

The Irish Textile Journal,

WITH WHICH IS INCORPORATED

The Belfast Linen Trade Circular.

[REGISTERED.]

ESTABLISHED 1852.

NEW SERIES, 1886

Vol. VIII. Belfast, February 15th, 1893. No. 86.

Contents.

	Page		Page
Technical Education in Ireland ..	13	The Belfast Linen Trade Report ..	18
Technical Instruction for Hand-loom Weavers ..	13	Abstract of Board of Trade Returns ..	19
Belfast Health Society ..	13	Exports of British and Irish Produce and Manufactures ..	19
Conciliation, not Reconciliation ..	14	The Linen Merchants' Association ..	19
Friendly Feeling in an Irish Factory 73 Years Ago ..	15	The Irish Cotton Trade ..	20
Practical Instructions in Linen Weaving—III. ...	15	Monthly Reports—	
Special Reports—		Irish ..	20
The Making-up Trades ..	16	English ..	21
The Shirt and Collar Factories ..	17	Continental ..	22
The Irish Woollen Trade ..	17	United States Market ..	22
Correspondence—		Technical Education in Ireland—Meeting in Dublin ..	22
The Irish Woollen Trade ..	17	New Flax Spinning Roller ..	24
Current Textile Items ..	17	Chemicals and Dyes ..	24
		Selected List of Applications for Patents ..	24

Notices.

Correspondence and items of interest bearing upon the Textile Industries, Technical Education, or other questions treated in this Journal, are solicited. Market reports, or notes respecting the position and prospects of our Irish industries, will be specially acceptable. Correspondents should write briefly and on one side of the paper. Foreign readers are invited to send reports, and to point out any facilities which may exist for promoting the interests of Irish manufacturers.

The *Irish Textile Journal* is published on the 15th of each month. Yearly subscription, including postage, 11/6. Subscriptions payable in advance. Free sample copy sent to any address. Advertisers will find the Journal an excellent medium for announcements suitable to its pages. Terms may be known on application.

All remittances to be made payable to the Proprietor, F. W. SMITH, 7, Donegall Square East, Belfast.

The *Linen Market*, published every Saturday, at the above address, deals exclusively with the Irish linen trade in all its branches. Annual subscription, £1 1s. The *Irish Textile Journal* and the *Linen Market*, if ordered at the same time, will be supplied by post for £1 4s., or if within the City delivery for £1 2s. 6d., per annum.

The *Home and Foreign Linen Trade Directory* is now ready. Limp cloth, 2s. 6d.; boards, 3s.



Technical Education in Ireland.

MOST important meeting on this subject was held in Dublin on the 27th ult., presided over by His Grace the Duke of Abercorn. The report, which we give in another column, will be read with much interest. The meeting was a most representative one, and the utmost unanimity pervaded it. Mr. James Musgrave, Chairman of the Belfast Technical School, was particularly happy in the remarks he made on this occasion, and drew a pointed contrast between Ireland and Switzerland, showing what industry and self-reliance, backed up by a splendid system of technical instruction, have done for the latter country, and which Ireland, with far greater natural resources, if aided by similar advantages, might easily accomplish. The Archbishop of Dublin, Lord Monteagle, Rev. Dr. Molloy, the Hon. H. Plunkett, Mr. Arnold Graves, and others, spoke effectively on the occasion, and many friends of the cause, who could not be present, sent letters of sympathy with the object of the meeting. A resolution was adopted to the effect "that it is desirable to found an association for the promotion of technical education in Ireland." A powerful committee was then elected to carry out its provisions. In the course of the discussion, it was asserted that, whereas in England upwards of 125 large towns had taxed themselves in aid of technical education, in Ireland the whole expenditure was confined to £750 in Dublin and Belfast, and £250 in Cork. Further, that while in Ireland there were not more than 2,000 persons, outside of the National Schools, receiving technical instruction, there were in England some 300,000 to 400,000. These figures speak for themselves, and speak eloquently

as to the backwardness of Ireland in this matter. Mr. Musgrave pointed out that already in Belfast their technical school had increased the skill of those engaged or about to be engaged in important manufactures, and it had been the direct cause, in one instance at least, of introducing a new industry, that of woollen cloth. Looking at the names on the committee elected at this meeting, we fully expect that the association will do real practical work. The need for such an association is apparent to all in any way conversant with the condition of technical education in this country. What now lies before the association is to organise public opinion and stimulate public men; to rouse into activity public bodies, corporations, and town commissioners; to watch the national system of education, and to impress upon all men the absolute necessity of a proper system of technical education, if Ireland is to hold her own in the commercial world. Marvellous as it may seem, yet there are many who do not recognise the value of this instruction either to the individual or the nation. Only those who have been closely associated with the movement know how numerous those wilfully blind ones are, or can form any idea of the pertinacity with which they cling to their erroneous opinions. Talk about educating a political party! It is child's play to trying to educate public opinion upon a practical matter such as the necessity for, and benefits accruing from, technical, industrial, and manual instruction.

Technical Instruction for Hand-loom Weavers.

The Germans deserve credit for a further step which they have taken to promote technical education by inquiring into the position of the hand-loom weavers in the mountainous districts of Silesia, with a view to improve their condition. In a paragraph which appeared in a recent number of *Kuhlow's German Trade Review*, it is stated that—

In July last, the Director of the Royal School for Weaving and Dyeing at Grefeld, and an inspector from Göttingen, visited, by order of the Minister for Trade and Industry, the weaving districts of the Glatz and other mountains. They called upon the manufacturers as well as upon the hand-weavers in their homes, so that they were enabled to lay before the Minister a very exhaustive report on the results of their travels, which have now also excited attention in non-official circles. From this report it appears that hand-weaving in the Silesian mountains is full of vitality, but that the great drawback to unqualified success is the employment of exceedingly old, worm-eaten, and shabby weaving looms, and the circumstance that the hand-weavers have not kept pace with the many technical improvements in their branch, which elsewhere have been adopted several decades ago. It is suggested that a travelling teacher, accompanied by a joiner and a locksmith, be appointed, whose duty would be to visit the weavers at their homes, to make for them model looms according to the newest and most approved patterns, and to instruct them in weaving superior goods. Besides, technical schools expressly for weaving are to be established in the various districts, for which purpose the German Emperor presented at the beginning of this year the munificent gift of 45,000 marks, other contributions coming also in through the medium of the Silesian Union for Home Industries.

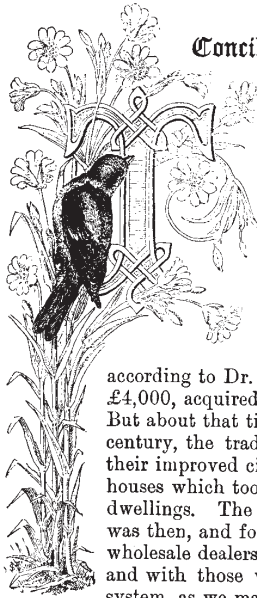
The Irish hand-loom weavers would be greatly benefited if a similar movement were inaugurated for them. The looms which most of them use are of an antiquated pattern, many being the "heir-looms" of the old Linen Trade Board. If, in addition to providing them with looms of a lighter make and more modern type, involving less labour to work, they got some instruction, with the object of effecting improvements in weaving and of diversifying their production, it would serve the linen trade and greatly benefit the weavers. Notwithstanding the improvements effected in the power-loom, and that fine cloth can now be made in this way, the hand-loom for many classes of goods—cambrics and fancy linens—is likely to survive for a long time, and as a cottage industry is well deserving of support.

Belfast Health Society.

We are glad to learn that the formation of a Health Society—which we advocated in 1890—is now an accomplished fact. To the ability and untiring zeal of Dr. Henry O'Neill, of Belfast, the credit is due of founding this Society, and for the past few months the amount of work which he has done to popularise the movement is amazing. Not only has he given a series of lectures, but he has launched a most creditable monthly magazine, devoted to the objects of the Society—namely, the promotion of the laws of health, temperance, frugality, and cleanliness. The means to be used for this purpose are stated as follows:—

1. The delivery of popular lectures.
2. The publishing and distribution of health literature.
3. Providing subjects of interest for the mind, and encouraging proper amusements and physical exercises.
4. Giving assistance to the constituted authorities in the promotion of sanitary laws.
5. Obtaining the assistance, so far as necessary, of any other society willing to co-operate in the work of this Society.

The President of the Society is the Rev. Dr. Hamilton, President of Queen's College, Belfast, and the Treasurer is Sir James H. Haslett, Dr. O'Neill acting as Hon. Secretary. The Society is eminently deserving of support.



Conciliation, not Reconciliation.

HERE is a passage in Dr. Aikin's *History of Manchester* which has for mercantile men all the interest of an old photograph. The public take pleasure, naturally enough, in following the personality of distinguished people through childhood, youth, and maturity, and in this graphic sketch of bygone days we have the textile manufacturer in his infancy, before steam and many inventions had brought such marvellous changes into his life. In Cottonopolis,

according to Dr. Aikin, few, if any, fortunes of £3,000 or £4,000, acquired in trade, had been made before 1690. But about that time, and in the opening years of the next century, the traders began to heap up riches, and proof of their improved circumstances was soon seen in the brick houses which took the place of the old wood and plaster dwellings. The business of old-established "clothiers" was then, and for long after, confined to transactions with wholesale dealers in London and a few other trade centres, and with those who frequented great fairs—the three-ply system, as we may call it, of manufacturer, warehouseman, and retailer having already been set up. But the profits of the old employers are said to have been much smaller than is generally supposed, the betterment in their condition being mainly due, in spite of the braver show made in their houses, to keeping up habits of steady industry and frugal living, although the business barometer might have reached Set Fair. Apprentices at that time, by the account of this industrious old author, "were now and then taken from families which could pay a moderate fee. By an indenture dated 1695, the fee paid appears to have been sixty pounds, the young man serving seven years. But all apprentices were obliged to undergo a vast deal of laborious work, such as turning warping mills, carrying goods on their shoulders through the streets, and the like. An eminent manufacturer in that age used to be in his warehouse before six in the morning, accompanied by his children and apprentices. At seven they all came in to breakfast, which consisted of one large dish of water-porridge, made of oatmeal, water, and a little salt, boiled thick, and poured into a dish. At the side was a pan or basin of milk, and the master and apprentices, each with a wooden spoon in his hand, without loss of time, dipped into the same dish, and thence into the milk pan, and as soon as it was finished they all returned to their work."

Imagination may busy itself for a moment with contemplation of the changes which time has wrought in commercial society, or make merry with the idea of industrial life, as it now is, being subject to these old-time conditions. In all Mr. Gilbert's topsy-turvy plays, no such mirth-provoking notion can be found as that of a modern manufacturer sitting down with all his men around one big bowl of water-porridge, open to indiscriminate spoons. But when surprise or humour has had its turn—when, perhaps, some tribute of regret has been offered to the good old apprenticeship system—there is room for the reflection that it would be all the better for business now-a-days if something of this personal intercourse between masters and men could be restored. Besides periodical meetings between them, such as we have already advocated, for free and candid discussion of matters in which both are interested, it would be well for other means to be taken by employers for making acquaintance with their workmen. For the effective action of Conciliation Committees, in single mills or separate industries, there would have to be limitation of numbers—the manufacturer could only meet representatives of the men. If all together met in council the result would probably be Babel, or something as near like it as the use of one language could accomplish, and the net benefit would be *nil*. But the regular meeting of a joint committee would still leave the greater portion of those upon whose services the employer depends out of his knowledge, and, to all intents and purposes, strangers to him. Their indifference or hostility might neutralise, and would certainly impair, what good the Committee might secure. What is wanted is personal contact and common sympathy between an employer and his hands. That they are called

hands is oftentimes regarded as a grievance, as though the term implied that workmen had no heads or hearts, and were only human portions of the industrial machine; but in the truest sense they *are* hands directed by a head, both parts of one body corporate. It is between these, in this relation, that we desire to see fuller accord and more friendliness of feeling. That they should be in antagonism, or regard each other with aversion, is fundamentally as absurd, as suicidal, as though head and hand in one man were determined to do each other a mischief. The illustration is an old one, as old as Christianity itself, but it is none the less, nay, rather so much the more, a true one.

There is no need to give advice as to how the gulf between masters and men should be bridged over, and counsel, under such circumstances, would be more than usually superfluous. Unless inclination and goodwill prompt any attempts to get on good terms with operatives, matters might as well remain as they are. It is not a duty to be performed by deputy, nor can esteem and trust be won by occasional entertainments at so much per head. Where there is a real desire to be more closely identified with the men, a will to recognise their worth and to obtain their regard, there will soon be found a way. Some hints or precedents may be met with in the newspapers, as such gatherings are from time to time reported, but these would have to be modified to what the men in any case would most welcome and enjoy. It is one of the most encouraging signs of the times, to those who have commercial interests at heart, and who have, at the same time, occasion to get general acquaintance with news, that such occurrences are coming under notice more frequently, not only in the summer, when man's fancy "lightly turns" to thoughts of holidays and ease, but in the dulness of long winter nights as well. At this rate it may, before long, become no uncommon thing for masters to meet their men, both unbent, and apparently with no other purpose in view than some kind of recreation; although, if those present did but realise it, they would all be occupied in reality with serious business of much importance. It would be, outwardly, only an unceremonious fraternising, off parade, of the entire industrial corps, from the commander-in-chief to all the rank and file, with no loss of self-respect to the one, and no detriment to the independence of the others. But the real business which they would have in hand, the unwritten agenda which would not be openly considered, would be the promotion of industrial peace and the unification of industrial efforts. So far as we have gone, it might perhaps be desired that some more satisfactory means could be found for the purpose in view. The dinner or supper which sends master and men to the same fare, on something approaching the old bowl of porridge principle, or the pic-nic which brings both together in a cricket match, may be well enough in their way, and are acceptable enough on the grounds that half-a-loaf is better than no bread; but Conciliation should be, if all concerned were ready for it, far removed from the arranging of pleasure trips or the giving of suppers. It is only because no better way appears of getting, at ease, into touch with the men, that such measures can be recommended; and something more—what shall we say?—well, rather more dignified, but none the less gratifying, would soon be the rule if this movement gets more hold upon our day.

It would not be improper to uphold this reform on the score of expediency. There is not much doubt that it would deserve the support of all employers of labour, on the ground that it would tend to make workmen more willing and diligent—more *worksharp*, as it is sometimes expressed. In that light, expenditure of pains or cash might be regarded as an investment. It would also to an appreciable extent minimise the probability of strikes, which might again be made a profit-and-loss consideration. And, if that assumption implies that a great deal of the discord and discontent in the world of work has been, although unintentionally, brought about by the unapproachableness of employers, there is hardly room to move an amendment to the inference. It is not easy to get direct evidence upon such a point as this. But, in a case where Conciliation was some years ago successfully established in a single factory—an instance which has been described as "the most interesting of all the efforts at industrial arbitration" in the States—the firm, in the course of a statement which was requested from them, after showing that strikes inflict losses all round, and so prove that the interests of Capital and Labour are to a great extent identical, went on to remark:—

"We will admit that arbitration has its difficulties; it is necessary that those becoming parties to such a compact should be guided by an honesty of purpose and a keen sense of justice, and an ordinary amount of intelligence is requisite. The employer very frequently holds himself aloof, is unwilling to have any intercourse whatever with his employes, except in that pertaining to

his work, for fear that his self-respect might be compromised. We think this is a mistake. If the employer, by his great intercourse with the commerce of the world, has it in his power to enlighten the employé and fails to avail himself of it, is not he in a measure answerable? If those who work for him and are constantly studying out their own respective interests, as they understand them, should be led or allow themselves to be drawn into a false position, or contrary to the dictates of reason, and he (the employer) refuses to reason with them, they are left to the mercy of agitators and demagogues, who usually profit by their (the workmen's) misfortunes. We think that in a board of arbitration these things are obviated, and we also think that the employer should consult directly with the representatives of his employé's."

If this is true of arbitration, entered upon on an emergency, it is ten times more true of a method which would forestall difficulties, and probably prevent cases being carried to the point of decision.

Conciliation might also, in all fairness, be represented as necessary. It is, we believe, open to proof that at no other period in the history of Labour has the separation between master and man been so complete and insuperable as in recent times. It is not only that the conditions of factory employment have isolated the employer, but riches and social status have interposed more serious barriers between him and his workmen. In bygone days, in this country as well as in others—even in old Rome, when slavery reigned supreme—there were festival days on which all classes mixed socially together, and special days of latitude upon which not merely liberty, but license, was allowed to the many-headed. Toil and servitude were allowed some solace, rough though it was, and for a little while could forget what dependence implied. In our day and generation the workman has obtained freedom, but with complete separation. That he is securing more substantial recognition is not to be disputed. The base lines of industry are being shifted, beyond need of demonstration. On this account it might be wise, if not necessary, to anticipate the changes which appear probable, and to draw a bill upon the future by making timely concessions to Labour. But, beyond considerations of expediency or profit, without thought of diplomacy or urgency, there are higher grounds upon which this question of Conciliation, in business and out of business, may be placed. It might, perhaps, not come within the range of practical issues for years to come; it is quite possible, rapidly as events often develop, that Capital might remain secure behind its intrenchments through the lifetime of most men now engaged in manufacture. But having regard to the golden rule, and granting a duty toward one's neighbour or obligations to posterity, the acceptance and practice of Conciliation will be governed by considerations, not of policy or profit, but by decision as to whether it is just, whether it is "lawful and right."

FRIENDLY FEELING IN AN IRISH FACTORY 73 YEARS AGO.

In the transactions of the Irish Linen Trade Board for 1820 there is an account given by the Inspector-General for the South and West of Ireland of the interest taken by the proprietors of a merino woollen factory at Kilkenny in promoting the intellectual and social enjoyment of the people employed by them. He says—

"In concluding my report of the County of Kilkenny, I hope I may be pardoned for mentioning the Merino Woollen Manufactory, an establishment that reflects on the respectable proprietors the highest credit; indeed, it may be said to be of national importance, not only as affording employment to hundreds residing in a part of the country where industry was before unknown, but as a school of moral and civilised behaviour productive of the happiest effects on the rising generation. The children of the peasants, heretofore idle and barefooted, may be found at peaceful industry, well clothed and orderly in their behaviour. In addition to the valuable employment which this factory affords, schools are provided for the children of each sex, and a portion of every Sunday is set apart for the instruction of those whose daily labour prevents their attendance at school. On the week days a younger class of children is educated and prepared for business. Having entered so far on the subject, I cannot avoid mentioning a novel arrangement established in this factory. Every person acquainted with Ireland must be aware of the love of dancing which prevails amongst the lower order of its inhabitants. When first the factory was established, it was observed that most of the young people were late in their attendance every Monday. On inquiry it was ascertained that they had passed their Sunday evenings in dancing, and were unable to rise at the usual hour. The intelligent proprietors, finding it to be a recreation so much wished for, proposed to establish a dance within the factory, on the express condition that all Sunday dancing should cease. Accordingly, one hour is set apart every Saturday evening for this amusement, and those who have had the pleasure of visiting the establishment on that day of the week may witness the gratifying scene of the young of both sexes (after their week's labour) dancing to their native airs in cheerfulness, content, and health. In no society of fashion is more order preserved than in this assembly of humble but useful members of the community. The dance is at all times attended by one of the proprietors of the factory, or some other gentleman of the concern, and, when over, the parties promenade to the music of a band composed of the apprentices of the establishment, after which they return to their respective homes, each sex conducted by careful persons."



Practical Instructions in Linen Weaving.

III.

(SPECIALLY WRITTEN FOR THIS JOURNAL, AND ALL RIGHTS RESERVED.)

Shrinkage or Contraction.



Calculations for warp and weft quantities it is almost impossible to arrive at positive results. Allowances or percentages may be made after carefully noting from time to time the shrinkage in different cloths; but there are, and always will be, variations in the twist of warp and weft yarns, and this perhaps obtains more in linen fibres than in any other spun material. The standard twist in yarns is, or ought to be, the square root of the lea count multiplied by 2. This would give the twists per inch for the counts required. Yarns, however, of poor quality can be made to look better and stronger by being slack-twisted. The factor 1.5 is constantly used, and at times 3 if a thread-like appearance is necessary; therefore this variable quantity can only be determined by practice and experience. Then we have many other uncertain elements to contend with—unequal tension in

weaving, the take-up being more or less according to the let-off not being positive; the quantity of size; quality and firmness of the selvage threads; drag on the weft passing through the eye of the shuttle; unequal power in the picking motion; waste of material by careless or indifferent weavers;—these and other causes prevent us from giving any fixed data for allowances and rules for calculating quantities of materials in the fabrication of cloth; they can only be taken as nett results. In a plain cloth weave the threads as picks have their distances apart inversely. The greater the number in one inch and the closer together, the weft in bending resists directly as the square of the number of warp threads per inch, divided by the weft, counts. The resistance of the warp in bending is as the square of the number of picks per inch, divided by the warp, counts.

A great number of picks per inch will cause the most of the contraction to take place in the weft; a low number of picks causes the weft to shrink less and the warp more. If a stripe in a sample contained very coarse yarns, alternated by fine yarns, the best method to obtain the original lengths would be to measure 12 inches of each class of yarn in the sample, and stretch them to a proper loom tension; then, if found to be 13 and 14 inches respectively, the percentage on each 12 inches would be 9 and 17. This would give a very correct calculation for quantities of each warp, so that if woven from two beams both would finish together without waste of material; thus if 50 yards of a fabric with equal stripes of coarse and fine yarns was required, then the two beams would be equal with 54.5 yards and 58.5 yards each, according to the percentages found from the sample, always supposing the proper tension is kept up in the loom during the weaving process. The real length of a weft pick taken out of a sample cloth may be determined in the same way as the warp threads, by stretching. In coarse linen and jute yarns, the counts are determined by the spindle weight; if 14,400 yards weigh 4 lb., it is generally known as a 4 lb. count.

General Rules for calculating Weights in Weaving.

To find the weight of a warp, multiply its length by number of threads in it, and, dividing the product by number of leas in a pound multiplied by 300, quotient=the weight.

To find the number of leas from the weight of the warp, multiply length of warp by number of threads for a dividend, and for a divisor the weight multiplied by 300, the quotient will give the number of leas.

To find quantity of weft for a piece of cloth, multiply reed width of warp yarn by picks per inch, which also means picks per yard, and the product by warp length; divide by leas count multiplied by 300, and quotient=weight of weft required; dividing by these rules, the result given is nett. It is the general custom, however, to allow 5 per cent. for waste; in yard-wide widths in the reed, from one half-inch to one inch extra yarn is allowed; but, as I have previously observed, there is no correct data to go by—a very heavy fabric will contract more than a light one, and a narrow cloth will shrink more than a wider one.

To find the weight of size necessary for a fabric—Suppose an order is given for linen goods to weigh a certain number of pounds, warp and weft items given with the order, then find weight of warp and weft, add both together, subtract this weight from the total weight required, and the difference will give the weight of the size.

From a small sample order, to find weight of materials to make the fabric, a standard width of 36 inches must be taken irrespective of the actual width, and 437.5 grains for one ounce; the method then will be as

follows:—The sample must be cut so that a certain number of square inches may be had to work the calculation from either one square inch or more; suppose we have 6 square inches, 2 by 3, then this piece is weighed in a grain scale, the number of threads warp and weft way per inch are counted. The weight of one square inch in grains multiplied by 36 and divided by 12·15 will give the weight of one yard in ounces in the above 6 square inches; then its weight multiplied by 36 and divided by 6 times 12·15 will give the weight of one yard in ounces; the division will be 2, 4, 6, or 8 times 12·15, according as the sample is one or other of the dimensions; the 12·15 is got by dividing grains in one ounce by 36 inches, thus $437\frac{5}{8} \div 36 = 12\cdot15$.

The weft and warp counts are obtained by comparison with well-known counts, or else by weighing certain lengths of each in grains. In giving fancy-weave patterns, other calculations bearing upon quantities, &c., will be given as they occur.

Factory Books.

For reference, comparison, and classification in all well-regulated factories, the warp pattern, number of threads and cuts, order number, pattern number, date of entry, and when delivery is required, are noted in a book. I am giving my system when a manager. Now both warping and weaving overseers should have similar books; paper is always cheaper than fibre waste. The difference in the weaving entries from the warping department would be—weft pattern, picks, weight out of the loom, loom number, or name of weaver. Where there is a designer, he would enter all these particulars in the books for each department; the warper would then make out his tickets according to the dates of delivery, not of the entry, because some orders, though received on early dates, may not require the delivery for weeks or months after others; after warping and beaming the ticket is, or ought to be, attached to the beam; and the drawer in or twister, with particulars of draft, &c., given from weaving overseer, when put into the loom, the beam is checked off. When the cut is woven the ticket accompanies the piece to be examined, and all the particulars entered in the cut-looker's book; by this system no mistake can possibly occur, even when the piece is finished and delivered.

The warping manager sees number of cuts required of each pattern, threads in warp, and all information, to prevent a blunder or waste. There are other systems. I have merely sketched out one which may prove useful to aspirants for the position of a weaving manager.

The Shuttle and Picker.

In weaving linen fabrics, either by hand or power-loom, to prevent waste of material and the flying out of the shuttle, the following remarks may be found worthy of notice:—

Linen, from the strength and rigidity of its fibres, requires a greater tension in the loom than any other material except silk, hence the shuttle is liable to be thrown by any trifling obstruction in the shed. The size and weight of a shuttle should be in proportion to the yarn, so as to obviate these obstructions in the shed. The reed must be in a perfect line with the shuttle line; the race board of the lay, level; spindles straight, in line with the shuttle; the race board properly bevelled to the angle of the shed, so that the shuttle in its course may hug the reed. The shuttle is nearly always considered as the troublesome object. Good shuttles, well made, are almost perfect in shape, well balanced, and ought to be kept so. No scraping down of the reed side of the shuttle ought to be allowed, if possible. The outer side may be rasped down a little, if needed, taking care not to interfere with the weft channel. If the left box shelf is too high and on the right too low for the race board, this alone is a sufficient cause for the shuttle's irregularity. All may be perfect in line, boxes level, and for days the loom may run well; but so soon as the bevel of the shuttle wears off, then difficulties commence: the race board may become loose in some part, or the reed, through beating up the weft in heavy fabrics, get out of line, and, of course, out goes the shuttle. The pickers or drivers are another source of trouble: they may be new, the shed clear, reed in proper position, healds level, and yet the evil remains. The hole for the shuttle tip in the picker may be so worn that, when the stick drives the picker, it is forced sideways, and the shuttle is thrown with a curve; the pick may be too soon from one side, and too strong from the other. More than one-half the labour may be saved by the shuttle having an easy motion. Draw the picker against the shuttle when it is fully in the box; draw out slowly, and see if the shuttle remains on the same level without tilting up; this will show at once the fault of the picker either being warped or badly gouged. When worn too soft, a picker is apt to throw the shuttle against the box-guide, a slack side, the treading and picking not in time, sheds too high or too low, two odd shuttles,—all or any of these causes are evils that ought to be remedied at once.

Reed Cutting.

A dry place where heavy cloths are woven in will cause weft cutting; a want of proportion between the fineness of reed and weft; the size being too sharp or gritty; dents in reed not polished, dirty, or rusty. Frosty weather has a great effect on the weft, and so has the sunlight, if permitted, as in sheds, to beat fiercely through the glass upon the looms.

Weft flushing off Bobbins.

In many cases the shuttles are too heavy; the speed at which they go across to be in time causes them to be harder to stop than a lighter one going at the same speed; therefore the lighter the shuttle can be used, the better the hard blow and sudden stop will be minimised, and the

weft will not be so liable to flush off the bobbins. Too much power must be avoided; no more is needed than sufficient for the easy working of the loom; any more is a direct waste all round. An uneven plunging pick will at all times injure the delivery of the weft from a shuttle; the raveling off may in many instances be prevented by having a little more spring on the swell in the box at the end where the bobbin points in towards the picker. The shuttle will be caught easier when it comes from the other side. Some degree of power may then be taken off the spring of the swell on the side where the head of the bobbin points in towards the picker—in fact, allowing just sufficient spring to keep the shuttle from rebounding. This method allows the shuttle to go into the box harder on this end, thus driving the weft on the bobbin. The leathers behind the pickers should be solid, and at the same time elastic enough to form a good cushion for the picker, and large enough to keep the pickers from striking back against the picking stick, this being another evil causing the flush-off of weft. Whatever may be the form or construction by which a shuttle is propelled, the motion is sudden, and to a great extent violent, more liable to breakage than wear. The overpick in such general use is not free from breakages, which are expensive, annoying, and vexatious. The picking tappet, consisting of a boss and shell, or circular disc with a nose-bit, strikes the picking bowl, and is therefore liable at all times to accident in every part of the boss and the shell by slipping and breaking. Now, suppose boss and shell cast together, and the shell made with an unbroken projecting rim surrounding its circumference, strength and durability would be obtained; the nose-bit could be firmly secured in its place by having small teeth on that part of its surface fitting to the shell, and similar teeth on the latter; these two fitting exactly into each other, it would be impossible for the nose-bit to move from its position. This is an arrangement which would save loss of time and repairing expenses. I shall have more to say on loom machinery on another occasion. In the meantime, my next communication will deal with fancy weaves and patterns; not that plain weaves or colour arrangements shall be neglected, but space is, like all other things, limited, and we must give place to the inevitable.



SPECIAL REPORTS.

The Making-up Trades.

The Apron and Pinafore Factories.



THE apron and pinafore factories are at present, and have been since the beginning of the year, employed up to the full extent of their producing power, notwithstanding that this season sees a very considerable increase in the production as compared with this period of last year. The first deliveries of spring orders for holland goods have now generally been completed, and repeat orders are being received already on a fairly extensive scale. As regards these, the makers-up are likely to be placed in a position of no little difficulty. It is a curious circumstance that holland apron samples, which are both easily and speedily got up, are the first to be produced each season; while fancy aprons and pinafores, which are both tedious and troublesome to bring round, are invariably the last to be undertaken. It is so, however, and the result this year has been that the union holland ranges, which now form by far the largest part of the turnover, were produced and priced before any upward movement in the cotton market had taken place, or had even been regarded as probable; and now orders are coming in for them at the old and not to be advanced rates, while the union cloths from which they are made have gone up, on an average, fully $\frac{3}{4}$ d. per yard. Some of the larger union manufacturers are, however, acting with the greatest consideration, and, in cases where their goods have been sampled and sold from, have barely made any advance whatever. They have been the better able to do this, in having contracted for large supplies of cotton warps at old rates. One well-known firm indeed is said to have laid in not less than one million pounds weight of cotton yarn at the very lowest price of last year. The policy of backing up their customers as above is both a considerate and a wise one, as their action has the result not only of saving the local makers-up from embarrassment as to orders offered and loss on those accepted, but has tended to bring permanently increased business to the Belfast makers-up, and, of course, to themselves; while a different course of action would have driven business away that might not have been easily recovered. White lawn aprons and pinafores are in steadily increasing demand; the orders for these are now coming in freely from London and other wholesale centres, and here too there is a considerable advance in the cost of material, though not proportionately very large in relation to the cost of the manufactured garment. In fancy aprons and pinafores new samples are still being brought forward for the coming season, though a fair amount of business has resulted from those earlier shown. Floral and scroll designs in print goods are those chiefly in demand. For all-cotton holland aprons the demand has almost completely died out; their places have been taken, apparently permanently, by union holland goods.

The Shirt and Collar Factories.

HE promise of steady and regular trade in the shirt, collar, and cuff branches of the making-up industries with which the season opened has been well sustained. Orders are being regularly placed for immediate delivery and for delivery within a reasonable period, and the coming year is hopefully regarded as likely to prove one that will witness a continued increase in the production and turnover, notwithstanding the discouraging reports that are heard from the districts most affected by labour troubles. In this regard, Wales and the counties of Lancashire and Yorkshire are likely to suffer most. Strange to say, though the cotton strike has considerably affected most branches of manufacture doing with that district, Manchester is ordering from the Belfast factories quite as freely in proportion as any of the other large trade centres of the United Kingdom, and the local makers-up who are doing a purely wholesale trade have, up to the present, suffered from no scarcity of orders from any quarter. Some of the firms, however, who do direct with the retail houses, have been receiving very doleful accounts of the prospects of business in the districts above named, and I hear of some of them contemplating the withdrawal of their representatives from them for a period. As regards profits, the manufacturers are not so favourably circumstanced as could be desired. In prints, which are chiefly used for the manufacture of ladies' shirts and blouses, they are fairly well covered by contracts placed previous to the advance in prices, and are also on a fair footing as regards this season's goods that have been sampled since the advance took place, as are also the makers of men's shirts, who, as a rule, had placed their orders for Manchester and French prints as far back as September and October last; but for many descriptions of white cottons, for interlinings and other purposes, a smart rise in prices has had to be paid. For linens also, which are generally bought from month to month to supply the requirements of the time, more money has had to be paid, while in the manufactured articles I am given to understand no advance whatever can be obtained. Very fair orders are being received for white and printed shirts, and for woven coloured cotton shirts, such as those made from Harvards, Oxfords, grandrills, &c. Fancy union shirtings I am told would sell freely—that is, linen with the colours in the stripes and checks of cotton; but the ideas of the Belfast linen manufacturers as to the quantity to be ordered to a design utterly forbid any experimenting in this direction.

I had intended publishing further particulars of the stamping and sale of union goods as all-linen, but the Linen Merchants' Association, whose province it would be to deal with an evil more far-reaching in its results than its members have probably any idea of, do not seem to think it a matter of much importance, and the subject has no special interest for me.

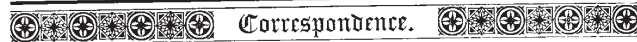
**The Irish Woollen Trade.**

THIS year, so far as it has gone, has opened up well for the Irish woollen trade, especially as regards tweeds and serges, which form the greater part of the trade. Repeat orders on a much more extensive scale than is usual at this period of the season have been placed by the leading wholesale houses, and the returns of the travellers who have gone out since stocktaking have been more satisfactory as regards the Irish branch of the woollen departments than in respect to any other end of the general trade. Irish dress goods in the wholesale houses have hardly been sold at all for some little time back, and even in the retail departments of the mixed concerns the trade has been small. This has not been altogether owing to the want of demand on the part of the public, but mainly to the fact that buyers seemed to assume that the trade in the meantime had passed away, and accordingly made no adequate preparation for it. On the other hand, those costumiers doing a high-class trade who had catered for a demand for the better qualities of Irish woollen dress goods, have had a very considerable business, and a highly remunerative one, as the result of their arrangements. The trade in serges for men's suits promises this season to be larger than ever, and already the leading tailoring houses are making a fair display of them. Speaking of serges, it is almost needless to say—but I do so by request—that the Dinsmore of Kells, referred to in recent issues as making very superior black and indigo serges, is Mr. John Dinsmore, of Old Green, Ballymena. The Old Green Woollen Mills, however, are in the Kells district, so that the description was not altogether incorrect.

As regards the coming winter trade in Irish woollens, some of the leading manufacturers have been in Belfast with their new designs, chiefly of tweeds. A fair selection of patterns has been made by the earlier buyers here, but as the confirmation will not take place for some little time yet, it is too early to speak with certainty as to the probable extent of business done. Prices quoted are much the same as have ruled for some months past. I do not hear much of anything being offered in the way of overcoatings by the Irish makers, which, while fashion tends as it does at present, seems like losing a chance; but doubtless the manufacturers are more profitably engaged in other directions.

Stamping of Irish Woollens.

Since date of last issue, I have had an opportunity of hearing the opinions of several leading Irish manufacturers and their representatives as to the wisdom of making the stamping of Irish woollens with the name or trade mark of the makers a rule not to be departed from. The general opinion is that it would assuredly be for the good and wellbeing of the Irish trade if such a practice were universally adopted and strictly adhered to, but there seems to be an equally strong opinion that it would be next to impossible to have such a rule carried out. Every maker is quite sure that it would be a wholesome practice for the entire trade; and equally certain that, if generally adopted, he would carry it out with the utmost integrity; but each seems to fear that some one else would break through it, and counteract the action of the rest. Of course, if mutual distrust is to prevent the adoption of a plan that has worked so well in past days, and is considered a sure safeguard of the trade in the future, there is nothing more to be said. There are about eight leading makers at present who, if they made up their minds to carry out the practice to the letter, could ensure its general adoption. For, if travellers carrying Irish samples have those of all the known makers stamped, the less known makers will require to stamp in self-defence, or their goods would lie under a strong suspicion of not being Irish at all. If the makers cannot agree to put the strict practice in force now, they will not find it easy to do so in the course of a few more years; and I venture to say that if they do not do so now, they will have grave cause to regret their inaction by-and-by.

**Correspondence.**

To the Editor of the Irish Textile Journal.

SIR,—As you take an important position in advocating Irish industrial progress, and prominently put forward the woollen manufacture as a growing and valuable addition to the other industries of Ireland, you will be pleased to learn that we have received another large order from Her Most Gracious Majesty the Queen. We enclose you patterns of "The Imperial Cloth," as made for the Queen, which we bring out in a great variety of shades, and it is suitable for ladies' tailor-made gowns, or the new cloaks now much worn. The special feature of this cloth is that it is warm and light, and can be had thoroughly waterproof. We may add that the material is patronised by the Duchess of Abercorn, who is so earnestly engaged in promoting Irish industries, the Countess of Caledon, the Marchioness of Conyngham, the Marchioness of Londonderry, Lady Rossmore, Lady Constance Leslie, Lady Jane Van Koughnet, and a large number of the leading members of the aristocracy.—Yours, &c.,

SHERARD, SMITH & Co.

Caledon, 8th February, 1893.

[The patterns sent us embrace a number of excellent cloths in a variety of shades. We take this opportunity of saying we shall gladly notice the productions of other Irish woollen manufacturers, if they will only take the trouble of writing to us.—ED. I.T.J.]

**Current Textile Items.**

MESSRS. Philip Johnston & Sons (Limited) have just completed a very extensive addition to their spinning mills at Jennymount. The new building is a handsome erection of six stories, with a frontage to Jennymount Street of upwards of 150 feet. No additional spindles have been erected, but a rearrangement of machinery has taken place and additional preparing machinery put in, which now makes the Jennymount Mill one of the best-equipped concerns in the province, as it is confessedly one of the most efficiently managed. Part of the ground floor of the new wing is occupied as cooking and dining rooms, fitted up for the benefit of the workers, and in connection with which a very complete and easily-worked system of payment by tokens for meals and cooking has been arranged. The new preparing machinery is of the most modern type, containing every improvement up to date, and has been supplied in about equal quantities by the eminent firms of Messrs. Combe, Barbour & Combe, Belfast, and Messrs. Samuel Lawson & Sons, Leeds. Line yarns up to the finest counts can be spun in the Jennymount mills—up to 200's are being produced in ordinary course—and tow yarns up to 90's, unusually fine counts of tows. The yarns are for the most part exported to various Continental markets, where they are held in high and growing repute. It is a drawback to the pleasure that one feels in witnessing the beautiful and skilful manipulation of the flax in the various processes of manufacture, to think that every ounce of flax used in this fine concern is imported from the Continent. It is a pity that it should be so, if all that is said regarding the fitness of Southern Irish soil for growing the finest qualities of flax be true.

Messrs. J. N. Kevin & Co., apron and pinafore manufacturers, Linenhall Street, Belfast, have taken into partnership Mr. Quail, formerly of John Arnott & Co.'s, of Belfast (Limited). Mr. Quail is well known and esteemed in business circles on both sides of the channel, and his popularity and lengthened business experience will no doubt be of much benefit to the rising firm he has recently joined.

The Belfast Linen Trade Report.

DRAWN UP BY THE LINEN TRADE BOARD, APPOINTED UNDER THE SANCTION OF THE BELFAST CHAMBER OF COMMERCE.

THE improvement referred to last month has considerably developed, so that the turnover in cloth as well as yarns has reached a more satisfactory point, and during the past week or two a rather buoyant feeling pervaded the market.

FLAX.

Except at the monthly fairs, the flax season is virtually over, supplies at the ordinary markets being now very small. Any lots offering are quickly disposed of at top rates, values having shown a steady advance. A good *ex store* demand is reported for both home and foreign flax, and prices have been steadily moving upwards.

February 1st.—RATHFRILAND—20 tons of milled, prices from 5/9 to 7/6. *2nd.*—BALLYMONEY—50 tons of milled, prices ranging from 50/- to 70/-; a large quantity of superior quality; large attendance of buyers; sales slow, sellers holding firmly for advanced prices. NEWRY—2½ tons of milled, which sold from 6/- to 8/6 per stone. *4th.*—BALLIBAY—3 tons of milled, prices from 5/6 to 8/6 per stone, and 4 tons of hand-scutehed, which sold from 5/- to 7/-. BALLYMENA—20 tons of milled, prices from 6/- to 9/- per stone; usual quality; fair attendance; prices steady. COOKSTOWN—20 tons of milled, prices ranging from 6/- to 8/9 per stone. *8th.*—RATHFRILAND—1½ tons of milled, prices from 5/9 to 7/-. *9th.*—MAGHERAFELT—4 tons of milled, prices from 5/- to 8/-; bulk of medium quality; very few buyers; demand quiet. NEWRY—3 tons of milled, which sold from 6/- to 7/9. *10th.*—BELFAST—About 40 stons of milled, which sold at 7/3 per stone.

YARNS.

Continued animation has marked the course of the spinning trade, the turnover for several weeks past being above usual averages. Prices have not only been maintained, but a further advance has been established in a considerable range of both lines and tows. Stocks on the market are now reduced to an exceptionally low point, whilst spinners as a rule are heavily foresold. The advance in foreign yarns has been even much greater than in this market.

BROWN POWER AND HAND-LOOM LINENS.

The demand for light makes of power-loom bleaching cloth, which showed some improvement last month, has been further stimulated. Orders for green yarn cloth have been freely placed with manufacturers, who have advanced their prices ¼d. per yard. Boiled yarn goods are also more freely disposed of, at hardening rates. Medium and heavy makes are in very good request, and prices very firm. Hand-loom goods of this make share in the improved turn, Ballymena cloth in particular being from ¼d. to ½d. per yard dearer, and the coarser sets are now scarce. Cloth for printing and dyeing has been in much better demand, prices showing an upward tendency. In roughs a considerable amount of business has been done; stocks are now very small, and prices advanced. Union makes are particularly brisk, and so also are union makes of glass-cloth, dowlas, and crash. For drills there has been a much improved demand, so that stocks are reduced and prices advanced. A fair quantity of linen handkerchiefs has been bought, but there is still room for much improvement; stocks

are somewhat reduced, but prices are low, though firm. Cambric cloth and handkerchiefs continue to improve, and manufacturers by power and hand loom are better supplied with work, but it is very difficult to get higher rates to meet the advance in yarns. More doing in damasks, and production is easily disposed of; stocks small, and prices advancing. Altogether, the manufacturing branch is much improved.

BLEACHED AND FINISHED LINENS.

Home Trade.—This branch of trade, after a prolonged dulness, has begun to assume a much better tone, and since last report buyers have placed orders more freely, the advancing tendency of prices having, no doubt, stimulated business.

Continental.—Though business is still limited with most of these markets, there is some improvement compared with previous months. The Board of Trade returns for January, however, show a considerable falling off in the volume of trade with France, Germany, Italy, and Spain, as compared with the corresponding month last year.

United States.—A very good trade kept up with this market, and advices from the other side are satisfactory, the season's business opening up fairly well. Shipments of piece goods from the United Kingdom mark an increase of one-third more than those of January, 1892.

Other Markets.—The Foreign West Indian trade is steadily improving, and official figures show that the volume is upwards of 19 per cent. over January of last year. British North American trade, according to the same authority, is 24 per cent. larger, Brazil 45, and Mexico 14 per cent. above the figures for 1892. The Australian market has been dull of late, the January trade of the United Kingdom being upwards of 23 per cent. less than in January, 1892.

For the expired month the total quantity of linen piece goods exported from the United Kingdom is 19½ per cent. and values 11 per cent. over the figures of the same month last year.

LINEN YARN IMPORTS INTO THE UNITED KINGDOM.

The Flax Supply Association state that, through the courtesy of the Assistant Secretary of the Board of Trade, they have obtained the following statistics regarding yarn imports for the past year:—

From	1891.	1892.	Increase or decrease.	
	lbs.	lbs.	lbs.	per cent.
Belgium	14,598,793	14,892,574	293,781 inc.	or 2.01
Germany	1,599,983	2,902,577	1,302,594	,, 81.41
France	2,863,936	2,619,930	244,006 dec.	,, 8.52
Holland	44,068	4,720	39,348	,, 89.28
Other countries	23,296	28,000	4,704 inc.	,, 20.19
	19,130,076	20,447,801	1,317,725	,, 6.88

Prices Current for ordinary Line and Tow Wefts. February 14th, 1893.

LEA NOS.	14	16	18	20	22	25	28	30	35	40	45	50	55	60	65	70	75	80	85	90	100	110	120	130	140	150	160
Line Wefts	—	—	—	7/9	7/-	6/-	5/9	5/3	5/-	4/9	4/6	4/3	4/1½	4/-	4/-	4/-	4/-	4/-	4/-	4/-	4/1½	4/3	4/4½	4/6	4/9	5/-	5/3
Tow Wefts	5/9	5/4½	5/1½	5/-	4/10½	4/9	4/7½	4/6	4/4½	4/3	4/1½	4/-	These prices are per bundle of 60,000 yards of grey Yarn, subject to the usual discount for cash.										120 threads 2½ yds.=1 lea 12 leas=1 hank 16 hanks 8 cuts=1 bundle				

Mr. Anthony Cowdy, bleacher and finisher, Greenhall, Co. Armagh, has lately entered into occupation of the Miltown bleachworks, near Banbridge, formerly occupied by Mr. Hayes, but now for a considerable time past lying idle. In the Banbridge works, Mr. Cowdy intends carrying on on an extensive scale the bleaching of towels, which at present constitutes an important part of his business, and in which he has met with more than ordinary success. It is his intention also to develop the bleaching of damasks at Miltown; the damask bleaching he has hitherto done on a smaller scale having been much appreciated by the trade. It is to be hoped that Mr. Cowdy's ideas in this respect may be extensively and successfully carried out; it is regretful to see so large a proportion of the damasks manufactured in the North of Ireland being sent to Scotland to be bleached.

Messrs. John S. Brown & Sons, Bedford Street, Belfast, have made a further extension of their damask manufacturing works. This is the second considerable extension of the producing power at their factory that has occurred within recent years. About six years ago an extension took place by which two hundred damask power-looms were added to the original number. In the building which has now been added to the works a further two hundred looms have just been erected. The looms have been all constructed by the machinists in the firm's own employment, from castings supplied by Mr. George Horner, Falls Foundry. A new compound tandem engine has just been put up by Messrs. Combe, Barbour & Combe (Limited).

ABSTRACT OF BOARD OF TRADE RETURNS, for the United Kingdom, for the month of January, and for the corresponding months of the years 1891 and 1892.						
	QUANTITIES.			VALUES.		
	Month ended 31st Jan.			Month ended 31st Jan.		
	1891	1892	1893	1891	1892	1893
IMPORTED—						
FLAX. Total Tons.	5,730	11,037	5,208	194,562	333,060	199,904
EXPORTED.						
LINEN YARNS. Total Lbs.	1,060,800	1,407,400	1,383,600	64,802	87,556	74,155
LINENS.						
Piece Goods,.....Yards	17,039,500	16,084,800	19,235,500	388,493	361,238	401,451
Thread for Sewing, Lbs.	187,800	219,700	188,600	22,488	27,483	22,593
Other Articles,.....Value	...	...	...	92,339	89,464	88,412
Total Value of Linen Manufactures,.....	...	...	...	503,320	473,185	512,456

EXPORTS OF BRITISH AND IRISH PRODUCE AND MANUFACTURES.

	ONE MONTH ENDED 31ST JANUARY.	1892.	1893.
Animals, living, ... ..	...	£25,201	£18,641
Articles of food and drink, ... ..	...	705,629	715,358
Raw Materials, ... ..	...	1,335,098	1,259,695
Articles manufactured and partly manufactured, viz.:			
A. Yarns and Textile Fabrics, ...	9,331,970	8,611,666	
B. Metals and Articles Manufactured therefrom (except Machinery),	2,551,466	2,632,783	
C. Machinery and Mill Work, ...	1,089,055	952,234	
D. Apparel and Articles of Personal Use,	1,007,008	876,702	
E. Chemicals, and Chemical and Medicinal Preparations, ...	707,184	728,274	
F. All other Articles, either manufactured or partly manufactured, ...	2,321,560	2,162,905	
G. Parcel Post,	72,533	67,761	
Total value,	£19,146,704	£18,026,019	

The Linen Merchants' Association.



THE twenty-first annual general meeting of The Linen Merchants' Association was held on the 31st ult. in the Linen Hall Library. The President, Mr. W. R. Patterson (Northern Linen Company), occupied the chair.

The Annual Report, read by Mr. W. H. Ward, Secretary, dealt with a great number of topics of interest to the trade, but for want of space we can only refer to a few. The World's Columbian Exhibition will open in May next, and several firms connected with this Association purpose exhibiting. The Belfast Technical School continues to show signs of life and progress by the number of those attending who have gained prizes, and this, through many disadvantages in its working, proves the desirability of a more extended and permanently established institution. The classes, however, for bleaching and dyeing have been discontinued, owing to the want of suitable apparatus. Our neighbours across channel and on the Continent have in all large centres made considerable progress in late years, whilst the Technical School in Belfast, which has now been in work for nine years, has only been kept afloat owing to the efforts of some of our well-known citizens who have taken a great interest in its welfare. Now the main object of these schools being to give valuable instruction in many branches to the community at large, it is only fair to expect that the City Council will take prompt action in this matter, and by imposing the authorised rate of one penny in the £1 thus place this institution on a sound basis for the public benefit. A meeting of the citizens was held in Belfast some time ago, and resolutions were adopted approving of a vigorous effort being made to promote the technical education question in the city, but the outcome to the present has been almost *nil*. Manchester, Liverpool, Glasgow, and all large manufacturing centres such as Belfast, make wise provision for the proper education of the labouring classes; and in these days it is well known that those communities which decline to avail themselves of this instruction will necessarily fall behind in the race. The acreage under flax in Ireland in 1892 fell to the unprecedentedly low figure of 70,642 acres. A portion of the crop was of good length and quality, but in many districts the plant was very short, and yielded a very poor fibre. On the Continent also the crop has been a small one, with a considerable proportion of short flax. The price of flax varied little in the early part of the year, but advanced towards the close. Yarns were in steady demand during the first six months; sluggish, with slightly drooping prices, during the autumn; and in brisk demand, at advancing rates, towards the end of the year, when prices prevailing twelve months previously were easily obtained. Spinners hold almost no stocks, and are being pressed to book orders for long forward delivery. In power-loom makes of brown linens manufacturers have been well supplied with orders; even the coarse end, which had been dull during the previous year, experienced a considerable improvement. Stocks are in moderate compass, and prices firm, with an upward tendency. In hand-loom makes demand has been very quiet for all qualities; for linen and cambric handkerchiefs it has been decidedly dull and at reduced rates. The total turnover of bleached and finished goods for the year has been good, but profits have remained very low. It is interesting to note that the United States, having apparently used up the large shipments sent them in 1890, prior to the increased duties, have in 1892 taken more than their average quantity. From Canada, Cuba, and the Argentine Republic demand has also been active, with increased turnover. The home and Continental markets have been quiet. Trade with France in linen goods shows a considerable falling-off during 1892, no doubt owing to the great increase in duty. The turnover with Spain was about the same as in 1891, but this is owing to heavy shipments made previous to the new tariff of 1st July coming into operation; since then, trade with Spain has been almost *nil*. Brazil, the Spanish Main, the markets on the West Coast of South America, and also Australia, have, on account of political and financial troubles, taken smaller quantities of our goods than usual. At the late Presidential election in the United States the voice of the country pronounced against the M'Kinley Tariff Act. It is therefore to be expected, when Congress assembles later in the year, that the provisions of that Act will be taken into consideration with a view to revision and reductions.

The Chairman, in the course of an able and most interesting address, dealt with the several matters referred to in the report, as well as others of local and imperial importance. Regarding technical education, he said—The subject of technical education has been brought before you regularly of late years in the annual reports, and has been pressed upon your attention and that of our citizens on several occasions from this chair. The present report deals with it so fully as to leave little for me to add. I believe we are able to maintain the

pre-eminence of the North of Ireland as a linen manufacturing country against the competition of the Continent. In one point, however, I frankly state our Continental neighbours are far ahead of us, and that is in this question of technical education. If this deficiency be not promptly supplied, we may expect to find later on that we have lost ground in the industrial race. I am glad to observe that Ireland is awakening to the importance and necessity of this subject, a representative and influential meeting having been held in Dublin a few days ago to take steps to promote technical education throughout the country. The committee of our Technical School are at present engaged in formulating a scheme to place technical instruction on the basis it should occupy in a city like ours. When the scheme is submitted to the City Council, we trust it will meet with their hearty approval and support, and that without delay the full levy authorised by Act of Parliament will be devoted to the furtherance of this object. We should not rest satisfied till Belfast has a technical school, with classes for the different trades, worthy of its commercial position, wherein our young men may be equipped to take creditable positions in the various industries, and be enabled to hold their own successfully against their competitors, whether home or foreign. Speaking on the M'Kinley tariff, he said—The M'Kinley tariff has not affected our industry in the least, with the exception of the handkerchief end, which has suffered somewhat from the increase of the duty from 35 per cent. to 60 per cent. Since the passing of the Tariff Bill the United States have failed to make any progress in the manufacturing of linens, even in the lower grades. Any advanced duty on these goods has consequently fallen as an additional tax upon the consumers, without advancing in the least the contemplated establishment of a linen industry. It seems more than probable this Act will have but a short existence. President Harrison in his last manifesto, though still standing to his gun of protection, admitted that M'Kinleyism was dead, killed by the vote of the nation. This is undoubtedly true, understanding by M'Kinleyism that extreme amount of protection as developed in the Act that bears the name of its promoter. Though this is the case, it would be unwise yet to attempt to predict how far the pendulum of public opinion has swung back in the opposite direction, though it may be to a considerable extent, judging by past experiences when reactions in the mind of the public have set in. We await, therefore, with interest further developments in this question in that great country. The past year has been a fairly satisfactory one for our linen industry. The spinning branch during the last two years shows a marked improvement on the depressed and unremunerative condition that existed previously for several years. In the manufacturing end the looms have been fully employed, and in the shipping branch the turnover has been thoroughly maintained. Prices of goods have not responded to an extent at all equivalent to the advanced cost of yarns, and consequently the margin of profit in the manufacturing and shipping departments has been exceedingly close. The total exports of linen piece goods from the United Kingdom during last year show an increase of 7½ per cent. in quantity and 4½ in value over those of 1891. This is a gratifying return, considering that all the other principal articles of export exhibit a decline, with the exception of woollen and worsted yarns and jute manufactures. I am glad, however, to state that in the closing months of the year signs have appeared that lead to the belief that the end of the depression has been reached. I trust, therefore, that as this year advances an improvement may become apparent. It is a matter of much thankfulness that business here compares most favourably with that in the sister country; there are fewer towns, if any, in the United Kingdom where at present employment is more constant and trade depression less felt. Considering that the various industries are all members of the great body corporate of trade, so that if one trade suffers other trades are affected more or less, it is almost a matter of surprise Belfast has not felt more the condition of business across the channel. No doubt our shipbuilding yards have been well employed during the past year, owing to their world-wide reputation for superior work; our textile industry has not suffered from the M'Kinley tariff, and we have a varied and increasing number of industries in our city, which prevents our being dependent on any particular one. But over and above these and other reasons which might be brought forward, it appears to me there is another, apt to be overlooked, and which I mention for the consideration of all concerned. There have been from time to time strikes in various trades here of longer or shorter duration; since our last annual meeting there was unfortunately a prolonged strike in the building trade. But, taking all these into consideration, I am of the opinion that in the matter of strikes Belfast compares favourably with other commercial centres in the United Kingdom, and that consequently the industries of this city have not been injured thereby, as has occurred across the channel. The Chairman concluded by moving the adoption of the report. The motion was seconded by Mr. W. R. Young, and passed.

Mr. C. H. Richardson was elected President, and Mr. William Crawford Vice-President, for the ensuing year. Council and officers for this year having been elected, the proceedings terminated with a vote of thanks to the Chairman. At the conclusion of the ordinary business an address, accompanied by a cheque for £150, was presented to the Secretary, Mr. W. H. Ward, as an acknowledgment of his high qualities and great ability in conducting the business of the Association since its inauguration. The address, beautifully illuminated and in book form, was executed by Messrs. Marcus Ward & Co.



The Irish Cotton Trade.

Cotton Yarns.

DURING the past few weeks the market has been fairly strong, and sales show a considerable improvement. Old contracts are being gradually worked off, and manufacturers are again obliged to lay in further supplies, not only for the execution of some fresh lines of goods, but also for future requirements. The raw material fluctuated somewhat during that period, but not to any great extent, as the short crop has fortified rates and prevented any material decline. As there is now every prospect of an early settlement of the strike, and of a resumption of work by the mills, spot lots of raw cotton will command still higher rates; and although "futures" will be probably thrown on the market, it is not expected that there will be any sensible decline in values. At the present time yarns are within about $\frac{1}{2}$ d. per lb. of the highest rates touched, but whether the increased production on the termination of the strike will cause a relapse it is difficult to say, as it is feared there will be then a "boom" in raw cotton which will fortify and serve to maintain existing rates. In Manchester, yarns are becoming scarcer every day, while the demand for Irish consumption is gradually growing, so that there is little disposition on the part of holders to operate for quantity even at strike prices; and as to the acceptance of old prices, it is quite out of the question. The looms in Ireland going on to unions are increasing every month, to the detriment of the pure linen fabric; and all this is tending to stiffen rates enormously.

Cotton Goods.

This market continues very firm indeed, but as the demand for Irish-made cotton handkerchiefs has been only of a medium character, there has been no important buying during the month of the cloth necessary to their making-up. Some respectable lines have, however, been booked, and there is a likelihood that larger quantities will be soon again required as the demand brightens up. It is quite different, however, with Irish union goods, which seem to be taking so well with the public that the demand goes on steadily increasing. Manufacturers say that although they can offer many makes of pure linen fabrics as cheap as union goods, buyers insist on having the latter article as being cleaner and more sightly, and that they are therefore obliged to fall in with public taste. This applies particularly to creams and roughs in the piece as well as to some classes of heavy household fabrics. Besides this, however, there is an extensive demand for glass-cloths, crashes, and other light makes of union fabrics.



(From our own Correspondents.)

Whilst we endeavour to obtain the most reliable reports from the best sources of information, it will be understood that we do not hold ourselves responsible for the views of our correspondents.

Irish.

DUBLIN.—All the markets remain more or less inactive, and show but little alteration from last reports. Linsens are in a very satisfactory condition, and the demand, though quiet, is well maintained. The general state of the trade has not materially altered, but a further improvement in the future is confidently looked for. In silks and poplins there is nothing to report, both being steady at the usual demand and output, with all the looms busy, but no signs of any generally increased demand. In woollens, prices are dull, although the American demand has been good. Over Channel a strong tone has prevailed in the markets for the raw material, but prices have not been much improved, and, locally, the latest report gives it that very little is coming to hand, and the demand is equally disappointing, with the values nominally as follows:—Downs, 10d.—10 $\frac{1}{2}$ d.; hoggets, 9d.—9 $\frac{1}{2}$ d.; ewe or wether, 8 $\frac{1}{2}$ d.—8 $\frac{3}{4}$ d.; seaside, 8d.—8 $\frac{1}{2}$ d.; mountain, 7d.—8d.; Scotch, 5d.—6 $\frac{1}{2}$ d. Retail houses dealing in textiles and clothing appear to be doing very well, the first dividend announced being that of the Henry Street Warehouse Company, Limited, at the rate of 8 per cent. per annum.

Prizes for Lace and Embroidery.

The Royal Dublin Society has issued its list of prizes offered for lace and embroidery, wood carving, artistic metal work, and lace and embroidery designs, to be competed for at the Show in August. Copies

and all particulars can be had on application to the Registrar of the Society, Mr. R. J. Moss, Leinster House, Dublin. I mention this here, as the fact may be useful to any readers of the *Journal* who are interested in either the lace or art industries of the country.

Laces for Chicago.

An exhibition of some, if not all, the Irish exhibits of lace and embroidery for the Chicago Exhibition will be held during the month in Dublin. Of this I shall, I hope, be able to treat fully in next month's notes. Meanwhile, I may refer to some of the work which is being prepared. The Convent of Poor Clares, Kenmare, has produced a lace flounce of about four yards, and fourteen inches deep, to the order of Lady Aberdeen's Committee. It is in what the workers call their "second texture"—i.e., not the finest work which is done, but none the less artistic and admirable. Except for the difference in actual texture, the artistic merit of the article is the same, as is also the genuine quality of the labour given to it. The price, I understand, of this flounce is £100, which, looking at its size, is anything but an exorbitant one. The same Convent also hopes to have finished in time a sideboard cloth in linen, with squares of lace, the designs for the latter embodying the rose, the shamrock, and the thistle, together with the Irish harp and American eagle. From the same centre of industry will also come a chasuble and accessories, executed to the order of Cardinal Gibbons, in the new Celtic embroidery so closely associated with the Kenmare Convent School. This is the first time a vestment of this character has been executed in this style of work, though the application of it to stoles and minor vestments has already been made, and referred to in these columns. Cardinal Gibbons' order reached the Convent through the Irish Industries Association, and was, I presume, one of the orders obtained by Mr. Peter White when last in the States. The Kenmare exhibit, on the whole, bids fair to be of exceptional interest and artistic merit.

The Industrial League.

The Association is pursuing its course and extending its operations. So far, since its reorganisation, it has gone on the right road, and shown signs of being of real utility. But there are not wanting symptoms that it is going a little astray. There are some things quite outside the legitimate functions of the League with which it has begun to meddle, and the sooner it gets back into its proper sphere of action the better for all concerned. Those who have been constant readers of these notes know that the Industrial League has always met with sympathetic treatment when on the right road, but that I have never hesitated to condemn false moves. These latter have, of late, been few and far between; but there appear to be some busy-bodies connected with the Association who either do not know, or choose to ignore, the proper duties of the League. I should very much regret to see the Association again in troublous waters, and sincerely hope that the better counsels of the majority will prevail, and prevent the League being made a stalking-horse for individual interests. The foregoing remarks do not refer to a correspondence the League has had with Father M'Fadden, of Gweedore. With Father M'Fadden's scheme I am in thorough harmony. The reverend gentleman writes:—"I have been for some time hatching an idea of further industrial development here in Gweedore by way of a fair or market, monthly or quarterly, for the purchase of home-spun stuffs, such as hose and half-hose, and different classes and qualities of friezes. The want of such a market is a tremendous check on the development of this industry here. Cottage employment is what I am most anxious for; the making of the webs and the yarns and the knitting would supply that, and a certain market for sales would ensure a wonderful improvement and activity in this direction." I sincerely trust that Father M'Fadden may be able to work out the details of a practical scheme, and any assistance which the Industrial League can give him in doing so ought to be generously and unstintedly given. Here is a legitimate outlet for any spare energy the organisation may possess, without going out of its way to interfere in matters which do not in the very least concern it.

The Technical Schools.

From the report read at the annual meeting of the friends and governors of these schools, it appears that the average attendance for the year was 120 per night. Of the 513 pupils 150 presented themselves for examination, and one bronze medal and a fifth prize were obtained from the City and Guilds of London Institute, besides many certificates and passes. Mr. Arnold Graves, the hon. secretary, drew attention to the fact that since the report had been prepared the Corporation has made its grants in aid of technical education absolute—a big step in advance—and has appointed a committee to frame a scheme of technical education for the whole of Dublin. The details of this scheme have not yet been published, but Mr. Graves said that he thought he might fairly say that they hoped to have a technical school in the north side of the city on the lines of the school in Kevin Street, and that possibly an arrangement might be made by which the technical school at Inchicore, in connection with the Great Southern and Western Railway, might be made available generally for the west side. It was hoped that the Pembroke Technical School, which had been established by the munificence of the Earl of Pembroke, and was being supported by the people of the township, would provide for the east end of the city. The scheme, as propounded by Mr. Graves, is an extensive one, but there is nothing Utopian about it, and a very short time may, and I hope will, see it carried out, and the schools in active working order.

LURGAN.—The linen cambric trade continues to improve; orders are more regular and plentiful, and the outlook pretty good. The only thing likely to clog future business is, just at the time (after such a long period of depression) that manufacturers are getting some orders at barely paying prices, spinners advance their prices for line yarns. This, if persisted in, will necessitate advanced prices for goods, which will be exceedingly difficult to get, if ever got at all. This unsteadiness in prices of linen yarns is greatly against profitable trading. Work for hand-loom weavers is now plentiful, and both hemstitched and woven-bordered cambric handkerchiefs are moving pretty freely. The output from hand-loom, although below other years at this period, is at its best before hands go to outdoor spring labour. Makers of linen handkerchiefs (boiled yarns) are now well employed. Power-loom manufacturers are also busy, and are said to have entered orders at better prices. This was much required in this end, as their dividends lately were very small. Hand-loom sheer cambrics keep in good request; also bird-eye diapers, damasks, fancy linen pillow shams, tea-cloths, sideboard covers, quilts, &c.

English.

LEEDS.—There were hopes, at the close of last year, of a much-improved business in all departments of the textile districts of Leeds, but, with some slight exceptions, trade cannot be said to have shown any rapid strides during the first month of the new year. In worsteds, especially those in fancy styles, rather more has been done, the tendency having been towards these in preference to serges. In the serge branches nearly all qualities and descriptions have had a very good demand, the lead having recently been taken in the medium and lower kinds. Mantlings have shown a slight improvement, but in the Yeadon district, where the lower qualities are being made, manufacturers are running short time as a rule, and the prospects of an early revival in this branch seem rather cheerless. In the tweed and cheviot branches a fair business has been done, and looms are fairly well employed on nearly all kinds. In the lower qualities for the ready-made clothing trade a better demand has been experienced recently. As regards prices, the tendency is firmer, in sympathy with the London sales.

BRADFORD.—The wool trade in this district has been good, the quantity sold having been large, although the sales have been mostly for actual requirements by the spinner. The prices generally have had a higher tendency, and on the month an advance of from $\frac{1}{4}$ d. to $\frac{1}{2}$ d. per lb. has been established, according to description, quality, &c. Botany wools have been slow of sale, the lead having been taken by English wools of longer staple. In the yarn branches, spinners have been well employed on old contracts, but new orders have not come in very freely, owing in a great measure to the fact that they have been disinclined to enter upon new work unless at advanced rates; and the manufacturer and merchant have, in consequence, only placed such orders as were absolutely necessary. The piece branches have shown no new feature, unless in respect to worsted coatings, which have had a larger demand for the United States than during the corresponding month of last year. This demand has been chiefly for high-class and medium quality coatings; still, a fair proportion has been in low descriptions. In the dress goods branches there is little to note.

BARNSELEY.—There has been a decided improvement in the linen trade of this district during the month, and orders have come more freely to hand. The demand for plain, fancy, and other drills has increased to a fairly satisfactory state, and more looms are now running on this class of fabric than for some time past. Table damasks show the least improvement, and makers of these find it a difficult matter securing orders with any margin of profit. Linen blinds have met with many inquiries, with the result that more looms are being put to work on these goods. Bed linens have been a shade quieter, as have drabnets and bluettes. Floor and stair coverings have had an average demand, as have huckabacks and such-like fabrics. More business has been done in towellings, in bordered, fancy, twilled, and other descriptions; and domestic cloths generally have met with rather more favour. Prices for most classes of goods, although low, are fairly satisfactory, taking into account the keenness of competition. Business generally is considered very cheering, taking the various departments as a whole, and that it is still early in the year. The prospects for the next few weeks are particularly bright, and the opinion seems to prevail that an improved trade will be done during 1893.

MANCHESTER.—Since the publication of my last report there has been a remarkable increase in the amount of business transacted in the local linen trade. Prices have advanced, as, of course, you and Belfast know better than we do, and the result has been much rushing to and fro on the part of firms interested in the industry. One hears, for instance, that Belgian firms in the habit of selling to Belfast houses have actually repurchased lots originally disposed of. It is considered as somewhat singular that the Continent, usually regarded by British and Irish flax spinners as their *bête noire*, should offer linen yarn quotations actually in excess of those current on this side of the North Sea. It may also be added, as another curious fact, that certain quotations issued from Ghent are $\frac{1}{4}$ d. per bundle in excess of Irish quotations. The linen market is, in fact, unmistakably excited—that is to say, excited in a mild way. We know, of course, that the linen market is not like the jute market, where

speculation pure and simple is almost as much in vogue as it is in Liverpool in connection with cotton.

Local home trade buyers have operated very much more freely during the past few weeks, and were it not for the depressed condition of the important Lancashire ground, travellers' returns would have shown much better results.

On 'Change to-day a most depressed spirit seemed to prevail, even amongst agents representing what are generally considered substantial prices. The reason thereof is easy to imagine. The strike in South-East Lancashire is the most disastrous circumstance that has happened in the industrial history of the county palatine since the period of the Cotton Famine, and the extraordinary thing is that the average Manchester man has no idea of such being the case, because his experience does not extend beyond the confines of what the outside world is in the habit of terming "Cottonopolis." I was in Oldham one day last week, and there witnessed scenes of desolation and poverty far exceeding in intensity anything that G. R. Sims ever described in his "Life of the London Poor." I do not think that Clare Market, or Ratcliffe Highway, or Soho as it existed before Wardner Street was improved, ever displayed such scenes of grinding distress as the merest outsider can witness in Oldham to-day. On Monday I visited a house not very far from the Central Station, where a husband, wife, and six children had only two small loaves and a quarter of a pound of bacon to last for Saturday and Sunday's meals, and these were the gift of an enterprising soap firm.

The shipping trade has considerably improved during the past few weeks. On the 1st inst., Sir Henry Mitchell, speaking at a meeting of the shareholders of a firm with which he is very prominently identified, said that the M'Kinley tariff would probably soon be lowered, and that an increase in British shipments to the United States would most likely result. It may not be out of place to suggest in this connection that Sir Henry, like many other out-and-out free traders in this country, expressed the wish which is father to the thought, and that on this occasion, as on many others, the "wish" might have been a little too previous. We do not suppose that many firms in the North of Ireland will agree with this suggestion.

With reference to the failure of a linen firm, I understand that the liabilities are about £17,000, and that the news of the collapse has not created much disturbance in local circles, nor, for the matter of that, in Belfast or in Dundee. The failure is, in fact, a trivial consequence resulting from the more serious collapse of Messrs. Lipman & Co., whose liabilities, amounting to a quarter of a million, have been followed by another disaster—viz., that of Hildesheim & Co., which figures to £127,000. It is considered as a peculiar circumstance that amongst the items included in the list of creditors there should be such a big sum in respect of liabilities to bankers, who, on the surface, appear to have been severely bitten. It is understood, however, that certain liens claimed by various creditors cannot be enforced; in any case, we cannot give a correct idea of the real position of affairs from a mere examination of the Official Receiver's statement of liabilities and assets. "Estimated" assets have a wonderful habit of shrinking, like a cheap flannel shirt after being washed. This, of course, is not the fault either of the Official Receiver or of the debtor, any more than it is the fault of the engineer whose estimate for the construction of a large undertaking is found to be below the actual cost thereafter incurred.

LONDON.—A slight improvement has been manifest in the state of the general trade of the city since the beginning of the current month, but the last half of January was particularly weak in almost every department. This was in a measure due to the fact that the retail houses had practically ceased to buy, reducing their stocks as low as possible by clearance sales prior to their annual balance. Very many of the retail houses close their books between the 7th and 15th of February, and from this date their operations commence for spring, and should the weather continue as mild as we have had it for the last fortnight or so, spring will soon be in upon us, although it is dangerous to be prophetic in so variable a climate as ours. I have just taken a run through several of the leading warehouses to glean some idea of the outlook, and I have not met with many gloomy anticipations. The general impression is that we shall have a favourable season; everything is shaping in that direction; weather is all that is wanted, and so sanguine are the dry goods men, that they tell me they shall have that too. What has largely contributed to the volume of business done during the current month is the presence of a great number of Canadian retail buyers in the London market, and their season's outlook is so good that they have been purchasing very freely. Although somewhat early, the buyers of the Canadian wholesale houses are also entering the markets, and already I have advised that a few of these have been operating in Lancashire and Yorkshire, and will probably drop over to Ulster, notwithstanding the impression that Irish linens can be bought cheaper in Manchester or London than they can in Belfast; but careful buyers, such as the Canadians are, will not be satisfied with anything short of headquarters. I may remark here, in passing, that some three or four important houses have been recently established in various cities in the Dominion, while a few of the older ones are contemplating retirement after many years of successful enterprise.

All the London drapery companies have now declared their annual dividends, and the results are much more satisfactory than was anticipated. Messrs. Rylands & Sons (Limited) have had a successful half-year, showing a surplus of £88,652 12s. 5d., which is an increase of £6,446 0s. 6d.

as compared with the half-year ending 31st December, 1891. The reserve fund at that date stood at £437,705 4s. 5d.; at the present time it stands at the enormous figure of £479,117 0s. 11d., or an augmentation during the past year of £41,411 16s. 6d. In December, 1891, the company declared a dividend of $7\frac{1}{2}$ per cent. free of income tax; for December, 1892, they have declared a dividend of 9 per cent. Putting the surplus of £82,259 4s. 1d. for the half-year ending June, 1892, along with the present surplus of £88,652 12s. 5d., we have a surplus for the year of £170,911 16s. 6d., which are the largest figures yet produced by any dry goods company in the world. The Pawsons & Leaf's Company show a net profit for the half-year of £14,166 17s. 8d., which, when everything is taken into account, is also satisfactory; a dividend of $6\frac{1}{2}$ per cent. has been declared. Messrs. Foster, Porter & Co. (Limited) show a net profit of £19,221 6s. 9d., and it is proposed to declare a dividend of 10s. 6d. per share, being at the rate of 10 per cent. per annum. The Fore Street Warehouse Company (Limited) show a net profit of £19,031 6s. 8d. for the half-year, or an increase of £3,071 as compared with the half-year ending December, 1891. A dividend at the rate of 5 per cent. per annum was declared. Messrs. John Howell & Co. (Limited) state that the result of their half-year's trading shows a balance of £25,982 5s. 8d., which is a slight decrease of £540 9s. as compared with the same period of last year; this is, however, easily explained; for the last six months the business of the company has been a great deal interfered with by building operations, but the company starts this half-year with an extremely handsome new warehouse, and will soon make up this small decrease. The usual dividend of 10 per cent. has been declared. Turning to Milk Street, I find the agents in a happier frame of mind, for business has been somewhat better during the present month. Tailors' linings are moving out well, and some good orders have been picked up among the wholesale clothing manufacturers. In this line the business done has been chiefly through the tailors' distributing houses, an industry which, during the last few years, has increased considerably in London, and seems inclined to get out of the hands of the general warehousemen. A fair business is reported in heavy medium linens. The shirt and collar makers are, in many instances, well stocked with orders for the season, and have already laid in good supplies. The handkerchief agents, although never satisfied, have still done satisfactorily. In the export trade there is little hopeful to chronicle, particularly in the Australian market. Private advices and cables during the week bring news of a most disastrous character, and it seems as if a promising harvest has been practically destroyed by the very inclement weather.

Continental.

LANDESHUT, Feb. 6.—*Yarns*.—Although the Yarn Exchange of the 1st inst. was not so well visited as last one, business was very lively. Prices for flax and tow yarn still continue unaltered and firm, and for fresh contracts spinners received fully the advanced prices. Several large contracts were perfected. *Linens*.—The trade in cloth keeps improving, and as the advanced prices do not yet cover the increased cost of yarns, consumers of cloth will have to be prepared for a further advance. Power-looms and hand-looms hereabout are fully occupied. *Flax*.—Prices of flax have risen further, and therefore only few limits were given. Next Yarn Exchange will be on March 1st.

LEIPZIG, Feb. 7.—The increase of value of the raw material has involved a further advance in prices of grey and bleached line and tow yarns above those already obtained at the beginning of this year. Under these circumstances the rise of the prices of yarns, and materials of all kinds in connection therewith, is considered to be a continuation of the advancing tendency which the linen manufacturers will indispensibly be obliged to obtain for their goods throughout. A meeting of the Board of the German Linen Industry Association, to be held in Berlin on the 8th inst., will probably decide upon the measures to follow.

United States Market.

(From our Special Correspondent.)

NEW YORK, January 31st, 1893.



THE opening month of the year was rather slow in bringing our linen men their share of the loaves and fishes, and it was drawing well towards its close when the Southern jobbers began to show their seasonably active interest. At this writing the general linen market is fairly active in such goods as are required for jobbing stocks—housekeeping paraphernalia as expressed by piece damasks, table cloths, towels, and crashes; brown drills and ducks in limited lots; ordinary grades of handkerchiefs, and considerable parcels of printed linen and union lawns for dresses. The inroads of cotton have told severely upon all linens that were formerly dealt in by jobbers, and our linen importers of the present are placing more and more dependence upon the manufacturing trade that cuts up linen, and the retail trade of our great cities. For the masses it might be said that cotton has entirely superseded linen. For table uses it suits them quite as well. For dress purposes it is cheaper and more

serviceable. For cheap clothing manufacturers, cotton hollands are just as good as linen every way; and if one were able to ascertain the amount of cotton cambric used for collars, cuffs, and bosoms, the aggregation of yardage would exhibit a large amount of the "what might be" that Belfast should have to her linen trading credit.

The strong advance in all cotton piece goods is fully maintained, and is sure to last, for the products of all our mills are sold up to June deliveries. The greater portion of our shirt and collar makers will be protected at old prices by contracts up to that time; then the serious question of obtaining advanced prices will present itself. As it is, the lower grades of white shirts have been advanced—there was small profit in them at any time. As far as our collar and cuff makers are concerned, they are selling their linen productions at the same prices they obtained before the advance went upon linens, and competition is so strong—though business with them all is very good indeed—that there is no likelihood of their being reimbursed. Helped along by encouraging reports from Belfast, 4/4 linens maintain a very strong position. Supplies are by no means excessive, and the demand for Troy consumption is good. A few contracts were placed yesterday for delivery between now and July 1st. Last week Mr. Richard H. Ewart, Mr. Pincus, and others representing the linen trade, succeeded in obtaining a hearing before a sub-committee of the Congressional Ways and Means Committee in relation to the repeal of the obnoxious 50 per cent. enactment of the M'Kinley tariff that is to go into effect on January 1st, 1894. It is too early to speculate upon what the result may be; but one point was accomplished, however, and that was, that Congressman Springer introduced a bill for the repeal of the clause a few days after the visit of the committee.

Referring to the damask sales and window shows of napery among our great retailers during this month, it is not out of the way to mention that James M'Cutcheon & Co., the one retail house that deals in linen goods only, have adopted the plan of exactly reproducing their choicest table cloth patterns on fine light paper measuring 7×9 inches. It is done by a process resembling that of lithography, the patterns—the drawings of which are perfect—showing up in a sort of stone colour. Measurements and prices of the cloths and napkins that go with each pattern are printed on the margins, and out-of-town customers can order without a journey to the city. Re damasks, John S. Brown & Sons have been allotted space at the Chicago Exhibition, and are preparing to do honour to Ulster. At present we know of only two other houses that will exhibit—the Brookfield Linen Company, and Fenton, Connor & Co.

Simon Davidson, well known to the older handlers of 4/4 linens as the senior of the shirt house of S. & M. Davidson, died on Tuesday, January 9th; and, strangely enough, on the same day died Gardner S. Hutchinson, twenty-five years a partner in the shirt house of Hutchinson, Pierce & Co. This shirt house has been fifty years in existence, and it enjoys the distinction of never having used any linens other than those of the Youngs of Ballymena.

Mr. Burgess, of the Athlone Woollen Company, returns to your side next week per s.s. "Teutonic." He reports the best order season yet experienced in his lines, more particularly in Irish friezes. Henry Matier & Co. are now Henry Matier & Co., Limited. Duke, Hanna, MacMahon & Co. are now Duke, MacMahon & Co., Joseph B. Hanna having become a member of the firm of Glendinning, M'Leish & Co.



Technical Education in Ireland.

IMPORTANT MEETING IN DUBLIN.



PUBLIC meeting, under the auspices of the Technical Education Association, was held in the Antient Concert Rooms, Dublin, on the 27th ult., for the purpose of furthering technical education in Ireland. His Grace the Duke of Abercorn presided.

Mr. Arnold Graves (hon. secretary) read a number of letters of apology for non-attendance from eminent persons unable to attend.

Archbishop Walsh, in his letter, expressed approval of the obtaining of an expression of public opinion in favour of technical education. He thought, however, that little progress could be made in technical education until a substantial reform had been effected in the system of primary education in Ireland in the direction of manual and industrial training.

The Chairman, in the course of his excellent address, said it was absolutely necessary to have perfection in all the arts of industry connected with that country. Therefore this Technical Association was formed. In 1889 a Bill was passed, the effect of which was, that when local authorities deemed it necessary to advance a certain sum for the purpose of technical education, the Government will give an equal sum in the shape of endowment. The same Bill applied to Ireland, but, he regretted to say, it had become perfectly inoperative and remained now a dead letter. He imagined Ireland was too poor a country to be able, of its own accord, to raise anything from the local rates for advancing technical education. In 1890 English County Councils were empowered to use for the purpose of technical education the beer and spirit duties. Advantage was taken of this power, and, as a result, at the present moment an annual sum of £740,000 was available for the purpose of technical education in England. If they only had this sum in Ireland, what great good they could do; and surely it would not be deemed too much, nor could the suggestion be deemed inopportune, if they asked for some sum, however small, to help them in Ireland. In 1891 modifications were made in the Act, the result of which was that the powers given for the purpose of extending technical education were largely extended, and every large town now had its technical school, and there was a vast army of

technical teachers all over England doing their best to improve the young people of that country in that respect. That was part of the object for which their work was extended. Efforts were being made to improve the art of butter-making in places where it was backward. Efforts were also being made to teach the children of the poor to economise in the cooking of food. He should here point to the great waste amongst the humbler classes in England in the matter of cooking. In Germany and France the housewife would make a good dinner for her husband out of half what was necessary for a similar repast in these countries. The art of dressmaking was taught in the technical schools in England. They wanted a Science and Art Department in their own country, and under the control of Irishmen. If they asked him the reason why, he would say this: So much had been done in England, and nothing in Ireland, and one reason was the formation of a Technical Education Association, started in the year 1888, under the presidency of the Duke of Devonshire, with Mr. Arthur Acland as secretary. They had met here now to form a similar Association, and he hoped they would meet with the same success as attended the same effort in England. They must organise and form a committee for the purpose of diffusing knowledge connected with this matter of technical education throughout the country, and they must put pressure on the Government in order to obtain grants. They did not wish to interfere with any existing institution in Ireland, such as the Royal Dublin Society, that had done so much good work to develop the science and art of this country; but they only wanted to make a start on behalf of the youth who were quite as capable to receive instructions from technical education as the youth of any other country, and with equally beneficial results. It had always struck him that an Irishman, whether young or old, had a more tender touch in his fingers than the man of any other country, and it appeared to him that if those fingers were applied to certain work in youth they would develop in later life to be of great advantage to the possessor. The subjects which would be taught in the schools were: In the primary schools—handicraft, drawing, agriculture, cookery, dressmaking, and laundry; in the intermediate technical schools—drawing, science, machine construction, building construction, mathematics; commercial schools—modern languages, bookkeeping, shorthand, commercial geography; school of design, where design, as applied to particular industries, would be taught; evening schools for apprentices, where science and art as applied to particular industries would be taught; technical instruction for women, including laundry, cooking, dressmaking, and cottage industries; instruction in rural districts—dairying, agriculture, fishery, net-making, hedge carpentry, higher technical training for employers and managers of works, mechanical engineering, applied chemistry, veterinary college, either separate or attached to existing college or colleges, and training science and art technical teachers. If they were successful in starting some such organisations as he had brought under their notice, the result might be to improve the whole system of trade and commercial enterprise in this country. Then those who were in that room that night would perhaps look back in those future years and say: "I am one of those who attended that meeting which has had now such successful and beneficial results to Ireland." (Loud applause.)

The Lord Archbishop of Dublin moved the following resolution—"That this meeting is of opinion that better provision should be made by Parliament for technical education in Ireland, and that a copy of this resolution be forwarded to the Government." He said when he was asked to take part in their meeting he gladly accepted the invitation, not merely because a request from his friend the Chairman was a very constraining motive in itself, and not only because he had always taken a very deep interest in the cause of technical education himself, but also because, loving his country, as he hoped he did, he felt that he was bound to come and give his sympathy, even if it were merely by his presence, in an effort which had for its object the welfare of their dear native land. And an additional temptation for him to come was the knowledge that their meeting was called on behalf of an effort in respect to which all classes and all creeds in the country had been able to agree. He could only wish that such a happy consummation more frequently took place. With reference to the subject for which they were now met, those who had studied the question knew how difficult it was to give a definition of it which would cover the whole ground. It did not represent mere intellectual culture on the one hand, or mere manual or mechanical labour on the other. It stood in an intermediate position between the two, and it served to bring culture so to bear on industry as to give to industry a new meaning, a new dignity, and a new efficacy. They who advocated the cause of technical education did not despise intellectual culture, but they did not think that culture was intended merely for the purpose of ministering to the enjoyment of the individual on whom it was bestowed. That was one object of culture, no doubt; but it had a higher and a holier aim. What they believed was that culture should come down, as it were, from its serene heights, and should come into touch with the human activity of every-day life. Why was their Association formed? It was in order to concentrate into a focus the enthusiasm that already existed throughout this land on behalf of technical education. This enthusiasm was like the great water-power of Ireland, of which they heard so much—everyone told them that no country had so much water-power as Ireland if only it could be utilised. All this water-power was running to waste, and sometimes, because it was not confined within a useful channel, it ran over and did mischief. They might be asked what hope of success had they, and was it near at hand? For five years a similar Association had existed in England, and they could point to that and show what use it had been. That body had been the means of bringing out of the Imperial Treasury for the purpose of technical education not less a sum than £700,000 a year. Facts like that showed the use of an Association like theirs. The Association did not intend to begin by ignoring what had been done by other bodies, by the Royal Dublin Society, in their National Schools, which had made a good beginning. Nor did they wish to forget what had been done in reformatories and industrial schools, nor by the Irish Industries Association, the object of which was rather to exhibit for the purpose of sale than to promote the industrial education. In all these different institutions they welcomed fellow-workers, and in some of them co-workers in the race. There was plenty of room in the course they desired to pursue for them to go on without treading on anybody's toes. Their desire was in every way that they could to help existing institutions. They did not desire to teach what was taught to apprentices in workshops. They wished not to supplant, but to supplement, that which was being done, to help

all and to interfere with none. Above all, they wanted to obtain a grant from the Imperial Treasury. That was the great object which they had in view, and they would not rest until that object was attained. He could not see how such a request could possibly be refused. In the sister land a sum of £700,000 was given each year in support of technical education, and in Ireland they had a right to expect equal justice. One objection to a Government contribution to these technical schools was that they already largely contributed to reformatories and industrial schools; but he (the Archbishop) held that was only an argument in favour of the present movement. If the Government thought it well to give criminals and those who stood close to that class education in technical matters, it was strange if they would not give it to those whose only fault was that they had the desire but not the opportunity of being taught. If they went forward with a united front and demanded justice in this matter, he did not see how they could be refused. (Applause.)

Mr. James Musgrave, J.P. (Belfast), said he had no doubt the reason why he had been invited to second this resolution was because he happened to be chairman of the Belfast Technical School, and they might wish to know what was being done in the North. The Belfast school had already done good work, and had not only added to the manufacturing skill of those engaged and of those to be engaged in important trades, but it had been the direct cause of the introduction of at least one other industry—that of woollen cloth—which had not previously existed in the district. But, while this was very satisfactory, he was bound to say that, owing to insufficient funds, the results for so far had not been equal to their hopes, and had fallen very far short of their possibilities. One of the obstacles to success in Belfast was the difficulty of getting people to understand the difference between "literary" education, which is supported by the State, and "technical" education, which appears to be nobody's business, and to realise how the necessity arises for so large an expenditure of money in providing proper buildings and appliances and skilled masters for efficient technical teaching. The reason was simple. A single master, with pen, ink, and paper, and a few books, can teach reading and writing, and open up to youths who have a real desire for learning many of the delights of English literature. But this does nothing towards giving them a practical scientific knowledge of those great industries from which the wealth of nations is now to a large extent derived. Just as the theoretical education of a surgeon is of little value without a technical training in the dissecting-room, the chemical laboratory, and the use of the microscope, so manufacturers and their foremen and artisans must always be at a hopeless disadvantage, unless in youth the latent qualities of their minds have been developed and stimulated by a knowledge of the general principles of physical science and mechanics, together with practical drawing and designing, all taught under one roof, and shown practically applied to the various processes of manufactures. This, which really constitutes what is known as technical education, requires a large building, with classrooms, industrial museum, and library. There must also be steam-engines, power-looms, spinning-frames, chemical laboratory, and retorts, as well as the apparatus and tools employed in the various industries. All this involved a very large outlay of money. Manchester was now building and equipping a new municipal school which will cost £125,000, but about one-fourth of that sum would suffice for Belfast. The famous Polytechnic School at Zurich cost £72,000, and is supported by a grant of £22,000 per year from the Swiss Government. The people of Belfast were earnestly considering how, by means of the Technical Instruction Act, which the chairman had described, they could guard their existing industries against increasing competition, and he (Mr. Musgrave) was sure they would welcome the help of that Association. Turning now to the difficult but most important question of provincial and rural schools, would they permit him to say that he believed that Association might become a powerful instrument in adding to their national prosperity by promoting technical education throughout the length and breadth of Ireland? It was the fashion to say that Ireland, having no mineral resources, must confine herself to agriculture; but Switzerland, which was about the first to prove to the world the advantages of technical education, and the motto of whose people is "We may be poor, but we shall not be ignorant," has absolutely no resources but her woods, her agricultural and pastoral lands, and the intelligence of her people. Yet there was the striking fact that the commerce of Switzerland, in proportion to her population, exceeds that of any Continental country. He asked them to consider from what sources that commerce is derived. It comes from her improved breeds of cattle; her butter and cheese of superior manufacture; from her extensive manufactures of silk stuffs, cottons, linens, hosiery, lace, embroidery, paper, leather, watchmaking, jewellery, chemicals, and aniline dyes, all being the result of the industry of her people, trained by the most perfect technical teaching in Europe. He asked was there anything in this list of productions that Ireland could not equal if her people were equally well educated. Ireland has had for ages what Switzerland has not, enormous wealth lying undeveloped in her fisheries, which technical training would soon enable them to realise. The soil of Ireland is peculiarly adapted for the growth of flax, but because it is said to exhaust the soil, and is difficult for unskilled men to prepare for market, it is little grown, while a very large sum is every year sent out of Ireland to purchase foreign flax. Technical education would show the people how, at little cost, they could restore to the soil the chemical qualities it had lost, and teach them the proper method of preparing the flax fibre so as to realise the highest price at market. Irish soil is also well suited for producing beetroot sugar, of which £12,000,000 sterling worth is imported into the United Kingdom every year. This only required accurate technical knowledge to become one of the resources of Ireland, thus bringing to their doors two industries of enormous value. In the Highland districts of Ireland he knew from experience that technical knowledge would enable the present sheep and cattle to be largely increased in value. The small local industries of woollen frieze, embroidery, knitting, and lace, which hitherto had brought comparative wealth to rural homes, were now being taken from them by the competition of superior work from Switzerland; but technical education would soon enable their people to recover these trades, and would probably result in local factories being established where workers were plenty and water-power available. How apparatus and teachers for really efficient technical instruction were to be provided in the rural districts of Ireland was a most difficult problem, but he believed it could be solved. The Congested Districts Board had already made a

valuable beginning with a portion of the work, and if that Association could succeed in securing for the whole of Ireland the great advantages of technical education, he was certain they would receive the thanks of every lover of our country. (Applause.)

Mr. Richard Bagwell, D.L., supported the resolution, which was unanimously adopted.

Mr. Arnold Graves moved—"That it is desirable to found an association of technical education in Ireland." He (Mr. Graves) had been spending the summer vacation in making a tour through Ireland on what he might call an educational stump. He had visited Galway, and addressed the Town Commissioners and the Board of Guardians; Cork, where he had addressed the Corporation, and had two interviews at the Munster Dairy School; and he also went to Newry and to Belfast. He had come back with several important impressions, and one was that there was a very general belief all over Ireland in the advantages of technical education. They did not see it so much in Dublin, because Dublin was perhaps the intellectual headquarters of Ireland, and not so much the industrial headquarters. They would find in the towns in the country a very general belief in the advantages of technical education. But at the same time there was a good deal of ignorance. The people read and saw that the trades of other countries had been benefited by technical education, and therefore they believed that their interests could be benefited by the same thing; but as to what technical education was, they had not such definite ideas. In the South of Ireland there was a very strong disinclination to levy any additional rates. There were a few places where it might be so aided, but, generally speaking, the North of Ireland man was very canny, and liked to keep down the rates as much as possible; and it would be very difficult to make the Northerners provide a fund out of the rates for this purpose. In the South of Ireland he found that the taxes were so high already that it would be an act of folly on the part of the local authorities to spend any more money; some of them were almost beggared. In the West of Ireland, in the congested districts, the very fact that the Government was giving £40,000 a-year to develop these localities was proof that the Government themselves admitted that the country was not rich enough to develop itself. Therefore, in the whole of the congested districts there would be no money forthcoming. In this matter they were making no extravagant demand, but asked only to be on an equality with England. When they got adequate endowment for technical education in Ireland, they might look forward to seeing that their agricultural interest would be saved from the ruin that was threatening it. He hoped they would be able to avoid that ruin, and to revive many of their languishing industries. (Applause.)

The Hon. Horace Plunkett, M.P., seconded the motion.

Rev. Dr. Molloy rejoiced that so many persons of different views could meet on a common platform and show united action in the interests of their common country. During the middle ages there was a very good system of technical education for workmen. But whatever they might think of the past, there was no doubt about the future, and they were certain to be left behind if they alone of all countries of Europe were left without a system of technical education. (Applause.)

Alderman Maguire supported the resolution, which was carried unanimously.

Lord Mounteagle proposed that a committee be formed to carry the foregoing resolution into effect.

This was seconded by Professor Fitzgerald, and adopted.

The second chair having been taken by the Earl of Fingall, a vote of thanks was passed to the chairman.

Condensed from "Northern Whig" report.

NEW FLAX SPINNING ROLLER.

THE importance of effecting further improvements in the spinning of flax yarns, so as to produce a level thread of uniform strength, has engaged the attention of many experts of late years. Several useful inventions in connection with flax machinery stand in the name of Mr. J. V. Eves (of Messrs. J. & T. M. Greeves), Belfast, and we have pleasure in noting a new one of his, in reference to the construction of wet spinning frame rollers, which is designed to overcome the disadvantages of older methods, by introducing two or three points which are a distinct gain. As briefly as possible the invention may be described as follows:—The shaft is made from "cold rolled" or "compressed" bars, a process which lends great rigidity to the iron, and enables it to resist torsion in a very remarkable manner, at the same time giving a surface so true and round that turning in a lathe may be dispensed with. It is thus possible to use a smaller diameter of shaft, giving equal results as regards resistance to torsion, and allowing of a greater projection of boss, so that there is material enough for many re-flutings. In frames where the rollers are brought very close together in order to obtain a short "reach," more room will be found for the weight wire, while the smaller diameter of journal allows more space for fitting in "stand brasses" of proper thickness. These advantages, due to the smaller diameter of shaft, would in a great measure be lost if the spaces between the bosses were covered with a shell of cast brass, which must always be of considerable thickness to gain a sound casting free from blow-holes, and adhering to the shaft. To obtain the thinnest possible coating of brass, the shaft is slipped inside a brass pipe, and both are drawn through a die which compresses the pipe into the closest contact with the shaft, and leaves it perfectly round, ready to receive the rings or bosses. The thickness of this shell of brass can be reduced to a degree beyond what is necessary, even to $\frac{1}{16}$ of an inch, yet it remains a perfect rust-proof sheath or cover, and, when the bosses are shrunk on, the whole forms an excellent construction, and does away entirely with the well-known trouble caused by "loose carriages." The bosses, being cast separately, phosphor or manganese bronze, or other hard, durable, and dense alloys, can be used at much less cost than if the spaces were covered with the same expensive material. Castings free from defects are thus more certainly obtained than when the bosses and space covering are cast in "carriages," as is usual. This method of constructing spinning frame rollers will commend itself to practical flax spinners, and, from the machine maker's point of view, there will be a gain when turning is dispensed with, and much weight of brass saved in the reduced thickness of the "space" covering.

BRUNNER, MOND & Co.—This most successful Company has just announced the magnificent dividend of 50 per cent. per annum, and carrying forward £173,000.

Chemicals and Dyes.

(Special Report by Messrs. SADLER & Co., Ltd., Middlesbrough.)

THE chemical trade continues dull and disappointing, notwithstanding the long stoppage of works during the Christmas and New Year holidays. Stocks are inconveniently large, and buyers come forward very reluctantly, always expecting lower prices. Caustic Soda, Soda Ash, and all Soda products are weaker and in buyers' favour. Bleaching Powder is in good demand, and makers are readily obtaining the small advance at which it is quoted. There is a distinct improvement in Ammonia products all round, Sulphate having advanced 5/- to 7/- per ton, and is still rising. Nitrate of Soda is strong, due, doubtless, to the shorter shipments and less quantities afloat. The new year has brought a distinct improvement in Bichromes, which are being sold now quite freely at the convention values fixed. Oxalic Acid enjoys a good market at 3d. less $2\frac{1}{2}\%$. Tartaric Acid, Citric Acid, and Cream of Tartar are moderately firm, and the same remark applies to Chlorates. Dyers' Chemicals and Sulphate of Copper are dull, with weakening prices. Aniline Oil is out of parity with Benzole, but there is a fair business being done, makers refusing to book forward orders at to-day's prices. Alizarins and other Tar Colours are brisk, but prices continue abominably unremunerative. Tar products are in capital request, especially Carbolic Acid, which is daily increasing in value, stocks in buyers' hands being low, and in makers' hands *nil*. The immediate future of Tar products is distinctly hopeful.

Selected List of Applications for Patents relating to Textile Fabrics.

Compiled from the Official Records, by Messrs. W. P. THOMPSON & Co., Patent Agents, of 6, Bank Street, Manchester; 6, Lord Street, Liverpool; and 323, High Holborn, London, W.C.

W. P. THOMPSON & Co., Patent Agents, as above, No. 23,486.—"Improved apparatus or device for automatically and instantaneously stopping looms on the false or return shot of the shuttle." (Hermann Eger and Johann, A., U.S.) December 20th, 1892.

R. T. GREENWOOD and J. MARSHALL, Glasgow, No. 23,877.—"Shuttle weft pick holders." December 27th, 1892.

W. SUMNER, Manchester, No. 23,996.—"Improvements in spindles and flyers used in preparing, spinning, doubling, and twisting cotton, wool, flax, silk, and other fibrous substances." December 29th, 1892.

T. E. WILSON, Belfast, No. 24,119.—"Improvements in the construction of bobbins and tubes used for the spinning and doubling of flax, cotton, and other fibres." December 31st, 1892.

D. E. RADCLIFFE, London, No. 114.—"Improvement in machinery for combing or hackling flax, hemp, jute, rhea, silk waste, or similar fibres." January 3rd, 1893.

T. H. SPENCE, Manchester, No. 497.—"Improvements in or connected with machines for winding yarn on to bobbins, bobbins, or quills." January 10th, 1893.

H. FICKER and A. MENSEL, Manchester, No. 596.—"Improvements in thread guides for spooling or winding machines." January 11th, 1893.

A. G. BROOKES, London, No. 653.—"Improvements in the doubling, spinning, twisting, or winding of hemp and other vegetable fibres, and in means or apparatus employed therein." (J. P. Staugman, Italy.) January 11th, 1893.

J. J. WEICHER, London, No. 744.—"Improvements in machines for extracting fibres from fibrous plants." January 12th, 1893.

L. GAR, Regent Street, London, No. 798.—"Improvements in winding frames for wool, worsted, and other yarn or thread." January 13th, 1893.

SPECIFICATIONS PUBLISHED.

The specifications of the following patents have been printed and published during the month, and copies thereof may now be obtained at the uniform price of 1s., which includes postage.

W. BOTTOMLEY, Glasgow, No. 20,625.—"Improvements in apparatus and processes for treating fibrous plants for the purpose of obtaining fibres therefrom, applicable also for treating of finishing yarns and fabrics." November 27th, 1891.

J. E. ORR, Cowdenhall, No. 1,970.—"Improvements in spinning and twisting machinery." February 2nd, 1892.

R. BROADBENT, Stalybridge, No. 2,217.—"Improvements in or applicable to machines for winding yarn or thread." February 5th, 1892.

E. SYKES and D. SYKES, Huddersfield, No. 2,074.—"Certain improvements in the cones of cop winding machinery." February 3rd, 1892.

G. M. LANE, London, No. 2,032.—"An improvement in machines for scutching and cleaning fibrous stems and leaves." December 3rd, 1892.

J. HANSEN and F. NAEF, Switzerland, No. 2,034.—"Machines for knotting head threads." December 10th, 1892.

H. WOLFE, Nieder Gorge, and H. DEDE, Hamburg, No. 20,224.—"Improvements in machines for breaking and scutching flax and the like." December 10th, 1892.

GERMAN APPLICATIONS.

WOLFGANG UEBELACKER, Gera, Reuss, No. 6,257v.—"Improved shuttle-catcher." September 12th, 1892.

MASCHINENFABRIK RÜTÉ, vormals Caspar Honegger in Rüté, Schweiz, No. 9,393M.—"Improved shuttle-changing mechanism for automatic looms." December 8th, 1892.

PROFESSOR DR. R. BAUR, Stuttgart, No. 13,934L.—"Improved process applicable for purifying and neutralising the acids contained in fibrous materials such as flax, hemp, China grass, &c." November 11th, 1892.

FREDERIC TER WEELE, Paris, No. 8,580W.—"Feeling apparatus for the Hülensersche combing machines." September 1st, 1892.

EMILE LANGJAHR, Paris, No. 7,661L.—"Improved selvage apparatus applicable for looms." October 19th, 1892.