Editorial Notices.

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

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 Their names will not be published unless requested.

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

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

All subscriptions payable in advance.

Copies of *The Textile Mercury* may be obtained by order through any newsagent in the United Kingdom, and also from the following WHOLESALE AGENTS:—

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The Textile Mercury.

VOL. VI. No. 166. SATURDAY, JUNE 25th, 1892.

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

LONDON OFFICE—121, NEWGATE STREET, E.C.

ARTIFICIAL SILK.

There seems at last to be some reason to believe that the production of artificial silk is about to pass out of the domain of the chemist into that of the manufacturer—out of the laboratory into the factory. At any rate it has been publicly announced that the works constructed at Prés de Vaux by the Chardonnet Silk Manufacturing Company are now completely equipped and provided with machinery. This company, formed in January, 1891, was founded with a capital of 6,000,000 francs, in 12,000 shares of 500 francs each. It is managed by a directorate consisting of five members—M. M. the Marquis Terrier de Loray (president); J. B. Weibel (delegated manager); Maurice Bretillot, banker, of Besancon, which is only a kilometre distant from the factory; G. Tiquet, manufacturer; and Raoul d'Hotelans. M. le Comte de Chardonnet, the inventor, is consulting chemist, etc. Of the 12,000 shares, 6,000 have been assigned to the inventor and M. Weibel, who has rendered great services to the company. In the remaining 6,000 shares subscribed for by the public, business seems not to have been very brisk: at any rate the operations on the Bourse of Besancon are not very numerous. This company has the exclusive right of dealing with the French patents, but there is another company which is said to be in course of formation under the management of Baron de Soubeyran, President of the Council of Administration of the Banque d'Escompte, that has acquired the foreign patents of M. Chardonnet, and is intended to have a capital of 20,000,000 francs. It will be called La Société Universelle de la Soie Artificielle, and it is hoped that the two companies will be combined. The French financial world is reported to have entire faith in the future of artificial silk, such strong faith in fact that the news of the acquisition of the patents of M. Chardonnet by the Baron de Soubeyran has caused a rise in the shares of the Banque d'Escompte. Manufacturers are more sceptical, but "*Qui vivra verra*," exclaims a French contemporary. And, no doubt, who lives *will* see.

MEN OF INVENTION AND ENTERPRISE.

What will the world be like in the year 2,492, that is, six hundred years hence? Its physical aspects will probably remain without material change; its mountains will stand in their present location, and its rivers in the main will follow the same channels to the sea. But undoubtedly in other respects it will have undergone a great change. The forces that have wrought such vast alterations during the initial term of activity will at that date have had time to bring many greater ones to fruition than those already accomplished. The development of what are now termed new lands, the rise of new centres of industry and the decay of old ones, will have brought about great changes in the distribution of population, especially amongst the European races, whose unrest is working out the mighty revolution initiated a century and a half ago by Hargreaves, Arkwright, Watt, Crompton, Cartwright, and others. Industrial, commercial, social and political conditions will have undergone corresponding changes and developments, and the observers and students of those days will, in comparison with present conditions, look upon a transformed world. With the curiosity innate in human nature they will undoubtedly seek to trace the great forces that have wrought these changes to their origin. Each enquirer will select the path that, in his estimation, will bid fairest to conduct him to a solution of the phase of the question in which he is specially interested. But none of these, we venture to say, will meet with a richer reward of their labours than those who devote their attention to the origin and development of mechanical invention, scientific discovery, and the enterprise that has utilised and compelled these to yield their treasures of material and intellectual wealth to the service of mankind. It will be to the textile inventors; the mechanical, civil, and marine engineers; the metallurgists and chemists; the geographical explorers and the pioneer-founders of new States; and finally, and most of all, to the men of enterprise who have utilised the labours of all of these, that the world of six centuries hence will owe its advanced position. And these men will then have assumed the eminent positions to which they are justly entitled. They will be the heroes of that time; whilst the professional politicians, who now occupy so much of the attention of the world, will appear, if they shew at all, only in their intrinsic insignificance. Of the chief contributors to the progress of civilisation, the men of enterprise, who have deserved most, have had the least praise awarded to them. This failure to accord the recognition due to their merits has, however, resulted in no particular injustice, as they have generally been able to secure a more immediately tangible and highly esteemed reward, and one most of them would undoubtedly deem preferable to posthumous fame. But times are altering, and the thinkers of the present day are beginning to recognise their potent influence in accelerating the forward movement of the age. A principal duty of the present-time publicist is to note these facts, and, like the old chroniclers of mediæval times, or their successors, the Pepyses and Evelyns of the 17th century, to provide a store of material for the enquirers of the coming days who may desire to find out to what and to whom the generations of their time may be indebted for the advantages they enjoy. It is indisputable that the biographies, portraits, and sketches of industrial establishments in the trade journals of the present time will provide much of the desired matter, and help to shed a great light upon movements that in the distant time to which we have referred will have borne such fruit as we cannot at present form any idea of by anticipation. Practically, then, it becomes the duty of those engaged in the leading industrial and commercial pursuits of the time to have records made of their achievements, and of this we trust our friends will take due note, and be careful to place the duty in the hands of competent persons who know something of that of which they become the recorders.

LIVERPOOL AND LONDON AS SHIPPING PORTS.

Some time ago we referred to the volume of trade transacted by our two leading ports, for the purpose of shewing that between them there is very little to choose. We have before us the figures for 1890, from which it appears that London's inward and outward trade was in round numbers, £232,500,000, as against £216,100,000 for Liverpool. The Mersey city exported £117,741,000 worth of goods, as against £89,000,000 worth from London. On the other hand, the Metropolis transacted a much larger import trade than Liverpool, the figures being £144,500,000 and £108,476,000 respectively. Below we give a few details concerning textile exports of domestic manufacture. Thousands are omitted:—

	Liverpool.	London.
	£	£
Apparel	776	3,063
Empty Bags	248	225
Cotton Yarn	4,600	388
,, Manufactures	42,700	5,900
Hats	399	535
Jute Yarn	91	68
,, Cloth	534	715
Linens	2,448	432
Silks	1,357	261
Woollens	2,519	964
Worsteds	5,580	1,462
Flannels and Carpets	622	521
Blankets	193	336
Other Woollens	787	573

There are several items in this table which appear somewhat puzzling. In the first place one is apt to wonder why London should ship more Dundee goods than Liverpool, seeing that the Mersey city is in such close touch with the countries principally consuming such goods, and that it leads the way as an exporter of jute yarns. The Eastern trade is no doubt well served by the London service of mail steamers, and this may induce shippers to forward consignments *viâ* the Thames. But how do Macclesfield men, who are always rushing off to London when overstocked, account for the fact that Liverpool (which in

this instance means Manchester and Macclesfield) ships more domestic silks than London? We give it up.

The Memoirs of Count Tariff: A Fable.

It must be admitted that though our methods of discussion have become more decorous, they are decidedly duller than they used to be. Some unquestionably vigorous instances of invective and ink-slinging in days gone by might be put forward in proof of the change, and very interesting the testimony would be, but not generally appropriate to these pages. As every student of Shakespeare knows, some textile titles and allusions have had part and lot in the vocabulary of reviling, though not to any considerable extent; yet, even in these election times, so suave are we that no useful purpose would be served in bringing trade adjectives to light again. But though these resources fail, the proposition with which this paragraph opens may be allowed to rest upon a case in which a tariff question was once made entertaining. Tariffs, like troubles, are always with us, and we appear to be born unto them. Their importance, at any rate, is so fully recognised that they are generally treated in such a deadly dull fashion as to deter ninety-and-nine persons out of every hundred from any endeavour to ascertain their scope and bearing; while the idea of coupling tariffs and entertainment together seems only fit for Wonderland, good enough to be recommended to Mr. "Lewis Carroll" with some confidence. But when the commercial clauses of the Treaty of Utrecht were being so eagerly and keenly debated in 1713, among the swarm of pamphlets and other publications issued in that memorable and momentous year was a really diverting little tract of close upon a hundred pages, which put current economic affairs in the form of a fable professing to set forth "The Memoirs of Count Tariff." The little book is still enjoyable, and, though lightly written, was certainly pungent in purpose, and not at all pleasant for an opponent to read. That it was written in the interests of France is not to be wondered at: Defoe's pen was engaged on the same side with a paper issued thrice a week, another periodical being sent out twice a week in opposition to him. Those were stirring times, my masters: and fiscal potentialities were not left to academic debates and prosy leaders. But our present interest in the matter is not so much with the course and issue of public opinion, as to notice the domestic textile industries which were affected and brought into consideration at that time. Count Tariff himself was shewn to be descended "from the ancient line of the *Tariffs*, a family of such quality as well as antiquity in France, that they trace their genealogy as high as any history can be found, and they appear equal in birth to *Commerce* itself, whose antiquity nobody doubts of."

The Count and the Woollen Men.

From the time of the first appearance of the Count in public, in 1664, he had been busily engaged in commercial affairs, his principal allies in England being "Mr. *Traffick*, an Eminent Merchant and Alderman of *London*. This Mr. *Traffick* traded, it seems, in Company with one *Harry Woolpack*, a famous Clothier in the West; and together they two manag'd the whole Trade of the Woollen Manufacturers on that side of the World." The leader of the rival party was "Mynheer Coopmanschap, an old Carrier and a cunning, tricking, circumventing, sharping Dutch Broker." As the parable runs, the agreement with France would have been ratified but for a statement, made at a meeting over which Mynheer Coopmanschap presided, to the effect that "Count Tariff had found out a new Invention, not only to supply his own Tenants and Servants with good Woollen Manufactures, but that in a little time he would be able to supply the whole World with Woollen Manufactures, even *Britain* and all; for that by this new Invention they could make Fine Manufactures of Coarse Wooll, and there was another new Project setting up now of making all the *English* Manufactures in *France without* any Wooll at all." The prospect of having broadcloths and serges without wool was received with consternation—and no wonder! "Laurd," said one of the audience aloud, "What will become of poor England. This will ruin us all with a Witness! What! The French Manufactures without Wool! Good Lack! This is the effect of making peace with the French!" But lest this report should, after all, fail to bring about the downfall of Count Tariff, it was proposed to stir up all home manufacturers, and particularly to alienate Harry Woolpack from him. Here it is that textile representatives are introduced. "*Josiah Whitecloth*" and "*Phil Medley*" stand for the Factors of Blackwell Hall, the woollen cloth mart of the metropolis at that day, and in connection with them were "*Sergius Perpetuanus* the *Spaniard* of Exeter, with an hundred thousand Devonshire men, and as many from Taunton-dean; There's *Joshua Double-dozen* and *Tom Kersie* out of the North, from Halifax and Leeds; they were famous for their numbers in Queen Elizabeth's time: Then there's *Goad Cotton*, Esq.; and *Flannel ap Plane*, the Welchman, besides *Henry Stroudwater* of Cirencester, Sir *Isaac Re Bay* of Colchester, *Jack All-Stuff* of Norwich, *Benjamin Drugget* of Newbury, and several others." This, besides giving a survey of early eighteenth-century industries, will shew how happily a very solid subject was handled. It is almost too much to hope that Reciprocity or Free Trade will be dealt with as agreeably, but the imagination may at least linger a moment over the thought of making the Marquis of Salisbury, or even Mr. McKinley himself, the central figure of a smart commercial allegory.

The Ramie Syndicate, Limited.

This company possesses property on the River Guadalquivir, where 15 acres were planted with ramie twelve months ago. Eighty-five additional acres are now undergoing plantation. The company is a London one, and has been formed for the purpose of testing the capability of the soil (which is on the island of Amalia) for the cultivation of the root. If the attempt prove successful a larger company will be formed, and a large acreage secured. The plant is said to grow splendidly, and the banks of the Guadalquivir are spoken of as extremely suitable for its cultivation.

The Bavarian Textile Industries.

From a Bavarian Government return we gather that the textile industries of that country during the past year have not been in a very flourishing state. The progress in various classes of manufactures that for a number of years has been continuous has received a check. The whole textile industry shews a falling-off. The non-contentious character of the operatives, and the consequent absence of strikes, was favourable to industrial progress, but the falling-off in exports, especially to America, caused increased competition at home and over-production in many branches of business. The severe winter, too, was hard upon the artizans in all branches: the general depression caused all superfluous workers to be dispensed with, and short time on an extensive scale cut down the earnings of those employed. The cost of living, too, is increasing. In Mittel and Obefranken the weaving industry especially suffered; stocks were heavy and many workers were dismissed. The spinning mills also complained greatly of depression in trade. In the textile factories of Pfalz and Unterfranken there was a reduction of 400 in the number of hands employed. Woollen and worsted yarns were in a bad way, having been considerably affected by the McKinley tariff. In several industries reductions of wages took place. Altogether producers in Bavaria have not been happy during the past year, and it is hardly likely that much alleviation of their circumstances will have taken place during the current one.

Notes from Bokhara.

A recent visitor to Bokhara made a serious effort to study the commercial activity of that city, but with slight success. The most important articles on sale, he states, are cotton, the sheepskins and lamb skins which are called Astrakan, wools, rice, tea, and a little silk. The last-mentioned article is so much neglected that owners of mulberry trees are pulling them up in order to use the ground for the growing of cotton and rice. Cocoons of all sorts are offered for sale in a large hall, where are piled up bales of cotton and wool, and sheep-skins; and in which are stationed as many small asses and camels as there are dealers. The cocoons are sold at various prices, the average being 35 tingues the 20 kodoks, that is, about 17½fr. per 8 kilos. Business is over about half-past two o'clock in the afternoon, and then the dealers retire to count over their coins. The method of weighing current in this Asiatic centre of trade is sufficiently odd to merit mention. The scales consist of a sort of trestle, formed of three branches, on which is suspended horizontally a bar of wood, terminating in two beams. The goods to be weighed are placed on one of the beams, and on the other are put stones, which serve as weights. Of course these pebble-weights become lighter after a time, and yet they continue to be used to weigh articles as dear as cocoons. As for the commercial operations of Bokhara, they are so unintelligible to the stranger that our informant felt himself obliged to confess that after mixing for some time with the white-turbaned frequenters of the bazaar, he knew about as little as before.

Our Competitors in Spain.

We have, on several occasions, pointed out that recent alterations in the Spanish customs tariff are calculated to assist the manufacturers of Barcelona greatly in competition with their foreign rivals, not only in the home market, but in Cuba and other important foreign possessions of Spain. Barcelona is the Spanish Manchester, and its population is about 300,000. The cotton, woollen, silk, and lace industries are carried on extensively, and as far back as 1883 its trade, inwards and outwards, exceeded £9,000,000—a figure equal to that of Swansea, but far behind that of Liverpool, London, Glasgow, Hull, Goole, Cardiff, Newcastle, and other leading English ports. Last year, Barcelona imported over £3,100,000 worth of raw cotton, and its exports of the manufactured article were worth £1,213,000, most of which we fancy went to Spanish possessions. The imports of textiles do not form such an imposing total as the exports, as the following summary, which we have specially compiled for the purpose of illustration, shews. In some respects the table is almost alarming,—but there is only one Barcelona in Spain!

	Exports.	Imports.
Cotton yarn and cloth.....	£1,209,000	£145,000
Hemp, Jute and Flax yarn and cloth	173,000	167,000
Woollen ,, ,,	135,000	142,000
Silk ,, ,,	56,000	79,000

Over £193,000 worth of machinery were imported by Barcelona houses from England last

year, and from other countries the purchases were valued at nearly £86,000. These details are most important, as shewing the position which Barcelona has now acquired. Last year the industrial prosperity of the district is evident at a glance. No class of workmen lack employment, and the wages earned are higher than in any other part of Spain. Whilst Catalan manufacturers, who have hitherto prospered with what is now decidedly a highly protective tariff, should have no reason to complain of circumstances at present, yet, strange to say, merchants of all classes in the town assert that trade in general was depressed last year; that there has been no improvement in commerce ever since the Exhibition of 1888; and that the year 1891 has been a specially unfavourable one for business. The feeling is ascribed to the failures of merchants, who lent themselves too readily some time ago to stock-gambling. The cotton merchants of Barcelona appear to have suffered heavy losses during the past year. Owing to the abundant crops of the two preceding years in the United States of America, large consignments were unexpectedly sent, towards the end of 1890, to the port, whereby the market was temporarily glutted, and a fall in prices ensued.

Weavers and their Bad Work.

Our readers, or at least most of them, know well that the subject of abatements for imperfect work by weavers has long been a matter of considerable friction in manufacturing establishments. Weavers don't like having their wages snipped by the cloth-looker, and when this becomes necessary in order to conserve the interests of the employer, the more combative of them make trouble with the cut-looker, though that much-maligned individual is merely doing his duty. The post this official holds is only a grade higher than that of the weavers themselves, and is generally given to a weaver of skill, experience, sound judgment, firmness, and tact; without these qualities well developed he is not fit for his post. Most weavers very unjustly regard the cloth-looker as their common enemy, but this is a great mistake. What sort of cloth would be sent into the warehouse and thence to Manchester, if it were never inspected before being despatched? We leave the weavers themselves to answer this question. We venture to affirm, however, that an employer who entered the business with a very handsome provision of capital for carrying it on, would very soon be driven out of the trade penniless if cloth-lookers were abolished. The result would be that the employment he provided would be lost, and the weavers thrown upon the world to compete for the places of those in work. Let weavers do their work properly,—which is no difficult matter in these days of good yarns,—and they will have little trouble with the cloth-lookers. It is highly necessary, too, that they dissociate themselves from the officious meddling of their trades-union officials, which is prompted by idle, careless, and worthless or incompetent weavers, who threaten mischief and actions in the County Courts for the recovery of small abatements made to ensure the more careful performance of the work. A week or two ago we dealt with this matter at some length, and shewed that, harsh as the cut-looker might be deemed, he rarely inflicted abatements that represented a tenth of the actual damage done to the cloth by the weavers' carelessness. A pertinent illustration of the truth of our remarks has just come to hand. On Monday, at the Colne County Court, His Honour Judge Gates gave a verdict for a cotton manufacturer of Brierfield, Mr. J. S. Veevers, who sued a weaver formerly in his employ, named William Cronkshaw, for 4s. 10d., that being the difference between the market price of a piece of cloth woven by the defendant and alleged to have been damaged through his carelessness or negligence, and the value of the piece when sold as a "reject." Defendant had paid 6d. into Court, and contended that that was sufficient for the damage, the warp having been a "burnt" or over-dried one. This exactly shews the point we urged in our previous note; and ought to be a very instructive case to both employers and weavers. To stop the impertinent and meddlesome intervention of the trades-union officials, let employers sue weavers for the differences between merchantable and unmerchantable cloth, when the latter has been made so by weavers' faults, and push the cases to their extremity until the award is paid. It is not good enough to do this and then let the defendants run off on the plea that they have no means. This course would soon put a stop to the proceedings on this ground, of which the employers have such good right to complain.

Another Unjust Prosecution of Employers.

According to a local newspaper—

The Rishton Victoria Cotton Company, Limited, was summoned at the Blackburn County Police Court on Wednesday morning by Mr. Birtwistle, factory inspector, for having four workpeople on their premises during illegal hours on May 18th last. Mr. Birtwistle visited the mill at 5-15 on the morning of the day in question, when he found four women at work on the looms. The manager of the mill, Mr. Wilson, admitted the offence, and explained to the Bench that the women were at work without the consent of the company. On March 30th last a serious breakdown occurred to the spinning engine, and a stoppage of the spinners was occasioned for nine weeks. This created widespread distress among the spinners, and the company got permission from the proper quarter to run a portion of the spinning department in the night in order to relieve the distress to some extent. About 30 male hands were thus employed, they making a start at six o'clock in the evening and stopping for half-an-hour at nine o'clock as the "breakfast time," and at 12-30 (midnight) until 1-30 for the "dinner hour." Work was continued until 5-30, and half-an-hour later the ordinary day operations were commenced by another lot of hands. The spinning department had to be driven by the engine which ran the looms in the weaving shed, and it was whilst the engine was being driven for the night operations that the four women secretly got into the weaving shed and started to work, unknown to the officials. Whitsuntide was approaching, and the women were eager to increase their income in view of the festival. The Chairman (Mr. T. Mitchell Eccles), said the Factory Act was specially for the benefit of the workpeople, and in this instance the hands had violated the Act themselves.—The Magistrates for that reason did not consider the case a serious one against the company, and a fine of only 5s. and costs would be imposed.

Mr. J. T. Birtwistle, the inspector, was very properly on the alert in this case, and very likely so from "information received." It was quite proper to put a stop to the transgression, but why did he not select the offenders for prosecution—the four women? He must have known the arrangements under which the mill was working at that unusual hour, and that no arrangement whatever had been made by the employers to engage the services of these women outside the time prescribed by the law. Why, then, did he not in conformity with the sections of the Act which we quote in another column select the actual offenders in the case at once? They were not only transgressing the Factory Acts, but were actually also amenable to the law of trespass for being in the mill at all at the time they were caught. We are surprised that the Company did not at once issue summonses themselves against the women in order to protect themselves. Even yet this ought to be done, and when these trades-unionist chickens "come home to roost," they will cease to hatch as many as are now ordinarily produced. We are glad to find that magistrates are beginning to discriminate and find the real offenders in the case, and we sincerely hope they will compel the inspectors to put the saddle upon the right horse. The case ought to have been dismissed as against the Company.

The Chicago World's Fair: An Exhibition of Bad Faith.

Readers of *The Textile Mercury* will remember that we originated the idea of British goods exhibited at Chicago being marked with their retail selling price in England, and counselled intending British exhibitors to make a display only on these terms, the object being, of course, to shew the American visitors to the Exhibition how severely they are mulcted in the interests of "protected" producers. Any direct benefits likely to accrue to British exhibitors will be extremely problematical: indeed if the Americans themselves believed in such a result they would never have allowed the Exhibition to take place on any consideration. Much to our surprise, however, our suggestion was accepted by the Exhibition authorities, and this concession was communicated by Sir Henry T. Wood, the secretary of the British Royal Commission, to certain Chambers of Commerce in Yorkshire, whose members were only willing to exhibit under the conditions suggested in these columns. Nevertheless, the well-known ways of the Western Republicans suggested a doubt as to their good faith, and in our issue of February 27th last we accordingly wrote: "Of course we are aware that this proposal, which originated in these columns, has been informally conceded by the American Commission; but it ought to be done by an express resolution, otherwise exhibitors may find some morning a request made to them to remove such particulars, as not being within the compass of the official regulations. One cannot be too careful when dealing with the American Republican party. This point properly assured, the matter of exhibiting might then be considered." And now our doubts are justified, as will be seen by the following paragraph from the *Manchester Guardian*:—

A serious doubt, to say the least, has arisen as to the conditions upon which foreign exhibitors at the Chicago "World's Fair" will be allowed to indicate the prices of the articles they display. In the prospectus put forward by the British Royal Commissioners it was stated that goods on exhibition, which may be imported for that purpose only free of duty, may be sold in bond at prices independent of the tariff, the duties being payable by the purchaser. In reply to an enquiry, the Director General of the Exhibition, Mr. George R. Davis, has stated that cards may be affixed to articles exhibited shewing the cost of manufacture, and that the prices at which they will be sold at Chicago may also be given. Exhibitors who take advantage of the latter privilege will be required to sell the articles at the prices stated to any purchasers who may tender payment for them, but the goods must remain until the close of the Exhibition. Nothing is said as to the payment of the duty by the purchaser, and it must be inferred from the following quotation from the letter of Mr. Davis that the seller is intended to pay it, although the very purpose of his giving the price at the place of production is to enable Americans to see the difference between prices in the States and other countries. Mr. Davis says:—"It would be obviously impracticable to permit exhibitors of foreign manufactures to place upon their wares prices which they might undertake to accept for the same provided no tariff law were in force in the United States."

Thus, after securing a grant of £60,000 from the credulous and complaisant British Government, and inducing British manufacturers to undertake the preparation of exhibits, the authorities of the Fair retract their word! We begin to understand now why the Mormons are so obnoxious to their fellow-citizens in the States. The Saints of Salt Lake City have two "peculiar institutions"—the practice of polygamy, and the observance of the commonplaces of social honesty: and the former gives

the people of Porkopolis and certain of their fellow-countrymen a pretext for removing from their offended presence the other and more accursed thing.

Textiles in the Vilayet of Trebizond.

The trade of this important district of the Turkish empire is a very large one, and although our Consul's report for 1891 is, as usual with such documents, published very late in the day, it contains several matters of interest. The mohair trade of the vilayet of Trebizond is not a thriving one, as Aleppo and Smyrna are considered better outlets for this article of Anatolian export. There was an increase in imports of cotton goods last year amounting to £12,285, chiefly owing to larger shipments from England. The total imports were valued at £274,830, a figure which is much below that of 1889, when the amount was £375,335. Had it not been for a considerable fall in the exchange value of the paper rouble, Russia would have been completely ousted from the market; as it is, French and German houses have made great strides, especially in Turkey reds and prints; the products of Smyrna, Aleppo, and Sivas having consequently been in much less demand. There was last year an increase in quantity, but not in value, of bagging imports by 800 cwts., due to cheaper qualities from Calcutta having been imported to cope with those of Dundee. The demand would have been greater had there not been a fall in imports for Persia. It will be seen from this that even in Trebizond the products of Indian looms meet those of Dundee. The fact by itself would not be of much importance, but forming as it does one out of a series of the same kind, the matter becomes really serious, and the anxiety of Forfarshire houses, with reference to Calcutta competition, can be well understood. Dundee may be said to regard the Indian capital in the same light as Manchester regards Bombay. The analogy is too marked to pass unnoticed. There was last year a slight decrease in quantity and a great decline in value of woollen goods, attributable to the importation of cheap common serges from Germany and the Danubian provinces. Woollen goods from England were complained of as very inferior to those of former years. If supplies continue so, says Consul Longworth, superiority will no longer be sought for in the United Kingdom. There is no necessity for a display of anxiety at these remarks. Importers in Turkey and shippers in Manchester, Bradford, Leeds, and London catering for the Turkish market, obtain and pay exactly for that class of goods which they require. Our consuls, who are not as a rule overburdened with commercial knowledge, are apt to indulge in pessimistic forebodings which only produce a smile on the part of those for whose benefits these warnings are given. Mr. Longworth provides us with several of these. He recommends greater punctuality on the part of British firms; "for as it is, pressing orders for goods on even cash terms are now scarcely ever executed in England with anything like ordinary celerity. Our mercantile classes at home would do well to bear in mind that they can no longer have it all their own way; that our commercial interests in these markets cannot possibly advance apace, while foreign competition is actually so strong and indifference in England is seemingly so great." It is entirely unnecessary for Mr. Longworth to remind British, or for the matter of that, German or French, manufacturers that they can no longer have it all their own way in the Trebizond or other markets. The fact has been taught by experience of a bitter kind; but we have not yet learned that indifference to their interests abroad is characteristic of shippers and producers in this country. There is much in connection with our foreign markets that consuls might with advantage refer to; but as a rule the topics discussed are of the stalest kind. If, besides vaguely stating that German and French houses are competing in this market or the other, consuls would give us the names of these enterprising firms, with the class of goods they sell, English concerns would be much more indebted to them than is the case at present. To resume: native linen and cotton stuffs are on the decline in the Trebizond district, being superseded by cheap European goods. Amongst the principal items of Trebizond exports are carpets, which last year were shipped to the value of £80,615, and silk stuffs, shawls, etc., figuring for £65,360. The imports of cotton goods we have already referred to. Those of woollens are about £120,000 a year for Anatolia. On Persian account the imports last year were: for cotton goods £350,875; for haberdashery £10,025; for silks and velvets £13,820; and for woollens about £95,000. Both in the Anatolian and Persian trade transacted through Trebizond houses this country leads the way in imports. In exports, however, the amounts classified under the head "Turkey and Egypt" are the largest. Britain comes second, and France makes a very good third. Samsoun, also referred to in Mr. Longworth's report, imported £455,000 worth of cotton goods last year. The laws of Turkey are modified counterparts of the *Code Napoleon* introduced in 1856. The order of procedure, revised in 1879, is, with due regard to the capitulations, equally French. There are two commercial courts within the vilayet, the one at Trebizond and the other at Samsoun. Each of those courts has a paid president appointed by Government, and four members, a paid Christian and a Mussulman, as well as an unpaid Christian and a Mussulman member, selected conjointly by the administrative and municipal councils. In commercial suits between an Ottoman and a foreign subject, the Consulate, besides sending a representative, appoints two members in the place of the two unpaid members. In mixed cases between foreigners the defendant is amenable to his own Consular Court in all cases but that of real property, which lies within the exclusive competency of the Ottoman civil courts.

The Ruin of England: A "Special Correspondent's" View.

We cannot congratulate some of our American trade contemporaries on the character of the "news" emanating from the correspondents, real or imaginary, responsible for supplying them with particulars regarding textile affairs in Manchester and other centres in this country. Some of these journals aspire to the attainment of an English circulation, but they are placing difficulties in their own way by publishing such nonsense as that which has lately filled their correspondence columns. One contemporary prints a grave discussion of the recent lock-out in this district from the pen of an individual who dates from London, where there is not a soul from whom information can be gained at first hand regarding events in the textile districts of the country. But London correspondents may perhaps be pardoned for their ignorance in this respect, and so long as they are content to forward letters consisting of extracts gleaned from the press of the North, and of cribbings from the Consular reports published by Messrs. Eyre and Spottiswoode, they are not likely to do much harm. But what shall be said of the "special correspondent" who, writing from Manchester itself, sends the following to the *Dry Goods Chronicle*?

Manchester, May 17th, 1892.

There is a financial undercurrent to our trade which it is difficult to understand or comprehend, and this has unmistakably cropped out at the last meeting of the Chamber of Commerce about its vote of bimetallism in its favour. We are losing our India, China, Japanese, an l South American trade through our gold policy, and you Americans through your McKinley tariff are running away with our cotton interests. You people have killed our Bradford trade and now you are killing our foreign cotton trade.

Apart from the literary inelegance of this distinctly amateurish "letter," and the staleness of the "news" which it professes to convey, there is something decidedly mischievous in the very tone with which our commercial ruin is described. "You Americans" include, as does England, a proportion of such individuals as form the Carlylean majority; and these, seeing such statements admitted into the columns of a reputable organ, may give them credence. Now it may safely be held that in a country whose daily papers speak frequently of the "countless looms of Birmingham and London" (*pace* the *New York World* and others) there is room for much improvement in the extent of the people's knowledge of European commercial affairs. Under such circumstances it is a discreditable thing that some trade organs should assist to increase the area over which this intellectual darkness prevails. The editor of the *Dry Goods Chronicle* knows very well that "Ichabod" will not be written for a long time over the body commercial of England. Let him go and "sin no more." His neighbours in New York and other cities have published statements more misleading still; but their very grotesqueness will have enabled Americans possessing a practical knowledge of our markets to discount them. It would also be excellently well if our worthy friends of the *Dry Goods Economist* would cease from publishing the reports of English correspondents who appear to imagine that there is a linen manufacturing industry in Manchester. There are no looms on linen here—not one. Correspondents should discriminate, when "cabbaging" from the local journals, between statements referring to distribution, and those referring to production. According to other "Special Correspondents'" recent statements silk plush is made here! The assertion proceeds from Manchester and London correspondents of our American contemporaries, who are certainly wasting their money if such communications are paid for—which is not likely, unless a more liberal spirit towards European correspondents has of late suddenly pervaded the American editorial mind.

SIR HENRY JAMES ONCE MORE.

Sir Henry James, in the speech on which we commented last week, and to which we advert again, modestly disclaimed the whole of the credit for recent factory legislation, telling the operatives "they had friends—sincere friends—now within the walls of Parliament, ever willing to assist them, and ever willing to see justice effected for them." It is implied in this statement that there has been a time when such was not the case. If this is meant, why did Sir Henry not distinctly state the period to which or whether to all antecedent Parliaments his remarks applied, and not defame those Parliaments which do not deserve it? If the statement has any truth in it, it only proves once more the discreditable character of professional politicians as a class. But we maintain that there is very little truth in it. The Parliaments of the past from 1830 to 1860 did do their duty to the workers, and that without the stimulus of votes as a reward to the members—which cannot be said of the "sincere friends" to whom the speaker referred. But there is another implication in this statement:

it is that the employers are tyrants over and enemies of the working classes. This is not creditable to Sir Henry James. We will leave this point, however, with its mere mention. As workers in the good cause, he associated with himself Messrs. Mawdsley, Birtwistle, Holmes, and the Executive Council of the Operatives' Association. These are the men with whom Sir Henry took counsel, and in whose moderation and "whose justice on the reforms suggested" he placed the fullest reliance. They were Sir Henry's guides, philosophers, and friends. He quite ignored the fact that these men, and the men and the interests they represented, were counterpoised by another body of men and their interests, of quite as great importance as contributors to the national welfare as these men, and whose interests were equally deserving of consideration if not of protection. But these men and their interests Sir Henry has persistently ignored. We need not, however, refer further to this, as it was the subject of comment in our last. Our point here is to ask whether the men named, *plus* the Executive Council, were men worthy, as leaders of the working classes, of the confidence he unquestioningly placed in them. Let us take Mr. Birtwistle first. It is about thirty-three or four years since Mr. Birtwistle emerged from the ranks of the weavers, and became secretary of the Accrington and East Lancashire Weavers' Association, which was formed by a secession from the parent association of Blackburn weavers. It is not necessary to trace Mr. Birtwistle's career through the intervening years; in its personal aspect it has always been creditable and above reproach. As an industrial leader we cannot say as much for him. Through the kaleidoscopic changes of the cotton trades-unionist movements he has generally come to the front, and in this way has gradually come to be recognised as the chief man connected with the weavers' societies. Now what is his record in this line? Beyond a mere mention of the disastrous strikes of 1878, and the burning of Clayton Grange, we will leave details and simply look at results. In brief they are these: In one large district, Burnley and neighbourhood to wit, he and Mr. Holmes, and all the forces they have been able to concentrate upon the task, have been utterly unable to prevent a considerable reduction of wages; whilst in the Blackburn district, where there was a manufacture of the same kind of cloths, they have insisted upon the payment of the old rate, to which manufacturers, to their considerable loss and the ultimate destruction of the trade, were compelled to submit. This was not because the Blackburn manufacturers were not so strong as those of Burnley, and could not have enforced it were they so minded, but because this branch of their business was not of sufficient magnitude, was not worth the price of the contest it would have involved to maintain it had they chosen to have fought the point. Hence Burnley has got a monopoly of a trade that has, singular to say, been almost the only branch of the weaving trade that has for years past undergone any expansion, and which still has the best prospects. The operatives' unions have used their strength tyrannically in this respect against their employers, and Messrs. Birtwistle, Holmes, and their colleagues are responsible for this. The employers were stimulated into endeavouring to remedy this by the criticisms of this journal, a couple of years ago; but the remedy devised has not yet taken effect. Weavers are permitted to weave in Burnley for about 10 per cent. less wages than in Blackburn.

There is next Mr. Mawdsley, that brilliant strategist of the Spinners' Association. After playing the petty tyrant upon individual firms for several years past, by the advance of the most arrogant pretensions and the promotion of isolated strikes, he precipitated upon the operatives the recent lock-out, which must have cost his constituents, the other workers affected, and the trade generally, a sum of not less than £200,000. We think this sum, *plus* his salary, is rather more than his services are worth.

To be brief: these men are all discredited by their proved incapacity in their own sphere, and their want of practical experience and knowledge of the difficulties and risks attending the conduct of the cotton industry on its commercial side, from being advisers upon its interests and the manner in which it shall be dealt with by the legislature in the imposition of restraints upon its conduct. We protest, therefore, on behalf of the trade, against Sir Henry James, a stranger to the county, and utterly unacquainted with its staple industry, coming here and obtaining a trust, and in his representative capacity consorting with these men, and taking their views as truthful statements of facts, and on that basis assisting them to obtain the passage of harassing laws by the utilization of which they hope to enforce other demands, while at the same time he refuses to listen to more competent judges and men more deeply interested. Such conduct is a gross abuse of the privileges of his position as the representative of a Lancashire constituency. The endorsement of this conduct by "his good friends" Mr. Mundella, Sir Henry Roscoe, and Sir William Houldsworth, does not make it any better. If the first-named gentleman thinks he could correctly diagnose the conditions of the Lancashire trade from his experience in the hosiery trade of Nottingham, he is egregiously mistaken. Sir Henry Roscoe knows much more of the inside of a chemical and scientific laboratory than he does of a cotton mill, and we have good reason to believe that his contributions to the solution of the humidification and ventilation questions are of very much less value than is usually affirmed. As for Sir William Houldsworth, his experience of the trade is restricted to a special department, experience in which does not imply any knowledge of the general cotton trade. The other names given are far worse. What in the name of common sense does Mr. George Howell or Mr. Mowbray know of the industrial or commercial aspects or requirements of the cotton trade? It would be a gross impertinence on their part to offer a single word of advice on the matter.

By the revelation of the names of those with whom he has thus sought counsel, Sir Henry James has demonstrated his own want of knowledge, and his incapacity to select technically intelligent advisers in a case where it was all-important he should have the best. But this incapacity becomes almost criminal when we further consider that he deliberately sought and gave full credence to the statements of men who knew only very imperfectly one side of the question on which it was necessary he should have light, and then, to confirm him in the views he had received, sought the approval of men who knew nothing, whilst at the same time he repudiated the advice and information offered by the best experts in the trade, who knew both the industrial and commercial aspects of the question in its widest and most intricate ramifications. Sir Henry James might have pleaded extenuating circumstances had such men been quite inaccessible, but we have reason to know that there were amongst his most prominent and firmest supporters in Bury, men who not only could, but did give him the truth upon these matters, to which he refused to listen. And these men, though agreeing, as do we, with his views on the general politics of to-day, will be found amongst his opponents, much to their deep regret. But self-preservation is the first law of nature, even amongst cotton spinners and manufacturers, and it is impossible to remain quiescent whilst a man is bartering away the commercial and industrial interests of the country, to assure himself a stepping-stool from which he may leap upon a woolsack. In the event of his defeat, we can assure Sir Henry James there will be a consensus of rejoicing amongst Radicals, both Unionist and Separatist, and Tories alike.

Sir Henry James in his address enumerated the demands of which he had been the mouthpiece, and so glossed them over that any stranger to the subject would have been convinced of his excessively "sweet reasonableness," and of course, would have been deluded. We examined and criticised these demands at the time, and notwithstanding that these criticisms were forced into his "daily thoughts and almost driven into his dreams" he neither answered them nor modified the demands, which clearly shews that he was actuated by other considerations than to make the Act a good one. To repeat our criticisms would be superfluous. The Act as it stands is simply a disgrace to any legislature, and would never have been passed had those who supported it not been pandering to the voting power of the trades-unionists, whom they were endeavouring to conciliate, and whose support they were, like Sir Henry James, hoping to secure. In almost every clause the Act inflicts a penalty upon innocent persons, mulcting the employer for the offences of the work-people, without the slightest regard to equity. But Sir Henry seems to pride himself principally upon what he affectionately regards as particularly his own bantling, namely, the celebrated "24th clause." It is very like its parent: it professes to be that which it is not. Strictly read, and in accordance with the canons of jurisprudence which forbid the importation into the law of anything not contained within the text of the Act being interpreted, this clause is absolute nonsense. We challenge its acknowledged father, on the strictest principles of grammatical construction, to make anything else of it. For a clause like this to have sprung from one of the lights of the legal profession, is a thing no lay mind can comprehend; it proves, however, two things: firstly, that the light has been enormously over-estimated, and instead of being like that of the sun in the midsummer heavens, it is more like that of the glow-worm in the hedgebank, requiring darkness in order that it may become visible. The clause itself is a fraud; it professes to be an honest child begot in lawful wedlock, having honesty for its father and industry for its mother. Instead of that it is a child of a dark intrigue: ambition is its father and trades-unionism its mother, and we trust its illegitimacy will be discovered and the dishonesty of the pretensions made on its behalf exposed. It was conceded by the legislature with false pretences, and has never yet been put in operation except on the stimulus of the trades-unionists. Only one or two instances at the most could be adduced tending to justify its enactment, and in one of the cases it was quite permissible to doubt the sanity of the offender, who has since left both the trade and the district. The allegation was that it was wanted for the coercion of the Burnley trade: but it has been put in operation only in Blackburn and districts making similar classes of goods, in which the revelation of the particulars, as demanded under the trades-union construction put upon the clause, will be far more disadvantageous to the manufacturer than to others who have only to give the details of

a printing cloth. The trades-union emissaries in the inspectorate are using it, as we said they would do, by harassing those whom they want to control. No weavers, either before or since its enactment, have been produced, or can be produced, who will testify that any particulars have ever been refused them which were necessary to enable them to ascertain whether they were being paid according to their agreement or not. No weaver has ever set the law in operation, and wherever action has been taken upon it, has been by the inspectors, and the weavers have been summoned as witnesses instead of standing forward as complainants. The most important case in which the law has yet been tested is the one at Blackburn, reported in our columns a few weeks back. Here there was not the slightest dissatisfaction on the part of the weavers, and not the slightest allegation that they were being wronged by being underpaid. We are strongly of opinion that the magistrate who adjudicated upon the case was wrong in the decision he gave, because he stepped outside the Act, and imported into it the standard list before he could make any sense of it. The Parliament had refused to acknowledge this list, and had struck out of the clause everything that could be construed into a sanction of it. This was pointed out to him by counsel, but he replied that they could not take cognizance of what the House did, and then inconsistently went outside and imported the list into it to enable him to attach any meaning to the clause at all. Surely this was *ultra vires* on his part. We trust to see this matter submitted to the jurisdiction of a Court quite out of the reach of either trades-union or political influence. But let us assume for a moment that the verdict is perfectly sound, and that the particulars as construed by the Bench to be the requirement of the Act have been given,—of what benefit has it been? Have the particulars of the construction of the cloth been, or will they be, changed to the advantage of the weavers? Have their wages been increased? The answers to these questions are all in the negative, and prove that this clause is absolutely worthless for any purpose whatever except as an instrument by which the trades-unionists, or a vindictive inspector, can harass the employers. And the achievement of this is the thing upon which Sir Henry James prides himself. Well! there is really no accounting for tastes. He took the meeting into his confidence, and told it that the Government was determined to have this clause carried into effect, and that before the Whitsuntide holidays passed away they would appoint a thorough expert to wet-nurse this rickety bantling of the speaker's, and raise it to a satisfactory condition of health. We doubt very much the ability of the person to whom these remarks pointed to perform such a miracle as will be required, and who it is once more rumoured has got the appointment referred to. This of course is Mr. Thomas Birtwistle himself. We cannot, however, yet bring ourselves to believe that the Government is capable of perpetuating such a job as this appointment would be. It would be a demonstration that all consideration for the equitable administration of public affairs had been abandoned. Here at present we will leave the 24th clause and Sir Henry James together. Next week we will perhaps interview him a little further.

THE FACTORY ACTS: BREACHES AND BLUNDERS.

Last week Messrs. O. and J. Folds, spinners and manufacturers, Rishton Mill, Burnley, were summoned before the Borough Bench of magistrates, on the summons of Mr. Platt, sub-inspector of factories in the Burnley district, on a charge of employing two women during prohibited hours. Mr. Platt testified that he found two women at work on the 13th May, at 5-40 p.m., or ten minutes beyond the time permitted by law. So far the case shews no departure from very ordinary lines. One, however, comes up in the answer to the charge made by the defendant firm. Mr. Obadiah Folds, one of the defendants, produced a notice affixed in his mill and which was read out to all tacklers and overlookers. This stated that the tacklers and overlookers would be held responsible by the employers for any infractions of the law that might take place. It was very clear from the evidence that the firm had done everything in their power to enforce conformity to the Act, even to the extent of devolving the legal responsibility upon their subordinates. In accordance, therefore, with this resolution, when summoned themselves they summoned their overlooker, who had charge of these women as weavers. This was a man named Howard Catlow.

The breach of the law was undisputed. What the magistrates had to decide was where the responsibility rested. Mr. Emmett, Catlow's solicitor, in cross-examination of Mr. Folds, elicited the fact that there was in existence another set of rules, one of which affirmed that children, women, and young persons working during prohibited hours would themselves be held responsible. This regulation, whilst apparently conflicting with the one already mentioned, is in reality confirmatory of the devolution of responsibility by the employers upon the offenders. It is not a flat contradiction—as Mr. Emmett, Catlow's solicitor, affirmed—but is corroborative of the former, and only differs in fixing the responsibility upon different persons. In bringing a summons against the overlooker Messrs. Folds had had the charge made out that Catlow, the overlooker, stood in the capacity of employer to the two women weavers—an obviously untenable position. The magistrates permitted the summons to be amended so as to state "that Catlow being the servant of Messrs. Folds did," etc., and then they dismissed the charge against Messrs. Folds, and fined Catlow 5s. and costs. This case has caused a considerable amount of excitement in Burnley, though we hardly see why it should have done so. Evidently the Overlookers' Association does not like to be saddled with the contingencies it implies, and on Wednesday, Mr. Emmett, the solicitor to the Overlookers' Association, informed the Bench that he had been instructed to appeal against the decision, and asked them to fix the amount of recognizances. This was done, the amount being fixed at £50 and two sureties of £25 each, which sums were lodged.

We sympathize with the sentiment which animates both the employers and the overlookers, because it is simply a gross injustice that either of them should be made amenable for the offences and transgressions of other people. The whole matter has been made as fine a "kettle-of-fish" of as could well have resulted from the all-round blundering that has taken place. Mr. Platt, the inspector, is the prime and greatest blunderer of the lot. Adopting the orthodox procedure of the inspectorate, he finds two women committing an offence against the law, and forthwith proceeds to summon two perfectly innocent persons, who were utterly oblivious of the transgression and had prohibited all such, and in equity, therefore, were perfectly innocent. These persons—the employers—not liking this procedure, summon a third person, almost if not quite as innocent as themselves: only less so to the extent that he might possibly be cognizant of the act of wrong-doing; but so far as commission of it was concerned, he was as innocent as they were. This was blunder number two. The overlooker, who was thus made the scapegoat, made the next and third blunder in defending himself, instead of charging the defence forward upon the two weavers who had done wrong. Why did he not summon them? He would then have got to the source of the offence and could have passed on the penalty. He was badly advised. Blunder number four was committed by the Bench of magistrates, who ought, after the evidence, to have dismissed the case at once, and instructed the inspector to have brought his charge against the offending weavers. Such blundering incompetence in the administration of justice under our factory legislation as this was constantly taking place, and is a disgrace to everyone connected with it. The public are given to understand that no prosecution for infractions of the Factory Laws is ever initiated without the sanction of the highest official at the Home Office. This is Mr. Whymper, Chief Inspector, who now sits in the seat of Mr. Alexander Redgrave. From what we observe in relation to prosecutions for infractions of the Factory Acts under the new *régime* it would appear that Mr. Whymper has adopted the traditional policy of the Home Office in these matters, namely, that when Brown has done wrong, they shall kick Jones and Robinson for it. Burnley, we presume, is in Mr. Superintendent Henderson's district, and we suppose that this matter would also come under his cognizance; if so, we are surprised that he should have sanctioned a prosecution against any one but the offenders, providing he had any say in the matter at all.

It is time the Inspectorate had notice, and we hereby give it, that the trade are determined they will no longer submit to the harassing persecution directed against them, mainly by trades-unionists working through their tools in the mills and on the Inspectorate and impressible persons in the Home Office. There is no need that they should so submit: the law will protect them provided they intelligently avail themselves of its provisions. In order to shew that our statement is correct in relation to prosecutions of this kind we reproduce, for the benefit of all whom it may concern, Clauses 86 and 87 of the Act under which they are now working. They are as follows:—

(86.) Where an offence for which the occcupier of a factory or workshop is liable under this Act to a fine has in fact been committed by some agent, servant, workman, or other person, such agent, servant, workman, or other person shall be liable to the same fine as if he were the occupier.

(87.) Where the occupier of a factory or workshop is charged with an offence against this Act, he shall be entitled, upon information duly laid by him, to have any other person whom he charges as the actual offender brought before the court at the time appointed for hearing the charge, and if, after the commission of the offence has been proved, the occupier of the factory or workshop proves to the satisfaction of the court that he had used due diligence to enforce the execution of the Act, and that the said other person had committed the offence in question without his knowledge, consent, or connivance, the said other person shall be summarily convicted of such offence, and the occupier shall be exempt from any fine.

When it is made to appear to the satisfaction of an inspector at the time of discovering an offence that the occupier of a factory or workshop had used all due diligence to enforce the execution of this Act, and also by what person such offence had been committed, and also that it had been committed without the knowledge, consent, or connivance of the occupier, and in contravention of his orders, then the inspector shall proceed against the person whom he believes to be the actual offender in the first instance, without first proceeding against the occupier of the factory or workshop.

DAMAGE to the extent of about 80,000 marks has been occasioned by fire in the mixing room of the cotton spinning factory of Johann Friedrich Klauser in Mont-Gladbach. It is supposed to have been caused by incendiarism.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

BOSTON, JUNE 14TH.

THE GREAT CARPET LOOM PATENT SUIT: FINAL JUDGMENT.

The great suit of the Webster Loom Co. *v.* Higgins, which has been proceeding for many years, has been finally settled. Ten years ago, when a decision had been rendered in the United States Supreme Court in favour of the plaintiff, the late Mr. E. S. Higgins is said to have remarked "Well, we'll fight you ten years more, and then beat you!" The prophecy was an unusual one—for it came true. On the 17th ult., Judge E. Henry Lacombe handed down the final decision of the court, as follows:

The Webster Loom Company *v.* Emma L. Higgins, Eugene Higgins and Josephine Brookes, as Executors, etc., of Elias Higgins, deceased:

This cause having come on to be heard upon defendants' motion for final decree, NOW THEREFORE it is, on motion of Livingstone Gifford, Esq., counsel for defendants, ORDERED, ADJUDGED AND DECREED that the complainants do recover from the defendants the sum of six cents, for infringements committed on the patent on which this suit is brought. And it is further ORDERED, ADJUDGED AND DECREED that the defendants do recover of the complainants the costs in this suit, to be taxed since the entry of the interlocutory decree, and that the defendants have execution therefor against the complainants.

As the Webster Loom Co. have filed no exception to the Masters' report, there can be no further appeal. The case settles the rights appertaining to the Johnson loom, and is one of considerable importance to carpet manufacturers.

THE HANDKERCHIEF INDUSTRY IN AMERICA.

Belfast, Glasgow, and other centres, still lead the way in supplying the beautifully printed and embroidered handkerchiefs which are sold in this country. The McKinley tariff did not have the immediate effect anticipated of causing a spurt in the trade here. The finer grades of ordinary handkerchiefs are still principally imported, American manufacturers having attained perfection in the lower and perhaps some medium grades only. Since 1890 there have been more hem-stitching machines at work in the United States. The usual claims of superiority for the native article are made by the trade and other journals, which do not get the advertising patronage of Irish firms. It is only those European industries which find mention in the advertisement pages of our dry goods organs that are superior to the native manufactures. If you want a puff here, it can readily be obtained by paying for it—the bigger the "ad," the bigger the puff. British manufacturers have so far refused to be caught this way, but the announcements of a few German manufacturers appear regularly in the columns of at least one of your New York contemporaries. The embroidered handkerchief trade is not yet a large one with us. There are only a few machines at work, as it is found the Swiss houses hold the position, even with high duties, which favour the native product. The increase in the duties on hem-stitched and embroidered handkerchiefs was 50 per cent., the rate now being 60 per cent. *ad val.* as against 40 per cent. prior to the advent of the McKinley Bill. The trade may eventually become a large one here, but at present it cannot be said to possess important proportions. There is a report that Messrs. Acheson Harden, of Belfast, will open a factory somewhere in New Jersey, but I have been unable to get it authoritatively confirmed.

Of the 85,000,000 yards of carpets now produced annually in the Republic, 47,000,000 are ingrain, 20,500,000 tapestry (Brussels and velvet), and 17,000,000 body Brussels and Wilton. Philadelphia produces over half of this, 46,000,000 yards, valued at $29,000,000; New York, 19,000,000 yards, valued at $13,500,000, and Massachusetts, 13,500,000 yards, valued at $10,000,000. The cheapening of the product and the consequent increase in the per capita consumption, which is tenfold greater than in 1860, is the direct result of improvements in machinery. Fine tapestries and Brussels can now be obtained at the former cost of the rudest ingrain. The enormous product, 85,000,000 yards, is consumed entirely at home, making a per capita consumption of nearly a yard and a half, far more than in any foreign country.

MISCELLANEOUS.

James Harden, of the firm of Acheson Harden and Co., handkerchief manufacturers and importers, sails to-morrow, per steamship *City of New York*, for a six weeks trip.

Mr. S. B. Heine, of the firm of Neuburger, Heine and Co., importers of embroideries, 468, Broome-street, New York, sailed abroad recently per steamer *Augusta Victoria*.

The failure of the firm of Corn, Kiliske and Co., New York, has disturbed importing circles, as all the leading houses are creditors to a greater or less extent, and especially as it follows so closely upon the Ely and Brother and the Simpson failures.

At the experimental station of the State Agricultural and Mechanical College at Auburn, Ala., an electric motor has been put in operation to gin and press cotton, and for other farm operations. The current is secured from the dynamo in the college not far distant. In ginning cotton by electricity, the fire risk is reduced to a minimum, and the space occupied for power is small. Another advantage is that a motor can be put wherever the power is required, whether it be in the ginhouse or elsewhere. Still another advantage would be that at night the ginhouse can be lighted with perfect safety by incandescent lights; in good picking weather, where there is not very much space for storing the seed cotton, this would be a great advantage.

Two years ago middling uplands cotton sold at 12 5-16c. one year ago at 8⅞c. and now at 7 13-16c. But this violent decline of 4½c. a pound from two years ago has not seriously affected the cotton goods trade, at least not in the same ratio, simply because conditions are changed. That there has been a fall in prices of light and irregular makes of brown and unbleached cottons to an unprecedented extent is conceded, but where the loss was most felt, production was checked and diversified as in the case of printing cloths. As an offset to the low price of cotton, labour, which is a most important element of the cost, has increased, while the hours of labour in some states are not so many, and hence no very accurate conclusions can be drawn about ruling rates for manufactured cloth. This settling of prices, therefore, must be wholly left to supply and demand, and although the mills generally have never been run with greater speed, on certain lines of goods some of them have their products sold up to October next. One South Carolina Mill is sold 1,189 bales ahead on 4-4 and 7-8 brown sheetings and drills, and two other mills have similar products engaged ahead to the extent of seven hundred bales.

AT a meeting of the German Jute Manufacturers' Association, held in Hamburg the other day, it was resolved to continue the short-time agreement, which has been in operation since February 1st, for another period beginning July 1st.

GUATEMALA TARIFF.—From the 8th September next the following articles amongst others will pay 25 per cent. instead of 50 per cent. Customs duty in Guatemala, viz.:—Elastic web of any kind for boots; woollen yarns for embroidering or weaving; cotton thread and wick or yarn, grey or bleached, for weaving; and red cotton yarn and different dyed cotton yarns.

Designing.

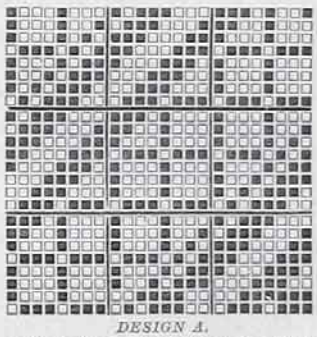
NEW DESIGNS.

COTTON SUITINGS AND HEAVY CLOTHS.

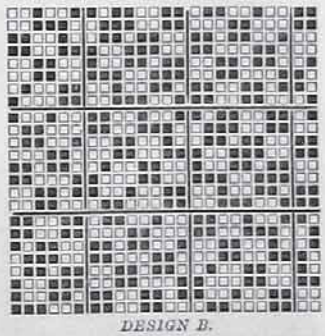
Designs A, B, and *C* will be found well adapted for cotton suitings and other purposes; 24 shafts, 24 to the round, straight over drafts. Warp 2/24's, in a 16 reed, 3 in a dent, with 48 picks per inch of 12's weft. The warp all one solid colour, such as chocolate, deep purple, dark moss green, dark drab, etc. Weft all white, cream, light straw, or lemon. Fancy blouses, jackets, and vestings, would shew to great advantage if produced from these three designs. All the fancy colours may be used for warp and wefts, provided they are in contrast with each other.

GINGHAM CHECKS.

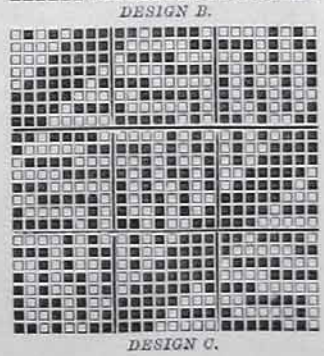
Fancy gingham check patterns, in plain weaves, 40 dents per inch, 2 in a dent of 36's warp, 80 picks per inch of 36's weft. Warp and weft pattern: 24 white, 24 china blue, repeat six times=288 threads; 36 white, 36 dark navy blue, repeat three times=216 threads; 36 white, 12 red, 36 white, 36 pale blue, 36 white, 36 pale blue, 36 white, 36 pale blue, 36 white, 24 dark, 24 white, repeat 6 times=288 threads; 12 emerald green, and repeat the entire pattern from the first 24 white. The total threads for a repeat on the pattern sheet will be 1,104 threads, or nearly 14 inches in the cloth; hence these large-sized patterns require double width or 54 inches when out of the loom. Weft pattern the same as the warp. For variety, dark buff in place of pale blue, dark brown for dark blue, pale blue for green, and dark blue for red. Other colour arrangements may be made; but we advise the pattern to be retained in the order we have given, and white or cream to form the



DESIGN A.



DESIGN B.



DESIGN C.

principal feature in warp and weft. Good bright finish, such as is obtained with metal bowls, which give a finer face and lustre than a finish with paper bowls.

Second pattern: 12 white, 4 mid lilac, 64 white, 4 mid lilac, 24 white, 4 mid lilac, 64 white, 4 mid lilac, 24 white, 4 mid lilac, 24 white, 4 mid lilac, 12 white, 16 mid lilac, 4 small black and white print, 24 mid lilac, 4 black and white print, 24 mid lilac, 4 black and white print, 24 mid lilac, 2 black and white print, 36 mid lilac, 8 dark brown, 24 white, 8 dark brown, 36 mid lilac, 2 black and white print, 24 mid lilac, 4 black and white print, 24 mid lilac, 4 black and white print, 24 mid lilac, 4 black and white print, 16 mid lilac, and repeat from the first 12 white. Weft pattern the same. These patterns will be found exceedingly handsome. Finish as for the first; width 54 inches.

FIGURED STRIPE.

Sketch 1 is an example of a very simple, yet effective stripe pattern, which may be utilized for various classes of goods, but which we have developed in *Design D* as a dress stripe pattern to the following particulars:—

Warp.

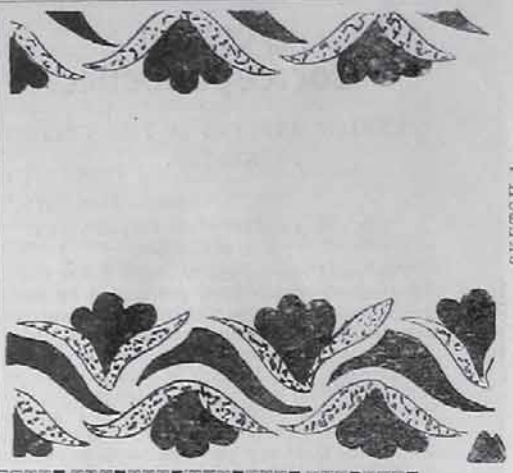
6 threads of 2/60's cotton
67 ,, 2/36's mohair
15 ,, 2/64's cotton or more, according to desired width of stripe.
16's reed 4's

Weft.

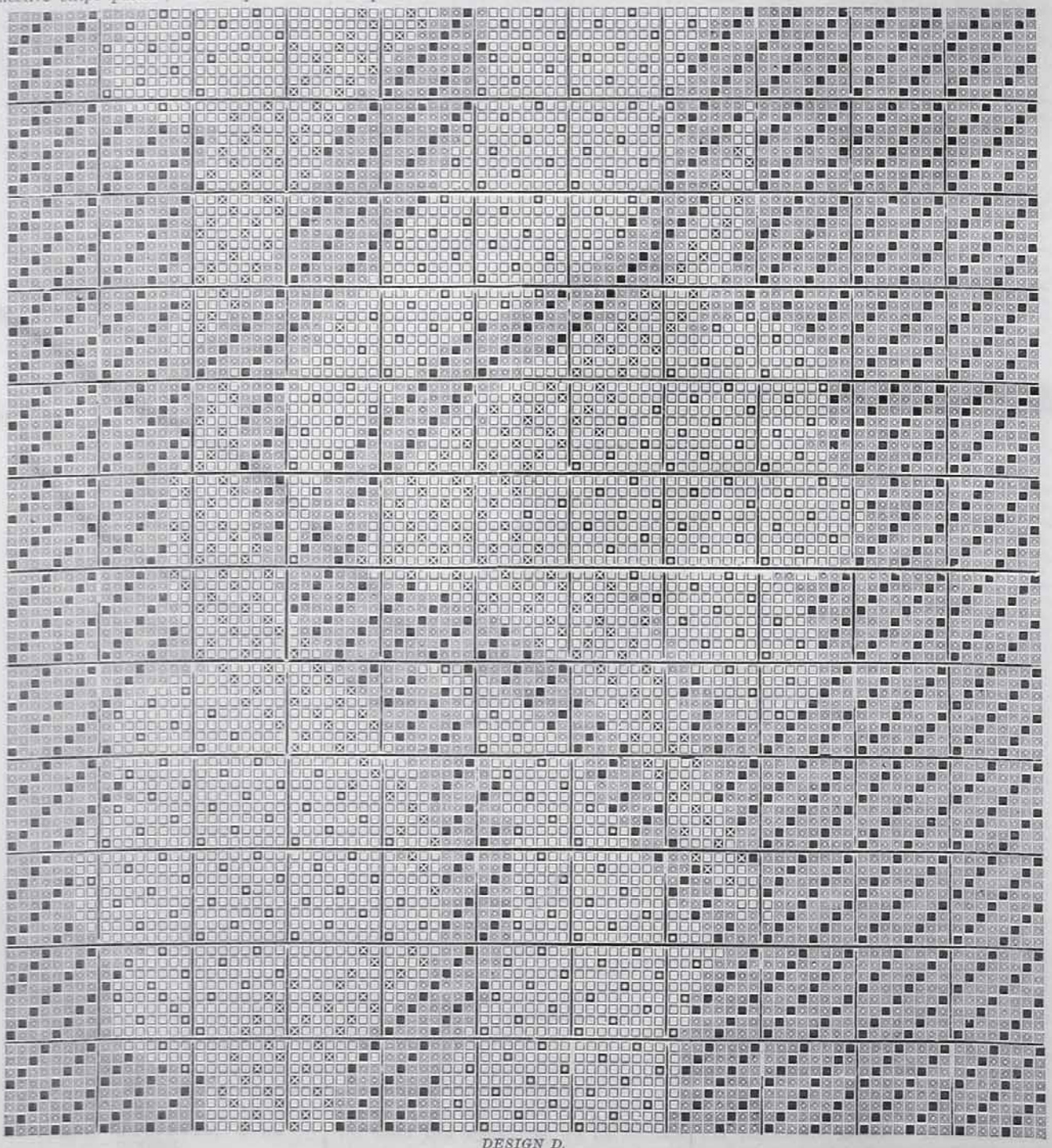
All 40's botany weft, 64 picks per inch.

Another effective method of development would be as a double warp matelasse; *i.e.*, let the cotton warp form the ground throughout the piece and introduce an extra warp of mohair to form the stripe figure.

The method, however, given here will prove very effective, since the bold warp flushes of seven will form a good contrast with the weft twill ground, while the 4-end sateen warp flush will give a fairly good representation of the crape effect indicated in *Sketch 1*.



SKETCH 1.



DESIGN D.

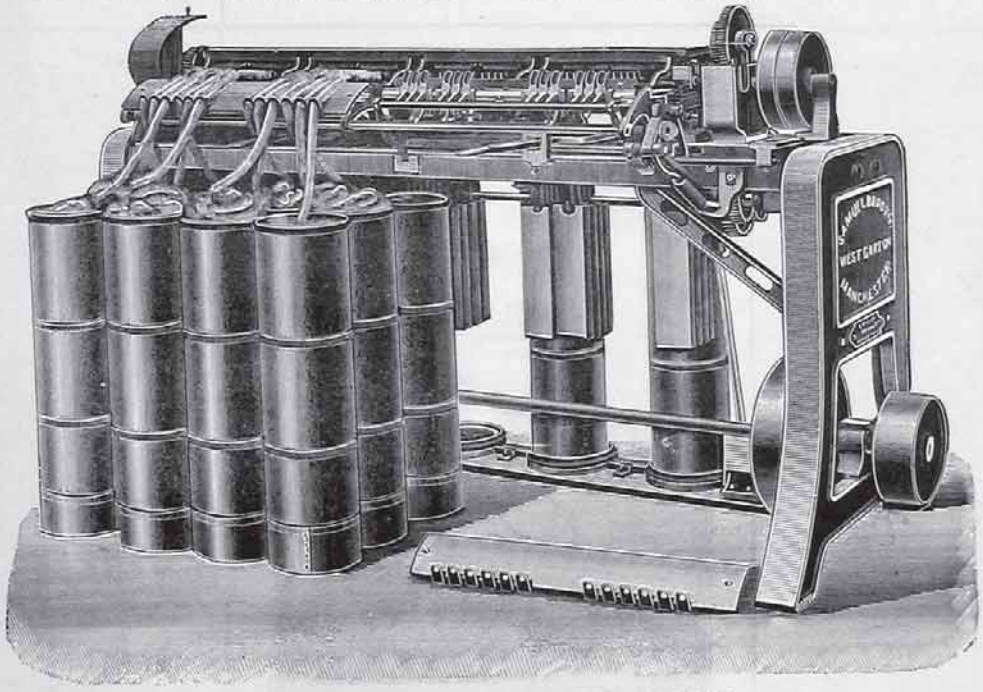
TEXTILE MACHINE-MAKING ESTABLISHMENTS.

MESSRS. BROOKS AND DOXEY (LATE SAMUEL BROOKS), MACHINE MAKERS, UNION IRONWORKS, WEST GORTON; JUNCTION IRONWORKS, NEWTON HEATH; AND 15, MARKET-STREET, MANCHESTER.

Amongst the notable textile machine makers of the latter half of the century which has now entered its last decade, who have left their impress upon the cotton trade, must be reckoned the late Samuel Brooks, the founder of the eminent firm the rise of which we propose briefly to sketch in this notice. To a great extent the early history of an industrial or commercial establishment must necessarily be involved in a biographical notice of its founder, because his work is simply the best expression of his life and capabilities. The observance of the proper sequence of events therefore dictates that our notice should begin with an outline of Mr. Brooks's life and labours.

The late Samuel Brooks was a native of Middleton, a village near Wirksworth in Derbyshire, where he was born in 1826. This village is situated very near to Cromford, which we may almost term the birth-place of the English cotton trade, at least in its modern form. Masson too is immediately contiguous to Cromford, and it was in these two places that Arkwright planted and for the remainder of his life worked his first and most successful mills. In the hill districts of Derbyshire, and especially so near to Cromford as Wirksworth, it would be impossible for young Samuel Brooks to pass the days of his boyhood without hearing everything about and having his ambition excited by the story of Sir Richard Arkwright, the barber's boy, who by his inventive genius and splendid business abilities laid the foundation of England's chief industry, the cotton trade; made a colossal fortune, became high sheriff of the county, and received the honour of knighthood. It was a well-known tradition, and thoroughly believed in as a fact, that from the two mills of Cromford and Masson, Arkwright for many years made an income exceeding £40,000 per annum. This was just the story to excite an ambitious boy to emulation, and there can be but little doubt that Samuel Brooks felt its influence. He was moderately fortunate in the circumstances of his birth, as his parents were enabled to give him a better education than fell to the lot of most boys in those days. This he received at the Wirksworth Grammar School, which he left in his fourteenth year with such an equipment of learning as a studious youth of his years might be expected to obtain in such an establishment.

With this equipment, *plus* a considerable fund of strong common sense and an ambitious spirit, he made his first venture into life. Derbyshire at that time offered few openings in the cotton trade or its connections, whilst Lancashire on the other hand was just making another step forward in its development, this being the result of the then recent invention of the self-acting mule and its subsequent improvement by Richard Roberts, and the stimulus to invention that his success created. To Lancashire therefore that young Brooks turned his thoughts and attention. The first engagement he secured was with the firm of engineers and machinists of which the late J. G. Bodmer was the principal, whose services he entered as junior clerk. Here he remained three years, and as this establishment was in somewhat close proximity to that of Richard Roberts, and equally devoted to cotton machinery, there would undoubtedly exist between them a spirit of healthy emulation, as Mr. Bodmer was also an inventor of no mean capacity, as is shewn by the numerous inventions for the improvement of cotton machinery that he patented. This engagement would still further bend young Brooks's disposition towards mechanics as the business of his life. At the end of the time mentioned he transferred his services to Messrs. Elce and Cottam, another Manchester firm engaged in the construction of cotton machinery, and at that time standing well in the estimation of the trade for the production of good machinery. As Mr. Brooks was now approaching manhood, the high qualities of his character as a servant, a mechanician, and a man, began to shew themselves very prominently, and won him not only the confidence of his new employers, but soon obtained for him a commanding position in the management of the firm. The failure of the health of Mr. Elce caused the devolution upon Mr. Brooks of the management of the commercial side of the business, and the death of the principal occurring not long subsequently, the conduct of the establishment was entirely entrusted to him by the executors. His engagement with this firm gave him the opportunity of acquiring a thorough knowledge of the machine trade, both in its industrial and commercial sides; and having attained this necessary equipment for starting business on his own account he formed the resolution to do so. The initial step in this direction was taken in 1859 by his becoming the tenant of a room in Union Mills, Minshull Street, Manchester, which he furnished with tools and machinery necessary for the production of loom temples and their adjuncts, and for the repair of cotton machinery generally. The entire staff did not exceed half a dozen hands, but this was far better than beginning on a larger scale while the business connection was to form. Up to this time nearly all spinning establishments included a repairing shop and a staff of mechanics, but these had been found an expensive luxury and were being gradually discarded. The institution of general repairing shops to which the public could resort greatly accelerated their complete elision. One of these Mr. Brooks founded, and this became the nucleus of the present extensive business of the firm.



DRAWING FRAME.—MESSRS. BROOKS AND DOXEY, MANCHESTER.

At this time the hammer, the chisel, and the file, formed important portions of the equipment of mechanics, and the tools by which machines were fabricated. Machine-making was almost a handicraft, and, except a very few, the splendid automatic machine tools that now exist were almost unknown. But in this department, as in that of cotton spinning before, the time had now arrived for the advent of a revolution that should transform the skilled mechanics of those days into the superintendents of automatic machines. Mr. Brooks saw

this, and his next forward step was to commence the construction of engineers' tools alongside his other work. This was a distinct success, as the new tools met with great appreciation.

By this time we are brought to the eve of an important event, namely, the outbreak of the Civil War in America, which affected the cotton and machine-making trades in a very serious degree. The spinning and manufacturing industries were paralysed by the cotton famine, and sympathetically the machine-making trade suffered by the arrested development of the two former on every hand. Still, to the machine trade it was not an unmixed disaster: the endeavour to substitute the short-stapled and poor cottons of India and other countries for those of the States necessitated a careful examination of the machinery throughout the mills and its adaptation to the shorter staples.

The late Mr. Samuel Brooks.

This was accomplished in the main by setting the centres of the drawing rollers in all the machines of which they formed a part nearer together. This enabled them to hold the drawings, slubbings, and rovings, and pass them from one pair to another without undue attenuation or breakage. The impossibility of doing this with them as arranged for the longer-stapled American varieties was the cause of the troublesome difficulties experienced with the short cottons in the early attempts to use them. Mr. Brooks's constant association with cotton machinery, combined with his previous training, led him to detect a weakness in the drawing frame when using the inferior cottons just then in vogue, which had not been so prominent previously. As a result he brought out his improved drawing frame, a machine that quickly gained the approval of the trade, as proved by its extensive adoption and continued popularity.

The rapid extension of business in every department about this time (1859), forced upon Mr. Brooks's consideration the necessity of providing more accommodation for the performance of the inflowing work. His staff of operatives had already increased from six to sixty, and his premises did not offer advantageous capabilities of further extension.

He was not long in settling this matter. The large engineering firms and others had gradually been moving outwards from the city to the outskirts, where they had more elbow-room and ground was less costly. Thither Mr. Brooks also went. A large plot of land on which stood a three-storeyed building capable of being adapted to the requirements of his business was secured in Thomas-street, West Gorton, between two and three miles from the Manchester Exchange. Hither the whole of his tools were speedily removed. Additional buildings were also erected for the increased plant that the growing business was demanding. The new establishment was named "The Union Ironworks," a name that, through its productions and the important inventions and improvements that have issued from it, has since become well-known throughout the cotton-spinning world. The drawing frame, which had become the speciality of the firm's business, was further improved by the addition of new patented inventions, and became so highly esteemed in the trade that leading firms of spinners and new joint-stock companies, in giving out contracts for machinery, we are informed, expressly exempted drawing frames from the contract in order to purchase them direct from Mr. Brooks themselves. Mr. Brooks introduced an improved doffing comb for the carding engine, which was a great advance upon the old one in common use. Soon after removing to West Gorton he commenced the production of throstle-spinning and doubling frames—a step forward that had an important bearing upon his subsequent success by obtaining him a business connection amongst spinners, manufacturers, and doublers, whose trade requirements demanded the classes of yarns produced upon flyer-spinning and doubling machines. This greatly facilitated the successful introduction by Mr. Brooks of the now famous ring-spinning and doubling machines, upon which the chief reputation and subsequent extensions of the business of the firm have been founded. This machine—the ring frame—as is well-known, is an American adaptation and improvement of an old Lancashire invention, which Mr. Brooks successfully re-introduced into this country, and making numerous further improvements upon it made it, as turned out from his establishment, a distinguished success. The demand for these machines has necessitated extensions time after time of buildings and plant, and the increase in the number of employés.

We have already observed that Mr. Brooks was a man of strong common sense. He also possessed analytical power and mechanical ability. These enabled him to quickly detect and remedy the defects of the machinery then commonly in use. He had further a penetrating insight into personal character, and by the exercise of this faculty surrounded himself with a staff of able and intelligent subordinates, who proved efficient co-operators in the building-up of the great business of which he both laid the foundation and erected much of the superstructure. Mr. Brooks possessed a tireless capacity for and devotion to work, too much so indeed even for a naturally strong constitution. As might have been expected, the enormous labour involved in the building-up

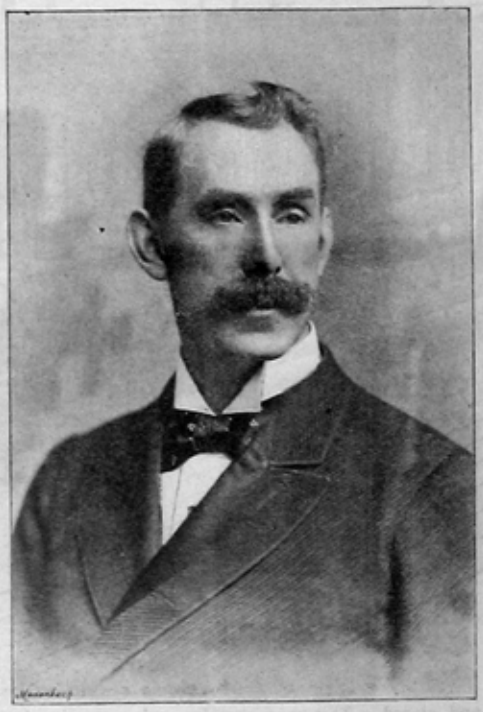
of such a business as that of the Union Ironworks told even upon his iron nerve and muscle, and in December, 1886, he suddenly died, struck down by disease of the heart, to the great grief of his family, his intimate friends, and the large staff of the firm's employés, by all of whom he was beloved and esteemed for the sterling qualities of his character. In the world of commerce he was highly respected for his integrity, straightforwardness, and uprightness of dealing. He was, in fact, a typical representative of the best qualities found in the men of enterprise who have given a special character to the 19th century. The accompanying portrait, specially prepared for this article, will give the reader a better impression of his strong personality than any verbal description.

The loss of Mr. Brooks was a severe one for the firm, but, owing to the wisdom with which he had selected his staff of commercial and managerial subordinates, and the spirit he had infused into them all, it was not permitted to interfere with the prosperity or rapid expansion of the firm. Mr. Samuel Herbert Brooks, the only son, had been carefully trained in his father's establishment and in a large works abroad to take an active part in both the technical and commercial sections of the business. He has also travelled for a considerable time abroad in many of the centres of the textile industries, both of the Continent and of America, so as to make himself thoroughly conversant with their latest developments and prospects. Since the death of the late Mr. Brooks he has taken, as became his position, an active part in the management. Mr. Brooks also spares some time for public life, for which he has developed considerable aptitude. He has for several years been the representative of St. Mark's Ward, West Gorton, in the Manchester City Council, in which he has done good service. He has also taken great interest in our Volunteer Forces, and for a while has held a Captain's commission in the 4th Volunteer Battalion Manchester Regiment. The accompanying portrait is an excellent likeness.

On the decease of Mr. Brooks the business was taken in charge by the executors, who shewed their appreciation of the faithful services rendered by Mr. Richard Alexander Doxey, Mr. Brooks's son-in-law, who had long been regarded as his chief assistant, by appointing him sole director and controller of the whole business. This confidence in his ability was amply justified by the results, as by the end of 1891, a period of five years, the turnover by the firm had been nearly doubled. Throughout this time Mr. Doxey was ably and loyally assisted by the efficient staff whom Mr. Brooks had gathered around him. His judicious and successful conduct of the trust reposed in him strongly demonstrated his possession of high business qualifications, and the desirability in the interests of the establishment of his admission into the firm as a principal when the business came to be formally taken over by Mr. S. H. Brooks. This took place at the commencement of the present year, when the style and title of the firm was changed to that of Brooks and Doxey. Mr. Doxey has visited almost every country where cotton spinning is carried on, and has thus come into personal contact with all branches of the trade, and learned therefrom their respective requirements. The accompanying portrait is a very faithful likeness, and, with the others has been specially prepared for this notice. In Mr. Doxey we venture to say the late Mr. Brooks had found the duplication of many of his own personal qualities of character, with a similar insatiable appetite for work, and the partnership that has been formed would, we have not the slightest doubt, have received his highest approval, and have been to him a matter for rejoicing. Mr. Doxey devotes himself exclusively to the conduct of the great business that has been built up. The combination formed by this partnership, which inherits to so full a degree the business principles of the founder, bids fair to be both enduring and highly satisfactory in its results. There has been no pause in the progressive development of the business since the death of Mr. Brooks, but rather, as observed above, an increase of enterprise.

As indicated above, the firm has two works, the "Union" at West Gorton, and the "Junction" at Newton Heath. A walk through either, but especially the former, is an instructive object-lesson to both technical and non-technical persons. The technical students of our various schools and classes studying the textile industries highly appreciate the privilege of a visit of inspection, which the proprietors frequently accord. If the reader will suppose himself one of a group of these, and will accompany us on a tour through the establishment, he will probably carry away as good an impression of the internal working and economy of a textile machine works as can be obtained short of actual inspection. Assuming, then, that we are in the Union Works, we first proceed to the raw material store, in which we find an enormous weight of various brands of the best makes of iron in the "pig" state, and a considerable quantity of the best machinery scrap. The labourers here, with the aid of a powerful automatic machine, break up the pigs, and from observation and experience can assort it into its varying qualities, for even the same brands vary; and afterwards from the whole compound the best blends are selected for the

Mr. Samuel H. Brooks.



Mr. Richard A. Doxey.

purposes required. Castings from some of the blends are almost as tenacious as wrought iron.

The moulding shops, to which we now proceed, are very extensive. There are two classes of moulders employed, usually termed skilled and unskilled, according as they work by patterns or plates, both of which systems are in extensive use. The exigence of space compels us to assume that the reader is sufficiently acquainted with the two methods to obviate the necessity for a description. When taken out of the moulds the castings are removed to the dressing shop, where they are thoroughly cleared of the sand in which they have been produced, and of any slight accidental roughnesses that may have been formed upon them. After dressing, the castings are placed in the stores, from which they are delivered to the various departments as required.

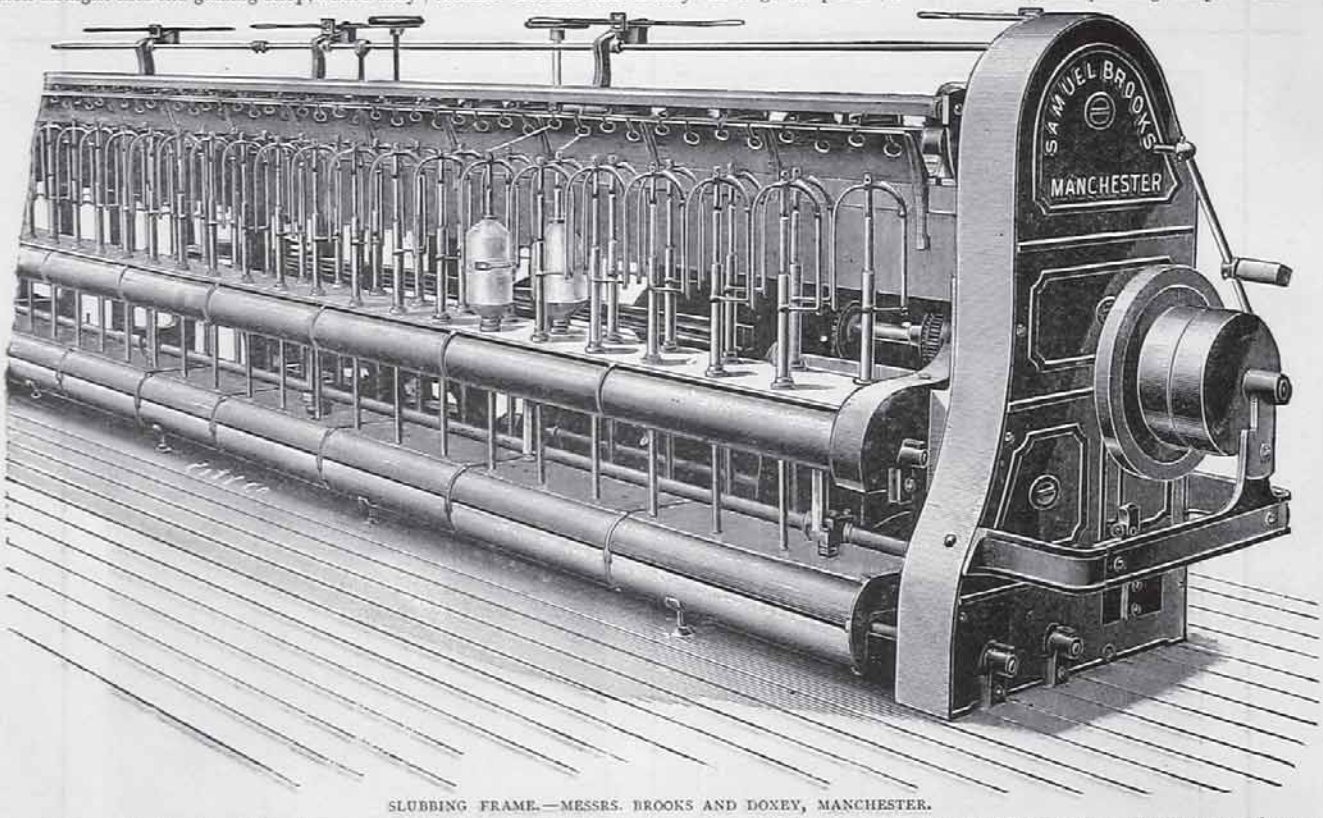
Many of the larger castings, however, are taken straight into the glazing shop, where they are ground and glazed. This shop contains fourteen large grinding stones and an extra complement of men, much overtime being required to be worked in it.

The planing shops are large and lofty rooms, with a fine equipment of planing and milling tools, many of the former being fitted with six cutters. The firm make a great point of planing or milling all the parts that will conduce to accuracy of construction and excellence of action in working. The boring and turning shop is equally spacious, and equipped with the best tools of the most modern type and construction. The firm also have a tool-making department, where they make all their own special tools, of which they use a large number, for facilitating the production and making the parts of their machines in the most perfect manner.

In the spindle-making shop there are three departments: the first for the production of bolsters, the second for wharves, etc., and the third for the spindles themselves. The producing capacity of each of these departments of the articles named is 10,000 per week. Every spindle is carefully tested, and any defect that is discovered can easily be traced back to the point where it originated. Perfect ones are passed into the store, which usually contains about 60,000 in their various stages. These are chiefly of the Rabbeth and the "Union" type, the latter being an invention of the firm, and so named from the works from which it issues. Before being sent away every spindle is finally tested at a much higher speed than any at which it can possibly be worked in a mill. In this place we may refer to the ring turning room. The ring, as most of our readers are well aware, is an important adjunct of the spindle in the ring frame. It requires to be very accurately and perfectly constructed, of the best material, hardened and tempered to the highest degree, and at the same time to be polished until its surface is as smooth as plate glass. It is an article to the production of which the greatest care is devoted and upon which no expense is spared to make it perfect. Messrs. Brooks and Doxey have given particular attention to the manufacture of the ring, and have attained therein a high degree of excellence. The ring is made from solid steel and has no weld in it; then specially designed tools are used to turn it to the desired section. The production of rings is on the same scale as the parts previously mentioned, being about 10,000 per week. The top and bottom roller-making departments are also important features, numerous special machines having been introduced, and the greatest care being exercised throughout in working to templet sizes, etc.

The erecting and fitting departments consist of a series of rooms allocated to the different machines made at the Union Works—viz., the Drawing Frame, Ring Spinning and Doubling Machines, Winding Frame, Waste Picking Machine, Reels, and Bundling Presses, etc. In these rooms every machine is erected and completed to the most minute detail, in order to ensure completeness before being delivered to the purchaser, whether at home or abroad. If for the latter, they are taken down completely, piece from piece, and carefully packed in strong wood cases, so as to guard against breakages.

The Junction Ironworks were originally erected some years ago by the late Evan Leigh, well-known as an inventor in cotton machinery, the loose boss roller and the revolving flat card being the outcome of his inventive genius. These being vacant at a time when Messrs. Brooks and Doxey, by a large influx of business, were pressed for increased accommodation they were acquired by them in 1888, and have since been worked by the firm as a branch establishment, mainly devoted to the production of cards, slubbing, intermediate, and roving frames. The processes begin with the raw material and end with the finished machine. This means that the works are replete with furnaces for the reduction of the metal; moulding shops in which pattern, plate and swivel box moulding operations are carried on; others devoted to grinding, turning, milling, planing, and testing the various portions of which the machines are built up. Beyond these are the erecting and packing shops. Included



SLUBBING FRAME.—MESSRS. BROOKS AND DOXEY, MANCHESTER.

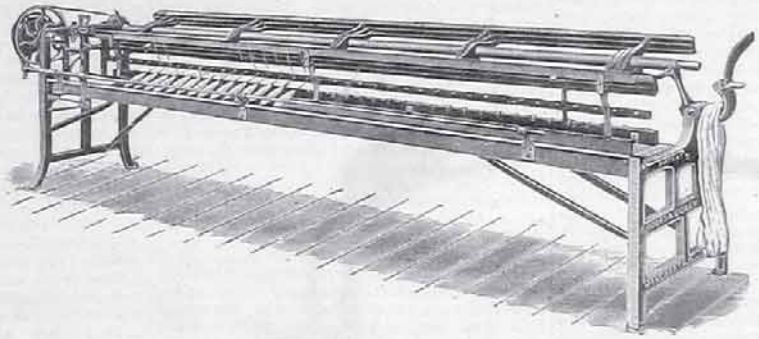
in the establishment are also a pattern shop, and a tool-making department in which the firm make their own tools and also tools for the trade. Since this place came into the possession of the firm, the arrangement of the building has been thoroughly reorganised, large extensions made, and many convenient appliances added for facilitating the handling of heavy parts of the machinery, packing cases, etc.; and further extensions are contemplated here as well as at the Union Works, West Gorton.

The fact that the business of Messrs. Brooks and Doxey was only founded in 1858, and that it has already made such progress as to take a prominent place in the front rank of machine-making firms, is a demonstration beyond which we need not go, of its having been conducted with a great amount of enterprise, inventive ability, skill, and prudence, and that with the continued exercise of such qualities it would be injudicious to place any bounds to its future success. From a staff of half-a-dozen hands, the growth has been such that it now numbers nearly 2,000. From making roller temples only for looms, the firm now make nearly every machine required for the transformation of raw cotton into yarn on

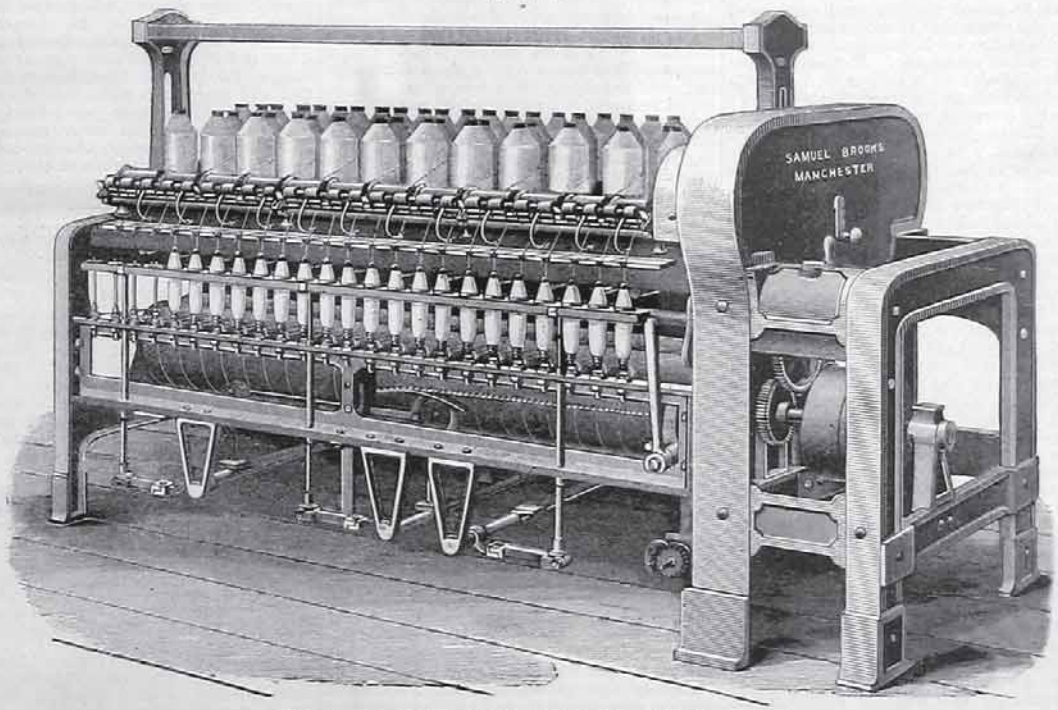
the ring system, and will, when the contemplated extensions are completed, be able to meet a greatly extended demand.

Nearly every machine produced has incorporated in it some valuable patented speciality, the invention or property of the firm. The revolving flat carding engine carries its flats upon revolving discs instead of the flats sliding over bends as usual; the well-known drawing frame contains the instantaneous front and back stopping motions, etc., which gave it its great repute; the preparation frames are furnished with a new and ingenious differential motion; and the ring frames for cotton, bobbin reels, and bundling presses. Included in their specialities, and of which mention should not be omitted, is the American Standard Ring Traveller. For the production of this several years ago the firm put down a special plant, and this, owing to the increasing demand they are having largely to augment.

The accompanying illustrations shew the well-known drawing frame, with the instantaneous stop motions; the slubbing frame, front view, containing numerous improvements; the ring spinning frame as constructed for spinning warp yarn; and a cop reel, with patent tumbler



COP REEL.



RING SPINNING FRAME.—MESSRS. BROOKS AND DOXEY, MANCHESTER.

worsted, etc., with the "Union" gravity spindle, which is an essentially fast-running, non-vibrating, oil-saving spindle. All the above, in addition to other improvements, are well-known and valuable specialities. The firm also make the Hill and Brown winding frame, to wind on paper tubes or bobbins without heads, and also another very ingenious machine introduced from America, namely, the Kitson patent waste picker or thread extractor, by which waste can be picked at one-twentieth of the cost of hand-picking. This machine we described a few months ago in these columns. A new departure just taken is the making of upright spindle winding machines, cop and doffing motion. They are always made of the best materials, and are of the highest finish.

It will be obvious from the above description that the firm of which Messrs. Brooks and Doxey have become the principals has already secured a valuable and world-wide connection, and the fact that they make on their own premises from the raw material the various parts required in the construction of their machines has doubtless largely contributed to the success attained. They are prepared to contract for the erection and equipment of mills in any part of the world with spinning and weaving machinery, and any special plant required for the transformation of the raw material into yarn and calico, hosiery, sewing cottons, or any other form in which it is desired to bring it out. In the manufacture of "sewings" one firm alone has, at the present moment, over 180,000 spindles of their production at work, and amongst their best customers for machinery generally are some of the largest and best known firms in this and other countries. The chief offices are at Union Ironworks, West Gorton; the branch works, the Junction Ironworks, are at Newton Heath; and the town offices at 15, Market-street, Manchester, opposite the Exchange. The registered telegraphic address of the firm is "Union, Manchester," and their telephonic number is 605. The firm will at all times be glad to answer enquiries and afford inspection of their machinery in operation to all *bonâ-fide* enquirers.

BOMBAY MILLOWNERS' ASSOCIATION.—The annual general meeting of the Bombay Millowners' Association was held on Tuesday, May 31st. Mr. George Cotton, who presided at the meeting, in proposing the adoption of the annual report, congratulated the Association on the peaceful time they had had lately, and dwelt at some length on the several points embodied in the report. Mr. Dinshaw Wacha, in seconding the proposition, congratulated the Association on the sympathetic action of the Government in matters of legislation affecting the mill industry of Bombay.

Bleaching, Dyeing, Printing, etc.

NOTES ON RECENT PATENTS RELATING TO DYES AND DYEING.

MILDEW IN SILK.

Dr. Truman, of Nottingham, has taken out a patent for an improved solution for use in the dyeing of silk. He states that silk yarn fabrics, etc., when dyed are liable to become discoloured if exposed at all to a damp atmosphere—a defect due to the formation of mildew. To prevent the growth or formation of this mildew is the object of using the solution just patented, which consists essentially of perchloride of mercury (corrosive sublimate), the strength of the solution used varying from 1 in 500 to 1 in 5,000, according to the particular class of dyed silk. The solution is added in the required proportions to the dyebath during the ordinary process of dyeing.

There is a presumption here that dyed silk is subject to mildew, but such is really not the case. It is finished silk, *i.e.*, dyed silk that has been treated with glue, size, or some other finishing material to increase its weight and lustre, which is subject to this trouble, and the easy decomposibility of these sizing materials gives rise to the formation of mildew. Obviously, therefore, the right place in which to use antiseptics in silk is in the finishing bath, not in the dyebath, where its presence might interfere with the dyeing operation—although there is not much likelihood that the small quantity of mercury chloride which is used would interfere to any material extent in this direction. Moreover, is the idea patentable? Mercury chloride has been used with some success in the finishing of cotton goods for the prevention of mildew; and can the extension of the same principle to silk finishing be patented? The action of the Patent Office in granting patents is no reliable indication as to the validity or otherwise of the patent.

DYESTUFFS FROM BENZIDINE.

The Farbenfabriken have taken out a patent for the production of some very valuable dyestuffs from benzidine. This body, with its homologue tolidine, has proved a very valuable base for the production of dyestuffs. Thus, if transformed into tetrazodiphenyl chloride by the action of hydrochloric acid and sodium nitrite, and then combined with salicylic acid, it gives a dyestuff capable of dyeing unmordanted cotton from a soap bath, and which, under the name of chrysamine, has become a very important commercial dyestuff. It has been shewn that the combination between the tetrazodiphenyl chloride and the salicylic acid takes place in two stages, an intermediate compound containing only half the quantity of salicylic acid being formed. This property has been found to be of service in the production of compound dyestuffs, all capable of dyeing unmordanted cotton. Now the Farbenfabriken have found that by boiling the intermediate compound with water in either an acid or alkaline solution decomposition sets in, nitrogen escapes, and a new dyestuff is formed, which differs from other dyestuffs obtained from tetrazodiphenyl, in that it only contains one azo group and contains an hydroxyl group. Thus the dyestuff derived from benzidine and salicylic acid has the chemical name hydroxydiphenyl-azo-salicylic acid, and the formula OH C_6H_4—C_6H_4 N: N—C_6H_3 OH COOH.

This has the property of forming colour lakes with mordants, and so it is capable of dyeing wool mordanted with chrome; or of being used in calico-printing, with a chrome mordant, giving yellows of a reddish hue. Similar yellow dyestuffs of various hues can be obtained by replacing the benzidine with tolidine or other homologue, and the salicylic acid with cresotinic acid or other of its homologues; thus the possibility of forming a large number of mordant dyeing yellow dyestuffs is opened out. One of these is probably the dyestuff lately placed on the market under the name of chrome yellow.

ROSINDULINE DYESTUFFS.

Dyestuffs of the rosinduline class promise to become of some importance. Azocarmine and one or two others have been brought out by the Badische firm, and there are the rosindulines of the Biebrich firm. The former has now patented the production of some other members of the group. The base of azocarmine is known as phenyl rosinduline, and although coloured, yet it is not of technical use as a dyestuff. When sulphonated, however, it is converted into the disulpho acid, which is then serviceable for dyeing wool and silk. The present patent deals with the production of new dyestuffs from phenyl rosinduline by melting it with toluidine or xylidine, when the tolyl or xylyl-rosindulines are obtained. These new bases are the homologues of phenyl rosinduline, and, like it, they possess no dyeing properties. When converted into their disulphonic acids they are then valuable for dyeing wool and silk—dyeing bluer or yellower shades than does azo carmine. The patent describes the production of the monosulphonic acids, but these, as they are not soluble, are not serviceable as dyestuffs. The question of isomerism as affecting the colour of dyestuffs here crops up: thus there is ortho-, normal para-, iso-para-, and para-tolyl-rosindulines. The first dyes yellower shades of red than azo-carmine; the second and third the same shades; while the fourth dyes bluer shades.

COAL-TAR YELLOWS.

Hitherto, although there are many coal-tar yellows known, which have found extensive use in dyeing wool, yet none have quite superseded fustic and Persian berries and others of the natural dyestuffs, although some of the coal-tar yellows possess the distinct advantage of being fast to light. The principal reason why the natural yellow dyestuffs are still used is that the colours produced by their aid on wool possess a great amount of fastness when the dyed fabrics are subjected to fulling, milling, or washing—a most useful property, not possessed by any hitherto known coal-tar yellow. The Farbwerke have lately patented the production of dyestuffs dyeing yellow on chrome-mordanted wool, which are said to be absolutely perfect as far as regards fastness to light, soap, and fulling. If this be so, then the dyestuffs are bound to be of great value. These dyestuffs are prepared by taking diamido-benzene-sulphon (or, as it is sometimes named, diamido-sulpho-benzide), diazotising this, and combining with salicylic acid. The commercial dyestuff will take the form of a paste, as it is only slightly soluble in water. This and the dyestuff from diamido-diethoxy-sulpho-benzide and salicylic acid are very fast dyestuffs. Obviously the homologues of the benzene compound and of salicylic acid may be used to form dyestuffs, all capable of dyeing chrome-mordanted wool various shades of yellow, but none of them are so fast as the two named above. None of these dyestuffs have been placed on the market as yet, but it cannot be long before they are, as there is a decided want of a fast milling yellow.

BLACK ON SILK.

The well-known Hoechst firm of Meister, Lucius, and Brüning have patented a process for producing black on silk. They say that the defect about the present silk blacks is that, being produced from logwood, they are affected by acids, which redden them; so that when the fabric is made into clothes it is more or less affected by perspiration, while the black is not absolutely fast to washing and soap. The method now patented obviates these defects, and a black is produced which is fast to light, acids, and soaping. It is also stated to be cheaper to produce—a fact which seems doubtful considering the cheapness of logwood. The new black is produced in the following manner: The silk is boiled off, as usual, and is then mordanted with ferric sulphate of 30° Bé., which also gives it weight. When fully mordanted and weighted, a blue bottom is given by means of a bath of yellow prussiate of potash and hydrochloric acid. The silk is next treated to a bath of cutch and tin salt to dye it and weight it, after which it is passed through a fresh cutch bath to ensure that all the tin is fixed on the silk, after which the material is ready for the dyebath. If necessary, or if a different method of weighting be desired, the silk may be weighted with perchloride of tin at 30° Bé. in the usual way, then mordanted, blue dyed, and dyed with ferric sulphate, prussiate of potash, hydrochloric acid, and cutch in the usual way, after which it only remains to dye to form the black. So far the method does not differ from the ordinary process of dyeing blacks, but now comes in the novelty: a weak soap bath is prepared, for every pound of silk 2 to 2½ gallons of water is taken, and from 15 to 20 % of the weight of the silk of soap, the amount varying according to the hardness of the water used in the dye-bath. To this bath alizarine is added in the proportion of from 20 to 50 % of the weight of the soap—(this is rather curious, taking the weight of a material used instead of that of the silk being dyed). This bath is heated to 65°C., and the silk is entered and worked for half an hour, when the temperature is raised to the boil and the silk worked for three-quarters of an hour. When the black has developed, the silk is taken out, more soap is added, and the bath raised to the boil and the silk re-entered; this gives it lustre and feel. After this process the silk is passed through a bath of carbonate of soda washed, and brightened in a bath of acid and oil, and then wrung out and dried. The results are stated in the patent specification to be excellent.

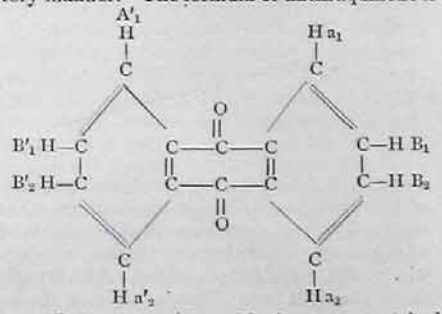
ROSANILINE DYE-STUFFS.

The Badische Anilin and Soda Fabrik have patented the production of some new dye-stuffs related to the rosaniline group obtained by a process of condensation of several bodies together. For instance, a compound with the name of methyl ether of meta-hydroxy-phenyl-para-tolylamine can be condensed with tetra-methyl-diamido-benzophenone, when a blue dye-stuff is obtained. Being basic in character, it is capable of dyeing tannin-mordanted cotton, and it will also dye wool directly, giving violet-blue shades. Further, by sulphonating in the manner that acid magenta is made, acid dye-stuffs are formed capable of dyeing wool from acid dye-baths. Similarly from other benzophenones and hydroxyamidoamines other dye-stuffs can be obtained, but no particulars of these are given in the patent specification.

ALIZARINE: A STUDY IN CHEMISTRY.—II.

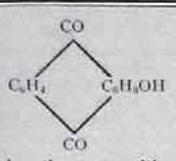
(Continued from page 435.)

The hydroxyanthraquinones are most valuable dye-stuffs, but when their study is entered upon, it is seen that their chemistry is most complex, and requires a great deal of study and attention before the subject becomes clear. In the hydroxyanthraquinones there is met with a large number of what are called isomers; that is, bodies having the same composition, but possessing different properties. Thus, simply to take a single example, alizarine is a dioxyanthraquinone, and so is anthraflavic acid: but while the former can be used to dye mordanted cotton, the latter cannot. The problem to be solved is to account for the existence of these isomers in a satisfactory manner. The formula of anthraquinone is



It will be seen that this is a symmetrical formula, and it is not too great an assumption to consider that the actual molecule of anthraquinone is also symmetrical: at all events that is the opinion of most modern chemists.

When hydroxyl is introduced into the anthraquinone an element of dissymmetry is introduced, and an unsymmetrical molecule is the result, as may be seen even when the short formula is used:—



Two bodies having the composition shewn in the above formula are known, which are named the erithro-oxy and oxy-anthraquinone: their properties are slightly different, as will be shewn later on.

The existence of these isomeric compounds is explained somewhat in the following manner: Of the six carbon atoms of each of the two benzene rings, two are connected with the quinone CO carbons: these of course can be left out of consideration. But when we look at the other carbon atoms with which hydrogen atoms are connected the conditions are somewhat different: two are directly connected with the carbons in combination with the CO groups, and it may be assumed that this circumstance invests them with certain functions, while the other two carbons are not so connected, and will have, therefore, different functions. Chemists call the carbons of the first kind the *alpha* carbons, and assign to them the Greek letter *a* as a distinguishing symbol; while to the latter kind of carbons the name *beta* and the letter *b* are given; further to each carbon atom is assigned a number, so that reference becomes easy. These letters and numbers and their order are given in the extended formula of anthraquinone given above. In erithro-oxy-anthraquinone the OH group is supposed to have the position *a* 1, while in the isomer it has the position of *b* 1. Neither of these bodies have any dyeing power, although dye-stuffs of the alizarine class can be obtained from them.

There is a very large number of isomers among the dihydroxy or the dioxy anthraquinones, and there is also a great difference in the properties of these isomers. A little consideration will shew that there cannot be many isomers among the monoxy derivatives. First there are only two positions in the benzene ring, the *a* and the *b* positions, in which the difference of positions of the OH group can make any difference, for the position *a* 1 and the position *a* 2 can be considered of equal value; the same applies to the positions *b* 1 and *b* 2; and it would scarcely seem as if a difference in the benzene ring, right or left of the central CO groups, would make any difference. When, however, the dioxy derivatives are to be considered, and having regard to the question of symmetry and dissymmetry of the compound, then there is a possibility of a more complex condition of affairs. Referring to the formula of anthraquinone given above, it will be seen that if in a dioxy anthraquinone the two OH groups have the positions *a* 1 and *b* 1, then a dissymetrical compound is obtained. The same thing happens if the groups OH have the positions *a* 1 and *b* 2, or *a* 1 and *a* 2, or *b* 1 and *b* 2; but the assumption can be made that the possibility of four isomers is here opened up, as before it was immaterial in which benzene ring we may consider the groups OH to be in—the result would be the same. The two with the OH groups in the positions *a'* 1 and *a'* 2 or *b'* 1 and *b'* 2 are more symmetrical than the two other bodies.

But the OH groups may be situated one in each benzene ring, and then the number of relative positions, and therefore possible isomers, is considerably increased; in fact, 11 such isomers are described. It will be sufficient if these are named, their principal features shortly described, and as far as possible the positions in which their OH groups are supposed to be pointed out.

Alizarin is by far the most important of them all. With alumina mordants it gives fine red colours; with chrome mordants Bordeaux reds; and with iron mordants a violet. The OH groups have the positions *a* 1 and *b* 1. Quinizarin has the OH groups in the positions *a* 1 and *a* 2; it has no dyeing powers, and gives but few colour reactions with metallic bases; by oxidising agents it is converted into purpurin.

Purpuroxanthin is found in the root of the madder plant; its colouring powers are very feeble, and hence it is of small consequence as a dye-stuff. It has the OH groups in the positions *a* 1 and *b* 2.

Anthrarufin has one of the OH groups in each benzene ring in the *a* 2 and *a* 1 positions. It is capable of being used as a dye-stuff, giving rather more crimson shades than alizarin.

Anthraflavic acid is another isomer, characterised by forming rather soluble compounds; partly on this account it cannot be used in dyeing; the two OH groups have the positions *b* 2 and *b* 1.

Isoanthraflavic acid is similar to the last in properties; the OH groups are in the positions *b'* 1 and *b* 1, and therefore one in each benzene ring.

Chrysazin does not possess any dyeing properties, and at present has no technical use. Its OH groups are in the positions *a'* 1 and *a* 1.

Isochrysazin has similar properties.

Hystazarin has some slight dyeing properties, giving much bluer shades than alizarin.

Frangulic acid and Anthraflavone are also dioxy anthraquinones, which do not possess any dyeing properties, and are of but little interest.

Theoretically ten isomeric dioxyanthraquinones are capable of existence, and eleven have been described. Most probably further investigation would shew that one or more had been described twice over by different observers, who, perhaps not working with pure materials, or possibly with mixtures of isomers, had obtained results slightly different from other observers, and hence concluded that they had got a new compound. It will be observed that of the ten isomeric dioxy-anthraquinones only two or three have any dyeing properties at all, which shews what a considerable influence position of groups of chemical elements in the compound has on its properties.

(To be continued.)

A BASIC red dye-stuff capable of dyeing cotton, wool, and silk, in brilliant fluorescent red shades, can be made from methyl amido cresol by combination with pthalic anhydride. No detailed description of the properties of the dye-stuff is given in the French patent specification.

A FINE green can be dyed on wool by first mordanting with 10 % of copperas and 5 % of tartar in the usual way, and then dyeing with 10 % of mononitroso (2-7)-dioxynaphthalene, which is sold commercially in the form of a 20 % paste.

MAGENTA is an amido compound, and therefore is diazotisable when it can be combined with other bodies to form azo dyes, but few of these are of any technical value. That with salicylic acid, however, forms a mordant-dyeing dye-stuff, dyeing yellows fairly fast to light, acids, and washing.

WOOL may be prepared for printing by working in water containing barium peroxide in suspenion, and then passing through an acid bath. By this process the wool becomes oxidised, and colours printed on it give darker shades than on untreated wool, while the process has the advantage over the chlorine method of not discolouring the wool.

A PROCESS of using the nitroso-*beta*-naphthylamine, a body closely relating to Read Holliday and Sons' Gambine, has been patented in Germany. The patentees mordant the fibre with iron, nickel, or cobalt salts in the usual way, and then dye it with the body just named. With iron a green is obtained; with nickel, brown; and with cobalt red-brown shades, which are said to have a considerable fastness to light, acids and washing.

MESSRS. SCHMITZ AND TOENGES have invented a new method of making Turkey-red oil. This consists, after treating the castor oil with sulphuric acid, in separating the fatty acids from the acid and heating them to a temperature of 221° to 248°F. until all the sulphur contained in the oil is expelled in the form of sulphurous acid and sulphuric acid. After washing with water to free the fat from all traces of these acids, the fat is treated with alkali to form the Turkey-red oil. This new product differs from the ordinary article in containing no sulphur, and consists mostly of the alkali compound of oxyoleic acid. It is said that 20% less of it is required, and that the reds, pinks, and blues are better.

WEIGHTING SILK.—The silk is boiled-off in the usual way, then dipped for half-an-hour in a bath of perchloride of tin of 35° Be. It is then wrung out, washed, and passed through a strong bath of soda at a temperature of 40° C., after which it is wrung, washed, and re-dipped in the tin liquor, from which it is again passed into the soda lye. The amount of weighting depends upon the number of dips: each treatment weights the silk about 12 to 13 %.

A FRENCH patentee proposes to employ the hydro-extractor as a dyeing machine, with, he says, some economy of labour and time. To this end he places the material to be dyed in the hydro, in the centre of which is fitted a pipe, the end of which is perforated with a number of small holes. This pipe is in communication with a cistern containing the mordanting or other liquor to be used in dyeing the material in the hydro. This liquor, by means of the perforations at the end of the pipe, is uniformly distributed over the contents of the hydro, and by the revolution of the latter is caused to penetrate with some force through the material to be dyed. The liquor after thus going through can be collected in a cistern and is ready to be again passed through the goods. Whether this is a practical method remains to be seen. At present it appears doubtful whether sufficiently level results can be obtained by it.

News in Brief.

ENGLAND.

Accrington.

Steps are being taken by the Corporation to obtain designs for the new technical school. The Council have decided to erect the school on Hyndburn Park, with a frontage on Blackburn-road. The buildings will be placed some distance from the road, so as to free it as much as possible from the noise of passing traffic.

From the half yearly report of the Accrington Weavers' Association, it appears £145 had been paid for deaths, £15 more than the last corresponding half year; 632 new members had been enrolled, beside 69 members who have changed from the old scale of payments into the new sliding scale. Total number of members, 3,805. There had been a gain in funds of £193. The total worth of the society is £4,402.

Ashton-under-Lyne.

The work of filling the Minerva Mill with machinery is progressing rapidly. About five pairs of mules are already fitted up. The spinning machinery is being put in by Messrs. John Hetherington and Sons, Limited, Manchester, and the engines by Mr. Benjamin Goodfellow, Hyde, near Manchester. It is expected that the engines will turn round about August of this year.

Blackburn.

Professor Robert Beaumont, of the Yorkshire College, Leeds, lectured on "Textile Designs and Education" for the second time on Friday night of last week in the Blackburn Technical School. The lecture was illustrated by diagrams and lime-light views.

Bury.

News was received by the Town Clerk of Bury on Monday to the effect that the Queen, through the Chancellor of the Duchy of Lancaster, had been pleased to approve of a memorial of the Town Council that £7,550 from the estate of the late J. K. Schofield, Bury, and formerly of the firm of J. K. Schofield and Co., Bury, who died intestate and without relations on the 18th June, 1889, be handed over to the Corporation for recreation ground purposes.

Halifax.

A Halifax correspondent of the *Bradford Observer* writes:—"Mr. James Tattersall, one of the Labour leaders at Halifax and a member of the School Board, has been dismissed by his employers, Messrs. Clayton, Margatroyd and Co., silk spinners, on the ground, as stated to Mr. Tattersall by the firm, that they did not wish to employ men who were engaged in setting capital and labour in conflict with each other."

Keighley.

Dr. Roberts, of Keighley, who is removing to Harrogate, has resigned the office of certifying surgeon under the Factory Acts, and his successor at Keighley, Dr. Ernest T. Roberts, has received the appointment thus rendered vacant.

Leeds.

Mr. Matthew Platts, worsted manufacturer, Bingley, died on Monday after a week's illness, aged 68. He was a prominent member of the Wesleyan denomination. Mr. Platts came to Bingley from Keighley, and for ten years carried on business as a tailor and draper. He then commenced business as a manufacturer at Peel Mill, Bingley, and afterwards removed to the Britannia Mills. He afterwards erected the present Albert Mills.

London.

Princess Louise, Marchioness of Lorne, accompanied by the Marquis of Lorne, on Monday opened, at 18, Carlton House-terrace, London, a two days' sale of work manufactured by the Scottish peasantry. Among the stall-holders were the Countess of Selkirk and Lady Reay, who represented Edinburgh, presiding over part of the useful section, where Harris tweeds of every kind and colour, ranging in price from 3s. a yard to almost any figure, suggest most useful and well-wearing suits. Shetland shawls, from finest fleecy gossamer to heavy wraps, were distributed around the room. The most attractive of all was the Ayrshire division, with a quite overpowering wealth of exquisite needlework of every description.

Macclesfield.

On Friday night of last week all the factories stopped work until Monday or Tuesday next, on account of the annual Barnaby holiday. This year the holiday is much longer than usual owing to the badness of trade.

Manchester.

On Wednesday a fire broke out on the premises of Messrs. F. Livingston and Co., cotton and cotton waste merchants and shippers, Canal-street, Ancoats, in a building of seven storeys, and rapidly spread to an adjoining building five storeys high, also occupied by Messrs. Livingston and Co. The main building collapsed, and a good deal of damage was done in the other block. The fire is attributed to friction in machinery.

Oldham.

Mr. J. M. Cheetham, head of the firm of Messrs. Cheetham, cotton spinners and manufacturers, Shaw, is also one of the borough candidates for Parliamentary honours.

Mr. Edward Henthorn, of Newhey, has been appointed clerk of works of the mill being erected by the Irwell Bank Spinning Co., Stoneclough, which is to hold 260,000 spindles.

Mr. James Dawson, chartered accountant, of Union-street, Oldham, has been appointed liquidator of the Bentfield Spinning Co., Limited, Greenfield. Mr. Dawson is also the liquidator of the Bankside Spinning Co., Oldham.

Mr. J. Duncan, minder at the Duke Spinning Co., Limited, Shaw, has been appointed the mule overlooker at the Moorfield Co. in the same district, in place of Mr. Parkinson, who is taking up a similar position at the Summervale Mill Co., Oldham.

The following local spinning companies are creditors in the estate of Messrs. Hargreaves Bros., cotton manufacturers, Fir Trees Mill, Higham, near Burnley:—Higginshaw, £51; Hope, £40; Park and Sandy, £12; and Woodstock, £59.

Mr. Robert Hasty, of the German Mill, Failsworth, has been appointed secretary and salesman to the Park and Sandy Lane Spinning Co., Royton, in place of Mr. E. Longbottom, who has transferred his services to the Holly Mill Co., of which he was chairman. The latter concern has only recently commenced spinning operations, and its first sale of yarn was effected a few days ago. The machinery is being supplied by Messrs. Platt Brothers and Co., Limited.

The directors of the Parkside Spinning Co., Limited, Royton, have, as we have previously reported, placed the order for the whole of the machinery for their new mill with Messrs. Platt Bros. and Co., Limited. This consists of 93,000 spindles and preparation. On Monday last they gave out the order for clothing the whole of the cards, awarding it to Messrs. Joseph Sykes Bros., Lindley, Huddersfield. The clothing will be of their patent plough-ground hardened and tempered steel wire.

Over fifty Oldham spinning companies will announce their results during the next few days, and these returns are expected to be far from pleasant reading. There is some talk of a further curtailment of production, but one cannot hear of any decisive action being taken in the matter. So far this year promises to be the worst of any experienced by the Oldham limited companies. The adverse balances now total a good round sum, and overshadow the reserve funds, but at the rate losses are being declared the Christmas balancings will disclose a very bad year indeed.

At the Royton Police Court, on Wednesday, Mr. George Buckley, owner of the Norman Mill, was summoned for a nuisance caused by his mill lodge. The prosecutor was Dr. Patterson, who has been so much on the heels of local millowners for the emission of black smoke. Evidence was given by a nurse at the Oldham Workhouse, adjoining which is the mill lodge. She deposed that she had to close the windows at the workhouse owing to the stench arising from the mill lodge. The nuisance existed at two o'clock that morning, and when it rained heavily the smell was something horrid. Mr. Buckley stated that the nuisance had been abated, and called several witnesses, who gave corroborative evidence, yet the magistrates made an order that "the nuisance be abated within 14 days, and be then removed."

Oswaldtwistle.

Messrs. R. Watson and Sons, Ltd., have stopped work for the present at their Stone Bridge and Rhyddings Mills. About 700 hands will be thrown idle. The company used to pay between £500 and £600 every week in wages.

Ramsbottom.

After a three weeks' stoppage, the Old Ground Mill recommenced running on Tuesday morning. New engines and economisers have been put in, and repairs to the chimney effected.

A special "in memoriam" service over the late Mr. Henry Stead, of Carr Bank, and the firm of L. Stead and Bro., was held at the St. Andrew's Presbyterian Church, Ramsbottom, on Sunday evening. The Rev. W. H. Elliot referred in eloquent terms to Mr. Stead's unvarying kindness to his workpeople, and especially to the fact that he kept his mills going through the Cotton Famine in order to provide bread for his workpeople's families.

Mr. John Cooper, who has been connected with the firm of L. Stead and Bro., Ramsbottom, for over 36 years, and for many years as manager, but who retired about two months ago, is about to be presented by the workpeople with a marble timepiece and pair of bronze ornaments. The timepiece bears the inscription, "Presented to Mr. John Cooper as a token of respect by the workpeople of L. Stead and Bro., Garden Mill, Irwell Bridge Mill, and Railway Shed."

At a meeting of the Ramsbottom branch of the Lancashire and Adjacent Counties Labour Amalgamation, on Sunday, in the Co-operative Hall, Ramsbottom, Mr. Leonard Hall, general secretary of the amalgamation, said the reverse sustained by the strikers at the Stubbins Mills of Messrs. Rumney and Co., was a serious blow to unionism, not only locally but generally. The local branch would at the end of the year have as brilliant a record as any union in the country. He remarked that at one place in the town a man had been seriously injured through no fault of his own, but through what was alleged to be the negligence of the employer, and as that employer refused to compensate the man, the Society is taking the case into court, and would spare no expense in fighting it out. The usual confidence and pledging resolution was passed.

Stockport.

Mr. Kearton, manager of the Portwood Spinning Co.'s mills, is leaving that position and going as manager to Messrs. Hawkins and Sons, Preston.

Winsford.

At a meeting last week of the Winsford (Cheshire) Local Board a letter was read from Mr. Thomas Barrow, of Rock Ferry, in reference to the erection of a proposed cotton factory on his property at Winsford, and saying he would help the movement. Mr. Wicks, secretary of the Salt Union, said his directors would be prepared to offer at a nominal rent a suitable site in Winsford for the erection of a cotton mill. Mr. Blogg said a site on the Salt Union property would be the best obtainable for the cotton industry, and the offer was an excellent one. Mr. Welsh said the Salt Union directors would be prepared to help on the movement in every possible way. The Board instructed the clerk to write to the Salt Union thanking the directors for their generous offer.

SCOTLAND.

Barrhead.

The employés of Messrs. Heys and Pollard, Gateside Printworks, held their annual excursion on Saturday to Rothesay. The company numbered about 260 hands.

The firm of Messrs. Zechariah Heys and Sons, calico printers, South Arthurlie, having attained its jubilee in the calico-printing trade, the occasion was celebrated by the workers in an excursion on Saturday to Stirling. The company, about 1,500 persons, filled two special trains. The firm cleared the entire expense of the excursion, and in addition also presented each of their workers with a jubilee handkerchief as a memento of the occasion. In the course of the day's proceedings at Stirling an address in vellum was presented to the firm from the employés, Mr. Thomson, the manager of the works, presiding.

Brechin.

The Brechin East Mill Co. last week paid a bonus of a week's wages to their workers at a cost of between £300 and £400. This is not the first time that company have thus shewn their liberality to their employés.

Dundee.

In a number of Dundee mills intimation has been posted that on and after yesterday operations will be continued on Fridays, and that until further notice the works will be closed only on Saturdays. It is expected that other spinners in the city will follow this example.

The schooner *Falke*, of Bremerhaven, is loading a cargo of machinery and other goods for Rio Grande do Sul. The cargo consists of engine fittings manufactured by a Yorkshire firm, jute spinning and weaving machinery made by Messrs. Urquhart and Lindsay, and a selection of jute yarns.

Glasgow.

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

India and China.	U.S. and Canada.	W. Indies & S. America.	Australasia.	Africa and Egypt.	Continent.	Totals.	Totals for year to date.
£33,367	3,670	—	122	—	6,269	45,428	1,952,626
—	18,459	592	—	—	587	19,638	435,199

The following are the total values of the exports for the same twenty-five weeks of last year:—Cotton, £1,918,156; linen, £371,714.

Stanley.

The Stanley Mills will close on Friday, 1st July, and resume on Monday, the 11th.

IRELAND.

Newry.

A destructive fire broke out early on Tuesday morning at the spinning mill of Mr. Abraham Wilson, Edward-street. The premises were practically gutted, and over 600 hands are rendered idle. The property was insured.

Miscellaneous.

TEXTILE PATTERNS AND DESIGNING.

(*Concluded from page 424.*)

Before we turn to the fully developed pomegranate pattern of the 15th century, another class of patterns belonging to the end of the 14th century may be discussed. Here again we have those slender elegant tendrils with little leaves, covering with profuse growth the ground of the material and often mingled with little birds, hares, dogs, leopards, stags, elephants, camels, etc. Owing to the influence of the Gothic style, the round arched leaves gradually disappeared and the vine leaf and bunches of grapes often appear as a characteristic floral ornament of this epoch. The chief difference between this class of design and those already described is the diminutive size of the forms and the closeness of their arrangement.

In some cases the designs upon the Italian fabrics of the 14th century also admit of a symbolical interpretation; this is proved by an interesting design preserved in the Royal Textile Collection at Crefeld. The scene is woven in gold thread on a ground of black silk—a dog with a broken chain round its neck sitting in a boat steered by an eagle. A duck and two swans swim in the waves by the side of the boat, out of which a tree, bearing pomegranates, is growing. The interpretation of this is as follows:—The dog, the symbol of the human soul, has been freed from this mortal life, as indicated by the broken chain; the eagle, the symbol of divinity, having descended from Heaven to break the chain, now steers the soul to the abode of the blessed, and this action takes place under the shade of the great and mighty tree of the church. This design was probably made for use at funerals.

Another design of that period, often used nowadays in modern fabrics for chasubles, etc., in Catholic churches is the following:—Two stags fastened with chains and turning their heads to Heaven kneel on a flowery ground surrounded by large connected hexagons; dewdrops and sunbeams fall from the disc of the sun, which is partially hidden by clouds, where two eagles are sitting. In this pattern the stag is supposed to be the symbol of the human soul, weary of life and yearning for the delivery from its mortal body, therefore looking heavenwards. We shall not be mistaken if we find in this interesting design a reference to the beautiful words of the xlii. Psalm—"As the hart panteth after the waterbrooks, so panteth my soul after thee, O God."

At the end of the 14th century animal figures, as I have said, disappeared gradually from design, giving weight of floral ornament, which by-and-by was trans-

* A lecture by Mr. Paul Schulze, Conservator of the Royal Textile Museum, and Lecturer on Design at the Royal Weaving School, Crefeld.

formed into the imposing pattern called the pomegranate pattern. During the end of the 14th, the whole of the 15th, and the first quarter of the 16th century, this ornament was a prominent feature. It is composed of fruit like bananas or pine apple, placed in a cluster of leaves, from which flowers and leaves are sprouting, the whole being surrounded by ornaments of different kinds. This ornament is used in a variety of different ways, and therefore it is not possible to describe every variation of the design which the inventive designers of the latter part of the middle ages constructed with the assistance of the pomegranate. The arrangement is the same in all patterns, the details only being different. The pomegranate placed in the centre as a symbol of Christian love, and surrounded by blossoms and fruit, is symbolically interpreted to mean that love which by the aid of faith brings forth the fruit of everlasting life. The rose with five, seven, or nine leaves, which surrounds the pine apple, is surmounted by crowns—the reward which Charity received in Paradise. The thorny branches, plaited together, tell us of the crown of thorns, and remind us that only by pain and struggle is the victory gained which brings the crown of eternal life.

With regard to their technical details the fabrics of this period differ greatly. We see substantial silk fabrics with a shiny satin ground, the pattern being in the same colour with taffeta binding; or on the same shiny ground, surrounded by shiny ornaments composed of calyxes, blossoms, etc., the pomegranate is shewn, woven with gold thread into the material. The designs upon the velvets of this period are often formed by narrow outlines, which are as though impressed, and allow the satin ground to come out. A great number of these materials are preserved in churches and museums. They are mostly in brilliant colours, red, blue, and black, which even now claim our admiration for their durability, which seems imperishable. Velvets were also manufactured with pile composed of several differently coloured warps, a fact worth mentioning as shewing that the weaving art had made considerable progress at this time.

A very interesting development of the pomegranate pattern appears about the end of the 15th century. Broad ornamented stems take an undulating upward course, and on either side branches, bearing blossoms, leaves, and little pomegranates, are disposed. These broad stems are interrupted at intervals with large pomegranates surrounded by the many-leaved rose. This is generally woven in silk velvet, with piles of two different heights. The velvet is covered with little ears of gold and the pomegranates are woven in uncut gold velvet or "frise."

The fabrics are worthy of great admiration, owing to their strong and substantial quality, their splendid colours—red and deep blue velvet upon a gold ground; and lastly by the length of the patterns, which are often more than a yard long. I may also say, that there is hardly any other time in which velvets of such an imposing and decorative effect were manufactured. These splendid textures, which were primarily intended for tapestries and hangings in churches, were nevertheless also used for the clothing of the human body.

They were the fashion of the Burgundian Court in the latter part of the 15th century, where the use of an immense mass of material made the employment of these gigantic patterns possible. In the patterns of this time we see ladies dressed in robes of many folds, and with a long train, which was looped up and carried on the arm. The noblemen of the court of Charles the Bold were dressed in large gowns, which on account of their extravagant length fell to the ground in folds.

The fabrics of these dresses, covered with the designs before described, were furred, bordered with ermine, and faced with precious stones. Even the Saints, the figures of Biblical history, were represented by the artists of those times as being dressed in the rich velvets and brocades of the Burgundian period. In the large altar picture in the Cathedral of Cologne, the holy men are marching in the midst of their splendid suite as though they were Dukes of Burgundy, and the Holy Virgin is depicted in the gorgeous festival garment of the Burgundy Court.

Naturally the expense attending the weaving of such material was immense, and it is not to be wondered at that an author of those times should write about this pomp and luxury in the following terms:—"The nobles are completely enveloped in gold and silver velvet and silk and satin and taffeta. They exhaust their mills, their meadows, fields and woods, in short their revenues, in order to purchase dresses; the gorgeous ornaments upon which, composed of embroideries, laces, tassels, fringes, chains, etc, often considerably surpass the cost of the material."

Although these splendid fabrics were produced in Italy and in the Orient up to the 14th century, we find that in the 14th and 15th centuries, owing to the emigration of Italian weavers to France, Flanders, and Switzerland, the lucrative art of weaving began to obtain a gradually firmer footing in these countries also. In France more especially the Kings attempted to attract the weaving artists by means of charters and privileges, and to settle them in the towns of that country. Amongst these towns Lyons took the first place and rapidly increased, and with its magnificent productions soon became a dangerous competitor with the other manufacturing towns; this was in consequence of the extraordinary favour and protection which these towns enjoyed from the Government. King Francis I. (1536) enacted, for instance, that workmen who took up their abode in Lyons for the purpose of manufacturing there fabrics of gold and silk, taffetas, damasks, velvets, and other like materials, should be permitted to acquire personal and real property and dispose of it by donation or testament to their wives, children, heirs, etc. For a certain time they were freed from all taxes, gate-tolls, or military services and duties. We are told that in the middle of the 16th century Lyons gave employment to 1,700 silk weavers; about the year 1675 to from 25 to 30,000; and when at its best in the latter half of the 18th century to 80,000 persons with 1,800 looms.

Now let us consider what kind of designs appear on the manufactures of Lyons, Flanders, and Italy in the 16th century. It has already been shewn by examples how the change from one style to the other occurred: for instance, the change from the animal patterns to the pomegranate patterns. In the same way we may follow the gradual variations of the latter until at last a new motive displaces this pattern, which, after having fulfilled its task as a link of this connected chain of textile designs, itself gives place to the new order of things.

Just as we occasionally find, in some of the fully-developed pomegranate patterns, small animals, relics of the textile design of the 14th century, so we find the new characteristic feature of the 16th century pattern to be the vase. In the pomegranate pattern of the 15th century, as a rule, the thorny branches, which surrounded the pomegranate, were made to grow out of a root or a crown; but in several patterns we find instead a little vase. This ornament makes its first appearance in a very modest way, but, gradually increasing in size, it finally displaces the pomegranate itself, and maintains its ground for some length of time amid surroundings of the most varied nature. The thorny branches and the rose change into the sharp-pointed oval enclosures of branches or of elegantly drawn extended leaves, which are united at the point of contact by calyxes, crowns, etc. In the middle of this oval enclosure the vase is placed; and we see the little blossoms and flowers, which were derived from the pomegranate, proceeding from the vase. In several patterns we see alternate rows of vases and pomegranates, always enclosed in the same way. A characteristic mark of the textile design of the 16th century is to be observed in the filling of the little triangles and squares which occur in the calyxes and other places.

The fabrics which bear these patterns are woven in a very splendid manner. They are for the most part brocades with a ground of red satin. The design is formed by a yellow and white woof, which is joined with a warp of red silk in twilled fashion, thus giving a very soft warm tint to the material. This effect is still more enhanced by a thin strip of silver being interwoven with the fabric; this, combined with the yellow and white silk threads, gives a rich metallic lustre, with the changing hues of gold and silver. The Renaissance, with its more elegant forms, produced the most varied compositions of the vase pattern. In the latter half of the sixteenth century the vases with their light and graceful sprays of flowers do not always appear in the midst of surroundings, which must be considered as relics of the middle ages, but they are arranged close to one another in rows without them, so that the figures in the one row are placed upon the gaps of the series below. Sometimes we find in these patterns of the end of the sixteenth and the beginning of the seventeenth centuries, little birds and lions. The great revolution in fashion which followed the introduction of the Spanish styles of dress did not fail to have an effect on the patterning of dresses. The narrow folds and slices of the garments required small patterns, which merely relieved the ground but laid no claim to attention on their own account. The tendrils and ribbons, instead of filling large spaces, occupied much smaller ones, in which a small palmetto, derived from the large designs of the fifteenth century, took the place of the large flower vase. The patterns are composed of elegant surroundings, enclosing symmetrical forms, such as the pomegranate or little flower vase; or lastly, little clusters of flowers, formed by three or five stalks bearing blossoms and leaves.

The technical detail of these fabrics is in most cases the same. The patterns are formed by cut velvet surrounded by outlines of uncut velvet, and they appear on a shiny satin ground of different colours. The silk fabrics are mostly of one colour, their patterns being formed by different bindings, reps on satin ground, etc., distinguished from the earliest periods. The colours now are less brilliant. The period of the religious quarrels produced by the Reformation was a more serious one. Men's consciences were awakened, and this earnest time was reflected in the cut and colour of the garments; in velvets especially the subdued tints added a wonderful effect.

During the period of transition from the 16th to the 17th century the surroundings of the little patterns underwent a change, and to some extent disappeared. We can discover the former existence of these surroundings in small branches of parallelograms united diagonally; the calyxes which formerly united the branches being separated from them and standing self-dependent. The symmetrical form formerly standing in the centre is displaced by an unsymmetrical branch with blossoms and leaves. Finally, the remaining part of the surroundings disappear altogether, and the typical pattern of the beginning of the 17th century is complete. It is composed of the unsymmetrical branches with blossoms and leaves, which appeared in the last variety of surroundings. They are put in series leaning alternately to the right and left. By referring to a large number of intermediate forms, we get a clear idea of the transformation. The pattern called "fleur semée," that is to say "strewn flowers," has been woven with the most different variations. The arrangement is always the same: one series of branches leaning to the right, the other to the left; the style of the drawing, and the etymological detail of the plant forms are given with much variety, as well as the size of the branches bearing the flowers, which may be seen from two to ten inches long.

But the more we advance in our researches the greater number of varieties of textile designs we shall meet with. With regard to their technique, the velvets of this period are very interesting. The ground is uncut velvet and the patterns are shewn by the cut velvet and are surrounded by an outline also of uncut velvet somewhat higher than the ground velvet. On the velvet of the 15th century, cut velvet of two different heights appears on one fabric; and in the stuffs of the 16th century we learn the difference between the cut and uncut velvet, requiring for its manufacture three different rods: one red for cut velvet; and two rods of different sizes for the uncut velvet of the ground and of the outline—this fact is a remarkable one.

Besides these fabrics, which only shew small patterns in consequence of the narrow Spanish costume which was worn all over Europe at this period, fabrics with large patterns were manufactured for hangings. These materials preserved their symmetrical character for a much longer time than did dress fabrics. We find the vase appearing also in these designs even of a large size, and surrounded by graceful tendrils, frequently populated with birds and quadrupeds and a basket of flowers; or horns of plenty, with fruit in the surrounding, take the place of the vase. On the whole, greater freedom is to be remarked in the general construction of the designs as well as in the treatment of the simple forms, which approach more and more a realistic conception.

The magnitude of this investigation naturally allows only of the description of the development of the patterns. A great many interesting subjects, which do not lie directly in our path, such as for instance the variations of one motive of the peculiar products of one manufacturing place, cannot be here dealt with, since it would occupy too much time.

Under the influence of the Baroque and Rococo styles, with their caprices, which disregarded a distinct and constructive arrangement of patterns, the originality which was periodically common to the patterns of former times is lost. We see a multitude of designs which are somewhat alike one another in their character, but of which we miss the common motive, which used to be continually repeated in the former designs, as, for example, the pomegranate in each pattern of the 15th century.

The important lace manufacture which flourished in France, more particularly under the Minister Colbert in the latter half of the 17th century, introduced a variety of very splendid woven designs. They are composed of flowery ornaments spreading out in the shape of a fan and intersected by interwoven ribbons of lace, very cleverly imitated. We cannot fail to admire the delicacy with which the transparent lace, the graceful ornament, and the reticulated edges of the ribbons are imitated; also the various small ground patterns used for filling up the fantastic forms and spaces enclosed by the leaves. The effect of these gorgeous patterns was enhanced by brilliant and striking colours, which sometimes produce a loud effect, but were often arranged with much taste. Moreover the lavish use of gold and silver thread, and, finally, the many different effects of the bindings, give evidence of the perfection in weaving at this time. In these materials taffetas and satin bindings are replaced by various elegant and strongly twilled rep bindings. In this way the so-called "lace patterns" betray the brilliancy and luxury of the time of Louis XIV.

Other motives, having their origin in far Eastern Asia, appear in the reign of Louis XV. About the year 1720 Louis XV. sent an extraordinary Embassy to the Chinese Emperor, bearing valuable presents, and under instructions to co-operate in trade relations and to revive such as already existed. In return for this politeness the Chinese Emperor selected splendid presents for the King of France, composed chiefly of beautiful pieces of porcelain, lavishly decorated with

Chinese figures and ornaments. This occurrence rendered Chinese style fashionable in the upper circles of France for a short time, and the originality of this distant nation in their style of ornament appears in the textile design of this period—Chinese vases; the characteristic dragon; landscapes, with the curious Chinese perspective; pig-tailed sons of the Chinese Empire in boats, and so on. In short, we find in the rich gold brocade and silk fabrics made in France in the second quarter of the 18th century, the same figures which we are accustomed to see on Chinese ware.

Contemporary with these patterns after the Chinese style, a noteworthy feature was the use of plant forms drawn from nature. Flowers and leaves are rendered with the full effect of light and shade, and the natural colours of the flowers are imitated to the utmost. The rose is used for choice. But fruit also cherries and plums, in fact a profuse flora in all possible fantastic forms, together with parts of architecture, cascades, shells, rocks, etc, served as models for the textile pattern of this time. A very rich effect was produced by supporting the many coloured floral ornament by a fanciful ornament woven in gold thread, by means of which the whole composition acquires a peculiar silhouette effect. The coloured satin ground is also enlivened with small leaves and blossoms, which, woven in taffeta, only shew the binding. As well as these irregular patterns, designs were made having a distinct symmetrical style. Slender tendrils with large roses and leaves are made to grow from a fantastic form in the centre, sometimes a vase, and these bear bunches of grapes, pinks, and other forms of blossoms. Textile design has here reached its highest point, both in a capricious choice of motive, in combinations of brilliant colours, and in the richness of the bindings.

In the time of Louis XVI. these grand designs, admirable notwithstanding their quaintness, disappear, and give place to patterns which, as regards delicacy of composition and softness of colour, leave nothing to be wished. The large bunches of roses are diminished to very small elegant nosegays, shewn upon a white ground with narrow stripes. The colours are reduced to such an extent that they no longer remind us of the preceding luxurious and splendid colour ornamentation. These small patterns are intermingled with every variety of hunting, fishing, music and such like symbols; fluttering ribbons, festoons, fruit baskets, etc., appear in the intervening spaces. They are the reflection of a period when ruin was approaching and when no energetic effort was possible. The designs on the textiles are a faithful mirror of the trival social life of that time.

But this state of things did not last for long. Probably in consequence of the excavations at Herculaneum and Pompeii, motives were furnished for woven designs which were taken from the wall paintings of classic antiquity. They bring us, after the desolation which the French revolution spread over art, science, industry, and trade, to the style of the first French Emperor, which found its opportunity in the imitation of the antique. Thus arrived at the end of the last "former centuries," I discontinue my researches, adjourning to another time our enquiry into the further developments or rather decay of textile design, and thus reaching the period when necessity compelled a change in this industrial sphere.

The International Exhibition in London in the year 1851 first taught us that the textile fabrics of the inhabitants of Asia, which were extensively exhibited there, were much more tasteful than European goods, with their patterns of large life-like flowers. Later on, the Ecclesiastical Exhibition at Crefeld in the year 1852, at which a large number of surplices, chasubles, copes, etc., of early centuries were exhibited, drew attention to the textile masterpieces which former times have left us. If we examine the rich collections of antique original woven fabrics which now are established in many towns, we shall be astonished by the manner in which our forefathers could produce wonderful effects with very insufficient mechanical assistance. And now the problem is left us of studying the rich treasures hoarded up in Textile Museums and of making use of them for the textile industry, which, as we have already seen, is so very important to the welfare of entire countries and towns.

To encourage these endeavours and to bring to notice all the beautiful and interesting subjects for investigation which this offers, these remarks have been made, but they do not in any way pretend to have dealt exhaustively with such a very extensive subject.

THE NEW WEAVING LIST.—At a meeting of the North and North-east Lancashire Manufacturers' Association held on Wednesday, it was reported that the employers of Blackburn and Burnley had agreed to adopt the new standard list for weaving. The Preston manufacturers have not yet adopted the new list, but they are holding another meeting to consider the matter in the course of a few days. An endeavour will also be made at a joint conference of employers and employed to bring the winders and warpers into line with the weavers on this question.

THE new Japanese silk crop is estimated at from 50,000 to 60,000 bales.

THE extensive yarn-dyeing works of Wilhelm Brass and Sons, at Niedergrund, near Warnsdorf, have been completely destroyed by fire. The loss is very serious, as all the stores of yarn were destroyed.

TWO preparing rooms and the warehouse in connection with the wool and cotton spinning factory of Albert Pollet, at Tourcoing, France, have been burnt down. The damage is estimated at 150,000 francs.

THE CHAMBERS OF COMMERCE CONGRESS.—A most interesting congress will begin in London on Monday week. For the second time, at the invitation of the Council of the London Chamber of Commerce, delegates from 131 centres of British trade in all parts of the Empire will meet and discuss a selection of the questions that most affect their interests. The delegates will lubricate their business with pleasure-trips and social functions. From the programmes it would appear that this congress, which has been in course of arrangement for more than a year, will be a complete success. The commercial relations of the mother country with her colonies and possessions will be the main topic of discussion, and the congress will be asked, by one authority and another, to commit itself to every variety of policy.

MR. MACLEAN ON THE EIGHT HOURS' DAY.—Mr. J. M. Maclean, the senior member for Oldham, referred to the Eight Hours' question at a meeting on Wednesday evening in the following terms: "I think it is a very good thing that the working classes should aim at making eight hours the full amount of work that they have to do from day to day. That is the goal which they may fairly aim at. We can all understand that it is a very natural thing that they should desire to have better wages and lower hours of work, but how is this end to be attained? As I say, I would rather have the interference of the Government than leave such matters to be regulated by trades-unions, because I think when a law is made by the Government of the country with regard to certain hours that are to be worked, that that law will be obeyed by everyone without reluctance; but when it is based merely on the decision of the majority of the people comprising the trades-unions, it must give rise to great heart-burnings and resistance. That being so, let us consider what should be done in the case of the proposal of eight hours of labour being enacted in any particular trade. I say what we have to consider in such matters is not merely the wishes of the majority of the working men themselves, but we have to consider the claims of capital as well as of labour."

NOTTINGHAM LACE DESIGN DISPUTE.—On Monday the Court of Appeal, consisting of the Master of the Rolls and Lords Justices Bowen and A. L. Smith, disposed of the appeal of the plaintiffs in the case of Woolley *v.* Broad against an order giving unconditional leave to amend particulars of defence. The plaintiffs, A. H. Woolley and Co., are lace finishers at Nottingham, and their case is that under a verbal agreement made between them and John Woolley, who is also a plaintiff in the action, the latter agreed to sell exclusively to them all lace manufactured by him according to two registered designs "in the brown" or unfinished state, and the plaintiffs, A. Herbert Woolley and Co., claimed by virtue of such agreement the exclusive right of selling lace manufactured in accordance with the registered designs Nos. 120,009 and 128,111, duly registered under the Act of 1883, on the 16th February and the 3rd July, 1889. It is alleged against the defendant, who is also in the lace trade, that during the existence of the copyrights in the registered designs he had, without licence or consent of any of the plaintiffs, applied such designs or obvious imitations of them to lace manufactured by him. The plaintiff, John Woolley, claimed injunction restraining the defendant from continuing the infringement, and the other plaintiffs, Messrs. A. Herbert Woolley and Co., claimed £50 damages. The defence was that the design was not new and original, and that the statement of claim disclosed no ground of action on the part of the plaintiffs, A. Herbert Woolley and Co., and by way of counter-claim the defendant claimed that the register of designs might be rectified by removal therefrom of those designs in respect of which the plaintiffs had commenced their action, because the design in question was commonly used in the lace trade at and about Nottingham since 1880. Mr. Justice Lawrence, in Chambers, allowed the defendant to amend the particulars of his defence. The plaintiffs appealed against that order to Mr. Justice Day and Mr. Justice Charles, but they affirmed it, hence the present appeal. Mr. Dugdale, Q.C., appeared for the appellants, and Mr. J. E. Fox for the respondent. The Master of the Rolls, in giving judgment, said there was no reason why the order should be set aside. The defendant was entitled in support of his defence to give the fullest possible list of the firms of lacemakers who, he alleged, had made use of the design in dispute. Lord Justices Bowen and Smith concurred, and the appeal was dismissed, with costs.

WEAVERS AND THE EIGHT-HOURS DAY.—This week the officials of the Nelson Weavers' Association undertook the task of counting the votes upon various questions submitted to the adult members of the Association. There had been distributed 3,366 ballot papers of which 3,067 were returned, 495 of these being blank, 18 doubtful, and 3 invalid. To the question, "Are you in favour of an eight-hours working day or 48 hours per week in the textile trade?" the answer "Yes" was given by 1,651 voters, and "No" by 546. To obtain this by trades-union effort received the approval of 723 voters, and the disapproval of 556, 1,082 being in favour of obtaining it by Parliamentary action, and 282 against. To the question, "Are you in favour of the hours of labour in the Indian factories being reduced to the same as in Lancashire?" the reply was "Yes" from 2,437 voters, and "No" from 16. The final question was, "Are you in favour of waiting for an international eight-hours day?" to which 1,428 answered "Yes," and 676 "No."

THE TAXATION OF MACHINERY.—Notwithstanding that Mr. Gerard Balfour's Bill defining the law on the rating of machinery was read by the substantial majority of 110 so early as April 6th, its chances of passing into law this session are hopeless, owing to the approaching dissolution. Manufacturers are, however, by no means disheartened, and intend forcing the subject on the attention of all candidates at the forthcoming general election. Meanwhile they are resisting the attempt to tax their machinery wherever made. A very notable instance of the success that can be obtained in this way, and of the benefits the National Association is able to confer on its members, has lately occurred in the city of Gloucester, where it has been sought to put into force the new theories of rating machinery. After a contest between the combined manufacturers, represented by Mr. G. Humphreys-Davies, the surveyor to the National Association, and the union valuer, extending over six days, the Assessment Committee have decided to revert to the old methods of rating, and have struck out of the assessment the value of the tenant's machinery. The result of this is a reduction of many thousands of pounds in the assessments, and the endorsement by the Assessment Committee of the policy so strenuously advocated by Chambers of Commerce and trades unions, that it is fatal to the best interests of the country to tax its producing power. Circulars and the last annual report, which gives a *resumé* of the progress of the movement, bringing this question very forcibly before all candidates for Parliament, are being issued from the Society's London offices, 8, Laurence Poutney-hill, Cannon-street. There is no attempt, however, to add another to the many test questions now being put to candidates.

Textile Markets.

COTTON.

MANCHESTER, FRIDAY.

Trade here continues in a very depressed condition. There is but little trouble anywhere reported from the operatives, who appear now to have settled down somewhat from the aggressive attitude they have manifested for a considerable time past. The mischievous stimulation they are continually applying to the inspectorate, however, remains undiminished, and every week there is a small crop of prosecutions under the Factory Acts of employers for transgressions of the law committed by the operatives themselves. There is a very general desire to observe the prescriptions of the law amongst the employers, and this is carried out as far as they have control over it by starting and stopping the engines at the time required. When infractions occur they are rarely more than transgressions — mostly unconscious—by those in charge of the engines, who, it will easily be conceived, may by distraction of attention allow a minute or two beyond the legal time to pass before they become aware of the fact. Prosecutions arise more from the operatives themselves persistently remaining in the mills and doing some little trifling work in the way of making things straight for re-commencement than from an intentional determination to go on working, and these things are always done by the best among them. In every establishment there are always a few of a cantankerous disposition, ever on the watch for cases of this kind, which they systematically report to their trades councils and trades-union officials, who forward the same to the inspectors of the district. These men, thus spurred on, "drop on," as it is called, the employers, and prosecute them for offences at which they have neither connived nor have been conscious of. The proper way, and one for which the law ought to provide, would be to make the offenders themselves directly responsible.

The long depression and persistent unprofitable condition of trade is beginning to bear its bitter fruit in the shape of wide-spread distrust and failures. Several have occurred within the past few days, and more are anticipated. Respecting cotton and the coming crop

the enormous efforts that have been put forth to send up prices have exhausted their energy, and it is now again rapidly gravitating downwards. The very low crop estimates put forward quite recently have received very little attention on any side, as it is clear they are utterly untrustworthy; and if they prove correct they constitute no reason why the trade should pay the advanced prices that have recently been attained.

COTTON.—As indicated last week, the spot market was quiet on Friday, with a slight tendency downward. Futures made an upward move, gaining 3 points at one time, but closing with an advance of only 1 to 1½. There was a very small demand on Saturday, spots shewing a slight accession of weakness, and futures losing 1 point. On Monday much strength was lost and spots declined 1/16d., and futures made the considerable fall of 5 to 6 points. On Tuesday spots were again quiet and the turn easier; futures fluctuated considerably, closing with a loss of 2½ to 3 points on the day. On Wednesday the adverse forces at work induced another reduction of 1/16d. on spots; futures varied slightly on this experience, making a gain of 1 to 1½ points. Yesterday spots were still in very small request, with values unchanged, futures losing 1½ to 2 points. The week's experience in Liverpool has been regarded as a distressing one. Spots have lost 1/4d. per lb., and futures 7½ to 9½ points.

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

	Import.	Forward.	Sales.	Stock.	Actual Export.
American..	31,209..	41,450	34,640	1,387,290..	6,457
Brazilian ..	1,693..	1,334	770	45,580..	—
Egyptian ..	2,265..	2,571	2,400	94,850..	633
West Indian	— ..	734	960	37,710..	121
East Indian	6,954..	2,179	930	43,980..	790
Total ..	42,121..	48,268	39,700	1,609,410..	8,001

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

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

	Saturday.	Monday.	Tuesday.	Wednesday.	Thursday	Friday
June.....	4·4 5	4·1 2	4·1 2	3·61 62	3·61 62	3·63 b
June-July..	4·4 5	4·1 2	4·1 2	3·61 62	3·61 62	3·63 b
July-Aug..	4·6 7	4·3 4 s	4·3 s	3·63 s	3·62 63	4·0 b
Aug.-Sept.	4·9 10	4·6 7	4·6 s	4·2 s	4·1 2	4·3 b
September.	4·11 12	4·8 9	4·8 b	4·4 s	4·4 s	4·5 b
Sept.-Oct..	4·11 12	4·8 9	4·8 b	4·4 s	4·4 s	4·5 b
Oct.-Nov..	4·14 b	4·11 s	4·10 b	4·6 7	4·6 7	4·7 8
Nov.-Dec..	4·16 b	4·13 s	4·12 13	4·8 9	4 8 9	4·10 b
Dec.-Jan..	4·18 b	4·15 s	4·15 s	4·10 11	4·11 s	4·12 13
Jan.-Feb..	4·20 21	4·17 18	4·17 b	4·13 b	4·13 b	4·14 15
February..	—	—	—	—	—	—
Feb.-Mar..	—	—	—	—	—	—
March	—	—	—	—	—	—
Price of Mid American.	4 3-16	4⅛	4⅛	4 1-16	4 1-16	4 1-16
Estimated Sales including Spec. and Export.	5,000 500	7,000 1,000	5,000 500	6,000 1,000	7,000 1,000	6,000 500

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

	G.O.	L.M.	Md.	G.M.	M.F.
American.....	3 1/16 ..	3 7/8 ..	4 1/16 ..	4 1/4 ..	4 5/16
			M.F.	Fair.	G.F.
Pernam.....			3 15/16 ..	4 5/16 ..	4 9/16
Ceara			3 15/16 ..	4 1/4 ..	4 5/16
Paraiba			3 15/16 ..	4 1/4 ..	4 5/16
Maranham			4 1/16 ..	4 1/4 ..	4 5/16
			Fr. G.F.	F.G.	G.F. Gd.
Egyptian			4 1/16	4 1/8	4 1/8 5 1/16
Ditto white			4 1/2*	4 3/8*	— 5*
	Fr.	F.F.G.	F.	G.F. Gd.	F.G. Fine.
M.G. Broach ..	—	—	—	3 5/8	3 13/16 4
Dholleraḥ	2 1/16	3 1/16	3 1/16	3 1/16	3 1/16 3 1/4
Oomra	2 1/16*	3 1/16	3 1/16	3 1/16	3 1/16 3 1/4*
Bengal	—	—	2 1/16*	2 1/16* 3 1/8	3 1/16 3 1/2*
Tinnivelly	3 1/2*	—	3 1/16*	3 3/8* 4*	— —

* Nominal.

YARNS.—The state of the Liverpool cotton market only faintly reflects the dulness of trade in Manchester, where everything has been against sellers and in favour of buyers. There is a very limited demand in every section of the market for yarns. Manufacturers are taking only the smallest quantities that will answer their urgent requirements, and as there are a considerable number of looms standing idle these are not great. Yarns have been dull throughout the week, and have steadily though slowly depreciated in value. Where spinners have been able to do business they have had to accept reductions on last week's rates, and stocks are again, through sheer inability to sell, becoming somewhat heavy. Bundles and two-folds remain very quiet, and the turn lower in values. Bolton yarns are moderately steady, with less doing. Spinning on every hand is in a very unsatisfactory state.

CLOTH.—The demand for cloth is quite insufficient to keep looms at work, and in very many cases it would be altogether injudicious for producers to venture upon making stock. Printing cloths are moderately steady, and the best makes of shirtings are fairly well engaged. Common sorts, however, are in little request, and makers want orders. A few varieties of the lighter classes of goods suitable for the East are moderately well sold, such as dhooties and jacconets, but all round the demand is quite inadequate to meet the requirements of producers and keep machinery fully employed. The number of stopped looms is increasing.

The trade to-day is no better. Cotton is unchanged. Yarns and cloth are dull, though there is perhaps slightly more disposition to operate amongst buyers.

WOOLLENS AND WORSTEDS.

BRADFORD.—Yarns are not much changed. Export merchants have few orders to place, and the home trade demand is unsatisfactory. The most enquiry is for singles, but twofolds are slow and little is doing in them. Mohair is not so brisk as a few weeks ago. The piece trade is also idle. A few makers of fancies are busy, but on the whole there is good reason for complaint.

LEEDS.—Business in the woollen cloth warehouses is keeping up more regularly than sometimes is the case after a rush like that preceding Whitsuntide. Winter repeats are coming in steadily for the better qualities of worsteds, presidents, naps, pilots, beavers, and wool meltons, the prices of which stand at about the same point as at this time last year It is producers of low meltons, worsteds, tweeds, and serges who are most affected by the competition. Ordering for the next spring trade has become rather spirited, owing to the unexpected firmness of the price of wool. Both the home and foreign market for serges is active, which helps to keep up prices. So far as manufacturers are concerned the trade in fancy mantlings and dress goods is slacker, but merchants continue to deliver large quantities. Makers of flannels and tennis suitings have good orders at rates which pay fairly well. Worsted coating makers are surprisingly busy in Leeds, considering that those elsewhere have scarcely more than half their machinery employed. The North American demand for the best worsted coatings keeps up most satisfactorily. There is a decided enlargement in the trade done in blankets.

ROCHDALE.—Manufacturers have now a large number of orders in hand. New orders are coming in very slowly, for some drapers are delaying their orders until they reduce their stocks of summer goods. Manufacturers are firm.

GLASGOW.—Messrs. Ramsey and Co., wool brokers, in their report dated 21st June, say:— *Wool*: There is no special feature in the wool market this week. The firmness with which the London sales have opened has had little or no influence on the home wools, and trade continues rather dragging. The opening series of public sales takes place here to-morrow. We have a large show of new wool and expect a fair demand at current rates. *Sheep Skins*: The supply is fairly good for the season. Long wools are reduced in numbers with the increase on shorlings and lambs. A steady demand at late rates.

FLAX AND JUTE.

DUNDEE, WEDNESDAY.—The feature of the market is the continued fall in *jute*. Only a few months ago jute, which a year ago was £12 a ton, was sold at £21 10s. To-day the same jute can be bought on the spot at £16 to £17, and new crop is offering August-October sailing, at £15. Yarns are without change. The restricted output makes the spinners much more independent. Seeing it is not even yet possible to turn jute into yarn without serious loss, the manufacturers find it impossible to force prices down. Jute cops, 8 lb., are 1s. 5½d. to 1s. 6d., and common warp 1s. 6½d. For the best yarn of the principal makers, common warp is sold at 1s. 8d. for 8 lb., and for fine 1s. 11d. is the price. Hessians are again quiet. There has been a large business done for South America, and since that time there is less disposition to buy forward. Still, as with yarn, so with cloth. The restricted production enables manufacturers to insist on list prices, the more so as they do not give any margin to tempt anyone to start silent looms. *Flax* is firmer, and tows of superior quality are advancing. Spinners here being well stocked do not follow the rise; but on the Continent there is a large business doing both in flax and tows. Linen yarns are not higher, but spinners are very firm. The only yarn easier to buy is the common quality of tow in heavy grists. Linen goods are fairly active, and both Fife and Forfar are moderately busy. Arbroath still remains dull, short time or standing looms being common, especially in the lower kinds of heavy flax goods. The Dundee *fancy* jute trade is dull, and only the very best makers find work for their looms. It is expected that in a few months, with the prospect of a large crop of jute, the Dundee trade, which has been disorganised by abnormal fluctuations in the value of jute, will regain its usual tone, and that machinery now silent will again give wages to the operatives and moderate returns to capital.

HOSIERY.

LEICESTER.—The yarn market is active, orders are of fair extent, and the spinners insist on full prices. Cashmere yarns, fancy, and lambs' wool are in good request for immediate consumption. Stocks are light, but there is little pressure for delivery. The hosiery trade revives steadily, and the prospects are encouraging.

DRY GOODS.

MANCHESTER.

For the dry goods houses, hopes of a prosperous month's trade have to a certain extent been disappointed, but the reports to hand from various sources are not unanimous. Some of the fancy rooms have done fairly well. Lace buyers have been able to move off stock more readily in consequence of the continued demand for various classes of fancy goods. Many of the new dresses are trimmed with the material. Silk lace is rather quiet. Silk velvet promises to have a better run during the remainder of the season. The Spanish trade has been slightly benefited by the prospects of a continuance of lower tariffs on certain British goods as against French lace. To overcome the effects of such differential treatment, the methods usual in such cases are being adopted, Calais houses shipping their productions to this country, whence they are re-exported to Spain as English manufactures. For lace curtains the enquiry is somewhat feeble. American orders are not coming forward freely.

There is a good deal of depression in the hand embroidery trade. Swiss competition has destroyed the business.

The demand for summer hosiery has been small. Manufacturers are not making many deliveries, owing to the reluctance of merchants to increase their holdings at the stocktaking period. Men's underwear and ladies' combinations have been bought. Canadian spring deliveries have now been made. Some Dominion buyers are operating for the later season. The American demand has not been satisfactory.

The silk trade of the district is in an extremely depressed condition. There seems to have been nothing to replace the Windsor scarf business which collapsed recently.

The Spanish trade generally is quiet. Barcelona houses have made such progress during the past ten years that many branches of our cotton trade with the Peninsula have been greatly curtailed Barcelona goods also supplant many local makes in Cuba and the Philippines. The linen trade is also a growing one there, and machinists have received several good orders of late for looms.

The worsted trade is steady. Some of the better qualities have been in fair request. For carpets there does not appear to be an active enquiry. There is a slight improvement in the South American trade generally.

Home trade prints have been in moderate demand. Shipping styles remain dull.

Joint Stock and Financial News.

NEW COMPANY.

JAMES DRUMMOND AND SONS, LTD., BRADFORD.

Capital £150,000 in 10,000 £10 preference shares and 500 £100 ordinary shares. Object, to acquire as a going concern the business of spinners and manufacturers, hitherto carried on at Bradford under the style of James Drummond and Sons; the freehold mills, warehouses, cottages, plant, machinery, etc.; and to carry on and extend the same. Subscribers:—

	Shares.
J. Drummond, Emma-royd, Heaton, Bradford	1
J. Drummond, 4, Farcliffe-road, Bradford	1
S. Drummond, Fairfield-road, Bradford.....	1
C. H. Drummond, Ashburnham-grove, Bradford	1
E. Drummond, Emma-royd, Heaton, Bradford	1
J. Croyke, 6, Grosvenor-road, Bradford.....	1
R. Rennard, 65, Lumb-lane, Bradford.....	1

The first directors are the first four signatories to the memorandum of association. Qualification, £2,500. Remuneration to be determined.

Patents.

NOTICE OF REMOVAL AND CHANGE OF FIRM.

SPECIFICATIONS PUBLISHED.

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

1891.

10,634 BROOKES (*Draper*). Looms.
12,678 RAABE. Condensing fibrous material.

1892.

243 HANSON. Extracting deleterious matters from wool, etc.
1,744 JONES. Pirn winding machines.
7,295 BUHLMANN. Warp-knitting and crocheting machines.
7,463 CLEGG. Mules and twiners.
7,482 MARWITZ. Wood fibre ropes.
7,773 JANSSEN. Frieze-like fabric.
7,793 BROOKES (*Munyan*). Sewing apparatus.
7,807 BARLOW. Looms.
7,840 CHAPMAN. Spinning rings and travellers.

ABSTRACTS OF SPECIFICATIONS.

450. Jan. 9, 1891. **Net lace, etc.** W. H. HEYMANN, Stoney-street, Nottingham, and C. J. COX, Rock House, Basford, Nottingham.

A thick cord or thread, or a bundle of threads, is woven into the fabric at or near each edge to enable it to be held in certain stretching machines.

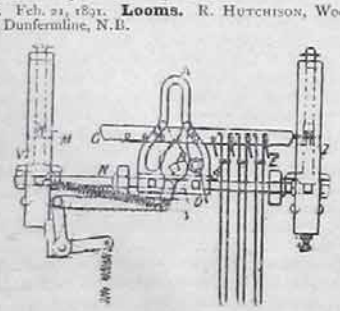
479. Jan. 10, 1891. **Guiding fabrics in finishing, etc. machines.** E. GESSNER, Junior, Aue, Saxony.

The invention is applicable for guiding fabrics in stretching, drying, shearing, pressing, winding, doubling, plaiting, printing, sewing embroidery, and other machines; it can be also applied to machines in which running cloths or endless bands are used, such as pressers and paper engines. Guide flaps K, each having a projecting guide surface 1 and a retreating gripping surface 2, are employed. The flaps are mounted on slides or bearing surfaces *w* reciprocating in a fixed plate *p* on the machine in an oblique direction with regard to the selvage of the fabric *w*. As the flaps move outwards, the surfaces 1 glide on the fabric until they fall by spring action on to the surfaces *w* (or into depressions in the latter), whereupon the surfaces 2 grip hold of the selvage and thus draw the latter out to the required extent. The rising and falling motion of the flaps is controlled by cams *a* operated by levers *n* and stops *t*, *t*1. A guide holds the selvage down when the flaps are lifted. Means are provided for preventing the return of the selvage when once it has been drawn to its right position. The devices and the methods of working them may be modified, and their application to some of the machines mentioned is described in the Specification.

583. Jan. 12, 1891. (Date given under SEC. 103 of the PATENTS, etc. ACT. 1883, June 13, 1890.) **Dyes.** J. C. L. DURAND, D. E. HUGUENIN, and A. J. J. d'ANDIRANI, Bâle, Switzerland.

Consists in heating the colouring matters described in Specifications No. 11,848, and No. 15,360, A.D., 1889, with an aromatic monamine or diamine such as aniline, *o*- or *p*-toluidine, xylidine, naphthylamine, *p*- or *m*-phenylene-diamine at 100°-200° C. The product is converted into new blue colouring matter by treating it with sulphuric acid on a water bath, or with fuming sulphuric acid below 18° C. For example, the blue colouring matter obtained by the action of the product of condensation of tannin and aniline or hydrochlorate of nitrosodimethylaniline, is mixed with aniline and heated for two hours at 140° C. The crystalline product when freed from aniline, is heated with monohydrated sulphuric acid in a water bath for several hours. The sulpho acid produced is separated from acid and converted into its sodium or ammonium salt, which is evaporated to dryness. These colouring matters dye wool and silk blue in an acidulated bath. On mordants they give less bright tints.

619. Feb. 21, 1891. **Looms.** R. HUTCHISON, Woodhead-street, Dunfermline, N.B.



Jacquards.—Relates to a "cross-border" jacquard having two cylinders W, Z, one for the border part of the fabric, the other for the body part. The cylinders each act on the same set of needles, and are carried by slide rods N upon which are mounted slotted brackets A having spring switch-pieces B. The cylinders are operated by the action of a bowl O carried by the griffe, and are put in and out of the way of the needles as required, by directing the bowl into one or other of the forked parts of the bracket-slots, the piece B being controlled by the operator to effect the changes. The lifting-hooks are made double, as shewn, and rest on a grooved bottom-board, beneath which a wire frame separates the neck bands. Each double hook has a stop-band S, of tin, which is soldered to one of the upright portions and encloses both, to prevent friction with the needles. Wooden strips, running through each row of hooks, prevent the latter from turning. The knives E are moved over to work with the front or the back hooks as required, by a rod C operated by projections M. The needles have cranked eyes for the lifting hooks, and other eyes for working on cross-wires.

694. Jan. 14, 1891. **Spinning.** R. TAYLOR, Jun., Oldham.

Opening and cleaning cotton, etc.—Relates to openers, etc., in which the cotton passes through one or more fans employed to draw or force it on to the perforated cages. In order to assist the opening and cleaning operation, part of the fan casing is cut away and replaced by a grid surrounded by a casing, and the sides of the fan casing may be roughened or perforated and provided with ribings or boxes to receive the dirt. *Drawings.*

695. Jan. 14, 1891. **Spinning.** R. TAYLOR, Jun., Oldham.

Carding-engines.—Each flat while being ground rests upon the prepared surface of a bracket and its working surface takes against the prepared surface of a slide which can move backwards and forwards in a pivoted bracket carrying the grinding roller by means of adjustable brackets. The slide is provided with a projection with which the flat engages, the flat and slide travelling together until the former is ground when it falls from the prepared surface on to the surface of the bracket and the slide is drawn by a weight, etc. into its original position to receive the next flat. *Drawings.*

751. Jan. 15, 1891. **Spinning.** D. STUART, 52, Chancery-lane, London, W.C.

Obtaining fibres from aloe, jute, pine-apple, flax, sansiveria, China grass rhea, ramie, etc. The material is passed between crushing rollers on to a table, where it is treated with a mixture of water and steam supplied by pipes. It is then passed to a scutching drum, steam being forced through the material from jets during the scutching operation. *Drawings.*

756. Jan. 15, 1891. **Spinning.** J. WALKER, 426, Elmer-street, Trenton, New Jersey, U.S.A.

Cap spindles.—The washer which separates the wharve from the lifting plate is made hollow and filled with fibrous material or other suitable packing, which absorbs and distributes the oil admitted to it through apertures communicating with channels on the upper surface of the washer. The packing is inserted and withdrawn through an opening. *Drawings.*

770. Jan. 15, 1891. **Tentering fabrics.** J. HORTON, Copley, near Halifax.

The fabrics are protected from grease by a series of preferably flanged plates, trays, and partitions, which serve also to direct the current of hot air through the machine for drying purposes. *Drawings.*

771. January 15, 1891. **Spinning.** G. A. BINNS, Archer-street Mills, Halifax.

Reed strippers or combs.—The pins or teeth are fixed into tubes of thinner metal than usual and filled in with wood or other light durable material. *Drawings.*

788. Jan. 15, 1891. **Spinning.** T. WRIGLEY, Waterside House, Todmorden.

Ring and traveller spindles.—The spindle is provided with a conical seating on to which takes a correspondingly formed part of the bobbin head. The bobbin is driven by the friction between the conical surfaces, which are grooved to facilitate the escape of the air from between them when the bobbin is placed on the spindle. The spindle may be of the usual length if desired, but is preferably only one-half or two-thirds the length of the bobbin, as shewn. *Drawings.*

1,286. Jan. 23, 1891. **Looms.** E. EDWARDS, 35, Southampton Buildings, Chancery-lane, Middlesex.—(*C. G. Held, Zittau, Germany.*)

Picking-strap connections.—The strap is doubled, and each end is passed through one side of the opening in the picker, and the two ends are brought up together through the slit in the top of the latter, and through the loop formed, as shewn, by the strap. The loop is then drawn tight. The ends of the strap are passed through a slot in and wound round the picking-stick, and can be fixed by a binding string.

1,303. Jan. 24, 1891. **Fulling woven or felted fabrics, leather, yarn, etc.** A. J. ASKHAM, Livingstone Works, Dewsbury.

In machines for fulling and milling woollen and worsted cloths, mantle cloths, sealskins, stockinettes, serges, estamins, flannels, blankets, rugs, felts, felt hats, hosiery, yarns, leather, etc., or for washing and cleansing woollen and cotton waste, sailcloths, ship linen, etc., the end of the trough is made adjustable with regard to the pendulous stocks by means of eccentrics, which are caused to oscilate the troughs about the centre by means of worm gearing, from a hand-wheel. The Provisional Specification states also that the trough may be moved endwise by a screw, a rack and pinion or by levers. *Drawings.*

1,311. Jan. 24, 1891. **Spinning.** J. W. SCOTT, Halliwell Cotton Works, Bolton; J. HAMER, 15, Windsor Grove, Bolton; and J. CARR, 267, Chorley Old-road, Halliwell, near Bolton.

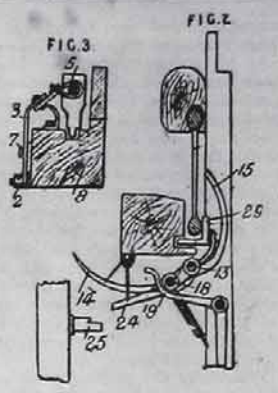
Flyer Spindles.—The hollow legs of flyers used in slubbing, intermediate, and roving frames, etc., are provided with a wide slot K in order that the inside of the tube may be made smooth, so as not to catch the yarn and cause waste. In the straight part of the flyer leg this slot is made on the inside, and in the curved part of the same on the outside.

1,325. Jan. 24, 1891. **Spinning.** J. ERSKINE, and F. W. FINLAY, both of Wolfhill Mill, near Belfast, and J. MCDOWELL, Prospect Mills, Belfast.

Rubbers for drawing rollers.—To facilitate the cleaning of the rubber without removing the same from the machine, it is mounted upon an axle *b* carried by spring or weighted supports *c* and is provided with a handle by which it may be turned from its working position, shewn in the drawing, into one at right angles thereto.

1,326. Jan. 24, 1891. **Looms.** C. THOMPSON, 2, St. James's Place, Otley-road, Baildon, Yorkshire.

Checking shuttles.—A loop of leather is threaded on the picking spindle 5 (Fig. 3) and is attached to a finger 3, pivoted to a bracket 2 in front of the shuttle-box. The fingers three on each side of the loom are connected by a metal band 7 which passes along the lay-beam 8, and through leather lined brackets thereon, the grip of which may be adjusted by screws. When the shuttle and picker are brought to rest by one leather loop the opposite loop is brought forward into position to check the shuttle on its return.

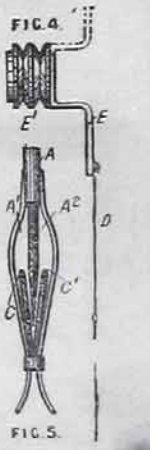


Loose-reed motion.—Curved fingers 15 (Fig. 2) on the stop-rod 13 bear against the loose part of the shuttle-box. When the shuttle traps and this part is forced back the reed case 29 is also forced back, and the stop rod removes the fingers 15 from contact with the box. At the same time the handles 14 are raised by reason of the bowl 18 thereon mounting the spring brackets 19, the reed is kept "open," and the spring fingers 24 (connected by a cord with the handles 14) come against the frogs 25 on the beat-up. The handles 14 pass beneath fixed heaters when the shuttle boxes correctly.

1,354. Jan. 24, 1891. **Dyes.** O. IMRAY, 28, Southampton Buildings, London.—(*Farbwerke vormals Meister, Lucius & Brüning; Hoechst am Main.*)

Alizarine derivatives.—Consists in the production of blue-green and red-violet colouring matters from alizarine blue. Nitro-alizarine blue is obtained by adding alizarine blue as a fine powder to a mixture of nitric acid of 47° Bé. and sulphuric acid containing 20 per cent. of anhydride at 0° C., and then raising the temperature slowly to 20° C. The product is poured into excess of cooled dilute soda and the nitro compound is obtained from its sodium salt by means of an acid. It may be used for dyeing and printing alone or with bisulphite, and yields blue-green shades. By treatment with soda lye and glucose, or with alkaline sulphides, or stannous oxide, or other reducing agents, the nitro-compound is converted into amido-alizarine-blue, which is a red-violet colouring matter of great strength.

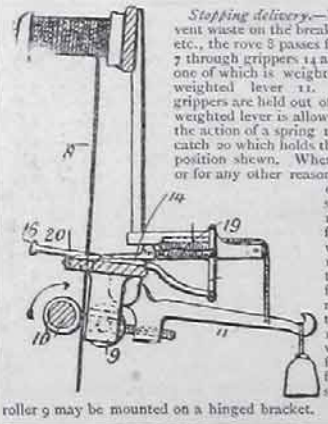
1,380. Jan. 26, 1891. **Looms.** J. MORRISON, 72, Burnley-road, Colne, Lancashire.



Shedding-motion.—For weaving leno selvages in "split-up" fabrics, the stationary ward threads are passed through the eyes of needles C, C1 (Fig. 5) arranged as shewn, in a pendant A. The crossing threads are passed through the spaces A1, A2 and through healds D (Fig. 4) carried by a tumbler or cranked lever E on a pulley E1, the latter being oscillated by a cord and cam-worked lever. The stationary threads are thus crossed by the heald threads in the required manner.

Change-box motions.—To reduce the length of pattern surface required to bring into action at distant intervals weft of different colour, two pattern cylinders are employed. One cylinder is driven by either of two catches on the lifting-bar. The catch of the second cylinder is controlled by the action on a catch lever of pegs on the first card surface. When the second cylinder turns, pegs on its pattern surface control through a cranked lever the catches putting either in action, or both out of action. Feelers are formed to act on both card surfaces. *Drawings.*

1,383. Jan. 26, 1891. **Spinning.** A. C. ROBERTSON, 2, Henderson's East Wynd; R. S. CHALMERS, 32, Dudhope-street; and J. L. S. LYON, 31, Reform-street, all of Dundee.



Stopping delivery.—In order to prevent waste on the breaking of an end, etc., the rove 8 passes from the bobbin 7 through grippers 14 and rollers 10, 9, one of which is weighted by means of a weighted lever 11. Normally, the grippers are held out of action and the weighted lever is allowed to fall against the action of a spring 19 by means of a catch 20 which holds the lever 16 in the position shewn. When an end breaks or for any other reason the delivery is desired to be stopped, the lever 16 is released from its catch 20, when the spring 19 forces forward the grippers 14 for holding the rove and raises the weighted 11, thereby preventing the rove from being drawn forward. If desired, the presser roller 9 may be mounted on a hinged bracket.

END OF VOLUME SIX.