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REDUCTION OF WAGES IN DUNDEE.

The jute spinners and manufacturers of Dundee are in a bad state, owing largely to the failure of the crop in Bengal. So serious is the situation, that they have felt justified in asking their employés to bear a share of this disaster, and have, therefore, passed a resolution reducing wages five per cent.

THE MANUFACTURERS' FEDERATION AND THE CRISIS IN THE COTTON TRADE.

This afternoon an important meeting of the representatives of the Local Associations in the Federation was held to consider the present situation. The meeting was well attended, and a strong and general opinion was expressed that an extensive resort to short time was absolutely necessary in the interests of the manufacturing branch of the trade. A resolution to this effect was passed, and the representatives were instructed to convene mee'ings of their associations immediately with a view to receive their authorisation to support a resolution to be submitted to another representative gathering to be held on Tuesday next, in favour of the general adoption of short time.

THE AMERICAN COTTON CROP.

In view of the fact that cotton has been driven up $\frac{5}{16}$d. per lb. in a very short time, it may not be undesirable to offer a word of warning to the trade on the danger of supporting this movement. In the concrete facts and circumstances of the case no justification for it can be found, but rather the opposite. The change, therefore, is entirely owing to a change in the mood of the trade and of operators. The former have supported the latter in their efforts to bring about a rise, and the strength of both combined has been sufficient to effect it. Mr. Pasch, of Havre, who writes a polyglot cotton circular, would have everybody believe that the visible supply has been reduced quite recently by about half a million bales. This, he affirms, is due to the stimulus to consumption given by low prices. Whether this be correct or not we may safely leave to the experience of our readers in the trade, who, we think, will give the statement an emphatic negative. There is certainly no increased demand for cotton goods in the leading countries of Europe, nor in the Eastern outlets through which English manufactures find their way to consumers. A little more may be experienced in the United States, owing to the prosperous harvests; and that, being almost entirely provided for by the American mills, will account for a portion of their increased takings this season, the remainder being due to laying in a little extra supply at a low price. The purchase of futures by English spinners and others, to which the advances therein and those of spot cottons are mainly owing, arise from the latter cause. It should never be forgotten that any purchases beyond the rate of actual consumption imply correspondingly diminished purchases in the future, the ability of the user to hold aloof from the market at any time when by so doing he thinks he can gain the greatest advantage being increased in the same ratio. The actual figures of the present crop are shewn in the statistics issued by the Secretary of the New Orleans Cotton Exchange, giving the cotton brought into sight from 1st September to 15th April, which is as follows, with comparisons for the same period last year:—

	This year. Bales.		Last year. Bales.
Agg. port receipts	6,628,000	..	6,408,000
,, net overland	1,139,000	..	977,158
,, Southern consumption	447,000	..	448,630
Excess interior stock	279,000	..	246,517
Total in sight	8,494,000	..	8,080,305
Brought in sight during week	62,000	..	70,000

From this it will be seen that only half a million bales more are required to come into sight from now to the close of August for 9,000,000 bales to be reached. As more than this quantity came to the ports alone last year, there is very little reason to fear that this figure will not be attained, and not very much more to apprehend that the total of this crop will not reach the figure we gave as its probable outcome in November last, namely, 9,200,000. It may be that this season rather more will be held over on the plantations than was the case last year, as the stimulus to bring it forward will probably be less than at that time. We may, therefore, properly ask whether the experience of the trade as to an increased demand for yarns and goods has been such as to warrant the payment of increased prices for cotton, either at the present moment, or for some months to come. We think not.

EXHIBITING AT CHICAGO.

A good deal has been said of late concerning the advisability or otherwise of exhibiting British goods at the World's Fair. The question is one which requires to be considered entirely from a business point of view, and, regarding it in such a light, many manufacturers appear to have determined not to shew at all. As far as Manchester is concerned, the American trade has fallen to such a low ebb that local houses naturally only take a languid interest in the matter. They cannot be expected to become enthusiastic over a matter which concerns them so little. The demand from the States for British cotton goods is a declining one, although occasional fluctuations lead some to suppose that we may be able to regain the trade. The average value of the prints shipped from this country to the States is between 4½d. and 5d. a yard. When they reach the New York market the cost is, of course, increased enormously, and 8d. to 9d. represents the price at which the goods are frequently sold to the American public. During the March quarters of the past three years our shipments to the United States were as follows:—

	1890.	1891.	1892.
Prints ..	£115,000	66,000	67,000
Bleached Cloths	113,000	131,000	112,000
Grey Cloths ..	27,000	30,000	20,000
Machinery ..	151,000	224,000	236,000

The increase in machinery need not give cause for special congratulation, as it is to be used for manufacturing goods which were formerly supplied by this country, but will in future be manufactured in the United States. At the same time it would be unfair not to point out that many Americans who purchased English machinery after the passing of the McKinley Bill have so far found their capital unremunerative, while some at least of the British firms that opened factories in the Republic have had reason to bitterly regret having taken such a step. Of these the plush manufacturers form a case in point, but fortune has been unkindly with them chiefly because of changing fashions. This want of success has, however, been quoted by over-zealous writers as an illustration of the disadvantages of Protection. We would not advise English plush manufacturers to spend much money on the World's Fair, and we do not think it likely that they will. Nottingham, however, should regard the matter in a far different light, for the prospects of a revival in the hosiery trade with the States are not at all remote. There is an interesting story connected with a special lot of hosiery at present offered by a prominent New York jobbing house at a heavy reduction in price. When the tariff was raised on foreign seamless hose, American manufacturers concluded that they would be practically secure from competition, except among themselves, in makes to sell at 10s. 6d. or under, and a number of them put in the necessary machinery for producing fast-black seamless styles to supply their market. Foreign manufacturers, however, accommodated themselves to the changed

conditions, with the result that their competition has in no degree abated, and they still practically hold the seamless hose market. In the particular instance occasioning these remarks, the manufacturer spent £7,400 on new machinery for producing this speciality, but after a year's struggle he has resigned the contest. His machinery is lying idle, and the balance of the stockings he made are selling below cost of production. It is stated that the value of machinery in similar plight, after a trial of the industry, or which has been put into factories and never started up, is quite considerable. These are facts which should revive the hopes of English hosiery manufacturers. Much of the credit for the accomplishment of the results referred to belongs to Chemnitz houses, who have displayed much ability in producing fresh styles to suit the changed conditions of the American markets. Their achievements in the dyeing of cheap goods are worthy of world-wide admiration. Edison is reported to have said that he goes to Germany for chemists. The remark is founded upon an intimate acquaintance with the German qualifications. Nottingham, for the reasons mentioned, might therefore find it advantageous to spend a little money in advertising her goods at Chicago.

The Belfast View.

Belfast, of course, transacts a splendid American trade, and, no doubt, Ulster manufacturers will be well to the front at the Exhibition. Linens have always been well represented at the great American Exhibitions, and the opportunity now afforded is one which is not likely to be lost. Out of total American shipments to the value of £540,683 during the past quarter, the Belfast Consular District supplied about £337,000 worth, according to an official return which now lies before us. Ballymena and Lurgan, which are part of the Belfast Consular District, also shipped the following goods during the period referred to:

Cottons	$209,000
Flax	127,000
Unions	69,000
Threads	54,500
Machinery	63,000

The most important item after threads is, oddly enough, ginger ale, and the shipments of all classes of goods from the district were worth $2,199,000. Trade at this rate for the remaining nine months would amount for the year to nearly $1,800,000. In the September quarter of last year the total was $2,389,000. For the June quarter the amount was $1,692,000. With such a large interest in the American market, Belfast may well regard it as advisable to keep her goods to the front at Chicago. But as far as our own district is concerned, the opinion of commercial men, as already stated, appears adverse to the project.

Ecclesiastical Textiles in Germany.

An exhibition held recently at Berlin shews that even protestant Germany gives considerable attention to the manufacture of ecclesiastical textiles. It seems that great progress had been made in recent years by German manufacturers of altar-cloths, etc. The patterns are sketched by masters in the art of design, and although in most cases it is easy to recognise them as dependent on well-known models of past centuries, it must be allowed that the use of what is acknowledged to be excellent is quite justifiable, even when it proceeds from other ages and other nations. The colours of the valuable products in this branch of textile activity proceeding from our days are almost uniformly glaring, and yet the combination of them in certain instances produces a very harmonious effect. Some articles, on the contrary, exhibit contrasts not always likely to produce a pleasing impression on the eye of the spectator with a taste for harmony in colour. But it is precisely these articles which are suited for the ordinary man, who is not so particular as to colour: they are not intended to cultivate the æsthetic feeling; their main end is to awaken the consciousness of the power of the Church and its representatives by taking captive the senses; and this end is best answered in the case of the sense of sight, which is here in question, rather by coarse effects than by skilfully arranged combinations.

Do the Cotton Operatives Read Their Unions' Trade Reports?

The dissemination of information bearing upon trade and commerce is regarded on every hand as essentially necessary to an industrial community, no matter to what branch it relates. The leaders of the trades-unions connected with the textile industry, especially the spinning section, view this question very seriously. The documents they issue from time to time to their members fully bear out this statement. We have now before us two copies of reports sent out, one by a branch society, and the other by the central office, both of which place workers in possession of valuable information as to the state of trade. In the compilation of these some amount of trouble is expended. In one the weekly transactions of cotton markets are recorded, together with the prices of the several grades, and also the prices obtained for the different classes of yarns. Then, under the head of "Labour Matters," information is imparted about London, Glasgow, Yorkshire, and the Continent, while cuttings from the *Chamber of Commerce Journal* as to commercial tariffs and treaties are reprinted. Turning to the other document, which by the way is published annually, a review of "trade and wages" is given, "disputes" are dealt with, and also questions affecting the "labour laws." Then we come to a "tabular statement" shewing the price of cotton and yarn, together with the margin between the same on the Friday in each week during the year, compiled from weekly official returns—a comprehensive document, certainly. The heads of the respective columns are:—Low middling Orleans cotton per lb.; average 32's cop twist per lb., margin per lb.; average 40's weft per lb., margin per lb.; good fair Egyptian cotton per lb., average 60's twist per lb., margin per lb. The year's exports of cotton goods and yarns, compared with the previous two years, are also tabulated, and these form an interesting compilation. It will thus be seen that workpeople are posted up with intelligence concerning the condition of the trade in which they are employed, and can glean for themselves the state of the market and the margin between cotton and yarn, and the condition of affairs beyond their own border. This commercial training, one would have thought, would have the effect of making the operatives a little more reasonable in their demands, especially when they must have noticed that during the past twelve months the margin has been growing beautifully less. It has, however, not had this influence, but rather has it been the contrary. They suppose to calculate to a nicety the amount it costs to produce yarn per lb. and in this way they reckon the sum to which capital is entitled as its share of profits. But beyond this there are other matters that should be taken into account, such as losses from bad debts, and deductions for raw material turning out poorer in quality than was thought at the time of purchase. There are also losses by breakdowns, fires, etc.: not only from the occurrences themselves, but from the interference with production. Indeed, if the profits derived from a purely hand-to-mouth trade could be tabulated for the last ten years, we are certain they would present a very poor return on the capital employed. As it is, no secret is made that for several years past large profits have been made from speculation at a time when scarcely a farthing piece has been obtained from trading transactions. In their endeavour to similarly make up for the deficiencies of trade, numbers of spinners have landed themselves this season sadly on the wrong side of the ledger. Here then we have a chain of circumstances which at the present moment should not be lost sight of, and which surely cannot fail to carry with them their own weight. The trade has been living more or less on speculation. But the severe check it has received must leave a deep impression upon the minds of operators, and completely interfere with the previous procedure, directing them to return to the old lines of legitimate trading. If this is so, then it would appear that the percentage of profit obtained must be smaller. This also, in its turn, must mean less wages for the operatives. Hence the outlook regarding the relations of capital and labour is not very encouraging, and apparently it points in the direction that labour must be content with a lower rate of remuneration.

French Trade in the Levant.

At the annual meeting of the French Chamber of Commerce in Constantinople, which was held recently under the presidency of M. Cambon, the French Ambassador, a speech was delivered by the latter in which he discussed the present position of the French trade in the Levant. "France," said the speaker, "was long mistress of the markets of the Levant by virtue of her geographical position; but since the considerable development of means of communication on the European Continent, and the territorial changes which have created new commercial relations, we have had to encounter terrible competition. Nevertheless we have not lost ground as might have been supposed." It is rather surprising after this confident introductory statement to find that the favourably situated country referred to comes only third in the foreign commerce of Turkey, England taking the first place, and Austria the second. Nevertheless, the situation is pronounced relatively satisfactory, though the sanguine orator may have felt more apprehension as to the future than he deemed it prudent to admit, for he added: "This situation must be preserved, it must even be strengthened and extended, for in the time in which we live it is impossible to remain stationary. Immobility means inferiority, and we all lose our present position if we do not strive incessantly to improve it." Before concluding, M. Cambon had to acknowledge that France had made no progress during the last ten years. It had lost nothing, but it had gained nothing, and that, according to the ambassador's principle stated above, must in reality mean retrogression.

Corduroy or Corderoy.

Some wit, name unknown, is asserted to have said that a dictionary was very excellent reading, but it changed the subject too often. Such a remark is not likely to be made of the monumental history of the English language which is being used under the editorship of Dr. Murray. Delightful reading it is, but each word is so fully dealt with that nobody could consider it desultory. Among many other merits, it was to be expected that the new dictionary would contain a fairly complete account of textiles through their several titles, and there was the hope that many of the philological puzzles with which textile history is burdened might be cleared up. But in one case a good old trade

tradition is regarded with doubt, and an entirely fresh conjecture is introduced. There might be some difference of opinion about the derivation of gauze or satin, or an open question as to the origin of kerseys, but it seemed as if corduroy was quite safe from disturbance. *Corde du roy*, the king's cord, was taken as an accomplished fact, just as the word is found in Dr. Brewer's "Dictionary of Phrase and Fable,"—"a corded fabric, originally made of silk, and worn by the kings of France in the chase." This is to some extent borne out by Waterston's "Cyclopædia of Commerce," 1814, where the fabric is described as "originally composed of silk, but now very extensively made in England of cotton." Against this there appears the following entry in the new dictionary :—

CORDUROY, *sb.* and *a.* Also 8 corderoy, 9 cord de roy, corde du roy. [A name app. of English invention: possibly from the surname *Corderoy*. It has been assumed to be of French origin, and to represent a supposed Fr. *corde du roi* 'the king's cord'; but of this there is no confirmatory evidence, except such as is derived from the fact that *corduroy* is a kind of 'cord' or corded fustian.

Duroy occurs with *serge* and *drugget* as a coarse woollen fabric manufactured in Somersetshire in the 18th century, but it has no apparent connexion with *corduroy*.]

The earliest illustrative extract is of the year 1795, consisting of an advertisement from the *Hull Advertiser* of that date, mentioning "An old brown coat and old corduroy breeches." That the stuff then old was commonly made and worn long before that time may be judged by the fact that one of the first attempts to set up the cotton manufacture in the United States began with a piece of corduroy. The date of this interesting event has usually been given as 1780, but recent research, for the sake of a forthcoming history of American textiles, has disclosed that it should be 1789, and on April 30th of that year the *Massachusetts Spy* gave a full account, as well it might, of the memorable proceedings :—

On Tuesday last the first piece of corduroy made at the manufactory in this town was taken out of the loom; to say that it looks well, and equal to any of the same quality imported from a foreign market, might be thought only to be retailing the common prejudices of people in general in their own favour, when they enter into business and view the first product of their labour. But, throwing partiality aside, we would only observe that good judges speak highly of it, and give it a decided preference to that imported from Great Britain. The carding machine, which is really a great curiosity, has been some time completed, as well as the spinning machine. In a little time it is hoped that the quantity of corduroys, jeans, etc., made in this town, will be sufficient to supply the inhabitants of this country, and be the means of saving a considerable sum of money among ourselves.

Now as to the origin of the word. The first thing to be done is to get rid of the mythical manufacturer of the name of Corderoy, and to flatly refuse to believe in him. We must fain conclude, in the language adopted on another occasion, that "there never was no such person." But it must be admitted, too, that the legend of the French king who wore corduroys of silk when hunting, is also in need of confirmation.

No distant climes demand our corduroy,
Unmatched habiliment for man and boy,

wrote Sydney Smith in 1820, and it would be a fine instance of the meeting of extremes if this characteristic raiment of railway servants, as Mr. Sexton once spoke of it before a Royal Commission, could be shewn to have sprung from royal initiative. There were royal factories in France—in Languedoc; but search may be made long enough among such records as remain of the goods produced in them, without finding any trace of corduroy, and if any proof can be brought forward of the introduction of the fabric in either silk or cotton it will be welcome. With reference to duroy, a time-honoured manufacture not peculiar to the 18th century or to Somerset, but made earlier than that in Berkshire, Devonshire, and London, it is worth noting that it was, like corduroy, a material for men's wear. An interesting instance of its use is found in a passage of one of the papers of Sir Everard Digby, of Gunpowder Plot notoriety, and discovered, with other documents, tied up in two silk bags, among the effects of his son. "Besides the trunk of armour which was sent to Mr. Catesby," he wrote, "I did carry but one other trunk with me, which had in it clothes of mine, as a white satin doublet cut with purple, a jerkin and hose of de-roi colour satin laid very thick with gold lace. There were other garments in it of mine, with a new black winter gown of my wife's." It would seem natural enough that a corded duroy, or de-roi, should become corduroy, but we may well hesitate to offer another theory to make confusion worse confounded. It is true that George Soane, in his "New Curiosities of Literature" (1849), commenting upon an old account of Sturbridge Fair, where it was said that

Several booths were filled with serges, duroys, shalloons, cantaloons, Devonshire kerseys, etc., from Exeter, Taunton, Bristol, and other parts west, and some from London also,

does not hesitate to declare that "*Duroy* is what we now call *corduroy*," but even such an emphatic opinion cannot be taken for granted.

GREAT DEFEAT OF THE "LABOUR" PARTY IN VICTORIA.

Intelligence from Melbourne, Australia, despatched on Wednesday evening, shews that by the elections to the Legislative Assembly of Victoria, which took place on that day, a great defeat has been inflicted upon the labour party. Of thirty-six labour candidates nominated, and who went to the poll, only eleven have been elected. The chief interest of the election centred in the prospects of success or defeat of this party, and the latter has occurred. We trust that this result may have some not inconsiderable influence upon the jelly-fish aspirants to the English Parliament, in shewing them that constituencies in this country may possibly object to have their highest interests sacrificed at the so-called shrine of labour,—but which would be more correctly termed the shrine of idleness; for the most of those who have erected this modern eikon have a strongly developed aversion to honest work: they like best to earn their bread by the sweat of their tongues, and are only concerned to get Demos to contribute his pence towards their maintenance in the Temple of Laziness. In due time there is no doubt that they will be found out.

THE FELT HAT INDUSTRY OF CHAZELLES-SUR-LYON.

A monograph recently issued by the Chamber of Commerce of St. Etienne gives some rather interesting information regarding the history of the manufacture of hats in Chazelles. It seems that this branch of manufacture dates back several centuries; and, according to tradition, an epidemic was introduced at the beginning of the 17th century by some camels' hair coming from Smyrna, and imported to be used in the hat manufacture. Not, however, until the period of the Revolution are there documents which enable us to form anything like an exact idea of the extent of the hat trade of St. Etienne. In the archives of the Commune repeated reference occurs to the hat-makers. Among other documents there is a requisition dated Pluviose, the seventh month of the fourth year (Feb. 5th, 1794), in which the General Council of the district of Boen demand all the caps in the possession of the different manufacturers, in order to provide head-dresses for the volunteers called to the frontier. There were found in the hands of 30 manufacturers 1,200 caps, and 400 to 500 kilos. of wool intended to be worked up for that purpose. It would appear from statements and reminiscences that until 1855 the manufacture was confined within very restricted limits, meeting only the wants of eight to ten departments round about. The caps were sold at the great fairs that used to be held in the various towns, especially Clermont-Ferraud, Limoges, and Nevers. About 1850 another opening presented itself for this branch of industry. The houses in Lyons, which did business not only in France, but throughout Europe, used to send representatives to Chazelles every Monday to take away the goods manufactured during the previous week. These caps were supplied in an unfinished condition, to be completed at Lyons, whence they were forwarded into all parts of the globe as products of the hat trade of Lyons. The enlargement of this trade, and the consequent competition expanded the industry of Chazelles to such a degree that the production rose to between 4,000 and 5,000 hats per week in 1850, and to 18,000 or 20,000 in 1870. In 1871 a newly established house commenced the complete production of hats, with the result that gradually, by a process which was not perceptible at the time, the 17 houses of Chazelles, producing about 1,500,000 hats per annum, were led to supply their goods directly to exporters. This branch of manufacture, occupying about 1,600 to 1,800 hands, has been completely transformed by the introduction of mechanical appliances. The materials formerly employed—camels' hair and wool—have been replaced by the hair of the rabbit, the hare, and the beaver. Three-fourths of the goods are exported.

"THE CUSTOMARY WEAVER."

BY AN OLD ONE.

Well do we remember the out-of-the-way straggling busy village of our boyhood, with its white-washed thatched cottages, loom houses, and well trimmed gardens full of old-fashioned flowers—sweet-william, ribbon grass (from which many pretty striped patterns were obtained for the loom), the ten-weeks stock, sweet briar hedges, and always a spare patch set apart for culinary or medicinal herbs; and close to the porch, with its fragrant honeysuckle, one or two bee-hives. Here could be heard from early morn far into the night hours the clickity-clack of the weaver's shuttle and buzzing whirr of the bobbin wheel, the rays of the candles through the leaden-lozenged panes of the loom shop serving as a beacon-light to many a worn, benighted traveller, who was sure of shelter and refreshment. How often did the children in those long-past times forego their marbles in the bright and sunshiny days to straighten ravelled bobbins and skeins of weft, within sound of the solemn, ponderous tick of the old eight-day clock! How many times we have hid when playing hide-and-seek within its roomy case, or have been good-naturedly lifted upon the top of the loom, has passed beyond remembrance. Those were the happy days of childhood, the recollection of which can never be effaced from memory. The customary weaver of these days was a type of hand-loom weaver very distinct from his fellow operative of the town: he was a man of some local importance and a power in the land; generally constable of the parish, whose legal services might be required once or twice during the twelve months of his official dignity. Crime of any degree, however, was almost unknown in those secluded hamlets. Being generally a man of some substance, with a taste for music, the customary weaver often led the village choir on a Sunday with a flute, to the accompani-

ment of a violoncello; and in all matters affecting the village life he was to all intents and purposes a man of importance. The rural population for miles around were supplied by him with cloth for every possible use, from barragon for suitings, to dress ginghams; linsey woolsey for petticoats and bed gowns; apron checks, sheeting, bed ticking, and in fact all clothing material that was necessary for country people. It took some amount of capital to produce these requirements, purchase the raw material, pay his journeymen's wages, and provide for the support of his household; though it is needless to say that all earned their keep: from the little toddler up to the eldest son or daughter of the house, every hand was engaged in some part of the processes of manufacture. The "Truck Act" was quietly ignored, farmers paying the weavers in kind, with cheese, butter, eggs, etc., and in turn they paid their journeymen and others much in the same way. The Saturday reckonings in this respect were remarkable feats of arithmetical calculations. Such was the primitive system of manufacturing amongst the customary weavers. In hard times, though an industrious life, it was a light-hearted poverty, free from any unbittered strife, such as at the present day is so fierce between employer and employed. The weavers made their cross-over patterns of white and blue on a grey warp by weaving the bobbins alternately. Few are now left of this sturdy, honest race, and those who remain and follow the craft are sparsely scattered over Wales, Scotland, and the remote valleys of the North of England. Many of the ambitious spirits amongst them, not content with this jog-trot mode of living, commenced selling their goods in the large towns, and one amongst the number, known amongst his fellows as "Level Jimmy," made his way one day to Manchester with his wallet of checks and stripes, and upon his arrival made diligent enquiry as to who were likely to prove his best customers. He then proceeded to call upon one of the most opulent drapers of the town, resolving to do some business, having come so far for the purpose. Having entered the shop, which he found crowded with purchasers, and the assistants all bustling and busy behind the counters, he waited what he thought a reasonable time, then laid down his wallet and his old beaver hat and stick on the counter, and enquired for the "mestur." One of the shopmen asking what he wanted, Jimmy answered—"Do you want good honest checks, bundle-handkerchiefs, Tom Coffs or Julia Spots?" "No," was the prompt reply, with a look of contempt at the old man's mean appearance. "Well, ye just have a look?" "No, not at all, I have no time." "Well, you will find it worth your time to look at them, and you are sure to buy," and Jimmy proceeded very coolly to untie and empty all out of his wallet at once. "Will you go away, I tell you, for an old fool; we don't want your goods, but just, oh! get out of this," said the exasperated shopman, sweeping all off the counter. Jimmy looked up in his face with open mouth and enlarged eyes, and then down to the floor where his cloth lay, and then said, "Won't you buy?" "Get out of the shop at once." "Are you in gradely airnest?" "Yes," was the reply, picking up Jimmy's hat and throwing it into the street. Jimmy walked after his beaver, and giving it two or three dashes on the wall outside the door he re-entered very composedly, wringing the moisture out of it, and said with a smile, "I would not have done that to you, and surely after such a caper you will buy something." The proprietor, who was standing all the time in the shop, admired the patience, good temper, and perseverance of the old man, examined his goods, found them suitable, purchased the lot, ordered a regular supply, and thus was laid the foundation of an opulent mercantile house. This old man was the original James Grant, of Ramsbottom, generally understood to be one of the original Cheeryble Brothers, whom Charles Dickens made famous in "Nicholas Nickleby."

A Survival of "The Customary Weaver."

"The customary weaver," whose life and labours are described in the above note, is, as therein observed, almost extinct, though a few specimens are yet to be discovered, chiefly, we believe, in the mountainous districts of Wales. One such we have found in Hênllan-st., Denbigh. This is Mr. E. R. Williams, an old weaver, who still uses the primitive hand loom, in vogue before the days of John Kay the inventor, in which the shuttles are thrown from hand to hand, and not from box to box as in the more modern one. This is not from ignorance of the existence of modern appliances altogether, but rather from the fact that too many shuttles and wefts sometimes enter into the composition of the fabric to permit of the use of a range of boxes large enough in the hand-loom. Mr. Williams makes "Welsh cloth" for suitings, tweeds, flannels, table covers, blankets, and, in fact, almost every kind of fabric that has been in vogue, probably, during the century or two previous to their supersession by others from mechanical looms. In saying this, however, we must be understood to except all elaborate and highly fanciful fabrics. From a number of patterns of winseys submitted to us we can truly say that we have seldom seen more chaste, neat, and elegant materials of their kind. If good skirtings of sound material, honest fabrication, great durability, and free from deleterious ingredients be deserving recognition and patronage, we should strongly advise ladies desirious of obtaining a genuine article to entrust an order to this worthy follower of the ancient and almost extinct craft of hand-loom weaving. Mr. Williams has been a frequent exhibitor at the Eisteddfods and local exhibitions in the Principality, in which he has carried away the different prizes offered for the class of goods he produces. About eighteen months ago, a beautiful piece of skirting, of which we have a pattern before us, was presented to Her Majesty the Queen through the mediumship of Mrs. Townshend Mainwaring and Lady Florentia Hughes, and of which Her Majesty expressed very high approval and pleasure at its reception. Another point shewing the primitive style of his business is seen in the fact that he offers to make up the home-grown wool of his customers. Should any of our readers desire to put themselves into communication with Mr. Wiiliams, who would no doubt submit patterns on request, he may be addressed at 31, Hênllan-st., Denbigh.

The Labour Movement in Macclesfield.

A few weeks ago we reported the existence of a movement on the part of the Cheshire silk operatives in favour of an advance in wages. The employers apparently yielded to the demands of their men, and the advance, or rather a consent to pay the rates current some years ago, was granted. Since the occurrence of these events the Windsor scarf trade has, to the surprise of many, fallen off to an alarming extent, and many outsiders are asking themselves whether the result has been produced by the action of manufacturers in sending more than the ordinary amount of work to Scotland. There might be ground for the assumption were it not for the fact that the weavers did not ask for an advance on Windsor scarves. If manufacturers have sent this class of work to Scotland, their conduct has been due to a desire to "pay the weavers out" for their action in demanding an advance, and we have not so far heard of any charge from an authoritative source confirming or even formulating this view. At the same time the Macclesfield manufacturers must be regarded as occupying an exceptionally favourable situation when the position of their brethren in the cotton trade is considered. If their operatives become unruly, work can be sent elsewhere, and the manufacturer, with mills nominally closed, can obtain supplies of his goods from Scotland.

THE DISPUTE IN THE COTTON TRADE.

We are now in the midst of the dispute in the cotton trade, upon the earlier stages of which we have already commented several times. At the close of last week the Executive of the Operatives' Associations, after a brief consideration, offered to submit the matters in dispute to the arbitration of two representatives of each side, who, in the event of failing to agree, should bring in a fifth person, whose decision should be final. This offer, apparently so fair, is in reality as far away from such a condition as it would be easy to get. The dispute at Stalybridge commenced on an allegation that the material was bad—a statement that was denied by the management at the time. As the wrangle, however, could not be ended, the latter offered to submit the matter to the judgment of any disinterested and capable persons who might be agreed upon, and even requested Mr. S. Sidebottom himself to examine the work. "Oh, no!" said that worthy; "the minders know best when it spins bad." Here was an offer of arbitration made to the operatives under the fairest conditions, when the material alleged to be bad was in the machinery, and in a couple of hours could have been thoroughly examined, and an incontestable conclusion arrived at. But what did those wonderfully wise and just men, their leaders, do? They refused the offer, instructed the men to tender their notices, and brought them out into the streets, where for four months they were kept and maintained by fellow operatives' contributions. At the end of that time arbitration was substantially agreed to, and the men were permitted to return to work in order that an examination of the material could be made, when it was strongly demonstrated—and almost as fully admitted by the officials of the operatives themselves, as we have already shewn—that there was no justification for the strike in the first instance. But, of course, for the officials of the Union to admit themselves in the wrong would be destructive of their claims to infallibility of judgment and omnipotence of power in the realms of industry, on which their arrogance is founded; therefore, as might have been expected, no good was permitted to come of the attempt to settle matters. The workpeople were again withdrawn. The mill was then opened for the reception of non-unionists, with the results that usually ensue, in the shape of intimidation, terrorization, and assaults, necessitating the constant presence of a large force of police to keep the peace. And this from the fair-minded, liberty-loving, generous-hearted men of the manufacturing districts, whose reputation for noble qualities of character is as wide as the empire! Surely such conduct is affording abundant material for a revision of this estimate of the qualities of Lancashire men.

Three more months have gone by, the mill has continued to be worked under all the disadvantages of a scratch staff of employés, working under the terrorization of a cordon of men acting more like ravening wolves than

human beings, who are only kept at bay by the batons of policemen. The material that was alleged to be bad has undoubtedly been all worked out before now, and therefore the dispute cannot possibly be arbitrated upon with advantage, as only evidence can be tendered of conditions that have long since passed away, which may easily be sworn to have been anything quite different from what they were; while such affirmations can only be rebutted by the recollections of the facts that may be advanced from the other side. The offer of arbitration to-day is, therefore, altogether inadequate and out of date; any fact of ancient history might just as well be sat upon and with just as much advantage. Substantially the Executive of the Employers' Association have shewn themselves to be of the same opinion, and in reply to Mr. James Mawdsley's offer they have in effect agreed to meet him and his colleagues to ask them what they want to arbitrate upon, as the original dispute now affords no points that can be submitted from his side. But the case is different on that of the employers'. They have some points—and strong ones too—which we submit are the only ones that could admit of arbitration at this stage of the matter. The Stalybridge Spinning Company has been damnified by the action of the local association of operatives in the wanton and unjustifiable attack made upon it by being deprived of the profits that would or might have resulted from unmolested working, and by the destruction to a more or less extent of its business connections, its customers having been compelled to go elsewhere for supplies of yarn, and these it may never be able to get back. The employers' association, too, in coming to its defence against this causeless attack, has been involved in great expenditure in contributions in support of the Company. We think, also, a word or two should be said on behalf of the Corporation and public interest of Stalybridge, which have been put to great expense, and involved in commercial loss by the mischief-making of Mr. Sidebottom and Mr. Mawdsley. The only points that, properly considered, can be advanced are these, and they all come practically from the employers' side. The question arising upon them would thus be the amount of the indemnity the operatives' associations should pay to the employers' association. This should include not only payment for the mischief wrought, but a punitive amount as well, such as would tend in future to prevent these rash escapades being undertaken without proper cause and due consideration, and then only after sensible methods have been tried to settle differences which must inevitably be liable to arise in such a gigantic industry as the cotton trade, in a reasonable and equitable manner. On Thursday afternoon it was announced to a press interviewer by Mr. Mawdsley that they would accept the meeting suggested in reply to his own communication by the employers, and we hope it will be found that he has carefully endeavoured to formulate proper answers to the enquiry made by the latter. If he has done so, we have no doubt that the investigation will have shewn him and his satellites the intrinsic weakness of their cause, and the absolute baselessness of the position they have assumed. This ought to lead to an immediate and unconditional surrender, with the fullest and most sincere apologies for the wantonness of the attack and the mischief it has wrought. And this should be complemented with an undertaking that in future they will confine their operations to a defence of their legitimate interests as equitably considered alongside those of their employers, and both in close relationship to the general state of the trade. These are the points that ought to receive the attention of the meeting to-day (Friday) as they are really the only ones that have been developed from the dispute. We are writing in advance of it, and therefore cannot say what will or may be done. The employers' representatives, however, have very weighty responsibilities in their keeping, and it will behove them to be careful of entering into engagements that may hamper them in the future. Any want of firmness on their side will have the most disastrous influence upon their organisation as a body, which, as yet, is only very loosely coherent, and which any failure to maintain their interests in a case wherein every particle of justice is on their side would completely destroy. As yet we have seen few evidences of the development amongst them in any individual of the qualities of a powerful leader or commander, the want of which was never greater in the history of the trade. That such a one may be forthcoming, if their interests have not to be destroyed and their property confiscated, is a prime necessity of the time.

Foreign Correspondence.

TEXTILE MATTERS IN THE UNITED STATES.

BOSTON, APRIL 14TH.

AN ENGLISH ORDER FOR AMERICAN MACHINERY.

The Browne and Sharpe Manufacturing Company, of Providence, R.I., have just shipped an order for special cotton drawing rolling machinery to Messrs. Hetherington and Sons, of Manchester. The order given to the Manchester firm is no doubt an experimental one. The reputation of Messrs. Hetherington for enterprise is such that little surprise will be manifested in Europe at this report. The following description of the machinery bought by Messrs. Hetherington is from a local source:

Messrs. Hetherington have thoroughly tested this roll upward of a year in the best and largest mills abroad, and will now commence making it and put it on the English and Continental markets. This roll is pronounced both in England and the United States as one of the most important inventions of the age in cotton machinery, entirely upsetting, as it does, the old time theory and practice that you must have a cushion of cloth and leather to draw cotton staple. This process is claimed to shew better uniform drawings; saves roll-covering bills, varnishing, floor space, power, waste and wear; is one-half less weight; one-fifth less deliveries on drawing frames; gives equal production and better quality than leather, as every roll is of the same accurate size, from best hard crucible steel. The company shew mills in New England using upwards of twenty thousand rolls down to lesser number, and making up to 19-hank roving.

As already stated, the above description is from an American source, and I reproduce it for what it is worth.

DEPARTURES OF BUYERS.

Mr. Charles Shaw (Tefft, Weller, and Co.'s, white goods and linens), and Mr. James Gamble, representative of the Broadway Damask Company, sailed for Europe to-day per *Germanic*.

Mr. Batten (Sweetser, Pembrook, and Company, dress goods), and Mr. Wiegand (the H. B. Claflin Company, dress goods), will sail for Europe on the 19th inst. From the latter Mr. C. A. McEwen, buttons, etc, sails on the 16th, and Mr. Finlay, trimmings, sails on the 21st inst.

J. H. Gill, buyer of ribbons for E. S. Jaffray and Company, sailed per steamer *La Champagne*, for Europe on Saturday, the 9th inst.

MACHINERY WANTED.

Harriman Brothers, Lowell, makers of elastic webbing, have recently enlarged their building to substantially twice its former size. It is intended to fill the new space with the latest improved machinery.

The Windsor Print Works Company, North Adams, Mass., is considering plans for enlarging its plant by adding more printing machines and building storage sheds. If decided on, the work will begin in a few months.

The Merchants' Manufacturing Company and the Fall River Manufactory have determined upon a complete reorganisation of their picking departments, and have placed their orders with the Potter and Atherton Machine Company, of Pawtucket, for 35 of their latest improved compound opener lappers, intermediate and finisher lappers, besides seven automatic cotton feeders to go with them. It is the intention of these mills to adopt the English type of carding machines, an order for some of which has already been given.

The Firth Carpet Company, West Cornwall, N. Y., has shut down for an indefinite period. The weavers and spinners refused to accept a proposition of a reduction of 10 per cent. in their wages until August 1st, and the mill has been closed in consequence. The concern is connected with the well-known Firths, of Heckmondwike, Yorkshire, manufacturers of tapestries and other descriptions of carpets. The Firth Company is recognised here as one of the most enterprising concerns in the Republic, and in this special class of trade native houses find it difficult to compete.

SILK AT PATERSON.

Mr. Vecker, of the Paris Silk Co., does not believe that the increased demand for silk goods will be followed by an appreciable rise in prices. Mr. Vecker, who is a Frenchman, says: "A week—ten days—the demand is fully met—more than met—Europe waits to supply—there are fast steamers now-a-days." Dress goods, cut-ups, and novelties generally are, however, commanding slightly higher prices, although in other departments of the trade complaints are frequent. A correspondent writing to one of the dry goods journals well illustrates the position when he states that a well-known representative of an important branch told him recently, that he could make more profit on his contracts at 65c. than he could on similar ones at 85c. a few years ago. Manufacturers generally are not in this fortunate position, of course, but the fact is one that indicates what changed methods and circumstances permit.

The New Jersey silk town will shortly reach the hundredth year of its existence. It is not improbable, according to a fervid writer in the *Dry Goods Chronicle*, that "pæans of triumph" may ring out in honour of the occasion, and that the city may send forth "a blast of exhortation and defiance" that shall echo from shore to shore of this great continent; and that shall be heard even in Lyons, Macclesfield, and Crefeld. The same writer, after interviewing a number of best-informed silk men, has obtained figures ranging all the way from $8,500,000 to $11,250,000 as the amount invested in silk mills, plant and stock; all the way from $37,000,000 to $41,000,000 as representing the approximate annual turnover, and from 21,000 to 25,000 as the number of operatives employed in one or other branch of the trade, the figures throughout relating to Paterson only. *Shriner's Paterson Illustrated* gives the following figures as representative of the turnover in each of the States named:

	1860.	1870.	1880.
Pennsylvania	$1,700,000	1,600,000	2,800,000
Massachusetts	1,300 000	1,400,000	4,000,000
Connecticut	1,200,000	3,300,000	5,000,000
New York	1,115,000	1,800,000	9,300,000
New Jersey	970,000	4,000,000	13,000,000
Paterson alone			11,000,000

If the estimate of $37,000,000 to $39,000,000 given above can be relied on, the increase in Paterson's silk trade since 1880 has been enormous. Below are some figures relating to prominent firms existing in 1886:

	Looms.	Spindles.
Pioneer Silk Co. (John Royle's successors)	36 ribbon, 76 broad	
Wm. Strange	300 ribbon	6,000
Pelgram and Myers	200	3,000
Hamil and Booth	400	30,000
Dexter and Lambert	200	6,000
Phœnix Manufacturing Co.	200	
Ashley and Bailey	50	
W. D. Holmes	50	
Throwsters.		
Hopper and Scott		4,000
J. McAlister		2,500

The silk finishers of this time were J. Crew and Thomas Henshall, both accounted as among the most reliable representatives of this branch of the trade, their staff then consisting of about fifty hands in each case. J. Weidman, George Morlot, and See and Sheenan were the only dyers.

There has, of course, been a rapid increase since 1880 in the size of the plant of the above firms, while many new ones have started business.

Reviews of Books.

MESSRS. HOWARD & BULLOUGH, GLOBE WORKS, ACCRINGTON, ENGLAND: ILLUSTRATED CATALOGUE OF PRODUCTIONS. Accrington: Messrs. Howard and Bullough, Limited.

In the way of trade and business works this superb catalogue is one of the finest we have ever seen, being handsomely printed on tinted paper, bound in calf, and gilt-edged and lettered. It opens with a handsome title page and list of contents, after which follow the fine view of the works that we had the pleasure of issuing with our description of them in these columns a few weeks ago.

The contents are divided into several sections, the first being allotted to mill architecture, and containing several handsome illustrations of mills at home and abroad, which the firm have wholly or partially equipped with machinery. These include the model mill of Messrs. Coats, Paisley; the Arkwright mill, Rochdale; elevations or plans of mills in India and Brazil; and diagrams of improved roofs for mills and sheds. Next come boilers, fuel economisers, engines of various types, turbines, gearing, etc., all briefly described and beautifully illustrated.

The next section, and the largest, is devoted to the description and illustration of cotton-spinning and manufacturing machinery, commencing with cotton gins and ending with yarn and cloth bundling presses. The machines in this division are so numerous that we can only mention a few of the firm's leading specialities. These are openers, scutchers, revolving flat cards, and the series of frames fitted with their electric stop-motion and improved differential motion. Next follows the firm's celebrated ring frame, and in connection with this are some beautiful illustrations of the spindles with which they are furnished. Winding frames, reels, and bundling presses come next, and are succeeded by stop-motion warping frames and magnificent illustrations of cylinder and cavity sizing machines, with size mixing becks, and the small frames for drawing in and "looming." This division concludes with a series of beautiful illustrations of looms for numerous kinds of cloths, and warehouse machines.

The next section is devoted to illustrations of tools requisite for furnishing a well-equipped smith's and mechanic's shop, so essential an adjunct to mills abroad. Following this comes the last section, replete with illustrations of nearly every possible accessory needed in the complete and perfect equipment of a modern mill, and which are essential if it be desired to avoid loss and inconvenience. Messrs. Howard and Bullough may be congratulated upon having thus made a record in trade literature.

THE WOOLLEN THREAD; ITS NATURE AND HISTORY, ITS STRUCTURE AND USE. By CHARLES VICKERMAN. Huddersfield: Alfred Jubb and Son, Ltd. Price 1s.

Mr. Vickerman, who is a well known authority on the matters dealt with in this little work, defines man, on the fourth page, as "a creature that fabricates his own clothing." After this opening definition, Mr. Vickerman goes on to speak of the early history of our woollen manufactures. The book becomes more interesting, however, when what are more strictly Mr. Vickerman's own contributions to the contents commence. The writer's grandfather was carding engineer for the Mr. Horsfall who was shot by the Luddites on Crosland Moor, and he used to tell his grandson about the shepherd-farmers bringing to him a few stones of wool to card at the little mill at the foot of the Wessenden Valley. After carding it was taken home, and rolled in wrappers. The long winter evenings were whiled away by spinning it on the single-thread wheel, it being deemed unsafe to entrust both carding and spinning operations to machinery. There are some further interesting reminiscences of the early days of the wool trade in Yorkshire. The description of the structure of woollen thread is very minute. Mr. Vickerman says nothing about the new cloth of which we spoke some time ago. The fabric is to be a "cross" between a worsted and a woollen, and, unless we are mistaken, Mr. Vickerman has set himself out to produce it. Should he succeed there ought to be a fortune awaiting him. Yorkshire has already given power-loom plush and alpaca to the world, and the men who first produced these goods are now wealthy. It would be in accordance with the fitness of things if the same county added another to the list of its triumphs in the nineteenth century. Mr. Vickerman's work will command attention out of respect for his admitted practical knowledge; and it would perhaps be too much to ask him to take the world into his confidence in connection with his ideas of a new cloth.

PATENT SELF-BALANCING HYDRO-EXTRACTORS: CATALOGUE. Messrs. Watson, Laidlaw and Co., Engineers, Dundas-street South, Glasgow.

Messrs. Watson, Laidlaw and Co., the eminent specialist engineers and machine makers of Glasgow, have just issued a sectional catalogue of their productions, which is mainly devoted to hydro-extractors, of which they make several types. It is well deserving consultation by those interested in this class of machines, and we commend it to their attention.

ILLUSTRATED CATALOGUE OF ENGINES, BOILERS, AND GEARING. By A. G. BROWN, M.E. Bolton: Messrs. John Musgrave and Sons, Limited. Price 21s.

This is a re-issue of the illustrated catalogue of the productions of the eminent firm of Lancashire engineers in an enlarged and improved form, which we noticed at some length on its first appearance a few months ago. In the new issue several slight defects have been eliminated, and a considerable amount of new matter has been added. Engineers, millwrights, spinners, manufacturers, merchants, and all users of steam power will find that the volume contains much useful information. It is not a mere record of work done in the establishment whence it issues, but the numerous problems arising in steam engineering are ably discussed and elucidated from their scientific sides by Mr. Brown. We hear that the previous edition was so much called for that it was soon sold, and, the demand continuing, the present has been issued in order that disappointment may not be experienced anywhere.

AN international exhibition in Berlin is planned for 1896, but there is some reasonable doubt of its success so far as North America is concerned, unless German manufacturers display more interest than they have shewn hitherto in the World's Fair at Chicago.—*Central-blatt.*

CONSIDERABLE excitement has been occasioned in manufacturing circles in Berlin by the dishonourable conduct of an agent. A collection of designs had been left in a place of business to be called for. Before the arrival of the person to whom it ought to have been handed, a commissionaire appeared, requesting the box to be entrusted to his care. As the arrival of the proper person caused enquiries to be made, it was ascertained that the commissionaire had been despatched by an agent who desired to get these designs into his possession. The police repaired to the offender's office, and found him engaged in shewing the stolen designs to an unsuspecting manufacturer. Arrest, of course, ensued.

Designing.

NEW DESIGNS.

DRESS GOODS.

Seldom has a season commenced with such a large choice of dress materials. Plain-made fabrics are very numerous, but they take a secondary position, the first in choice and favour being given to geometrical patterns, or small shadings and dots. We give a suggestive design, *A*, which repeats on 66 ends of warp, and 66 picks of weft. At the top left-hand corner we shew dots for a plain ground and in other parts of the design a few dots of the 11-shaft satin ground, counting 4; but the 6-shaft satin, though imperfect, would make a good ground, as it is the proper measure of 66 ends and picks, and if filled in the following order the imperfection would not be visible to any extent: 1, 4, 2, 5, 3, 6, and repeat. The colourings must be contrasted hues: warp all light; weft dark shades; positive colours of weft may be on neutral ground in the warp; for instance, a sky-blue warp—yellow drab weft for figures and diagonals; or a pale light pink warp, with very dark emerald green weft. The warp may be made a dark ground, claret-brown, with old gold weft, or sky-blue, buff, pink, cerise, turkey-red, creams, lavender, light lilac, steel-grey—all these coloured wefts will suit a dark warp ground and give a considerable number of samples. A good opportunity also occurs here for the use of wefts having lustre, such as spun silk, mohair, alpaca, and linen. The design is worth a trial on a cotton warp, 30's twist, in 36 dents per inch, two in a dent; wefts according to judgment as far as counts and picks are concerned. The satin ground will help to make a firm cloth, and the figures are so distributed all over that the tension in the warp will not be unduly taxed.

NEW PATTERNS IN COTTON DRESS GOODS.

In plain weaves, the following patterns for stripes and checks will be found useful: 40 dents per inch, 2 in a dent of 30's twist; good clean yarns, bright fast colours; 80 picks of 40's weft. *First pattern:* 24 light indigo blue, 3 white in one heald, and in one dent, 14 white, two in a dent, 3 white in one heald, one dent, 60 light indigo blue, 3 white in one heald, 14 white, 3 white, one heald, 24 light indigo blue, 3 white, in one heald, 1 white and 1 dark azuline blue, for 13 repeats; 3 white in one heald, 16 light indigo blue, 3 white in one heald; 1 white and 1 dark azuline blue, for 13 repeats; and commence the pattern from first "24 of light indigo blue." Weft all white, well bleached; breadth in reed 31 inches. *Zephyr check*, plain weave:—Same counts, etc., as first pattern, 24 sapphire blue, 24 white, 144 sapphire blue, 24 white, 24 sapphire blue, 4 white, 2 black and white print,

———, 4 white, 2 black and white print, 2 white, 2 black and white print, 2 white, 2 black on a white print, 4 white, 2 black and white front, 4 white, and repeat from first "24 sapphire blue." Weft checking same pattern, although the black and white print weft may be left out and the square formed by the white shuttle only; at all events it would give a variation. The pattern may also be made with light china blue for the sapphire and red and white print, also rose pink for sapphire, with blue and white print.

Another pretty *gingham check* or zephyr: 42 coral, 12 light pink, 12 cream, 12 very light green, 42 coral, 36 white, 12 cream, 6 light pink, 8 white, 8 coral, 4 white, 4 light pink, 4 white, 4 light pink, 42 white, and repeat from "42 coral" at the beginning. Weft check the same. Instead of coral a green, dove, or clear slate may be used. These patterns on plain weaves will give satisfaction.

THE ANALYSIS OF PATTERN.—X.

SETTS.

Attention must now be directed to the methods of indicating the number of ends and picks in a piece, since these particulars, in conjunction with the counts, indicate the weight of the resultant cloth. The ends in a piece are indicated in such a number of ways that in order to render our remarks clear the simplest method shall first be considered, and the more intricate ones explained by means of this.

Evidently the simplest method will be to state always the threads per inch, since the width of the piece is usually stated in inches: thus the

sett multiplied by the width gives the number of ends in the warp.

The "Stockport" system is similar to this, only the number of dents or splits in the reed is indicated along with the number of ends through each: thus, a 12's reed 4's = 12 reeds per inch, with 4 threads through each = 48 threads per inch. For the actual weaving operation, this latter method is perhaps preferable, but in all calculations for cloth the ends per inch method forms a much more convenient standard.

The other important systems are as follows:—

The "Bradford" system, based upon the number of beers (40 ends) in 36 inches.

The "Blackburn" system, based upon the number of beers (20 splits) in 45 inches.

The "Manchester" system, based upon the dents in 36 inches.

The "Scotch" system, based upon the dents in 37 inches.

The "Leeds" system, based upon the number of porties (38 ends) in 9 inches, ¼ yard.

To shew clearly the different meaning of a certain sett, say 40's, in each of the above, the following list is given.

40's sett in ends per inch	=	40 ends per inch.	
40's ,, Bradford ..	=	44 ,,	,,
40's ,, Blackburn ..	=	17 splits	,,
40's ,, Manchester ..	=	1¼ ,,	,,
40's ,, Scotch	=	1 1/9 ,,	,,
40's ,, Leeds	=	169 ends	,,

In all the following calculations, ends per inch and picks per inch will be adopted throughout.

TO FIND THE SETT.

There cannot be any fixed method for finding the sett of a cloth, since the conditions are so varied that a system which might answer admirably in one case might be of no use whatever in another. Of course the simplest method, if possible, is to count the number of ends in ¼, ½, or 1 inch, by means of a piece-glass; but this can only be effected in analysing coarse cloths, since in the finer makes the threads and picks become so merged into one another that it is practically impossible to count the number in even a quarter of an inch.

The system most useful and most in vogue is to place the glass on the piece and count the repeats of the weave in the space covered: thus, in *Diagram* 24, a half-inch square encloses 4 complete twills. Should the weave be the 2-and-2 twill, the threads per inch will be 4×4×2 = 32; if the 3-and-3 twill, 4 × 6 × 2 = 48 threads per inch; and in like manner the threads or picks per inch in any weave may be calculated.

A system very similar to the above is to pull a thread or pick out of the piece and count the number of curves—repeats of weave in ¼, ½, or 1 inch. For example, in *Diagram* 4* each curve in the pick 2 equals 3 threads, since the weave is the 2-and-1 twill; in *Diagram* 5* each curve in the thread 1 equals 12 picks. Thus under these circumstances the curves in the weft indicate *the threads per inch*, and the curves in the warp *the picks per inch*.

This system is particularly useful in analysing such fancy combinations as indicated in *Design* 8a, a thread and pick from which are given in *Diagram* 7.† Having found the weave, the sett may readily be obtained by direct proportion. Example:—If a fancy check, occupying on design paper 40 ends, repeats 1½ times in one inch, what is the sett?

As 1 : 1½ :: 40 : 60 ends per inch.

If the design does not repeat once in the inch, say ¾ of a repeat to the inch, then:—

As 1 : ¾ :: 40 : 30 ends per inch.

Should the analyst fail to obtain the sett of a cloth by any of the above methods one other may be resorted to, and that is pulling the ends or picks out of, say, ¼ or 1 inch of cloth, and counting them in this manner.

THE SETTING OF CLOTHS.

Since the analyst will often be required to build up cloths from the knowledge obtained in pulling them in pieces, a brief consideration of the principles of setting fabrics may be of much use in this treatise. This question is one of such wide scope that we can only touch upon the principal features, leaving the reader to carry out the ideas to their full limits.

There are three modifying influences to consider in setting cloths: firstly, the diameter of the yarn; secondly, the weave or weaves; and thirdly, the characteristics of the yarns to be employed.

Diameters of Yarns.—These may be ascertained by finding the yards per lb. in the counts under consideration and extracting the square root. A deduction from this of 16% for woollen, 10% for worsted, and 8% in the case of cotton and silk yarns will give more accurate results. Example:—A 40's yarn gives the following result:—

40 × 560 = 22,400 yards per lb., and
√22,400 = 149 − 10% = 135 diameter, *i.e.*, 135 part of an inch.

From the foregoing it is evident that the square root of any counts, *not the counts*, is in direct proportion to the diameter, so that should it be desired to find the diameter of one yarn from a known diameter, direct proportion may be employed, using the square root of the counts (or, what amounts to the same thing, squaring the diameters). Example:—If a 40's yarn has a diameter of 135, what is the diameter of a 20's yarn?

As √40 : √20 :: 135 : 95 diameter of 20's, or
As 40 : 20 :: 135² : s² = 95 diameter of 20's.

These rules apply to every system of counting yarns, but it should be remembered that the results obtained are only approximate: they may be influenced in some degree by material or structure and many other influences. Still the designer has no fear in making these the bases of his calculations, and introducing such slight modifications as experience and common sense suggest.

* *T.M.* Feb. 13th. † *T.M.* Feb. 20th.

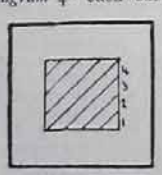

DIAGRAM 24.
(*T. M.* Feb. 13th.)

DESIGN A: DRESS GOODS.

Machinery and Appliances.

IMPROVEMENTS IN ENGINE DETAILS.

MAKERS: MESSRS. JOHN MUSGRAVE AND SONS, LIMITED, BOLTON.

This eminent firm continues to display its customary zeal by the introduction of improvements in details in engine building, the objects of which are to more nearly perfect every point in its particular requirement. We illustrate and describe below several recent ones.

CROMPTON'S PATENT PACKING BOX AND METALLIC PACKING.

An important feature on all engines is the packing box on the piston rods, and this should be made so as to be perfectly steam-tight, while at the same time permitting the rod to move freely in any direction. These conditions are perfectly accomplished with the packing box illustrated in Fig. 1, and the metallic packing used prevents leakage of steam or air, and also ensures that the friction and wear of the rod is reduced to a minimum.

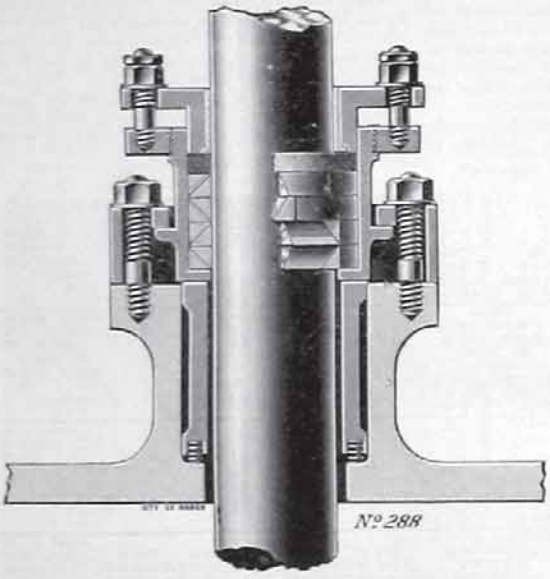

FIG. 1: CROMPTON'S PATENT PACKING BOX.

This packing box and packing may be applied to any existing engine, no change or alteration of arrangements being required, except the addition of two or three studs to the packing flange of the head, and an inspection of the engraving will shew the simplicity of the apparatus employed.

The piston rod is surrounded by a loose sleeve extending the whole depth of the ordinary packing space, the inner end of this sleeve resting on springs, which compensate for variations in length through expansion and contraction; the outer end of the sleeve bears against the bottom of the packing box containing the metallic packing. The packing box is held against the loose sleeve by a cover-plate bolted to the packing flange. The cover-plate bears on a flange encircling the packing box, and while making a steam-tight joint at this point, it does not prevent the packing box from moving sideways in following the movements of the piston rod; and in horizontal engines, through wear or lack of alignment, the piston rod is sometimes much higher at one end of the stroke than at the other end. The piston rods of vertical engines are also liable to be out of line from the same causes, but not to the same extent as those of horizontal engines are.

The packing consists of rings of white metal of a triangular section, each ring being in halves and placed in the box so as to break joints, a final layer of asbestos packing being inserted at the top, against which the gland bears.

BUCKLEY'S PATENT PISTON ROD SUPPORT.

It has frequently been urged as an objection to horizontal engines that the weight of the pistons and rods would wear the cylinders oval, and leakage of steam past the pistons would result from this uneven wear; also, from the same cause, the ordinary packing boxes and glands used would wear out of round, necessitating constant attention and frequent renewals of packing to keep the glands steam-tight. These objections were certainly valid ones, as the difficulties in the way of keeping the cylinders round were undoubtedly great until the roller piston rod supports (shewn in Figs. 2 and 3) were introduced. This arrangement is for the purpose of furnishing an efficient support to the piston rod close to the cylinder, and it is found after extended experience that they answer admirably for this purpose. In Fig. 4 the supports are shewn applied to a tandem compound engine. For single cylinder or side-by-side compound engines, supports may be arranged at both ends of the large cylinder, and at the front end only of the small cylinder. These supports may be easily adjusted so as to keep the pistons central in the cylinders, preventing wear on the bottom, and keeping the glands and packing boxes in good order; at the same time the friction of the engine is greatly reduced. These are features that will be greatly appreciated by all parties interested in the subject.

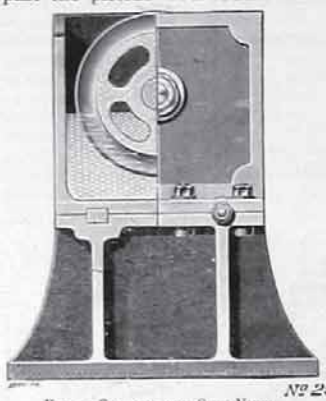

FIG. 2: SECTION AND SIDE VIEW.

FIG. 3: SECTION AND END VIEW.

BUCKLEY'S PATENT PISTON ROD SUPPORT.

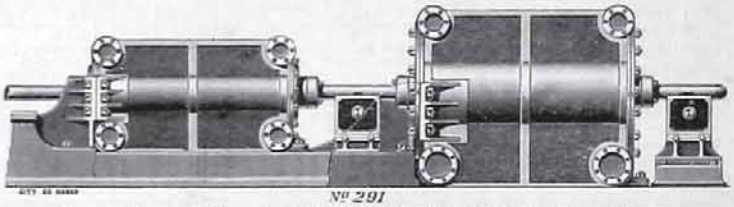

FIG. 4: TANDEM COMPOUND ENGINE, SHEWING APPLICATION OF ROLLER SUPPORT TO PISTON RODS.

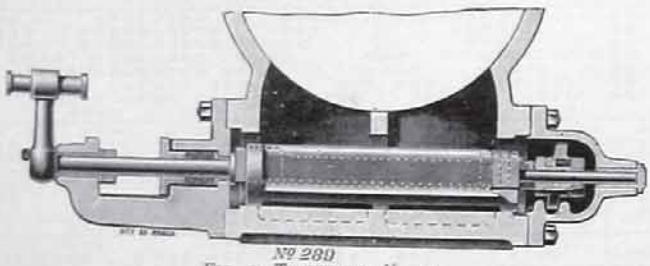

FIG. 5: TRAVERSING VALVE.

MUSGRAVE'S PATENT TRAVERSING VALVE.

All valves having a reciprocating movement, tend to groove both their seats and themselves, and when once this action is started it is rapidly increased by the rush of steam leaking past the valve, necessitating frequent refacing of the valves and seat. This grooving action is prevented by the device illustrated in Fig. 5, which causes the valve to move endways, to and fro, across its seat, never making two succeeding strokes in the same place, and greatly reducing the wear and preserving both seat and valve.

These valves may readily be applied to existing engines without any alteration whatever being made to the cylinders. The valve seats would of course require re-boring, in order to get them into good condition to start with, but otherwise the new valve and new bonnets would go directly into the places of the old ones. A device of this kind, which by keeping the valves and seats in good order prevents leakage of steam and consequent loss, will, we believe, be welcomed by all managers and engineers interested in this subject.

Those desiring any further information on these various appliances and devices may apply to the makers as above.

RAMIE.—A process for the animalisation of the ramie fibre has been patented in France. It consists in treating the fibre, which has previously been degummed, and then thoroughly dried, with a mixture of fuming nitric acid and ordinary sulphuric acid, whereby it is converted into a nitro derivative. If the acids are strong enough an explosive compound may be formed, but as a rule it is best to work so as to obtain a product in which the ramie fibre is not so much affected. The nitro-ramie is now treated so as to reduce the nitro to an amido compound—an operation which can be affected by the action of a variety of bodies: alkaline, sulphides, carbon bisulphide, ethyl sulphide, and metallic sulphides which are soluble in ammonium sulphide, are specially mentioned by the patentees; stannous chloride in either alkaline or acid solution is also given as a reducing agent. Treated in this way the ramie fibre acquires all the properties of animal fibres, particularly that of being able to be dyed without previous mordanting. Nothing is said as to whether the strength of the fibre is at all affected by the process, but this is exceedingly likely to be the case.

Bleaching, Dyeing, Printing, etc.

METHODS OF SILK DYEING: THEIR PRINCIPLES AND PRACTICE.—III.

(Continued from page 279.)

The third method is applicable to the dyeing of the so-called acid colours upon silk. These colours are derived from both natural and artificial sources. The natural colouring matters belonging to this group are but two in number, namely, indigo extract and archil. This, however, is made up for by the exceedingly large number of acid coal-tar colours, which are continually being added to. The colouring matters, dyed by the method now to be considered, partake of an acid character, and the commercial products are generally the sodium or other alkali salts of a colour acid. The principle that underlies all processes of dyeing with these dye-stuffs, whether they be applied to silk or wool, is the combination of the colour acid with the fibre, so as to form an insoluble colour lake. The affinity of the silk fibre for the colour acid, while of a fair degree of strength, is by no means equal to the affinity of the colour acid for alkali; therefore to ensure the combination of the silk fibre with the colour acid it is necessary in the process of dyeing to liberate the latter, and have it in a free condition in the dye-bath. This can only be done by the use of an acid that has more affinity for the alkali than has the colour acid. Such acids are acetic, sulphuric, or hydrochloric, but generally the two former are most commonly used. As a matter of fact it is quite possible to place silk or wool in solutions of many of the acid dye-stuffs and yet for them not to be dyed, simply because the colour acid is not in the right state to combine with the silk fibre: it may be in such a bath in a combined condition, while it is essential, as just pointed out, that it should be in the free condition.

Almost any acid can be used in the dyeing of acid colours, but acetic and sulphuric are those commonly employed. Acetic acid is used with dye-stuffs which, like the eosines, rhodamine S, and a few others, are liable to be affected in shade or brilliancy by sulphuric acid. The simplest bath—which may be adopted in some cases, as with naphthylamine black D, acid magenta, fast red, indigo extract, azofuchsine, rhodamine B, archil, acid violets, naphthol yellow, orange G, Victoria blue B, etc.—is a plain acid bath, and wherever possible such a bath is to be preferred to one of a more complicated nature. The combination between the colour acid and the silk fibre is a chemical one: at all events that is the pretty generally accepted opinion of all persons who have written on the theory of dyeing. Chemical combination is influenced by time: if the process of dyeing be done quickly, then the combination of the two bodies is not properly and completely brought about, owing to the fact that the affinity between the two bodies is not great, and being so the dyeing or colour produced is loose, and liable to rub or fade. From this it will be seen that the best method of dyeing such acid colours on silk would be to enter the goods in the bath at a low temperature, and raise slowly to the boil, during which operation the combination of colour acid and silk is completely brought about, and the colour is properly fixed on the fibre. A good plan of working, especially in dyeing pale shades, is to enter the goods into a plain bath of the dye-stuff, then; after working a short time to ensure complete impregnation of the fibre with the dye-stuff solution, to add the acid and to complete the dyeing as usual. Some colours which have a strong affinity for the fibre require the addition of an assistant to the bath to ensure level dyeing, such as Glauber's salt, salt, soap, and boiled-off liquor. Of these the first two should be used wherever possible, as giving a clean bath, and by far the great majority of dye-stuffs can be used by their means. Soap and boiled-off give, when broken with the acid, rather greasy baths, not over pleasant to work with; as far as possible it will be found best to use them only when half boiled-off silks are being worked, and with the object of preventing any of the gum from the silk going into the bath, in such cases old boiled-off liquors give the best results.

The number of colouring matters capable of being so dyed is great, and any of these may be combined together to form an endless variety of compound shades. It may be mentioned in passing that while those dyes applied by the first and second methods can be mixed together to dye compound shades, they cannot be mixed with the acid dyes. Some of the so-called direct cotton colours, chrysophenine, titan pinks, titan yellow, clayton yellow, etc., can be dyed on silk from a bath of salt or Glauber's salt, acidulated with a small quantity of acetic acid.

(To be continued.)

DYEWOOD EXTRACTS.

Meissonier, in 1829, initiated in France the manufacture of extracts for printing on woollens. This industry did not rise to importance until 1835. In 1842-3 Panay succeeded in obtaining from logwood liquor crystals of a deep red colour, almost black on the surface, which were in fact hematein—'oxidised hematoxylin,' more or less pure. He arrived at this result by placing the rasped logwood in heaps and watering and turning it over periodically for several weeks. Varillat of "St. Hilaire" was the first (in 1855) to adopt vacuum pans for the concentration of the weak liquors, their use being borrowed from the sugar industry. At present there are 44 works in Europe and 5 in America devoted to the production of wood extracts.

Logwood.—The introduction of logwood into Europe dates from the discovery of America by the Spaniards, who denominated the wood *palo campechio*. The tree, *Hematoxylon campechianum*, grows to a height of 12 to 15 metres, and the trunk alone is employed in dyeing. The wood is imported into Europe principally from Carmen, "Lower California," the state of Campechy, in Mexico, Honduras, Yucatan, St. Domingo, Hayti, Guadeloupe, Martinique, Trinidad, Jamaica, and Cuba. The woods most esteemed for the manufacture of extracts are those from the island of Hayti, the ones most employed at Havre being Fort Liberty, Cape, Aquinus, St. Mark, and Monte Christi woods. The Jamaica woods are inferior in yield of extract to those of Hayti, both in quantity and quality. The colour is not so strong nor the shade so good. The roots of the Jamaica wood are also imported. Whilst low in price they are very difficult to grind, and their yield is in every respect unsatisfactory. The woods from Laguna, Carmen, Honduras, and Yucatan, whilst belonging to the same family, give a different shade: the colour yielded is very fine, but is wanting in depth, and they are not so economical in the production of blacks as the Hayti wood. The woods from the Guadeloupe, Martinique, etc., are less esteemed, and, like those of Jamaica, are used only because of the scarcity of the Hayti wood.

Yellow Wood or Fustic (*Morus tinctoria*).—The yellow woods are mostly got from Mexico and the neighbouring States, the West Indies, and South America. The wood most valued is that from the island of Cuba: it is hard, compact and heavy, and of an orange yellow colour. The wood most employed in the manufacture of extracts is undoubtedly that of Nicaragua, which is known as Corinto, from its port of export. It is a heavy close-grained wood of a fine yellowish orange colour. Young fustic, the "French fustet," is a shrub (*Rhus cotinus*) the branches of which, sawn and stripped of their bark, are used in dyeing. The young fustic of America is held in good esteem. The colouring matter is reddish yellow, readily soluble in boiling water, and tolerably rich in tannin. The colouring matter of young fustic has great analogy to that of Persian berries (*Rhamnus tinctoria*), and the extracts of the latter are frequently mixed with young fustic.

Red Woods.—Pernambuco wood (*Cæsalpinia echinata*) comes from Brazil and Jamaica. It is a hard, compact wood, heavier than water, and its surface after long exposure to air is of a black-red colour. That from Paraibo is most valued. It comes also from Nicaragua, California, the Phillippine Islands, and Brazil. Amongst them the St. Martha and Lima woods are most esteemed, as they approximate most closely to the Pernambuco wood in shade; but on account of their high price the cheaper Bahia wood is almost always used in the manufacture of Lima wood extract. Sapan wood (*Cæsalpinia sapan*) is imported from India, Reunion, Ceylon, Siam, Manilla, China, and Japan. It yields colours which have a considerable resemblance to those of St. Martha wood; it is, however, not so rich in colouring matter, but the shades produced are very bright. All these red woods appear to contain the same colouring matter, named "Brasilin" by Chevruel, who first isolated it. The extracts of red woods, both liquid and solid, are frequently mixed with arsenious acid and tin salts to brighten or modify their shade. A well-made solid extract represents 12 times its weight of the original wood. It may be remarked with regard to red woods that the heart of the wood alone is rich in colouring matter. There are other red woods of which the colouring matter is insoluble or only slightly soluble in water, such as santal (*Pterocarpus santalinus*), caliatour, barwood, and camwood. Santal wood comes from Asia, Ceylon, Madagascar, Coromandel, Australia, and Indo-China; and caliatour, barwood, and camwood from Sierra Leone. These woods, finely ground, are only used directly in dyeing, and are not applicable for the manufacture of extracts. The introduction of aniline colours has led to a greatly diminished use of the red woods, notably those of Pernambuco, Lima, St. Martha, and Sapan.

Manufacture of Dyewood Extracts.

The manufacture consists of four distinct stages: (1) The ageing of the woods; (2) the extraction of the colouring matter; (3) the concentration of the liquors; and (4) the preparation of the solid extract. The wood, after grinding, is carried by means of an elevator to an upper floor, where the logwood is sprinkled with water and exposed in heaps for from 24 to 48 hours, whilst the fustic goes directly to the extractors. The extracting vats have their opening on a level with the upper floor; they are conical in form, and are made of oak or pitch pine. They are arranged in sets, say, of six vats, and after being charged with the ground wood, boiling water is circulated methodically from vat No. 1 to vat No. 6, and so becomes more and more charged with colour. It leaves the last vat at a strength of 2° to 2½° B., and passes as strong liquor to the stock vats, where it is ready for concentration. The wood receives three successive treatments with water, and becoming more and more exhausted, the third gives only a strength of 1° B. Finally, the wood is subjected to a fourth treatment with water, and this last liquor is returned to vat No. 1, the whole of the vats having in the meantime been recharged with fresh wood. The vats are provided with a false bottom, pierced with holes, and covered by a wirework netting held in position by a grating. There are manholes at the side for discharging the spent wood, and steam pipes are provided for heating the liquors. The strong liquors at 1½° to 2° B. are pumped into the concentrating pans, and there evaporated to the required strength. Up to 6° B. the liquors are only considered as strong decoctions; above 7° B. they are looked upon as extracts. Extracts marking respectively 26°, 23°, 6½° B. in the concentrators will be 30°, 27°, and 10° B. when cold. To make the pure dry extract, the liquor is carefully evaporated in the vacuum pan to a density of 45° B., which is the proper strength for making a good dry extract. The charge is quickly run out, before it has time to thicken, into wood or metal moulds. In the German works closed vats, usually in sets of ten, are used, and the woods are extracted under a pressure of 1½ to 2 atmospheres. The quality of water used in making the decoctions is of the highest importance: it should be pure, clear, and soft, and if not absolutely pure, it should by preference be slightly alkaline. It is of

importance to avoid the use of water containing iron, bicarbonate of lime, metallic salts, or excess of alkali. Hayti logwood yields 25% of its weight of extract at 30° B., or 16¼% of dry extract. The woods most commonly used are of inferior quality to the above, and yield only 22% of extract at 30° B., or 14·66% of dry extract. The logwood extracts produced in the early days of the industry were pure products, containing only the extract of the wood itself. The competition amongst makers, and the demand for cheap products, has resulted in the manufacture of logwood and fustic extracts admixed with cheaper mineral and organic bodies, such as molasses, glucose, quercitron bark, sumac leaf, divi-divi, turmeric root, chestnut extract, etc., or the ground wood, dextrine, etc. When such admixed bodies are liable to fermentation in presence of acids or alkalis, it becomes a necessary precaution to add suitable neutralizing substances. Several of the latter bodies serve at the same time to brighten the shade of the extract, whilst others, such as potassium ferricyanide and alizarine orange, are added to both logwood and fustic extracts to impart a colour which is quite factitious. The molasses are obtained from the sugar refineries at a strength of 42° B., 100 kilos. of this corresponding to 140 kilos. at 30° B. Glucose is prepared from potato starch by treatment with dilute sulphuric acid and subsequent neutralisation of the acid with chalk,

Quercitron bark *(quercus tinctoria)* is obtained from Philadelphia and Baltimore. 100 kilos. of bark yield 30 kilos. of extract at 30° B., or 20 kilos. of dry extract. Sumac *(rhus coriaria)* is got from Sicily, Italy, and Tyrol, Dalmatia, Illyria, France, Spain, Portugal, and North America. It contains tannic acid, varying in amount from 10 to 22%. The decoctions of sumac are only prepared as required, as they readily ferment, the tannic acid being converted into gallic acid. 100 kilos. of Silician sumac yield 75 kilos. of extract at 30° B., or 50 kilos. of dry extract. Divi-divi *(cæsalpinia coriaria)* is obtained from the West Indies and Central America. Its contents in tannin varies from 18 to 45%; 100 kilos. of divi-divi yield 52 to 56 kilos. of extract at 30° B., or 35 to 37 kilos. of dry extract. Turmeric root *(curcuma rotunda)* is obtained from the East Indies, China, and Persia, and contains 68% of colouring matter. It is used in the form of an impalpable powder, being added in this state to fustic extracts that are to be converted in dry extracts. Chestnut extract is prepared from the wood of the chestnut tree *(fagus castanea)*, which grows in abundance in Central and Southern France, in Italy, Corsica, Spain, and Portugal. The wood of very old trees contains 6% of tannin—young trees not more than the half of this. Chestnut extract is brown and astringent: at 20° B. it keeps well, but if weaker than this its tannic acid is readily transformed into gallic acid; 630 kilos. of chestnut wood yield 100 kilos. of extract at 30° B., containing usually from 22 to 25% tannin. Dextrin is potato starch rendered soluble by treatment with nitric or other acid, and subsequent drying in a stove.

Commercial Extracts Manufactured at Havre and Rouen.

There are two systems of manufacture: the first, in which the woods are extracted with water only; the second, in which the water used is charged with molasses. In the first system the pure decoction serves as a base, to which the admixtures are subsequently added; in the second system the extracting tanks are charged, not only with the ground woods, but also with several of the admixed bodies that enter into the composition of the final product. The first is to be preferred as being best adapted to the manufacture of products of unvarying composition. It is seldom that logwood extract at 30° B. is sold in the absolutely pure state; that sold as pure usually contains from 14 to 17% of molasses, at 30° B. Similarly the dry extracts sold as pure are seldom such in reality; usually they contain 3% of chestnut extract at 30° B. and 5% of molasses at 42° B. The commercial hemateine in powder is prepared from 100 parts pure logwood extract at 30° B., and three parts of chestnut extract at 30° B. The solid extract is dried by lying on shelves for several days, and is then ground in the mill. It forms an orange-red powder, of good appearance, and is packed in hermetically sealed cases, as contact with air changes its look. In the preparation of the lower grades of extracts by the first system the admixtures are added to the strong liquors in the evaporating pans. In the second system the substances that are added to the extracting vats are molasses, chestnut extract or the ground wood, and sumac leaves. The "foots" from the clarification of logwood extract, the powdered gypsum, potassium ferricyanide, etc., are added to the strong extracts in the evaporating pans. In the second system the chestnut is added as ground wood, and the sumac in the form of leaves, to the extracting vats. The manufacture of logwood extracts for calico printers is uniform in all the works. The logwood liquor at 10° B. is allowed to settle for from 20 to 25 days, and the clear is then evaporated in the concentrating pans to a strength of from 15° to 30° B. as required. Nevertheless logwood extracts for printers often contain molasses: thus, one frequently sold is prepared from 3,000 kilos. logwood liquor at 10° B., 630 kilos. molasses at 30° B., and 5 kilos. soda crystals, yielding 1,625 kilos. extract at 30° B.

Commercial Fustic Extracts.

These are seldom sold pure. With few exceptions the extracts, both paste and dry, are admixed with foreign matter to reduce their cost. A comparison of the price at which the "dry fustic extract, superior" is sold at Havre, and the cost of the wood itself, shews a margin too small to admit of the profitable manufacture of a pure product. Fustic of good quality, "Corinto, Cuba, or Tuspan," yields 11 to 12% of dry extract, or 16 to 18% of 30° B. The commercial fustic extracts contain, as admixtures, molasses, glucose, and dextrine, which are added to the weak liquors before passing to the concentrating pans, whilst quercitron bark, sumac leaves, powdered turmeric root, and divi-divi are mixed with the rasped wood in the extracting vats. Sulphates of soda and zinc and alizarine orange are also added to modify or brighten the shade of the extract.

Sumac Extract.—For the manufacture of sumac extract the Silician sumac is preferred, the sumacs of Italy, the Tyrol, Illyria, Dalmatia, France, etc., being less suitable. Sumac extract is mixed with molasses and chestnut extract, etc. In the manufacture the process must be continuous, the liquors passing at once from the vats to the concentrating pans. Vacuum pans are the most suitable, and the extract, when ready, should at once be put up in casks. Silician sumac, when carefully treated, yields 75% of extract of 30° B., and the Dalmatian and Illyrian sumacs from 65 to 70%.

Residues.—The spent are available only for burning in the furnaces. The "foots," which settle from the clarified logwood liquors, contain, when dry, 48% of colouring matter. They are utilised as admixtures in preparing low qualities of dry logwood extracts. Logwood extract at 30° B. is calculated as yielding 7½% of such deposit.—Mafat in the *Bull. Soc. Ind. de Mulhouse.*

News in Brief.

ENGLAND.

Blackburn.

Between 200 and 300 weavers employed at that portion of Novia Scotia Mill, worked by Messrs. Rogerson and Co., turned out on strike on Tuesday. A number of the hands did not turn up to work on Monday, and in consequence the employers decided to impose a fine upon them for not doing so. The upshot was that the whole body of weavers objected to this course, and they turned out as stated. At Messrs. Haydock and Duerden's, Bright-street Mill, about a similar number of weavers are out on strike, owing to some dispute having arisen with the masters in respect of the hands also taking Monday as a holiday.

Bolton.

Messrs. Geo. Knowles and Sons have closed their three large spinning mills; 500 operatives are affected.

The death is announced, at Bromsgrove, in his 60th year, of Mr. Wm. Garnett Taylor, whose family were long connected with the cotton spinning industry of Bolton.

Bradford.

The dispute at Bradford, which threatened a deadlock in the extensive dyeing business of the district, has been virtually settled. This satisfactory result is largely due to the action of the recently constituted local Board of Conciliation, on whose invitation representatives of masters and men met in conference and eventually agreed to a series of resolutions, under which work was resumed on Wednesday by Messrs. Armitage's men.

Burnley.

Last week a driver in the employment of the Lancashire and Yorkshire Railway Company was bringing a lurry heavily laden with cotton pieces from a mill in Healey Wood-road, when the weight overpowered the horse, which broke through some railings and fell into the canal. The horse, after plunging about a few minutes, broke the shaft-pin and was got out. The lurry was recovered the same evening. Nearly the whole of the cloth was spoiled.

Clitheroe.

The name of Mr. John W. Southworth, cotton manufacturer, has been placed on the commission of the peace for this borough.

Bury.

Yesterday week a fire occurred in the spinning room of the Brooksmouth Mill, Elton, belonging to Mr. R. Peers, where it set fire to some cotton in the mules. The damage, which was confined to cotton and machinery, amounts to over £200.

Colne.

The warp dressers at Mr. J. Birtwistle's Walton-street Mill, Colne, have struck work in consequence of a learner having been put on one of the dressing frames, the proper dresser not having put in an appearance before breakfast time. The employer said he had a right to put whom he chose on the frame; but the men, who are members of the district Warp Dressers' Association, told him their rules would not brook such treatment, and they came out in a body.

Darwen.

In connection with the University extension lectures delivered in Darwen on the subject of Textile Designing, under the auspices of the Technical School, by Professor Beaumont, of Leeds, an examination was held on Friday, 8th inst. Considering the brevity of the course of lectures given, the examiner reports that the work of some of the students is of a creditable character. He, however, recommends that fuller attention be paid to the principles of designing and pattern construction. Mr. Jas. Nightingale has won the committee's prize of one guinea, and Mr. Oliver Wade that offered by Professor Beaumont. The following have gained University certificates:—

First Class.	Pass.
H. Bolton	W. Bennet Fish
R. Leach	Thos. Howarth
J. Nightingale	Michael Meehan
Oliver Wade	

These lectures, as well as the textile classes so ably conducted by Mr. Myers, have afforded the intelligent artizans of the district opportunities of extending their knowledge of the weaver's art.

Farnworth.

Messrs. Thos. Nuttall and Sons have executed considerable structural alterations and repairs to the Lakefield Mills recently purchased by them, and have put in a number of new looms, supplied by Mr. George Keighley, of Burnley. The weaving shed will very soon be ready to commence running.

Keswick.

The eighth annual exhibition of the Keswick School of Industrial Arts, which now numbers a hundred members, was opened on Tuesday in the Parish Room. The Ruskin linen industry, a branch of this school under the supervision of Miss Twelves, shews beautiful specimens of the Princess Louise and other linens, and of Greek lace and embroidery; an important feature is the beautiful coloured linens, which are exhibited both in the piece and embroidered. The youngest spinster, aged nine years, is to be seen in the room spinning. Fifty-two varieties of linen have been produced at Keswick. A 16th century cradle attracted attention, the sheets and pillow-case being made of Ruskin linen. Mrs. Rawnsley now appeals to all who are interested in the home arts movement to help her in putting this local industry on a permanent footing. About £500 has been received towards the £1,500 required for a school building.

Leeds.

The dispute at Messrs. Hargreaves and Nussey's, woollen manufacturers, Farnley Low Mills, is now settled. At an interview between the employers and the representatives of the weavers a new price list was agreed to, concessions being made on each side.

The fact of the acceptance by the dyers of Messrs. Armitage and Sons, of Bradford, of the terms agreed upon at the conference held last week, was at once communicated to Messrs. James Reffitt and Sons, the

only Leeds firm of dyers directly affected by the agitation. Messrs. Reffitt at once withdrew the notices served on their hands, and the expected lock-out has thus been averted.

Liverpool.

A fire broke out on Saturday forenoon at a large warehouse belonging to Messrs. Melladew and Sons, in Neptune-street, stored with 3,600 bales of cotton, and a large quantity of yarn. The cotton belonged to Messrs. Moffatt Brothers, and the yarn to Messrs. Smith, Coney, and Barrett. The fire spread very rapidly, and the roof fell before it was got under control.

On Friday night of last week a fire broke out in a lofty cotton warehouse at the corner of Love-lane and Atlas-street, in the joint occupation of Messrs. J. Rew and Co., Muir, Duckworth and Co., and Smith, Edwards, and Co. It contained between 3,000 and 4,000 bales of cotton, and the basement was stored with bonded spirits. The basement was saved, but the other floors were destroyed, with 3,000 to 4,000 bales of cotton.

Manchester.

On Wednesday night a fire occurred at the Eccles Printworks, in the occupation of Messrs. Sackville Brothers, and rapidly spread. The premises were completely gutted, and the damage is estimated at between £3,000 and £4,000.

Mr. John Edward Shaw, a director of Messrs. John Shaw and Sons, Limited, Brookroyd Mills, Halifax, and Mr. John Thomson, of Messrs. Steward, Thomson, and Co., merchants, Manchester, have joined the Board of the Lancashire and Yorkshire Bank, Limited.

Under the auspices of the Technical Instruction Committee of the City Council, Mr. Paul Schulze, conservator of the Royal Textile Museum, Crefeld, Rhenish Prussia (who is on a short visit to this country), delivered a lecture on Wednesday evening in the Mayor's parlour at the Town Hall, on the "History and Development of Textile Patterns of Former Centuries." The subject is one on which Mr. Schulze is a recognised authority, and he was able to illustrate his remarks with examples of rare and beautiful work.

A memorial from the Dressers, Dyers, and Finishers' Benevolent Society has been adopted for presentation to the employers of Manchester and district. It states that many years have elapsed without any material change in the conditions of labour, so far as working hours are concerned, in this trade. The subject has recently been under the consideration of those employed therein, with a view to seeking an alteration in that direction. General meetings have been held, and a committee appointed, who now respectfully submit the following proposals for consideration and approval. 1. That the maximum working hours be reduced to 56½ per week 2. The hours so reduced to be taken off the latter portion of the day. 3. The said reduction to come into operation on Monday, 16th May, 1892. The memorialists, in placing these propositions before the employers, say they "do so in the full confidence that they will recognise in the circumstances of the times the necessity and the justice of the same, and that they have no desire to see those whom they employ labouring under less advantageous conditions than the members of other trades and industries, and which the public in general are also beginning to look upon as reasonable and requisite; and they are convinced that such a change would prove beneficial alike to employers and employed."

The death occurred, on Wenesday of last week, in London, of Mr. James Chadwick, principal partner in the firm of Messrs. J. and N. Philips and Co., Church-street, Manchester, and formerly head of the Chadwick Sewing Cotton Company, Eagley Mills, Bolton. For some years past Mr. Chadwick had been in failing health, and although he retained his business connection with the two firms mentioned, the state of his health latterly had compelled him to spend much of his time in retirement. He was a magistrate for the Salford Hundred and for the county of Strafford, of which he was a Deputy-Lieutenant at the time of his death, and High Sheriff four or five years ago. Mr. Chadwick's father, with other gentlemen, founded the extensive firm of J. and N. Philips and Co so far back as the year 1832. The Chadwicks for more than half a century have also been connected with the manufacture of sewing cotton, their concern at Eagley, formerly known as James Chadwick and Brother—father and uncle of the gentleman who has just died—having been converted into a limited liability company a short time since. It is 20 years since he took an active part in the business at Eagley Mills. The deceased gentleman, who was a churchman, recently made a gift of a beautiful memorial window to the Manchester Cathedral, which now adorns the clerestory of the edifice. Mr. Chadwick, who was in his 68th year, was chairman of the Manchester Assurance Company, and was also on the committee of the Rochdale Canal Company. His only son died 15 years ago.

Nottingham.

On Saturday afternoon a meeting in connection with the Midland Counties Bleachers, Dyers, and Trimmers' Federation, was held at Old Basford, in support of the men on strike at Mr. E. Weldon's, New Basford. About 90 men are affected by the dispute, which arose owing to the refusal of the employer to grant an advance to the dyers in the early part of the year. The introduction of non-union labour to fill the places of the dyers who had left led to the trimmers being called out by the Federation of Bleachers, Dyers, and Trimmers. Appeals for assistance have been issued by this body. A deputation was sent from the Bolton Bleachers' Association on Saturday to address a meeting of the men, with the object of establishing a closer union with the Midland Federation and the Lancashire Unions. Mr. W. Hardstaff (President Trades Council), was voted to the chair, and was supported by Messrs. Hulme and Isherwood (Bolton), J. Chawner, G. Robinson, M. Bradley (Basford), and W. Montgomery (Nottingham Dyers).—Mr. Hulme said it was a standing disgrace that men engaged in such an occupation as a dyer should be expected to work for 5d. per hour, and if he found fault with them at all it would be because they had not decided to go in for a higher wage. In Lancashire the men were receiving 6d. and 7d. per hour for similar work to that done in Nottingham. He promised them every assistance on behalf of the union he represented.—Mr. Isherwood having addressed the meeting, it was resolved that the action of the employer was a direct attack upon the stability of the federation, and pledging support to the federation in the efforts to bring the dispute to a successful issue.

Oldham.

During the stoppage many mill owners are taking advantage to have repairs carried out in connection with their concerns.

It is computed that there are at present over nine million spindles stopped in Oldham through the lock-out. The mills which are working are small firms and manufacturers spinning for looms. The large mills are all stopped.

Messrs. Fox and Williams, Manchester, have had in hand the strengthening of the engine-house walls of the mill of Messrs. Hoyle and Jackson, cotton spinners, Hollinwood. Their fusible cement has again proved its excellent adaptability for this purpose.

Mr. J. W. Hanson, formerly employed at the Duke Spinning Co., and who has recently returned from an engagement in India, has been appointed carding master at the Holly Mill Co., Royton, whose mill is on the point of commencing work.

We have previously referred to the formation of a company for the purpose of building a ring spinning mill in Oldham. The project, we understand, has not been abandoned, and at a favourable opportunity action will be taken to conclude the preliminaries.

At the meeting of the West End Mills Co., on Thursday evening, the chairman (Mr. S. Buckley) stated that should the lock-out collapse soon the margin at present would grow less, though the stoppage of the mills had improved the position of spinners. It was impossible, in his opinion, to predict the duration of the stoppage.

The council of the Oldham Operative Cotton Spinners' Association decided on Tuesday night to pay all the members during the lock-out the full amount of the strike pay—12s. per week for minders, and 1s. for each child; full-timers, 6s. ; half-timers, 3s. The Oldham Card and Blowing Room Operatives' Association will pay strippers and grinders 10s. per week ; senior general workers, 8s. ; juniors, 6s.

The steam engines of the Holly Mill Co., Royton, were christened on Wednesday afternoon by the chairman of the board of directors, Mr. E. Longbottom, the salesman of the Park and Sandy-lane Spinning Co. The "giants" were named "Lancashire" and "Yorkshire," no doubt the latter being selected owing to the makers, Messrs. Pollitt and Wigzell, of Sowerby Bridge, hailing from the county of broad acres. The engines are capable of turning 130 horse power, and will drive at the rate of 75 revolutions per minute. The main driving wheel is 22 ft. diameter, for 32 ropes, which travel at the rate of one mile per minute, and are 1⅝in. diameter. The mill is 22 windows long and 12 windows wide, and is a five-roomed structure, with an additional carding shed and cellar four windows in length, and when completed will contain 74,000 spindles, with all the necessary preparations for carding. The whole of the machinery is being supplied by Messrs. Platt Bros. and Co., Oldham.

Ramsbottom.

The strike of labourers at Messrs. Rumney and Co.'s printworks at Stubbins continues without any prospect of early settlement. The firm have issued a statement of their side of the question, in which they state that the 53 youths and men now on strike left work without asking for any advance of wages, and without the sanction of their own union; that the firm were, before the strike, paying from 5 to 10 per cent. above the average wages paid for similar labour by other printers with whom they had to compete in the world's markets; that the men's deputation on April 11th admitted that, while they knew no printworks where higher wages were paid, they did know others where the wages were lower than those the firm were paying; that while willing to deal with any individual application on its merits, they could not grant a wholesale advance, irrespective of age, occupation, or ability; and that the strike has already entailed a loss of over £500 in wages in a locality none too flourishing at present. The firm have issued placards to the effect that they are willing to pay from 16s. to 18s. for strong lads, and 18s. to 20s. per week to youths as back tenters. On the other hand the strikers have issued notices asking calico printers' labourers to keep away from Stubbins during the dispute.

Rossendale.

A number of members of the Rossendale Union of Liberal Clubs visited Hawarden (Mr. Gladstone's seat near Chester) on Saturday. The right hon. gentleman received them in an informal manner, and accepted gifts representing the special manufactures of the district. Among these was one from the workmen of the Sunnyside Printworks, a 40-yard piece of print of beautiful design. Replying to a remark that the works where the goods were printed were recently run by Sir Thomas Brooks, the defeated candidate for Rossendale, Mr. Gladstone remarked that Sir Thomas was an excellent candidate for his party, and their victory was all the more creditable.

Rochdale.

Messrs. Henry Tucker and Co., Castleton Silk Mills, have just had a quantity of work performed for them in the way of repairs and strengthening of walls, foundations, etc., by Messrs. Fox and Williams, Manchester, with their fusible cement. It has been highly satisfactory in execution, and has involved no delay, having been done at the week ends.

Shaw.

The Shaw Spinning Co. Limited, have taken advantage of the holidays to have their engine foundations repaired with fusible cement by Messrs. Fox and Williams, of Manchester.

Stockport.

The lock-out here affects about 3,000 operatives, who are receiving pay from their societies at the usual strike rate. Up to now the stoppage seems to be merely regarded as a holiday.

Mr. William Hamnett, well known in the Manchester district as a hatters' machinist, died at his residence, Longshut-lane, on Saturday, from the after effects of influenza, erysipelas and inflammation of the lungs supervening. He was 51 years of age.

On Wednesday a deputation representing the textile trades of Stockport waited upon the Stockport School Attendance Committee in reference to the half-time question. The deputation consisted of the secretaries of the Powerloom Weavers' Society, Spinners' Association, and the Cardroom Hands' Society. Their object was to protest against the proposal by one of the schools in the town to refuse to admit half-timers, but the Committee said the school managers had withdrawn their application. The deputation then said that, in their opinion, scholars should be allowed to go to labour when they had been examined and passed by the Government Inspector, instead of having to submit to a special examination. If the Government examination was good enough for the Government grant, surely it was good enough for the child to work. The Committee agreed with this, and passed a resolution asking the school managers to allow the scholars in standards three and four to be examined individually instead of by sample. The deputation said that hitherto children who had received their labour certificates had not been allowed to go to the mill to learn their work. The certificates had not been given to them until they had obtained regular employment. This, it was pointed out, was a hardship to many parents. The Committee said the officials of the Committee had been acting wrongly in refusing to give certificates, and promised to remedy the grievance

SCOTLAND.

Dundee.

Mr. James Mann, managing partner of Hillbank Spinning Works, died at his residence, Netherlaw, on Sunday, at the age of 50.

Mr. Charles Couper, who has been for many years a jute merchant in Dundee, died on Monday from inflammation of the lungs. He was well known in the town and much respected.

The subject of wages has been of late pretty freely discussed by Dundee jute-spinners and manufacturers. On Tuesday a meeting of the Trade Committee was held at the Royal Exchange, when it was suggested that the crisis might be met to some extent by a further reduction of working hours, and that a movement should be set on foot to have all the works stopped for the week on Thursday night instead of on Friday afternoon and Friday evening, as is the case at present. This

suggestion did not find much favour, and after full consideration it was resolved to recommend the trade that the wages of all mill and factory hands should be reduced by 5 per cent. A general meeting of the trade was called for Thursday afternoon to submit this recommendation for consideration. The announcemen: of the proposed reduction caused considerable stir in the city, and excited the greatest surprise at the offices of the Mill and Factory Workers' Union in Midstreet. The Union is decidedly opposed to any reduction of wages at the present moment. On Thursday the recommendation to reduce all wages five per cent. was endorsed by a general meeting of the trade.

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.
£52,184	5,289	155	455	—	12,214	70,297	1,390,827
—	16,134	42	164	—	60	16,400	308,385

The following are the total values of the export for the same sixteen weeks of last year:—Cotton, £1,291,838; linen, £283,212.

Miscellaneous.

RUSSIAN TEXTILE INDUSTRIES.

COTTON, SILK, WOOL.

As a consumer of cotton Russia occupies the fourth place in the world, coming immediately after England, France, and Germany, running the two latter countries very closely. No other branch of the chief Russian industries equals this in importance. In 1889, 216,917 persons were employed in the production of cottons, and the value of the product amounted to 266 millions of roubles, as compared with 72 millions in 1867. At the Paris Exhibition of 1889 there were exhibits of cotton brought from Central Asia, and considerable attention and encouragement is being given by the Government to the development of native cotton cultivation, if only to relieve the country of the annual tribute of from £5,800,000 to £6,000,000 paid to America, Egypt, and India.

The cotton industry has made enormous strides in Russia. At the Paris Universal Exhibition, Russian cotton goods were almost unanimously awarded the first place; in 1882 the Austrian delegates at the Moscow Exhibition declared that they were of excellent quality, and that they compared favourably with the best foreign products. According to these authorities there were no foreign cottons which would have a chance of finding a place on Russian markets, even leaving out of consideration the Customs duties, with the exception of yarns above number 60's.

The spinning of cotton has increased even more rapidly than the weaving, thus enabling consumers to dispense more and more with foreign threads. In 1888, the imports of cotton goods by the European frontier did not exceed in value 9½ millions of roubles, and of cotton yarns, 10 millions, while in 1890 the value of cotton goods imported was 2 millions of roubles, and of yarns rather over 8 millions. From 1870 to 1882 the production doubled; from 1867 to 1889 the production of the cotton spinning mills rose from 42 millions of roubles to 156 millions, but in spite of this development the number of factories has not increased.

The origin of silk manufacturing goes back in Russia to the seventeenth century. It has grown very considerably since 1855, owing to increased demands and the extension of the Russian possessions in Central Asia, which are the principal sources of supply of Russian raw silk. In 1888 Russia imported 11 million roubles worth of silk and 1,500,000 r. worth of silk tissues. In 1890 the imports of the former were valued at 3,300,000 r., and of the latter 1,800,000 r. The distinctive feature of this industry consists in that it is practised to a very great extent by hand as opposed to mechanical labour, and that it has experienced a considerable development among small factory proprietors, artisans, and peasants, in the Governments of Moscow and Wladimir, who work for the larger manufacturers.

The woollen and leather industries have also shewn considerable progress during the last few years, while the manufacture of machinery has greatly increased. In the latter industry alone 16,000 workpeople were engaged in 1867 and 51,214 in 1890, and the value of the articles made rose from 14 million roubles in the former year to 56 millions in the latter.

THE STRIKE AT BURY.

The Daisyfield Mill dispute still remains unsettled, despite frequent interviews between the operatives and their representatives and the firm and their representatives. The point at issue now is whether the weaver or overlooker shall be responsible for counting the picks. Neither side will give way, and the weavers' secretary, who withdrew the winders' notices on Wednesday of last week, has again prevailed upon both the winders and reelers to sign a "round robin" giving notice *en bloc*, which was tendered to the firm on Wednesday, but was refused. It is said that the Weavers' Association will endeavour to force them by withdrawing the operatives at the termination of the period of the notices, and make the matter a test question. A meeting of the Bury Federation of Employers was held in the No. 2 Room, Bury Athenæum, on Tuesday night, for the purpose of drawing up a report concerning the dispute. The whole of the sub-Committee appointed to deal with the matter were present, with the exception of one member. The following manifesto was decided upon by the meeting, signed by Mr. E. C. Rostron, secretary of the local federation, and agreed to be issued as a reply to certain statements which have been made in connection with the dispute:—

TO THE WEAVERS AND INHABITANTS OF BURY.

As it appears that there is a certain amount of misunderstanding and some misrepresentation concerning the strike at Daisyfield Mill, we beg to submit the following facts to your consideration:—

1st.—The secretary of the Weavers' Association struck the mill on an entirely new question, all the original alleged grievances on which the notices had been given having been satisfactorily arranged.

2nd.—This question, which was first raised on the Tuesday night (the day before the notices expired), was a demand that the jobbers should count the picks once a day, and be equally responsible with the weaver for the weight of the cloth.

3rd.—The system universally adopted in the cord trade with negative motion looms, with the exception of a part of the mills in Bury and district, is for the weavers to be responsible and count their own picks.

4th.—This system has been in use nearly 25 years at Daisyfield Mills, and up to the said Tuesday night there had never been a shadow of a complaint about it.

5th.—To meet this difficulty by way of a compromise Messrs. W. and J. Hutchinson, Limited, offer—(*a*) Jobbers in gaiting fresh warps shall see that the right picks are put in at the beginning of the cut, and shall put their mark on the cloth after it has woven on to the lap, after which the weaver shall be responsible for the cloth. (*b*) The jobber shall carry each cut into the warehouse when it is downed, and shall also count and regulate the cloth at each cut mark. (*c*) By these arrangements all lifting and carrying of weights and of pieces will be taken off the weaver, whose sole responsibility will be to keep the cloth as the jobber left it

This association is of opinion that Messrs. W. and J. Hutchinson, Limited, have by these concessions fairly met the case, and hereby commend them to the attention of the weavers for their acceptance, as the association is of the opinion that a system which has worked so long and so satisfactorily without complaint should not be hastily disturbed.

Signed, E. C. ROSTRON, Secretary.
Bury Federation of Cotton Spinners and Manufacturers.
Bury, April 19th, 1892.

A GERMAN contemporary recently made the surprising statement, in answer to a correspondent, that ramie was too young a textile to have found a biographer, and that therefore information must be sought in the technical journals. Has our contemporary never heard of the elaborate work of M. Michotte, "Traité Scientifique et Industrielle de la Ramie?" Perhaps the omission is to be accounted for by the fact that the book is French and not German.

WHAT DOES IT COST TO GROW AMERICAN COTTON?

The Atlanta *Constitution* says an "important question has been sprung" in the statement made by Georgia's Commissioner of Agriculture, that "cotton may be raised at a cost of 3c. per pound." The paper named continues:—

The cotton trade takes issue with the statement, and Mr. S. M. Inman asks that the detailed figures of the transaction be given. The statement was first made by Colonel Redding in an interview published in the *Constitution* six months ago. He gave then the result of a cotton experiment, which has since been described in the official experiment station bulletin for February. The position was that the cost of cotton growing was chiefly labour, and the expense per pound decreased rapidly as the yield increased. This was substantially the position of Colonel Corput, and Commissioner Nesbitt, who have been preaching intensive farming, was quick to seize upon an argument which, if true, must have a powerful effect in converting farmers to the plan of confining the cotton crop to a few acres, and making it pay better than a crop spread over a wide area. If it actually pays better to cultivate ten acres than twenty, with given resources, the farmers, who are already sorely perplexed by the labour problem, will be glad to change the system for one requiring less help and bringing better returns. This was the idea uppermost in Commissioner Nesbitt's mind The cotton trade takes a different view of the matter. They say that the statements that cotton may be raised for 3½c. per pound is not borne out by the facts, and they further assert that this statement from the official head of the Department of Agriculture will have a disastrous effect on the cotton market, for the official statements of this kind command respect and credence the world over Mr. S. M. Inman was so much impressed with the importance of this aspect of the question that he thought it advisable to challenge the statement in order that a discussion may be started which will bring out all the facts. Accordingly he addressed the following letter to Comissioner Nesbitt:—

"Atlanta, Ga., March 18.—Mr. R. T. Nesbitt, Commissioner of Agriculture, Atlanta, Ga.—Dear Sir,—In this morning's *Constitution* I see this statement from you: 'A recent experiment at the Georgia station shews that where land has been properly treated a yield of one bale to the acre can be made at a cost of 3½c. per pound. Colonel Corput, of Floyd, a careful accountant, shewed me his estimates also, and he made a profit of 2½c. per pound where the yield was a bale per acre. Another experiment, of which I have the details, was made on land which seemed entirely exhausted. Protecting and paying crops of peas, clover, and grass were planted, which brought the land to a condition where high fertilization was both feasible and profitable, and in 1890 the crop averaged one and a half bales to the acre at a cost of a fraction over 3c. per pound. It was marketed at 8½c., thus giving a clear profit of 5½c. per pound to the producer.' Coming as this does from the official head of the Department of Agriculture of one of the largest cotton-producing States in the world, the statement carries a weight and responsibility that is of vast importance. This statement will probably be telegraphed to every important cotton market in Europe and America, and used in the cotton circulars and reports. It will be a bare argument for still further lowering the price, and will be quoted as an authority for years to come. I esteem you as a friend and honour you as an efficient State officer, but it does seem to me that in this calculation some of the items of cost must have been left out. I respectfully ask that you give me the figures by which it can be done, so that they can be verified by the experience of others. I may finally be convinced that even under the most favourable circumstances cotton can be raised at 3c. to 3½c., but I would be glad to see the figures first.—With sentiments of esteem, I am respectfully yours.

"S. M. INMAN."

To this Commissioner Nesbitt replied as follows:—

"Farm Hill, Ga., March 18—Mr. S. M. Inman, Atlanta.—Mr dear sir,—. . . First, though, I wish to correct what appears to be a misapprehension on your part as to my exact meaning. I thought I had been explicit in stating that it is only after years of preparation of the land by other crops that cotton can be produced at the lower figure of 3c. or 4c. Were every farmer in Georgia to begin to-day, the cost of cotton production could not be materially lessened under three or four years, so that my statement can have no material effect on the present or the coming crop. Letters of appeal from different sections of the State, as well as personal interviews with farmers, impelled me to utter again the warning which I trust that, even at this late day, the farmers will heed. I am only anxious, and feel it my duty, to protect their interests as far as possible. Many of them allowed themselves directly after the war to be deluded by the all-cotton policy, and to-day hundreds of them are left with impoverished farms and

debt hanging like a millstone around their necks. . . In regard to the figures and estimates as to reducing the cost of cotton production, I send you, with this, the March number of *The Southern Cultivator*, containing a full statement of Mr Corput's receipts and expenditures. I also send Bulletin No. 16 from the experiment station, containing careful estimates on both points. In neither of these is the interest on the investment considered, because the improved condition of the farm amply covers that. The figures in the third case mentioned in the interview I have not by me. I sent them to *The Southern Cultivator*, and they will appear in the April number. I understand that Mr. Truitt, of Troup County, states that his cotton never cost him over 4 cents. I have a neighbour who made the past year eight bales on four acres of land that has been gradually brought up to a high state of productiveness. He kept no accounts, but says he made a good deal of money, even with the low price of cotton. I have written very hurriedly. Thanking you for your kind consideration and great courtesy, I am, with high regards, yours truly, R. T. NESBITT."

Bulletin No. 16, of the State Experiment Station at Griffin, contains this paragraph on page 155: "It would not be a difficult matter to count in all the expenses of making the crop on the land covered by experiment No. 22. The items have all been given in the account of the preparation and culture, and every farmer can fix the cost of each item according to his own judgment and experience. Mr Kimbrough, the agriculturist, estimates the aggregate cost of ploughing, harrowing, hoeing, picking, and fertilisers—nothing being allowed for interest on the land or superintendence—at an amount which would make the cost of the cotton 3½c. per lb. of lint."

The *Cultivator* article referred to is a statement of farm operations by Colonel Corput. The first part, which relates to cotton, is here given: "Believing that an accurate statement of the operations of a small farm would be interesting to your readers, I submit the following itemised exhibit of the work done by hired help on my eighty-acre farm. Every dollar expended or received is charged or credited where it belongs. It is an unvarnished statement of facts. But for the rust I would have made at least ten bales of cotton more. Believing that the cotton operations would be of interest to a greater number, I make a separate exhibit for that crop. The thirty bales of cotton reported averaged 476 pounds when ginned. I reduce average to 460 pounds, so as to be positively inside the weight at present time. My estimates as to cost for ploughing, etc., are full, but my help being hired by the year, allowance has to be made for rainy weather, so that no over-charge should appear against the vineyard."

COST OF CULTIVATION AND PROCEEDS FROM TWENTY-EIGHT ACRES IN COTTON.

Turning land 1 man and 3 horses, 24 days, at $3 per day	$72.00	
Harrowing with disc, 1 man, 3 horses, 4 days, at $3 per day	12·00	
Laying off, 1 man, 1 horse, 4 days, at $1·25 per day	5·00	
Distributing Fertilisers, 1 man, 1 horse, 5 days, at $1·25 per day	6·25	
Listing on Fertilisers, 1 man, 1 horse, 8 days, at $1·25 per day	10·00	
Bedding with one-horse turners, 1 man, 1 horse, 9 days, at $1·25 per day	11·25	
Running out middles, 1 man, 1 horse, 4 days, at $1·25 per day	5·00	
		$121·50

PLANTING.

Harrowing down bed, 1 man, 1 horse, 5 days, at $1·25 per day	$6·25	
Distributing Fertilisers, 1 man, 1 horse, 5 days, at $1·25 per day	6·25	
Planting and covering, 1 man, 1 horse, 5 days, at $1·25 per day	6·25	
25 Bushels Ozler cotton seed at 35c. per bushel	8·75	
5 Bushels Truitt variety cotton seed at $1 per bushel	5·00	
3½ tons acid phosphate at $15·75 per ton	55·13	
1 ton of cottonseed meal	17·75	
Mixing above	2·00	
Hand to assist with fertiliser and planter, 5 days, at 75c. per day	3·75	
		$111·13

CULTIVATION.

Harrowing cotton in sprout, 1 man, 1 horse, 4 days, at $1·25 per day	$5·00	
5 ploughings, 2 furrows to row, 1 man, 1 horse, 40 days, at $1·25 per day	50·00	
Chopping to a stand, 21 days' hoeing, at 75c. per day	15·75	
Chopping through cotton 4 weeks later, 9 days, at 75c. per day	6·75	
		$77 50

GATHERING, HAULING, AND GINNING.

Picking 46,500 pounds of cotton, at 50c. per hundred	$232 50	
Hauling 30 bales of cotton to the gin at 60c. per bale	18·00	
270 yards of bagging, at 7c. per yard	18·90	
6 bundles ties, at $1 45 per bundle	8·79	
Toll for ginning, 1 20th	50·13	328·23
		$638·36

CONTRA.

30 bales of cotton, average weight 460lbs., 13,800lbs. at 7¼c. per lb.	$1 000·50	
Remnant, 645 lb. of seed cotton, at 2c. per lb.	12·90	
15 tons of cottonseed, at $11·50 per ton	172·50	
Total income from 28 acres		$1,185·90
Total net profit from 28 acres		$547 54

The foregoing shews that each acre cost :—

For the preparation of the land about	$4·53
For planting, seeding, fertilising, &c., about	4·00
For cultivation, about	2·76
For gathering, ginning, bailing, &c, about	11·72
The entire cost of crop per acre	$22·81
The gross earning of each acre	42·33
The net profit of each acre	$19·52

The cotton crop remains unsold, and the larger portion of the seed was used for fertilising wheat, but would bring the above if placed on the market at the present time. Much of this cotton could have sold for 8½c. if ginned and marketed as gathered. I have owned this land for seven years. The year I bought it it was planted to cotton, and I am told made one-half bale to the acre. Next spring I seeded part of it to oats, and planted balance in corn, with the result of about 20 bushels of oats and 15 bushels of corn per acre. That fall I terraced the land, turned it with three horses, and subsoiled in same furrow with two horses, at a cost of about $5 per acre. In the following, or second spring I planted it in corn and peas; gathered something over 27¼ bushels of corn to the acre, and saved about 150 bushels of peas. That fall and following spring seeded it to wheat and oats, and sowed in clover. No account was kept of this year's crop, but from then until turned last fall, has averaged a yearly cutting of two tons of clover hay per acre. The field is now in wheat, and will be brought back to clover the coming spring. In the last seven years I have used about five loads of barnyard manure to the acre.

This is a matter of so great importance that the *Constitution* will invite a discussion of it by leading farmers of the cotton region. It has a bearing upon three matters of vital importance, to wit: The cotton market; intensive farming; the labour problem. A question suggested is this: If intensive farming prevail, because of its economy and profit, will not the reduced acreage of cotton reduce the crop? Or will the yield increase more than the acreage decreases?

COTTON MANUFACTURING IN QUEENSLAND.—The proposed erection of a cotton factory at Ipswich, in Queensland, by the Queensland Cotton Company, (already referred to in *The Textile Mercury*), is expected by the *Brisbane Courier* to give an impetus to cotton cultivation by small agriculturists for many miles round that centre. The factory enterprise is only on a small scale, but the Brisbane paper thinks the ultimate success of cotton manufacturing in the colony is reasonably certain. The Queensland Woollen Company has done well, in spite of several adverse circumstances. While heavily-protected competitors are being shut up in Victoria, the Queensland Woollen Company is discussing an extension of operations. In purchasing raw material it had further to compete with English and foreign buyers at a disadvantage; for wool-growers prefer to send home their entire clips, not caring to break large quantities by disposing of small parcels to a local factory. The Cotton Company will not require to fight against the same odds. It will have no rivals nearer than America, where labour is dear, although cotton is of first-rate quality; or than England, where labour is cheaper, but where the raw material is imported. In addition to this, Ipswich fabrics will be made from fibre expressly grown for their manufacture. There will be no rival in the buying field, and the enterprise therefore takes somewhat the nature of a partnership between the company and the farmers. In 1861 it was declared by English experts that Australian cotton fibre was of superior quality to American, and for several years the bonus then paid in Queensland, and the effect of the American War upon Manchester supplies, were sufficient to cause a somewhat heavy production of cotton in the Ipswich and Maryborough districts. With the expiration of these adventitious aids, however, the industry ceased to exist.

THE JUTE TRADE IN BENGAL.

In an interesting article on the jute trade in Bengal, the *Economist* of Saturday last, discusses the results of the business to the Indian millowners, and as to whether the prospects of the near future are such as to warrant the extensions of machinery that have already been and are about to be made. These amount to close upon 1,200 looms, about one-half of which may probably be in operation within the next six months. An analysis of the balance sheets of those concerns whose accounts are made public, brings out the fact that the latter half of 1891 was much less profitable than the first half. Dear jute, the *Economist* argues, although it played an important part in manufacturing operations, "ought not to have effected profits very seriously had producers sold their goods sparingly," as most of the factories "held in July of last year from two to three months consumption of old crop jute at low costs, and, further, throughout the last six months of the year there was a continuous rise in prices of goods." That the profits made were not greater may, therefore, be due fully as much to bad salesmanship as to the dearness of raw material. From reliable price lists issued by Calcutta brokers we have compiled the following table, shewing the average prices in each of the months, January of last year to February of the current year, of five standard qualities of jute goods in regular production in that part of the world, and from the same sources we give an average of the quotations current for loose jute :—

	Jute per maund.	E. bags 40 by 28, unhemmed, 8 by 8, 1 13-16 lb., f.o.b., per cent	Twills 44 by 26½, hemmed, 8 by 8, 2½ lb., f.o.b., per cent	C. Bags, 40 by 28, hemmed, 8 by 9, 2¼ lb., f.o.b., per cent.	Hessians, 36 by 22, hemmed, 11 by 11, 12 oz., f.o.b., per cent.	Hessian Cloth, 40 in., 10½oz., 11 by 12, f.o.b., per cent.
1891.	Rs. A	Rs. A	Rs. A	Rs. A	Rs. A	Rs. A
January	2 13	14 0	22 0	18 12	10 0	8 8
February	3 0	14 8	20 8	20 0	10 0	8 8
March	3 0	14 12	Nom.	Nom.	11 8	9 0
April	3 0	14 4	21 8	18 12	10 0	8 10
May	3 3	15 0	22 0	19 0	10 0	8 14
June	3 5	13 8	20 8	18 0	10 0	8 8
July	3 6	14 8	22 0	18 8	10 0	8 8
August	4 0	14 12	22 8	19 8	10 8	8 10
September	4 8	16 0	25 0	20 0	12 0	10 0
October	4 12	16 8	25 12	21 0	12 0	10 0
November	5 0	18 0	27 8	23 8	13 0	10 12
December	5 8	18 8	28 8	24 8	13 0	10 14
Increase December compared with July.	+60%	+30%	+30%	+35%	+30%	+30%
1892.						
January	7 8	21 8	32 0	28 0	14 8	13 0
February	8 0	21 0	30 8	27 0	15 0	13 0
Increase compared with Dec.	+40%	+13%	+7%	+10%	+16%	+18%

In the opinion of the *Economist* the table abundantly shews that in the last nine months operators in jute or jute goods and manufacturers had a splendid opportunity of making money for themselves; but although the profits on jute manufacturing for the second half of the year are not so satisfactory as could have been wished for, "shareholders will have no real grounds of complaint if such profits continue to be made in the future." But of this the *Economist* has grave doubts, and cannot help saying, "on the information at present at our disposal, that we shall be greatly surprised if the results of manufacturing operations for the first half of the current year do not disclose a condition of affairs far from satisfactory, notwithstanding the fact that production in India will be these next six months considerably reduced through sheer want of jute. It is in this half year that the effects of dear jute will be most strikingly shewn, and what with a diminished local demand for manufactures, and prices—cheap they might be called when the present cost of jute is taken into consideration—at a level which is not likely to induce free consumption, the immediate future has, in our judgment, not much of brightness in it." Discussing the future in special relation to increase of machinery, the *Economist* recurs to its previous remarks on the influence of the failure of cereal crops on the development of the trade in gunnies. "We have already shewn that fully 1,400,000 tons of wheat—a total never before reached—were exported from India, and if past experience of this trade is to form any guide to the future, such a quantity need not be looked for this year, even recognising that high sterling prices in European markets, low Indian exchanges, and moderate sea freights must have made wheat growing an exceedingly profitable industry to cultivators in India, and provided an incentive to increase production. The difference between the prices paid in 1891 compared with 1890 and 1889 works out at nearly 5 annas per maund increase, which means on an export of 1,400,000 tons nearly 120 lakhs of rupees more drawn into the country, apart altogether from the sum represented by the increased export, whilst if the comparison were made with six or eight years ago the difference in favour of 1891 would probably be found not less than 12 annas per maund. Then with regard to the exports of seeds, the statistics shew the trade of 1891 to have been exceptionally

large. We are much afraid, therefore, that in the current year neither the exports of wheat nor of seeds will reach such totals as in 1891, and in this case it follows that to the extent of whatever falling off there may be, will the trade in gunny bags be injuriously affected." If the local trade fails to give Indian manufacturers the outlet they require, business will be pushed in other parts of the world, and it is not improbable that increased quantities will be diverted to this country and to New York. "It is in the latter part that competition with Dundee manufacturers will be keenly felt; so far as coarse bagging for the United Kingdom and foreign markets served therefrom are concerned, competition for orders will perhaps be confined to Indian mills. We shall not venture to discuss whether jute goods can be laid down in New York more cheaply from Calcutta than from Dundee, or whether the course of trade in that part of the world partakes in any degree of urgent demands for supplies, in which event the closer proximity of Dundee would give its manufacturers an advantage over those in Calcutta. All we will say is, that such competition bodes no good to any one engaged in producing jute cloths. There is still another important point to which special attention may well be directed. Those engaged in the trade will know whether the chief markets of the world have not, of late, shewn evidence of being overstocked with goods—whether fresh supplies are or are not difficult of sale—whether orders are not exceedingiy scarce. According to our information such is the case. Whilst, therefore, we regard the present curtailment of production—it will probably have to be more drastic if any real good is to be done—as likely to prove ultimately in the best interests of manufacturers in allowing time for surplus stocks to be moved into consumption, we must remember that in the ordinary course the machinery at present silent will, as soon as possible, again be put in motion. And in respect to India, the quantity of machinery is being increased by from 10 to 15 per cent., and this increase in output of goods (this point is very important) will be not upon the production in 1890, but upon that of 1891, which, in respect of the local trade and of the foreign trade, was already 45 per cent. and 35 per cent. respectively greater than in 1890. That is to say within the next twelve months, or two years it may be, millowners will be offering for sale in Calcutta, roughly, something like 50 per cent. more goods than they had to handle in 1890, whereas the statistics for the years 1882-88, already given shew an annual expansion of only about 9 per cent. It is not, seemingly, all the Calcutta mill agents who look upon the year 1891 as an exceptional one for the sale of jute goods. For reasons already stated, we so regard it. We do not dispute that an outlet can be found for increased supplies from Indian factories; but it will be in the foreign rather than in the local trade, and our belief is that before it is found, shareholders must suffer severely. The experience of a few years ago, when the industry was in a state of collapse consequent upon over-production, ought not to have been so soon forgotten.

UNITED STATES APPRAISERS' DECISIONS.

The following is a selection of recent decisions:—

Woollen cloths from Bidgood, Jones and Wilson, London—Cut goods entered at various prices. Add cases and lining. Add 1d. per yard on ¾ for shrinking. Add 2d. per yard on 6-4 for shrinking. Add 2½% for cutting. Add 7½% commission. Deduct 2½% discount.

Cotton lace curtains, from Goodall and White, Glasgow—1717, 6 yards, W. T. lace curtains, entered at 1s. 6d. per pair. No advance; 1805, 7 yards, W. T. lace curtains, entered at 4s. 6d. per pair. No advance; 1803, 1804, W. T. lace curtains, entered at 3s. 4d. per pair. No advance. Discount 2½%. Add cases. Deduct inland freight.

Coloured cottons, from A. Mitchell, Jr., and Sons, Glasgow—30 in., 5094, zephyr under 200 threads, entered at 8⅛d., advanced to 8⅞d. per yard; 27 in., 5066, zephyr crape stp., entered at 5⅞d, advanced to 6⅜d. per yard; 27 in., 5066, zephyr crape ck., entered at 6⅜d., advanced to 6⅞d. per yard; 30 in., 5046, zephyr crape stp, entered at 6⅞d., advanced to 7⅜d. per yard; 30 in., 5046, zephyr crape ck., entered at 7⅜d., advanced to 8⅜d. per yard; 32 in., 2044, Madras, entered at 5⅜d., advanced to 6⅛d. per yard; 27 in., 5078, zephyr crape spot, entered at 10⅛d., advanced to 10⅞d. per yard; 28 in., 5580, zephyr stp., entered at 4¾d., advanced to 5⅛d. per yard; 28 in., 5580, zephyr ck., entered at 5d., advanced to 5⅜d. per yard; 30 in., 5582, zephyr stp., entered at 5⅜d., advanced to 5⅞d. per yard; 30 in., 5582, zephyr ck., entered at 5⅞d., advanced to 6⅜d. per yard; 30 in., 5584, figured zephyr, entered at 8⅜d., advanced to 9⅛d. per yard; 30 in., 5082, figured zephyr, entered at 7⅜d., advanced to 8⅛d., per yard; 30 in., 5084, figured zephyr, entered at 6⅞d., advanced to 7⅜d. per yard; 32 in., 2032, 2034, Madras, entered at 5⅜d., advanced to 6⅛d. per yard; 32 in., 5014, zephyr, entered at 5⅞d., advanced to 6⅜d. per yard; 30 in., 5506, zephyr stp., entered at 6⅜d., advanced to 7d. per yard; 32 in., 2002, Madras, entered at 5⅜d., advanced to 6⅛d. per yard. Add making up ⅛d. per yard. Discount, 3%. Add cases.

These are the only decisions amongst the last batch that relate to British goods. There is, as usual, a host of alterations in Continental invoices.

THE blue-print factory of Gerson Spitzer and Son, at Alt-Ofen, Austria, was partly burned down recently.

THE firm of Josef Teuber and Sons, of Brünn, proposes to enlarge its premises.

THE Joint-Stock Woollen Manufacturing Company of Julius Heinzel, in Lodz, is extending operations by the erection of a print works.

THE machine-hosiery factory of Wex and Sons, in Einsiedel, has been destroyed by fire, but business is still carried on in another building.

MESSRS. John Hetherington and Sons, Limited, machinists, of Ancoats, Manchester, have this week received orders from the U.S.A. for nearly 200 combers.

THE order for all the mules required for the new mill at present being built for the Kerr Thread Company, at Fall River, U.S., America, has been placed with Messrs. Threlfall, of Bolton.

IT is to be optional with the Austrian Socialists whether they wear the blue blouse or not on the 1st of May, many being too poor to purchase even that cheap garment.

A STRIKE has occurred in the linen spinning mills of Nachod, near Prague. Two thousand operatives have come out, and the movement is expected to spread.

THE report of the Alsace Jute Spinning and Weaving Company, of Bischweiler, for the past year shews, after the appropriation of £3,232 to the various accounts, a surplus sufficient to permit of a dividend at the rate of our per cent., as against six per cent. for 1890. The company's share capital is £50,000.

STRIKES seem to be on the increase on the Continent; at any rate the fact that a weekly Continental contemporary mentions four in one issue is surely significant. The reasons are various: sometimes discontent with wages, and sometimes dissatisfaction on account of the presence at the works of persons who are for some cause obnoxious to the hands or the agitators who exercise so strong and so hurtful an influence over them.

GERMAN "FUTURES."—A meeting of Hamburg merchants engaged in the cotton trade, held a few weeks ago, appointed a committee to enquire into the possibility of establishing dealings in cotton "futures" in that port. It is now stated that the negotiations have proved very encouraging, and that substantial support has been promised. Definite arrangements are now being made for the formation of an association of cotton merchants for the purpose.

THE Spaniards have not unnaturally endeavoured to meet the efforts of the French authorities to encourage silk spinning on the northern side of the Pyrenees by protective measures. As there seemed to be danger lest Spanish cocoons should be exported into France to the injury of Spanish trade, the Cortes has just imposed an export duty of 30 cents. per kilogramme of fresh cocoons and 90 cents per kilogramme of dry cocoons. In 1890 the quantity of dry cocoons imported into France from Spain amounted to 41,000 kilogrammes.

MERCHANDISE MARKS IN TURKEY.—Sir F. C. Ford, her Majesty's Ambassador at Constantinople, in a despatch to the Foreign Office, dated the 3rd March, encloses copy of Note Verbale which he had received from the Sublime Porte stating that the matter of the enactment of regulations to prevent frauds in the cotton yarns trade in Turkey has been referred by the Council of State to the Chamber of Commerce at Constantinople, in order that full publicity may be given when foreign goods are introduced into Turkey with false marks or of inferior quality and dimensions.

A DIFFICULTY IN WORKING THE INDIAN FACTORY ACT.—A correspondent of the *Times of India* mentions some odd instances of minor difficulties which have occurred in the working of the amended Factory Act which came into force in India at the commencement of the present year. The limit of age for "full-timers" in factories is fixed at 14 years, and as very few native operatives know their children's ages, or even their own, the medical officer has, in passing lads and girls for work, to judge the age as best he can—generally, as in the case of horses, by examining their teeth. If he concludes that they are under 14 he reduces them to "half-timers." In one Bombay mill recently a number of girls were thus sent back as under age who were actually mothers, and several boys who were fathers were also reduced; and one of the latter was the father, it is said, of three children.

A SYNDICATE of English and New York capitalists has bought up the businesses of 18 out of the 20 cotton pressing establishments in New Orleans, and it is expected that the remainder will shortly pass into its hands. The sum invested in the undertaking is £600,000. The syndicate intends to put down new machinery, and expects to be able to increase substantially the amount of cotton passing through the port of New Orleans.

IN a telegram forwarded to the Spanish Coolnial Government from Manila the Government is urged to use every effort to secure a commercial treaty with the United States under which the sugar of the Philippine Islands may be admitted into the States free of duty, as is that of Brazil and Cuba. Such a treaty would imply, of course, preferential treatment of American manufactures in the Philippine Islands, and for this reason is likely to receive the energetic opposition of the Barcelona mill owners.

CONSIDERABLE annoyance has been caused in textile circles in Germany by the rumour that permission has been accorded to a few firms to employ females over 16 years of age in night work from the first of the present month. It is felt all the more keenly because for years the manufacturers in the department referred to (combed yarn spinners) have, as a whole, been trying to remove this evil, and the hope has been entertained that night labour would be declared to be illegal, at the very time at which this alleged movement in the opposite direction had taken place. Another reason why this retrograde step is peculiarly illtimed just now is the circumstances that, owing to the bad condition of trade, many spinning factories are working only 5 days a week, and in many instances only 8 or 9 hours a day.

THE textile industry of Greece has the advantage of a supply of home-grown cotton, which, before 1882, amounted to about 51,000 cwt. annually, and in 1890 reached 76,705 cwt. The cultivation of this crop is capable of great development, and the value of the cotton imports is diminishing from year to year. A distinctive feature of cotton grown in this country is its whiteness combined with shortness of fibre and great strength. The centre of the textile industry is at Athens, where there are eight spinning and weaving establishments, three of the most important of which belong to one firm, using 13 boilers, 14 engines of 470 h.p., combined 25,500 spindles, and 450 looms, and giving employment to 850 operatives, whose wages vary between 5d. and 4s. per day. The coarser numbers of the spun goods are principally produced here, and the bulk of the produce of weaving looms consists of common stuffs, of which the humble classes are chiefly the purchasers.

UNITED STATES CUSTOMS DECISIONS.—The following decisions relating to the classification of articles in the Customs tariff have recently been given by the Customs authorities in that country:—Bleached loosely woven *cotton cloth* with small figures or dots woven therein, an imitation of so-called "dotted Swiss," and known as "Scotch lappets," or figured muslin, is dutiable as bleached cotton cloth containing over 50 and not over 100 threads to the square inch, and valued under 9 cents per square yard, at 3 cents per square yard under paragraph 345, Act of October 1st, 1890. Unbleached *cotton cloth*, a portion of which has raised figured stripes resembling "damask," and a portion having raised stripes in the form of cords, and sometimes called "barred muslin," returned by the appraiser as unbleached cotton cloth, counting variously between 100 and 150 threads to the square inch, and valued at over 8 cents per square yard, and exceeding 200 threads to the square inch, and valued at over 10 cents per square yard, is assessed for duty at 40 per cent. and 45 per cent. *ad val.* respectively, under paragraphs 346 and 348 of the Act of October 1st, 1890.

THE PAPAL PALLIUM.—The promotion of Dr. Vaughan to the Archbishopric of Westminster will necessitate a visit to Rome as soon after the reception of the Pope's brief as business at home will permit. One of the chief objects of such a journey would be the bestowal of the *pallium* by the Pope himself on the new Archbishop, who is bound to beg for this token of the "fulness of episcopal office" within three months of his translation; and he will hardly care to postpone his visit until the end of that period, by which time the summer heats will render Rome scarcely pleasant to the traveller. The *pallium* is a band of white wool, worn on the shoulders, having two strings of similar material, and ornamented with four purple crosses. It is worn by the Pope, and sent by him to Patriarchs, Primates, Archbishops, and in some few instances to Bishops. The *pallia* are made by the nuns of Torre de Specchi from the wool of two lambs brought every year to the Church of St. Agnes at Rome by the apostolic sub-deacons during the singing of the "Agnus Dei," and by them presented at the altar and received by two canons of the Lateran Basilica. When the *pallia* are finished they are placed upon the tomb of St. Peter, remaining there all night. The new Arch-

bishop cannot, strictly speaking, assume his title nor perform episcopal acts till he has received the *pallium*. Thenceforward he wears it on certain specified feasts, but only in his own province.

WORKING OF THE INDIAN MERCHANDISE MARKS ACT.—The Calcutta *Englishman* of a recent date says that, on the whole, the Indian Merchandise Marks Act appears to have worked fairly well during the year following its adoption. The returns for 1890-91 shew about 1,100 cases of detention under the Act, of which nearly 60 per cent. came under the sub-section which requires all piece goods to be stamped with their length. Less than one-third of the cases of detention occurred in Calcutta, nearly two-thirds in Bombay. Of the 300 cases in Calcutta about 250 consisted of unstamped or partially stamped piece goods, 16 were false trade descriptions, and over 30 were goods, marked with the name of a British or British Indian trader, made abroad and not shewing the country of manufacture. As a general rule, importers of piece goods, which figure most largely in the list of imports, appear to have complied with the requirements of the Act; and since the cases in which goods were not stamped the mere obligation to make good the omission involves in itself considerable trouble and expense, the Collector of Customs reports that he has not, as a rule, thought it advisable to impose heavy penalties.

INDUSTRIAL SOCIETIES AND STRIKE FUNDS.—In the Court of Appeal recently, the case of Warburton, on behalf of certain members of the Huddersfield Industrial Society (Limited), *v.* the Huddersfield Industrial Society (Limited) came on for hearing, before Lord Herschell and Lord Justices Lindley and Kay, upon the application of the defendants from the judgment of Justices Mathew and A. L. Smith affirming the decision of the Judge of the County Court. Mr. Arthur Cohen, Q.C., and Mr. E. Ford appeared in support of the appeal; Mr. R. O. B. Lane and Mr. Percy Banting opposed. Mr. Cohen stated it was an appeal from the decision of the Divisional Court, holding that a resolution passed at a duly-convened meeting of the Huddersfield Industrial Society to pay out of the profits £20 towards a fund for the support of some working men who were on strike at Manningham was invalid, and that the payment might be prohibited at the instance of a dissentient member of the society. Lord Herschell was of opinion that the purpose in question did not come within Rule 10 of the society, which provided that after payment of expenses the profits should be from time to time applied by the direction of the quarterly meeting either to increase the capital, reserve fund, or business of the society or any lawful purpose, and the remainder, less any grant for educational purposes, divided among the members of the society in proportion to the business they had done with the society. For that reason he thought the judgment of the court below must be affirmed and the appeal dismissed. He did not consider it advisable to express an opinion upon the wider question they had been invited to discuss by Mr. Cohen. Lord Justices Lindley and Kay concurred.

BLOOD POISONING BY STOCKINGS.—If there are any of our readers who are still haunted by the fear of death through a stocking or a glove, or who have friends liable to such imaginary terrors, we respectfully commend to their consideration the following sensible remarks by a continental observer of experience. The question has not yet, he asserts, been scientifically examined, but probability is in most cases against the existence of any real peril from this source. Reports of alleged injury of this sort usually run somewhat as follows: A met with a slight injury, which at first he scarcely noticed at all, but after a few days the wound began to inflame, and at last blood poisoning set in. Now, it was discovered that A had been wearing coloured gloves or stockings, and the inference is at once drawn that the dye in those articles occasioned the mischief. For this inference there is not the slightest logical basis: it would, in fact, be as reasonable to lay the blame on the sunshine. The admitted neglect of the injury at first is of itself quite sufficient to account for the poisoning of the blood. The blame in these cases is usually laid at the door of the aniline colours, and appeal is made by way of proof to fuchsin, which contains arsenic acid. It is a fact that this substance may occur in fuchsin, but at the most not more than two grammes in a kilogramme. Now, one kilogramme of this dye colours 100 pairs of stockings, or 100 yards of stuff, so the amount of the deadly material for each pair of stockings will be 2-10 of a gramme; and that which would come in contact with a sore place perhaps 1-5000th of a gramme. Moreover, the acid in question is used to hinder the decomposition of organic matter, so exerts an effect the exact opposite of that which is ascribed to it. An experience of more than 30 years in the Crefeld dye works is said to testify that among thousands of workmen who have their hands all day in the concentrated dyes, not a single case of blood poisoning has occurred. So these sensational stories, which from time to time appear in the newspapers, may be safely relegated to the region of myths.

FRANCO-RUSSIAN COMMERCE. — In view of the close political connection between France and Russia, the following remarks of an observant German contemporary on the commercial relations of the two countries are not without interest to us, as well as to those whose geographical position makes all the movements of the powers in question deserving of close study. According to the figures supplied by *Le Journal des Tarifs*, there is an enormous difference between the exports of Russia to France, and those of France to Russia. The value of the goods exported from Russia into France in the year 1890, is estimated at 260,145,962 francs, whereas the goods exported from France into Russia represented only 20,148,405 francs, or less than one-tenth. So far as textiles are concerned the difference is very significant. France exported silk only to the worth of 780,491 francs, whilst Russia exported not less than 4,339,941 francs worth of silk and raw silk. Great quantities of flax and sheeps' wool, were, of course, exported from Russia. On the other hand, France disposed of cotton goods to Russian customers to the value of 3,656,975 francs. Little Scandinavia, which is only one-tenth the size of Russia, buys almost as much of France as the empire of the Czar, and the latter purchases six to seven times more from Germany, and five times more from England. These figures shew very clearly that France is not very successful commercially in her dealings with Russia, whatever be her political gains. If the latter are not far superior to the former, the French Republic seems to be in danger of making a very bad bargain.

DISPUTE BETWEEN YARN MERCHANTS AND DYERS.—At the recent Manchester Assizes, Nisi Prius Court, before Lord Chief Justice Coleridge and a special jury, the case of Thomson Brothers & Co. *v.* Sharp, Murray, & Co. was heard. The plaintiffs are yarn merchants in Glasgow, and the defendants are dyers at Bradford. Mr. Gully, Q.C., M.P., and Mr. Sutton appeared for the plaintiffs, and Mr. Bigham, Q.C., and Mr. Richards for the defendants. The plaintiffs claimed damages against the defendants for improperly dyeing a quantity of yarn. The plaintiffs' case was, that in August, 1888, they asked the defendants to dye for them a sample of yarn with indigo blue. The sample was satisfactory, and in December, 1888, and January 1889, yarn to the extent of 15,000 lb. was sent to the defendants to be dyed indigo blue. In July, 1889, a further quantity of yarn was sent to the defendants for the same purpose. When the yarn was returned to the plaintiffs they sold portions of it to their customers. The dye did not give satisfaction to the plaintiffs' customers. It was found, Mr. Gully said, that the indigo was adulterated with benzo-purpurine, and that the dye "bled" red when bleached. One customer, to whom 10,000 lb. of yarn was sent, declined to pay for it on the ground that it was not dyed with pure indigo blue. The plaintiffs brought an action to enforce payment, but lost their case. Other customers also repudiated their bargains, and the plaintiffs had suffered great loss through the fault, as they alleged, of the defendants. They claimed altogether, £1,749. Mr. John Isaac Tinkler said he had had experience in dyeing, and declared that he would consider it a fraud if a man sold material described as of an indigo blue shade, in which indigo had not been used. When he said indigo he meant indigo. In his opinion indigo was not used as a descriptive term like turkey in turkey red. He would expect indigo to be used in producing indigo blue, although, in turkey red, he would not look for the presence of turkey. (Laughter.) Mr. J. S. Hoyle, manager of the colour department in the establishment of Messrs. Hoyle and Sons, cotton spinners, Manchester, said that pure indigo blue dye ought to be guaranteed by the dyer for the price paid by the plaintiffs. Mr. Christopher Rawson, analytical chemist, stated that the effect of the use of benzo-purpurine as the foundation of a dye would be that the colour would "bleed" under the influence of hot water. He held that the dye was not correctly described as indigo blue if other ingredients had been introduced into the colour. Mr. James Lennie, manager of a firm of shawl manufacturers at Kilsyth, said that in the trade the term indigo blue was regarded as a sort of hall mark, guaranteeing that the colour was produced by indigo. Several other witnesses gave similar evidence. At the conclusion of the case for the plaintiff, the jury were asked by the Judge whether they wished to hear the defendants' witnesses. The jury replied that, in their opinion, the plaintiff got what he wanted, and the Judge, remarking that that was a verdict for the defendants, gave judgment accordingly.

PILE FABRICS.—Mr. Ernest B. Fry, head master of the weaving department of the Keighley Institute, recently delivered a lecture on "Pile Fabrics, their Structure and Method of Production," being the last of a course on loom work. There was a good attendance of students and others interested in the work. The lecture was illustrated by about forty lantern slides of diagrams, designs, machinery, and photographs. Mr. Fry commenced by defining "pile," and after dealing briefly with imitation pile cloths, he commenced to classify his subject into warp and weft pile, shewing the distinctions in structure, etc. The latter was dealt with in detail first. The best methods of designing and the principles of construction were very fully described, as well as the methods of cutting the pile, both by hand and by the new process as patented by Messrs. Schott Bros., of Bradford. In describing this new machine the lecturer clearly shewed by diagrams and photographs the mechanism of the process, which he described as extremely simple but very effective, capable of easy application to any ordinary loom at little cost, and any pattern of weft pile which could be produced by the ordinary process could be woven by this process with the advantage of the pile being cut as it was woven in the loom, and with very little if any decrease in speed of the loom. The ordinary designs and methods for binding the pile and securing certain lengths and density of pile were equally applicable in this process, and an additional advantage was secured by being able to weave simultaneously plush or pile upon both sides of the fabric of any desired pattern or length, thus producing a large variety of new reversible fabrics suitable for many purposes, but more particularly for curtains, travelling rugs, furniture coverings, mantle cloths, trimmings, etc. The weft in all these fabrics was cut at any desirable point by thin steel knives actuated indirectly by the dobby or jacquard, which worked the ordinary pattern, and thus they were perfectly under control. This not only gave a very large scope for variety of design but also did away with the old process of hand cutting. The ease of production should open up a new field for enterprising manufacturers, and one in which there appeared to be every prospect of success. The next subject dealt with was warp pile fabrics, the many varieties of which were discussed at length. After the lecture a quantity of patterns of the new reversible and single pile fabrics (kindly lent by Mr. G. A. J. Schott and Mr. Vaughan) were examined with great interest. The committee contemplate throwing open to the public the course of lectures next session.

Letters from our Readers.

ASHWORTH versus LAW.

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

SIR,—Will you permit me to state that we entirely repudiate any connection with or knowledge of the letter appearing in your last issue signed "Charles J. Hall." After a three days enquiry, and a judgment lucid enough to all who wish to understand it, Mr. Hall takes upon himself to deal out "common justice." We do not know Mr. Hall, who assumes, we imagine, a self-imposed task of making things clear; but we would point out that, by our machinery, we do and always have ground down the sides of card teeth to any depth required by our customers. Wilkinson's patent specification had nothing whatever to do with the decision arrived at by the Court. Finally, Mr. Hall does not seem to know even what the decision of the Court was. Plaintiffs were not "non-suited" at all. The ruling was, "Judgment for Defendants," which is another, and widely different thing from a "non-suit."

—Yours truly, SAMUEL LAW AND SONS, LIMITED.

Cleckheaton, April 20th, 1892.

Textile Markets.

COTTON.

MANCHESTER, FRIDAY.

Our report of last week closed with the advent of the annual Easter holidays. Owing to the adverse condition of trade these have in most cases been a little prolonged. Hence, strictly speaking, up to the time of writing it is impossible to do much more than merely chronicle the resumption of business. This begins under a great cloud, that of a wide-spread lock-out of the operatives in the spinning branch of the trade. As the readers of this report will be already well aware, it springs from a most unprovoked and wanton attack of the Operatives' Union upon a joint-stock spinning company at Stalybridge. The course of matters in relation thereto has been already sufficiently outlined to render repetition unnecessary. On Thursday week, finding that the employers were serious in their intention of closing the mills, the operative leaders in Manchester met together for consultation, and, if possible, of avoiding the impending result of their actions. They concluded to offer arbitration upon the question involved in the strike, but as there was really no question which they have ever formulated beyond an allegation that the material was bad, and that they wanted five per cent. advance upon their wages for a month, and as this allegation has been denied and admitted to be wrong by some of their own leaders, and their demand refused upon that basis, there is really nothing to submit to arbitration. Their offer, however,

has been laid before a meeting of the Employers' Executive, who have decided to depute half-a-dozen gentlemen to meet half-a-dozen on their side, and in substance to ask them what they want to arbitrate about, and this meeting takes place to-day. In replying to this query, they will at once be confronted with the difficulty indicated, and will discover really that they have had no cause whatever for the course they have taken in relation to the Stalybridge Spinning Company. If the leaders of the operatives were endowed with any common sense, only one result could be predicted as the outcome, *i.e.*, an immediate and unconditional abandonment of the position they have taken up. This, however, is hardly to be anticipated, and it is quite probable we shall have a fight of some duration and obstinacy over a most shadowy pretext. Meantime the industry and commerce of Lancashire will suffer in a most tangible manner, as the resulting losses taken all round cannot be less than £100,000 per week.

COTTON.—Liverpool closed before the holidays, so far as spot cottons were concerned, with a very quiet tone. In futures there was more excitement, and prices were moving upwards, partly induced by spinners and others buying to cover their requirements during the closure of the market arising from the holidays. Liverpool likes to take long holidays, and has generally one extra over Manchester, in order that they may start business with a little *verve*, arising from the necessity of spinners buying moderately to provide for accumulated requirements. On this occasion, as usual, the arrangement has well served their purpose, as on Wednesday, when the market re-opened, on the strength of selling 10,000 bales and firmer advices, they managed to advance spots $\frac{1}{16}$d., and carry futures 2½ to 3 points up. Egyptian brown was also advanced $\frac{1}{16}$d. Yesterday the market developed a further increase of strength, spots making another advance of $\frac{1}{16}$d., and after several fluctuations futures closed rather weakly with a gain of three 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	52,920	29,959	22,080	1,471,590	3,176
Brazilian	—	221	470	51,460	—
Egyptian	3,517	5,375	4,940	114,660	280
West Indian	2,215	816	810	30,220	155
East Indian	3,045	1,357	1,030	37,230	190
Total	61,697	37,728	29,330	1,705,160	3,801

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

	G.O.	L.M.	Md.	G.M.	M.F.
American	3½	3 11/16	3 7/8	4 3/16	4 5/16
			M.F.	Fair.	G.F.
Pernam			3 7/8	4 3/16	4½
Ceara			3 7/8	4 5/16	4 3/8
Paraiba			3 7/8	4 1/8	4 7/16
Maranham			4	4 3/16	4 5/16
			Fr. G.F.	F.G.F.	Gd.
Egyptian			4¼	4½	4 5/8 4 7/8
Ditto white			4½*	4 5/8*	— 5*
	Fr. F.F.	G.F.	F.G.F.	Gd. F.G.	Fine.
M.G. Broach	— —	—	—	3 1/16 3 3/8	3 5/8
Dhollerah	2 11/16 2 13/16	2 15/16	3 1/16	3 3/16 3 5/16	3½*
Oomra	2¾* 2 7/8	3	3 1/8	3¼ 3 3/8	3½*
Bengal	— —	2 7/8*	2¾*	2 15/16 3 1/8	3 3/16*
Tinnivelly	3 3/16* —	3 3/8	3 5/16	3 11/16* —	—

* Nominal.

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
April	Holiday.	Holiday.	Holiday.	3-53 s	3-57 58	3-56 57
April-May				3-53 s	3-57 58	3-56 57
May-June				3-53 54	3-58 b	3-57 b
June-July				3-56 57	3-61 s	3-59 60
July-Aug.				3-59 b	3-63 4-0	3-62 63
August				—	—	4-1 b
Aug.-Sept.				3-62 s	4-2 3	4-3 4
September				4-0 1	4-5 b	4-6 7
Sept.-Oct.				4-0 1	4-5 b	4-9 v
Oct.-Nov.				4-3 b	4-7 8	—
Nov.-Dec.				4-5 6	4-10 b	—
Dec.-Jan.				—	—	—
Price of Mid. American.				3 13-16	3 13-16	3 13-16
Estimated Sales including Spec. and Export.				10,000 1,500	10,000 1,000	7,000 1,000

YARNS.—Business on the Manchester Exchange is to a considerable extent disorganised. Yarns have been advanced from ¼d. to ½d. per pound from the lowest prices owing to the stoppage of spindles, but not much business is being transacted. Manufacturers are in a very serious plight, as they can get no improvement in cloth, the demand for which is very limited. So bad is their present condition and future prospects, that a meeting of the Manufacturers' Federation has been summoned for Friday, to take into consideration the adoption of very short time or total stoppage of looms during the dispute with the spinners. Unless one of these courses be adopted, it is very probable that they will suffer for twelve or eighteen months to come from a scarcity of yarn, and consequently high prices, against which it would seem as if they were totally unable to get compensation on the cloth side. As yet Liverpool has captured the whole of the improvement in yarn values, and spinners are little if any better off than when rates were at the lowest.

CLOTH.—In cloth business is in a bad plight. Producers are quoting more on every hand owing to the advances in cotton and yarns, but are rarely getting the advances. More enquiry is met with, but the offers coming to hand shew hardly any improvement, and have been, in some instances, based on an assumption abroad that values are actually lower here.

THE market to-day exhibits little change in any department. Yarns are firm consequent upon scarcity, whilst the reports of cloth vary, the experiences of sellers differing somewhat.

WOOLLENS AND WORSTEDS.

In all the manufacturing towns the mills were closed during the latter portion of last week and the commencement of this. On Tuesday a few of the Leeds warehouses were open from ten to two, but nothing was done, the only customers present being buyers from a distance, who merely examined the goods, and might as well have stopped away in many cases, as far as the interests of merchants were concerned. There was very little done in Nottingham up to Wednesday, and business had scarcely resumed its normal aspect in Leicester by the middle of the week. On market day in Huddersfield most of the mills, as is usual at that period in Easter week, were closed, while the warehouses did very little. There was a slight attendance at the Bradford Exchange on Monday, but with poor results. Most of the mills were working at Rochdale on Monday, the holidays having been confined to the previous Friday and Saturday. Very little fresh business was, however, booked. Monday and Tuesday were holidays in Belfast.

The principal features of the week's small trade are noted in the reports subjoined.

HUDDERSFIELD.—Prospects are brighter, and the softer makes of goods of the better class are coming more into fashion again. The improvement in the low tweed trade is maintained. There is a fairly good business being done on shipping account.

ROCHDALE.—The only new feature in the trade of any consequence is the higher rates now ruling for wool, flannel wool being as much as 15 to 20 per cent. dearer. Yorkshire goods are quiet. Wool is slow except where staplers make concessions.

GLASGOW.—Messrs. Ramsey and Co., wool brokers, in their report dated 19th April, say—*Wool:* The wool market continued during the past week without change. Owing to the holiday season there has been little business doing. There is no change in values, but current rates are well maintained. *Sheepskins:* The supply is well kept up, and mostly of good sorts. A slow and irregular competition is experienced on account of low prices for skin wools and depression on the pelts.

LONDON.—Messrs. Schwartze & Co., in their report, dated 14th April, say :—

The following gives the total available and the quantities catalogued up to yesterday :—

	Available. Bales.	Catalogued. Bales.
Sydney	106,000	55 505
Queensland	59,000	39,326
Port Philip	76,000	40,401
Adelaide	27,000	14,117
Tasmania	8,500	2,423
Swan River	4,000	2,709
New Zealand	37,500	22,700
Cape	38,000	16,659
Total	356,000	193,840

The improvement which we reported in our circular of the 6th inst. has since made further progress, and compared with the low prices of the opening week, which, like the similar period six years ago, will probably become a landmark in the history of wool prices, the present position is as follows :—The bulk of inferior greasy Adelaide, of inferior medium, and good greasy Riverina and Sydney, the Queensland wools, and all greasy pieces 1d. to 1½d. higher ; deep grown superior Adelaides, good to superior Port Phillip and Sydney grease 1d. higher ; the best Western Victorian grease, which in February was upheld by American demand, unchanged. Medium faulty scoured fit for combing, 1d. to 1½d. higher ; the best scoured only par to ½d. dearer. Crossbreds, which did not decline at the outset, also unchanged, or at best ½d. higher. In this statement two features reveal themselves ; first, that the rise is proportionally strongest in low priced goods—grease that at the opening sold at between 6½d. to 8½d., and scoured at 11d. to 1s. 1d. ; that it gradually diminishes in the higher grades, and practically disappears in the best. And, secondly, that mainly Continental wools are touched by it, and that it is distinctly less in the classes which rely on English demand. As regards Cape wool, present prices may for grease be quoted fully ½d , for snow whites about 1d. to 1½d. above opening rates. The chief support of the market has been in the Continental buyers, the home trade having since the rise acted with great reserve. For America about 5,000 bales have been taken. The tone on the last day or two was somewhat weaker. The sales were closed yesterday for the Easter holidays, to be resumed on the 20th inst., and to last, as at present arranged, till the 4th May.

DRY GOODS.

MANCHESTER.—There has been very little doing this week in the home trade. The travellers have been working a few days since the publication of our last report, but buyers have been disinclined to operate. Nevertheless a most excellent assortment of fancy goods is to be found in the Manchester warerooms, and in millinery the display is exceedingly fine. The show of velvets is a splendid one, and some buyers appear to entertain the hope that the demand for these pile fabrics will be revived ere long. Ribbons have improved their position.

HOSIERY AND LACE.

NOTTINGHAM.—Good orders are on hand for Irish guipure, purl, and Valenciennes varieties, but the demand has not extended to all kinds of Levers laces. There is a moderate enquiry for silk Chantilly laces and for demi-flouncings. Makers and finishers of curtains do not report any change, and there are still many machines unemployed. Silk tulles are slow, and the demand for plain cotton nets is rather quiet. The hosiery trade is unsatisfactory.

LEICESTER.—Yarns are brisker, with larger deliveries and smaller stocks. There is a strong demand for lambs' wool and cashmere yarns. Cotton yarns are flat, and prices low. Hosiery is active. Specialities, fancy fabrics, and lambs' wool goods are in strong demand both for home and export. Elastic webs are rather flat, but cords, braids, and dress bandings are in good demand.

FLAX AND JUTE.

DUNDEE, WEDNESDAY.—The market continues in a most unsatisfactory state. Jute is still firmly held, the shipments being trifling. Spinners from day to day buy small parcels, and this keeps the price from giving way much. Jute yarn is weaker all round for all kinds and sizes. Even the very finest qualities can be bought this week for less money, say $\frac{1}{16}$d. per pound all round. Hessians are also weak, and stocks here and consignments to foreign markets tend to depress them. *Flax* also is rather easier to buy, while spinners having large stocks are shy. Flax yarns and tow yarns of the best warp qualities hold their value, but for all other kinds the market is against sellers. Linens are less enquired for, as the English holidays interfere with business, but both in Fife and Forfar all the looms are well engaged. Arbroath alone in heavy linens and canvas is still very dull, and the machines run short time. The Dundee *fancy jute* trade is quiet and orders are eagerly competed for. One hears of plans being made to introduce jute carpet weaving in India. On every side keen competition now affects Dundee. To-day one hears serious discussions on this question. It begins to dawn on manufacturers here that the real trouble is that Dundee must lay down hessians in New York *cheaper* than Calcutta can. If Dundee cannot do this, then Calcutta gets the trade. Short time only increases costs, and so makes it less possible to compete. The cure now proposed, therefore, is a large reduction of costs in Dundee, and an increase of output from costly plant. In this direction alone, say some of the most experienced, can Dundee look with any hope for a market adequate to command employment to the people already interested in jute manufactures.—THURSDAY. At a meeting of spinners and manufacturers this afternoon it was decided to reduce wages 5 per cent.

BELFAST.—Sowing for the new flax crop is being pushed forward, but the prospects point to a poor yield. Yarns are brisker. Brown power-loom linens are slow, but should soon begin to feel the slight improvement that seems setting in for bleached cloth; the home trade in each has rather expanded. There is no change in the shipping trade.

Gazette News.

PARTNERSHIPS DISSOLVED.

Edmund Lamprell and A. T. Emerson, warehousemen, Cannon-street, London, under the style of Lamprell, Andrews, and Emerson.

A. Emsley, R. Walker, and J. Mitchell, tool makers, Dalton Mill, Keighley.

J. D. Young and W. Stuart, linen manufacturers, Faulkner-street, Manchester, under the style of Peter Duncan and Company; as regards J. D. Young.

John Grimshaw and J. W. Shrigley, wadding manufacturers, Denton, Lancashire; as regards J. W. Shrigley.

W. Pearson and S. Pearson, Calverley and Leeds, woollen manufacturers; as regards W. Pearson.

T. L. Sutton, T. P. Torkington, and H. Sutton, trading at Spring Bank Hat Works, Stockport; as regards H. Sutton.

Joint Stock and Financial News.

NEW COMPANIES.

MELROSE MILL CO. LTD., BOLTON.

Capital, £18,000, in £10 shares. Object, to acquire the Melrose Mill, Heaton, near Bolton, and to adopt an agreement made between Mr. R. Hoyle of the one part and Mr. J. L. Collyer (for the company) of the other part, and to carry on the business of cotton spinners and doublers, silk, wool, flax, hemp, and jute spinners, combers and weavers. Subscribers:—

	Shares.
W. M. Musgrave, Heaton, engineer	1
J. Hoyle, Bolton, cotton spinner	1
S. Musgrave, Ashleigh, Heaton, engineer	1
G. T. Brown, Chorley, cotton spinner	1
J. L. Collyer, Mayor-street, Bolton	1
R. Hoyle, Heaton, cotton spinner	1
J. Keevan, 12, Acrefield, Bolton, accountant	1

The first directors are Messrs W. M. Musgrave, J. L. Collyer, and R. Hoyle. Qualification, 100 shares; remuneration to be fixed by the company.

BAXTER BROTHERS AND CO., LTD., DUNDEE.

Capital, £500,000 in 2,500 ordinary shares and 2,500 preference shares of £10 each. Object, to adopt an agreement between Baxter Brothers and Co., Dundee, and to take over and carry on the business of flax, hemp, and jute spinners, manufacturers, and merchants. Subscribers:—

	Shares.
W. O. Dalgleish, merchant, Dundee	1
E. F. Maitland, merchant, Dundee	1
T. Maitland, merchant, Dundee	1
J. Carmichael, merchant, Dundee	1
G. W. Baxter, merchant, Dundee	1
Elizabeth O. Dalgleish, Errol, Perthshire	1
J. O. Dalgleish, late captain 29th Regiment, West Brighton	1
J. Shiell, solicitor, Dundee	1

The first directors are Messrs. W. O. Dalgleish, E. F. Maitland, T. Maitland, James Carmichael, and G. W. Baxter, the partners constituting the present firm. Qualification, holding £1,000.

GREAT HARWOOD PARK ROAD MANUFACTURING CO., LIMITED.

Capital £8,000 in £50 shares. Object, to acquire the Union Mill, Great Harwood, and to carry on the business of power-loom weaving and cotton cloth manufacturing. Subscribers:—

	Shares.
R. Mercer, Plough Inn, Harwood, innkeeper	1
D. Birtwistle, Harwood, joiner and builder	1
R. Heys, 44, Delph Road, Harwood	1
A. Westwell, 9, Lomax Square, Harwood, weaver	1
J. Gordon, Queen's Hotel, Harwood, innkeeper	1
J. Shackleton, 11, Glebe-street, Harwood, plasterer	1
G. H. Taylor, Spring View, Whalley, bookkeeper	1

The above subscribers are the first directors; qualification, 1 share; remuneration to be fixed by the company. Registered office, Park Road, Great Harwood, Lancashire.

THE SCOTTISH ALUM COMPANY, LIMITED.

Capital £10,000, in £10 shares. Object, to purchase or otherwise acquire and undertake all or any part of the trade or business lately carried on by the Glasgow Alum and Ammonia Company, at Nitshill, Renfrewshire.

JUTE IMPORTERS' MUTUAL PROTECTION ASSOCIATION, DUNDEE.

Registered in Scotland on the mutual principle, members paying £3 3s. of entry money. Object: to advance, protect, and vindicate the rights and interests of jute importers, and especially of the members of the association and companies of which they may be partners or shareholders, in all matters and questions arising out of or connected with the jute trade, and to assist such importers, members, and companies in establishing and resisting claims having reference to the trade; to conduct, in the name of the association or of the members or other parties concerned, or otherwise, law suits and actions, or all arbitrations or other procedure which the association may deem requisite or advisable for the furtherance of the above objects; to satisfy and pay and free and relieve and protect parties from all costs, charges, and expenses of and incidental to such procedure, etc. Subscribers:—

	Shares.
A. Henderson, spinner, Dundee	1
A. B. Gilroy, spinner, Dundee	1
J. H. Walker, spinner, Dundee	1
J. N. Smith, spinner, Dundee	1
J. Cooper, merchant, Dundee	1
W. Shepherd, spinner, Dundee	1
J. Fullerton, merchant, Dundee	1
P. Spence-Mudie, spinner, Dundee	1

The affairs of the association are to be superintended and managed by a committee consisting of not less than 15 nor more than 21, of whom 7 shall form a quorum. Mr. George C. Heiller, merchant, Dundee, is to be manager of the company.

Patents.

NOTICE OF REMOVAL AND CHANGE OF FIRM.

E. K. DUTTON & CO.
(Late DUTTON & FULTON),
CHARTERED PATENT AGENTS,
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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.

5,351 HOFFMANN. Making up hanks of yarn.
5,601 ORMEROD and others. Looms.
7,339 HILL. Pleatings, ruchings, frillings, etc.
8,407 PITT (*Cassella and Co.*). Dye-stuffs.
8,702 WILLCOX (*Farbenfabriken vorm. Fr. Bayer and Co.*). Colouring matters.
8,790 DAMMAN AND LAPIN. Spinning machines.
9,166 TAYLOR. Singeing textile fabrics.
9,256 ROBERTSON and others. Looms.
9,944 IMRAY (*La Société Leblois Picent and Cie.*). Coiling up and drying textile materials.
15,741 HORN (*Beveridge and another*). Woven fabric.
18,003 BUGG. Compound fabric.
21,512 DIXON. Circular combing machines.

1892.

2,316 BOULT (*Eisenharilt*). Printing oilcloth.
2,848 HAMBLET AND CLIFTON. Looms.
3,431 FRY. Hat banding, etc., machines.

SECOND EDITIONS.

17,429 (1888) EYRE AND HOPKINS. Treating and scouring wool, etc.
7,713 (1891) JOHNSON (*Badische Anilin und Soda Fabrik*). Diazo dyes.

ABSTRACTS OF SPECIFICATIONS.

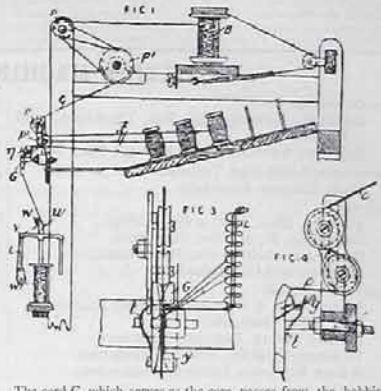
17,342. October 30, 1890. **Compound fabric.** B. TETTWEILER, 19, Koenigin-Augusta-Strasse, Berlin.

Relates to an elastic fabric which may serve as a substitute for leather in the manufacture of writing pads, portfolios, trunks, coverings for chairs, perambulators, coaches, carriages, boats, tents, and roofs, and as a building material for walls of sheds, huts, stalls, magazines, and the like, the said walls being bad conductors of heat. The fabric may also serve as a substitute for wood and iron plates. The fabric is made up of pig-tails, cords, or ropes *a* (made of waste fibre of cane, reed, etc.) plaited or woven together, or laid parallel and interwoven with a weft *b* of thread, cord, or wire, or otherwise made up into mats. A mat of this kind is saturated or coated with glue or glutinous material, a textile fabric B is spread on one or both sides, and pressure is applied to produce a thin sheet. In place of or in addition to the textile fabric, loose fibres, such as cotton or flax waste, cork powder, cellulose, or pulverized matter and the like may be applied. The mat may finally be varnished or coated by a waterproof substance; or a waterproof solution of resinous matter may replace the glue referred to. In some cases the glue or waterproof substance is dispensed with, and a layer of fibrous material may be applied and quilted by sewing the textile fabric to the mat. The method of making the fabric may be otherwise modified.

17,326. October 29, 1890. **Dyeing.** C. D. ABEL, 28, Southampton Buildings, Middlesex.—(*M. M. Rotten; Schiffbauerdamm 29A, Berlin.*)

Indigo Dyeing.—Relates to processes for dyeing materials of all kinds in the hyposulphite bath. Consists, firstly, in effecting the oxidation of the indigo white by passing the yarn or other material from the hyposulphite vat, avoiding as far as possible contact with the atmosphere, into a liquid containing oxygen, such as water. Ammonia may be added to the water, especially in producing the lighter shades, for the purpose of keeping the indigo white in solution. Other substances, such as alcohol, ether, etc., may be added for increasing or diminishing the oxygen dissolving power of the water. Consists, secondly, in maintaining the hyposulphite bath only weakly alkaline by adding to it at intervals some of the solution produced in the preparation of the hyposulphite solution by the action of zinc upon sodium bisulphites.

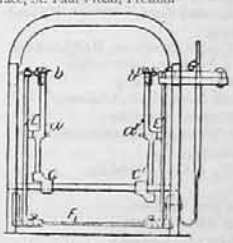
17,387. October 30, 1890. **Gimp-twine making machinery.** A. J. BROOK, 64, Rathbone-place, Oxford-street, London, W.



The cord C, which serves as the core, passes from the bobbin B round the pulleys P, P_1, P_2, and down the groove g (Fig. 3) of the guide G. This carries a hook g (Fig. 4) and a tension wire f, between which pass the threads f of the covering material. These threads are guided by a bent-wire frame L as shewn.

Flyer.—The head u and arm i are provided with pulleys m, m_1, and there is a guide groove formed at r.

17,404. October 21, 1890. **Looms.** W. R. BOWKER, 4 Fairmont-terrace, St. Paul's-road, Preston.



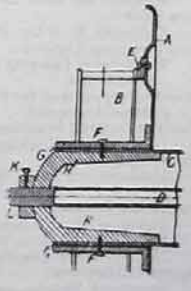
Weft stop-motion.—The fork b at one side of the loom carried by a lever E on a rock shaft F. The fork b_1, at the other side, is connected as usual to the knock-off lever G, to which a lever E_1 is linked, or the fork b_1 may be attached to the lever E_1. The loom is thus at once stopped, whichever side the weft may break. The weft hammers a, a_1 are worked by the tappets z, z_1.

17,406. October 31, 1890. **Net-making.** W. IRELAND, Buckhaven, Fifeshire, N.B.

Fishing and other nets are made by two rows of shuttles in combination with hooks. The rows of shuttles are situated one in front of the other upon a rail or carrier on an oscillating frame, and one of them has an independent lateral motion imparted to it by a lever and wedge bar. The two threads from the spools are first caught in hooks, after which a loop is formed in both of them by other twisted or rotating hooks. These loops are brought down in front of the shuttles, both shuttles are passed through them, and they are tightened by the motion of the shuttles, aided by tail wires, on the rear shuttles. The net is taken up by rollers and wound upon a beam. The various motions are derived by levers, etc., from two cam-shafts at the other side of the machine. *Drawings.*

17,485. October 31, 1890. **Looms.** C. U. PIAT and J. A. PIERRET, both of Presles, St. Maurice, s/Moselle, France.

Warp beams.—The beam, as shewn in Fig. 1, consists of a cylinder C mounted on the shaft D by means of end pieces H. The shaft D is hollow with solid journals L and the pieces H are fixed on it by set screws K. The disc A slides on the cylinder C, and is attached to the pulley B by screws E, which may be adjustable. The pulley B is fixed by screws F and the space between it and the cylinder is filled with fusible metal G. In a modification a wooden cylinder is employed. The pulley is then mounted on a bush on the end of the shaft. The bush is secured on the shaft by fusible metal and the pulley is fixed on the bush by a set screw. The disc is connected with the pulley by adjustable pins.



17,531. November 1, 1890. **Finishing fabrics.** R. W. Thom, Birkacre, Chorley, Lancashire.

In machines for backing or backstarching and finishing fabrics, the winches or rollers are placed below the drying cylinders, and immediately after the backing appliance a large drying cylinder is employed, or two more smaller drying cylinders. The apparatus may be combined with a face starching machine, so that both sides of the fabric may be starched in one continuous operation without batching or reversing. *Drawings.*

17,653. November 4, 1890. **Spinning.** G. Kirkham, 37, Ashton New-road, Beswick, Manchester.

Gassing and clearing yarn, etc.—The yarn is gassed and cleared in the same machine at one operation. The yarn passes from the delivery bobbins through guides, clearers, round the bowls, between which the gas burners are situated, and through over traversing guides to the receiving bobbins, passing *en route* a polishing roller covered with flannel or other suitable material. When fine yarns are treated the delivery bobbins are supported on horizontal steel spindles having conical ends which take into notches in brackets. *Drawings.*

17,694. November 4, 1890. **Primuline Printing.** E. W. Foxlee, 22, Goldsmith-road, Acton, London, W., and T. Bolas, 8, Grove-terrace, Chiswick, Middlesex.

Relates to the process described in Specification No. 7453, A.D. 1890. Consists in exposing the diazotized fabric, paper, etc. to the action of heat instead of light. This may be done by pressing engraved or other plates, etc., upon it, or by placing a stencil plate upon it, and heating it through the openings of the plate by a hot roller or plate. Or the heat may be applied by any means.

17,706. November 4, 1890. **Spinning.** F. M. Macey, Worcester, Massachusetts, U.S.A.

Spinning rings.—Relates to an apparatus for restoring the flanged track of spinning rings when the latter have become worn. The ring is held by set screws in a socket rotated by suitable gearing, and is operated upon by three cutters simultaneously, which are carri d by an arm hinged somewhat loosely to a vertical support, so that it can adapt itself to any irregularities there may be in the rotation of the ring. The ring may be flanged on both faces so that when one flange is worn the ring may be turned over and the other flange brought into operation. *Drawings.*

17,712. November 4, 1890. **Dyes.** B. Willcox, 47, Lincoln's Inn Fields, Middlesex.—(*Farbenfabriken vormals F. Bayer and Co.; Elberfeld.*)

Relates to new derivatives of alizarin and its analogues. Consists, firstly, in converting quinizarin and xanthopurpurin into bordeaux, apparently identical with alizarin bordeaux and purpurin bordeaux respectively, by the action at a low temperature of fuming sulphuric acid containing a high percentage of free anhydride. The neutral sulphuric others obtained as intermediate products are suitable for dyeing with mordants, or may be converted into bordeaux by boiling them or their alkaline solutions with acids. Consists, secondly, in converting the purpurin bordeaux described in Specification No. 8725 (1890), into alizarin cyanin by acting upon it in sulphuric acid solution with manganese dioxide or other oxidizing agent. Consists, thirdly, in converting the bordeaux of alizarin, quinizarin, purpuroxanthin, purpurin, flavopurpurin, and anthrapurpurin into cyanin-like products by oxidation by means of fuming sulphuric acid alone at a low temperature, or ordinary sulphuric acid at 200°—230° C. Purpurin or purpurin bordeaux and alizarin bordeaux yield a hexoxyanthraquinone. The sulpho acids of bordeaux described in Specification No. 12,715 (1890), are also converted into cyanin like compounds by ordinary sulphuric acid. Consists, fourthly, in producing and separating intermediate products which dye mordanted wool, by oxidising the bordeaux with sulphuric acid and dioxide manganese at 30° C., and pouring on ice. These products, when acted upon by ammonia, yield new colouring matters which dye blue and blue green shades with alumina and chromium mordants. Consists, fifthly, in producing dye-stuffs similar to alizarin cyanin, by oxidising in sulphuric acid solution by means of manganese dioxide, the colouring matters produced as described in Specification No. 12,715 (1890), by the action of ammonia upon bordeaux intermediate products.

PATENTS.

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