand keeps pretty brisk, and a considerable quantity is being shipped to the Continent.

Joint Stock and Financial News.

NEW COMPANIES.

JAMES HENRY ASHWORTH AND CO., LIMITED.

Registered by Waterlow Brothers and Layton, Limited, 24 and 25, Birch Lane, E.C., with a capital of £50,000 in £10 shares. Object, to acquire the Hall Carr Mill, near Rawtenstall, Lancashire, and generally all the real and personal estate and effects of the business of cotton spinner and manufacturer now carried on by Robert Worswick, under the style of James Henry Ashworth and Co., at Hall Carr Mill, and the goodwill of such business. The first subscribers are:—

R. Worswick, Greenbank, near Rawtenstall	1
R. Worswick, jun., Oakmount, near Rawtenstall	1
J. A. Worswick, Greenbank, near Rawtenstall	1
Mrs. Jane Ashworth, Woodleigh, Waterfoot	1
Mrs. Sutcliffe, Bank-terrace, Bacup	1
Miss M. Worswick, Greenbank, Rawtenstall	1
Miss A. Worswick, Greenbank, Rawtenstall	1
Mrs. Duncan, Waterfoot	1

There shall not be less than three nor more than five directors. Robert Worswick, Robert Worswick, jun., and John Ashworth Worswick are appointed governing directors. Qualification, 50 shares. Remuneration to be determined by special resolution.

Gazette News.

ADJUDICATIONS.

James Hall and Rachel Hall, trading as James Hall and Sons, Irwell Bleachworks, New Bridge, Radcliffe, bleachers.

PARTNERSHIPS DISSOLVED.

Rothwell Bros., Palace-square, Manchester manufacturers.

Holdsforth, Parkinson, and Co., Brookhouse Mill, Cleckheaton, wire manufacturers.

Edward Dews and Son, Ossett Spa Mill, Ossett, manufacturers; by death of Edward Dews.

NOTICES OF DIVIDENDS.

E. Wood, St. Helens Dyeworks, Whitehouse-street, Hunslet, dyer and cloth finisher; 5s. 8½d., first and final.

N. Hunt, Chesnut Cottage, Heaton Norris, W. Rumsey, 7, Poplar Grove, Brooklands, Cheshire (trading as Hunt and Rumsey), 18A, Faulkner-street, Manchester, merchants and grey cloth agents; 8½d., first and final.

N. Hunt (separate estate), Chesnut Cottage, Heaton Norris, and 18A, Faulkner-street, Manchester, merchant and grey cloth agent, trading with W. Rumsey; 15s., first and final.

Patents.

APPLICATIONS FOR PATENTS.

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

Where Complete Specification accompanies Application an asterisk is suffixed.

21st JULY to 26th JULY.

- 11,337. J. C. MOORE, 18, Crafston-street, Leicester. Apparatus for manufacture of cuffs, etc., and for splicing on circular knitting machines.
- 11,353. C. W. KEIGHLEY, T. KEIGHLEY, and W. NETHERWOOD, Commercial-street, Halifax. Cutting woollen, cotton, velvet, or other corded fabrics.
- 11,354. O. SWITENBANK, Commercial-street, Halifax. Manufacturing figured woven fabrics.
- 11,405. W. C. LOVERING, 55, Chancery-lane, London. Marking or indicating length in the manufacture of textile fabrics.*
- 11,406. C. B. BIGLOW, 55, Chancery-lane, London. "Moquette," or tufted carpets.
- 11,415. M. FIRTH, J. KNOWLES, I. HALSTEAD, and J. ROBERTSHAW, Sunbridge Chambers, Bradford. Winding balls of fibre for combing-machines.
- 11,421. W. STOKES, New Bridge-street, Manchester. Tape looms.
- 11,427. G. BARRETT, Central Chambers, Halifax. "Swells" used in looms.
- 11,460. T. MEHLER, 36, Turnpike-lane, Hornsey, London. Perforated plush and velvet.
- 11,494. R. BURWIN and S. FIRTH, 58, Low-street, Keighley. Loom shuttles.
- 11,530. B. WILCOX, 47, Lincoln's-Inn-Fields, London. Artificial indigo. (Farbenfabriken vorm F. Bayer and Co., Germany.)
- 11,548. J. IMRAY, 28, Southampton Buildings, London. Azo colouring matters derived from azoxyamines. (La Societe Anonyme des Matieres Colorantes de St. Denis, France.)
- 11,555. C. BAYE and O. FORSTER, 393, High Holborn, London. Compound rollers or printing surfaces from brass composition for calico printing, etc., by means of a special deep etching process.
- 11,567. J. S. DRONSFIELD, 1, St. James'-square, Manchester. Pasting, measuring, and cutting roller cloths.
- 11,570. J. SIMPSON, Ambrose-street, Broughty Ferry. Treatment of boot and shoe soles made of plaited jute or other yarns so as to render the same waterproof. (B. Malcolm, Australia.)
- 11,580. W. MARRIOTT, 88, Halifax Old-road, Huddersfield. Mordant for black dyeing.
- 11,585. J. WILKINSON and W. N. WILKINSON, Arcade Chambers, Manchester. Ring spinning frames.
- 11,614. W. BRITAIN, junr., and F. GOODACHE, 28, Lambton-road, Hornsey Rise, London. Looms for producing coil yarn mats, etc.
- 11,689. A. W. BROOK and T. BROWNSON, Commercial-street, Halifax. A new yarn.
- 11,693. W. JACKSON, 4, St. Ann's-square, Manchester. Shuttle box motion
- 11,700. W. WASHINGTON, 4, St. Ann's-square, Manchester. Means for letting off the terry warp in looms for weaving Turkish towels, etc.
- 11,704. W. THOMAS FOX, 25, St. Phillip's-road, Preston. Mounting of wire, cotton, worsted, or other fibrous heads, and shafts or frames for same.
- 11,710. I. BRIGGS, junr., 77, Colmore-row, Birmingham. Worsted balls, and apparatus for operating same.

SPECIFICATIONS PUBLISHED.

1889.

- 11,277. CROSSLEY. Weaving fabrics. 8d.
 - 12,798. TRAYER. Supporting, etc., fabrics in the roll. 8d.
 - 12,886. PLATT and FIDLER. Carding engines. 8d.
 - 13,010. LONGWORTH. Looms. 6d.
 - 13,692. REDGATE. Twist lace machines. 8d.
 - 13,855. HODGSON. Looms. 8d.
 - 13,934. HATFIELD and HILL. Looms. 11d.
 - 13,963. STEWART. Loom shedding mechanism. 1s. 3d.
 - 14,066. WEBSTER and THOMPSON. Tenting machines. 8d.
 - 15,333. SUTHERLAND and ESDAILE. Treatment of fibres, etc. 4d.
 - 15,624. BOOS. Carding-engines. 8d.
- 1890.
- 73. WILSON. Straight bar knitting-machines. 11d.
 - 207. WHITELEY, J. B. and E. Spool winding-machines. 6d.

- 5,054. KELLNER. Bleaching fibrous material. 6d.
- 6,415. HOLDING, J and E. Looms. 6d.

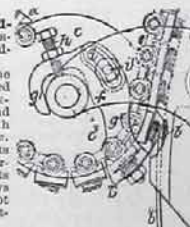
REPRINT (with alterations.) 1888.

- 17,496. WHITEHEAD. Looms. 6d.

ABSTRACTS OF SPECIFICATIONS.

3,913. March 6, 1889. Carding-engines. J. M. HERRINGTON, Vulcan Works, Pollard-street, Manchester.

Onings and coverings.—The breast cover b is supplemented by a curved shield g, which extends outwards therefrom, and also partly round the flats which are upon the carrier wheels c. The shield is carried by brackets p, suspended by hooks or other devices from bosses on the brackets f, and is provided with screws h, and a screw bolt and slot arrangement i, for adjustment. [4d.]



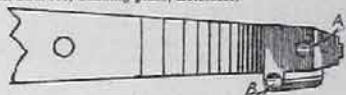
3,934. March 6, 1889. Dyeing. B. WILCOX, 47, Lincoln's Inn Fields, London.—(Farbenfabriken vormals, F. Bayer and Co., Elberfeld.)

Mordanting and fixing.—Relates to a process of fixing substantive azo-colouring matters in dyeing and printing, whereby lakes which are fast to hot water and to fading and milling are produced on the fibre. Consists in boiling the dyed or printed fabric with solutions of certain metallic salts, Zinc salts, for example sulphate of zinc, have no influence on the shade of colour, and are best suited for silk and wool. The lakes formed on cotton goods are not so resistant as those on animal fibres, but are faster than the original colour, for example, those formed by sulphate of copper or nickel. These salts in some cases produce also a change in colour. Consists also in printing dyestuffs prepared from a tetraco compound and two molecules of salicylic or cresol carboxylic acid, or with first one molecule of these acids and then with another molecule of any amine, phenol, or their sulho, or carbo acids. These dyestuffs are applied in neutral thickening in presence of a chromium salt, such as the acetate; or the material is first dyed or printed with the dyestuff, and is then treated with a solution of a chromium salt. [6d.]

3,983. March 7, 1889. Knitting. J. T. HARRIS, Gallowtree Gate, Leicester.

Circular machines.—The tricks of the needle cylinder are cut away at their lower ends to allow a needle-supporting ring to be secured to the base of the cylinder. This ring is in sections one or more of which are movable to place the needles thereon clear of the operating cams. For this purpose a bell-crank lever is provided, the arm of which is curved to depress the butts of the needles. Other details are described. [1s. 2d. Drawings.]

4,120. March 8, 1889. Straight bar knitting frames. J. A. BARFOOT, Canning-place, Leicester.



For making double-faced or plaited fabrics the thread carrier is provided with an additional eye B for the extra thread. In order to give the lead to the ordinary knitting thread, the eyes A, B may be on different parts, one of which is slitted at the end of each traverse by a spring projecting from the friction-box on the stir-cock bar. [6d.]

4,130. March 9, 1889. Circular head knitting machines. C. TENNOR, Canstadt, near Stuttgart.

In changing the yarn for altering the colour, the new yarn is knotted with the old, and a knot tied automatically without stopping the knitting operation. The old thread A passes through a guide eye O, around rollers 1, 2, 3, and through eyes 4', N, 5', to the needles s. The eye N is on a spring arm N', which is pulled down to the eyes 4', 5', when the thread is held for the tying operation by the plate Y pressing against the rollers 1, 3. The new thread B is first looped loosely around the loop formed in the old thread by means of traversing gripping devices. The knot is tied by the backward movement of one of these devices, when the old loop is held stationary on the rollers 1, 3, and is released from the roller 2. The threads A and B are then cut on the side nearer the bobbins by two pairs of scissors, and the new thread is fed into the machine. Finally, a supplementary roller loops the new thread around the roller 1, to allow it to be interlooped with the next thread. The bobbins 8 are carried on an intermittently rotating frame, and the various parts are operated by cam and ratchet mechanism driven from the knitting machine. [11d.]

4,149. March 9, 1889. Packing pile fabrics. G. H. BANNAUGH, Dunby Dale, near Huddersfield. In frames or reels for packing sealskin and other fabrics, the books are stamped or punched out of the frame itself. Filed opposite. Claim not admitted. [6d.]

4,162. March 9, 1889. Knitting. J. HAYBACROFT, 199 Cleithorpe-road, Great Grimsby, Lincolnshire. In knitting stockings and socks on parallel machines, the leg or calf is fashioned by narrowing at one end of the needles only, and the heel is made by continuing the work, without taking the stocking or sock off the needles. A "long," "square," or "Scotch" heel, without side loops, is made by putting the front half of the needles out of action, knitting on the others to the required extent, and narrowing sufficiently to take the corner off. The heel is then run off, and the selvedge loops run on the needles, the other needles being again put into action. The foot is then knitted, the pore being fashioned underneath the foot, by narrowing at one end only, and the toe is narrowed at both ends, to form a seam passing over and under the foot, instead of at the sides. The bottom of the heel and end of the toe are closed by the "knit" or "grating" stitch. [4d.]

4,030. March 7, 1889. Lace-making; looms. W. BIRSON, 86, Robin Hood-street, Nottingham.



Tension is applied to beams, bobbins, etc., by passing a strap round a groove or pulley at the end, and attaching its ends to a fixed part of the machine, and to the spring-loom I respectively. This loop is attached to a square tube C, which encloses a screw-threaded rod G, surrounded by a spring E, and rods upon pivots on a separate collar D, the tension being adjusted by the nut H. [9d.]

4,219. March 11, 1889. Looms. J. WATSON, Wheeler Buildings, Calverley, near Leeds.



Shuttles.—The bobbin is held on a flanged tube A, which is carried by the pick or tongue, and is retained by a spring C. A pin D holds the tube in position. The tongue is flattened on the side towards the spring. [6d.]

4,332. March 11, 1889. Looms. E. DURDEN and J. CHESTNAN, both of Ismailove, near Moscow.



Shuttles.—The tongue b is held in its spring position by a spring d which bears against an oblique projection c on the tongue. By pressing laterally on the thumb-piece d the spring may be removed from the tongue. The latter is mounted on a large hardened steel bush f secured upon a tapered fulcrum pin g; it is an oil hole. The tongue is steadied by a plate i. [6d.]

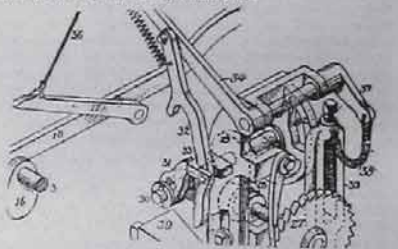
4,375. March 19, 1889. Bobbins, etc. J. HERRINGTON, 67, Nile-street, Oldham.

Bobbins and tubes used in spinning, etc., machinery are strengthened at the lower end, by a split metal hoop sprung on and held in place by another split ring sprung on to it and taking into a groove or between ridges formed thereon. The hoop may also be provided with one or more teeth in the side or on its upper edge which take into the bobbin shell to secure the hoop. [6d.]

4,392. March 12, 1889. Spinning. J. BONDOCK, 468, Leeds-road, and E. S. BISCOE, 15, South End-street, both in Bradford.

Spindles, repairing.—New tubes are attached to old wharves by cutting off the old tube close to the flange, and then soldering or otherwise fixing the new tube into the aperture of the old one. [6d. Drawings.]

4,317. March 12, 1889. Looms. P. HADDEN, 2,380, Hope-street, Philadelphia, Pennsylvania, U.S.A.



Drop-box motions.—Arrangements for putting the motion into and out of action in looms for weaving towelling and other cross-hatched and like fabrics. The invention is shown as applied to a loom in which a bar 18 operating the pickers carries a pivoted arm 17 required to be raised and lowered at times to be acted on, or not, by the cam 16. To effect this, it is connected by a cord 36 with a lever 34 on a shaft 35 carrying an arm 37. A catch-arm 32 hanging from the lever 34 engages with a fixed lug 33, unless pushed out by a toe 31 on a shaft 30 which is driven by worm gearing 29, 28 from a lay-driven ratchet 27. When thus acted on the arm 32 falls and allows the arm 17 to be operated by the cam 16 for weaving the border or pattern portion. The arm 37 at the same time lifts and tightens a chain 38 connecting it with a counterbalanced bell-crank lever 39. When the border is woven, the cam 42, which has been in engagement with a slot in the lever 29, now releases the latter, which swings forwards and acts through the arm 37, shaft 35, and rod 34, to return the catch 32 to its original position and to lift the lever 17 clear of the cam 16. A cord and pulley worked by hand may replace the re-setting device, and the apparatus may be otherwise modified. [8d.]

4,331. March 12, 1889. Looms. A. M. CLARK, 53, Chancery-lane, London.—(R. Simon, Washinton, New Jersey, U.S.A.)

Pile cutting.—Sharpening arrangements for the pile cutting knives of looms for double woven velvet, plush, and the like. The reciprocating pile knife passes over one of two sharpeners and under the other, these sharpeners being carried by spring levers which are pivoted to uprights on slides mounted in frames; the latter are actuated on by cams which are driven by worm gearing from ratchet wheels operated from the lay. The sharpeners are thus moved forwards and made to present different parts of their surfaces to the knife at each passage of the latter. Springs return the sharpeners to their starting position. The operating mechanism may be modified. [11d. Drawings.]

PATENTS. W. P. THOMPSON & CO.

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