

Machinery and Appliances.

IMPROVED PATENT STOP-MOTION TWISTING MACHINE.

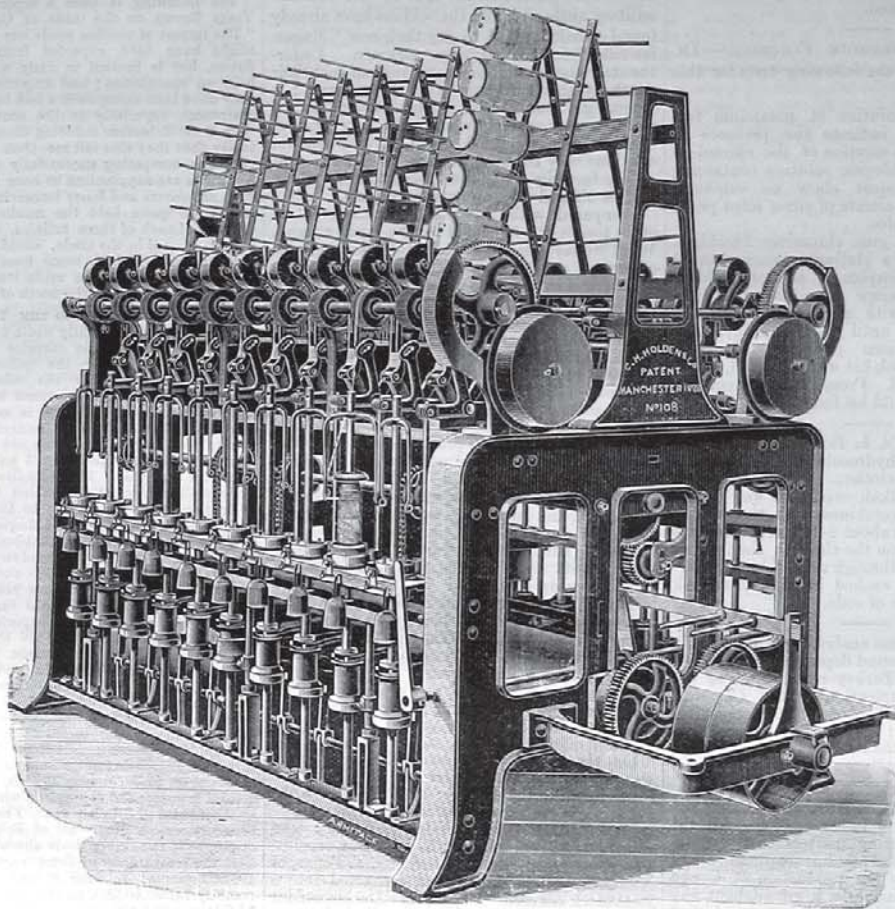
MAKERS: MESSRS. G. H. HOLDEN AND CO., MANCHESTER.

Self-stopping winding and twisting machines, though known and extensively used in several of the textile industries, are only of comparatively recent introduction to the flax, hemp, and jute trades. Those trades did not at first take kindly to them, and hence at present have some leeway to make up in the adoption of the most improved appliances. Perhaps, as first

We have this week had the privilege of inspecting a fine new twisting machine built for a firm in the jute trade, and embodying their latest improvements. It contained 86 spindles, carrying a bobbin of 6" x 5", and was twisting 4 ends of 4 lea yarn, putting in about 3 turns per inch. The work produced was excellent.

The general aspects of this machine are shown in the accompanying illustration; the details, however, are not correct, as many of these have been introduced or modified so recently as not yet to have allowed time for the preparation of a new illustration. The difference, however, we can easily point out. As will be seen, the yarn is arranged in the creel, on bobbins, as shown, whence it descends, and immediately passes through detector drop wires, which instantly on the

We may now proceed to describe the salient points and improvements introduced into this machine. These consist mainly in the arrangements for driving and stopping the spindles. The driving shaft is mounted as usual in the lower cross-rail of the frame, and carries a driving pulley for each pair of spindles. One strap 1 1/2 in. or 1 3/4 in. broad drives two spindles; the ones opposite each other in the respective sides of the machine. The strap in its course passes over a small fixed carrier pulley and a second swinging pulley which acts as a tension adjuster keeping the strap at a uniform tightness. As all the spindles are driven on this arrangement, which gives great driving power, a perfectly uniform tension can be obtained upon the respective straps which fact secures a



IMPROVED PATENT STOP-MOTION TWISTING MACHINE.—MESSRS. G. H. HOLDEN AND CO., MANCHESTER

brought out, the peculiar requirements of these trades were not adequately considered, thereby causing the machines to be less acceptable than they otherwise might have been. But, be this as it may, such is not the case at the present moment; all their special needs and purpose have been and are being carefully considered.

Amongst those who have devoted a great deal of attention to providing for the requirements of these branches of the textile industries may be mentioned the firm of Messrs. G. H. Holden and Co., successors to the late firm of Thomas Unsworth and Company, Limited. Messrs. Holden have thoroughly overhauled and improved their various types of machines since acquiring the patent rights of the company just mentioned.

breakage of a thread or the exhaustion of a bobbin, stop the machine. These wires have a broad surface where they rest upon the yarn, and this prevents any roughening or fraying of the yarn surfaces passing through them. The yarn next goes beneath and around about three-fourths of the fluted draw roller, when it returns over a pin, and over the top of the second draw roller. The arrangement of these rollers is such that the greater the tension upon the material the greater is the force of the nip between them. From the second roller, the yarn vertically descends to the flyer, through the eye of which it passes, and thence around the leg to and upon the bobbin. Such is a brief description of the course of the material on its passage through the machine.

uniform amount of twist being put into the yarn. The additional force thus obtained for the spindle also permits of the use of a correspondingly heavy drag, the advantage of which will be obvious in laying the strands well together. The spindle, we may observe, has four bearings: the footstep, the fixed bolster, and the traverse rail, whilst the fourth is not shown in the accompanying illustration; it is a projection brought over from a bracket which fits upon the top of the spindle. This gives greater steadiness to the spindle and enables it to run much more quickly than could otherwise be the case. The spindle itself is of the usual construction, but is supplied with a new patent claw clutch, the invention of Messrs. Holden and Ashworth. It is simple, perfectly noiseless, giving a very

positive start and stop, and is in every respect thoroughly efficient. The draw rollers are driven from the first shaft through trains of gearing and not by means of pulleys from straps as shown in the drawing, this being one of the improvements just introduced. A positive drive is thus obtained, which in all cases where practicable may be regarded as preferable to one that is not.

The introduction of this type of machine into the heavy fibred textile industries, if it has not already done so, will soon render its advantages obvious, as it has done in other trades. These may be enumerated as follows. First on the breakage of a strand or the exhaustion of a bobbin, its detection does not depend upon the carefulness or quick observation of the girl in charge, as the spindle is instantly automatically stopped before the end has passed above three or four inches towards the flyer. A girl may thus mind a much larger number of spindles than on the old plan, whilst the work is in many respects much superior, as nearly all possibility of bad work is automatically obviated.

Any communication on the subject of this machine may be addressed to Messrs. Holden and Co., as above.

SPENCER'S PATENT HIGH PRESSURE AND LOW WATER SAFETY VALVE.

MAKER: MR. S. FARRON, BRITANNIA BRASS WORKS, ASHTON-UNDER-LYNE.

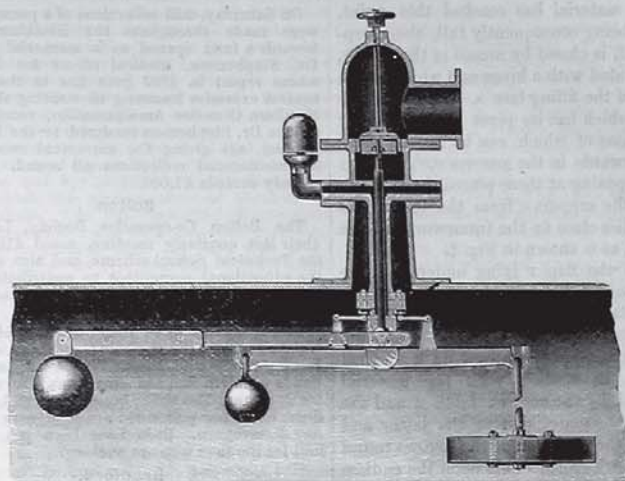
The importance of a thoroughly reliable safety valve as an attachment to a steam boiler is known to all steam users. Many descriptions of these valves have, at different times, been devised and introduced to notice; and it may be said that almost as many have proved defective in one point or another. Some are too complicated, and, in consequence, are liable to derangement; others may corrode in some of their working parts, and so stick fast and become unreliable at a critical moment when it is of life-and-death importance they should do their duty. The bulk of them are at all times, through accessibility, liable to be tampered with by persons densely ignorant of the power of steam, or perhaps maliciously inclined, so that there is ample room for the ingenuity of the inventor to be displayed in overcoming or obviating these defects. Accordingly, there are continued attempts to improve the means of securing safety, as boiler explosions are an unpleasant contingency in the use of steam.

We have pleasure in drawing the attention of our readers, most of whom are interested directly in all means of obtaining greater security in this respect, to a simple and effective high pressure and low water safety valve invented and patented by Mr. Spencer, and the sole maker and licensee of which is Mr. S. Farron, Britannia Brass Works, Ashton-under-Lyne. In this valve a principal object of the inventor has been to reduce the working parts to a minimum number, and so to obviate to a proportionate extent the risks of sticking and other forms of derangement when there is complexity. As will be observed it is a double or compound valve, consisting of one valve for high steam and another for low water, each being independent of the other in their action. The high steam valve is simply an ordinary lever safety valve, but with the lever placed inside the boiler out of the way of being weighted or otherwise tampered with. The low water valve is a slide valve, connected to a float lever on each side of the fulcrum as shown. The motion of the water keeps the valve continually oscillating slightly, so that sticking is impossible. When the water falls below the fixed level the

steam escapes through the internal pipe (which is 1/4 in. bore throughout) and blows the whistle which is fixed in one side of the valve, and also escapes freely to the atmosphere on the opposite side.

The small hand-wheel on top of valve may be used for lifting the high-steam valve for blowing off the steam, but cannot be used for putting any additional weight on the valve. The high-steam valve may be made in any size, and the lever may, if necessary, be put outside the boiler in the case of very small boiler. The

block of the above valve is made to receive all Hopkinson's bases, without having new ones put on to suit; but the makers state that it is advisable for new boilers to have 7 in. bases with flanges 12 in. diameter. The total weight of the valve is 3 cwt. less than Hopkinson's, and as the pressure necessary to move the valve is so small, the float is only 15 in. square by 2 1/2 in. thick, consequently much less room is taken up inside the boiler, and the valve can be applied to a much smaller boiler than is the case with a Hopkinson valve.



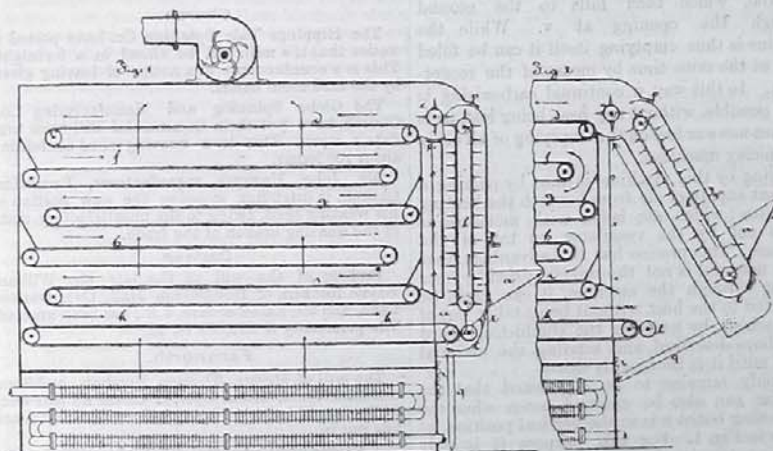
SPENCER'S PATENT HIGH STEAM AND LOW WATER SAFETY VALVE.—MR. S. FARRON, ASHTON-UNDER-LYNE.

CARBONISING AND DRYING MACHINE FOR WOOL AND OTHER FIBROUS MATERIALS.

Hitherto the various machines and appliances for the carbonising of wool have had one great disadvantage, viz., that the material to be carbonised in them is treated in a state of rest, that is to say without being moved and turned about. By this the carbonisation is, on the one hand, not very uniform, the heat not touching and penetrating alike to all the material, while

This alteration must make it possible to leave the material in the machine for a certain time, in constant motion, and subject to a fixed constant temperature, consequently without leaving any entrance or exit for air. This is said to be attained in the plan described below, the arrangement being made clear by the accompanying sketch.

The machine herewith described is well ventilated, then tightly closed so as to allow of no air entering, and the compressed steam for producing



on the other there is the greater objection that the part which lies nearest to the heating apparatus is discoloured and dried up or even burnt, losing thereby more or less of its textile properties and its value.

For obviating the above-mentioned objections, there was nothing better than the Norton drying-machine, slightly modified, which always keeps the material moving in a downward direction, the most suitable for carbonisation.

the right temperature is let into the heating apparatus in the lower part of the machine. The wool, which has previously been dried in the machine herewith described, or any other drying-machine, is now laid in the filling box a Fig 2, where it is seized by the conducting board B, which is furnished with pegs or the like and closed on all sides, and from there is carried to the roller c in the direction indicated by the arrows. This roller c, revolving considerably

quicker than the conducting-board B, takes the material from the latter and throws it upon the endless creeper D, Fig. 1 and 2, which is made of wire netting or a similar material, and which revolves on the rollers E, E. When the material reaches the end of this table it turns over and falls on to the second one F, which revolves in the opposite direction to D. From here it drops on to G, then on H and I and at last on K, turning over every time it falls and always moving in the direction of the arrows until it is seized by the roller L.

When the material has reached this point, the machine being consequently full, the receptacle M, Fig. 2, is closed by means of the flap N, which is provided with a hinge and which before formed part of the filling box A. The conducting-board B, which has its pivot in the cylinder O, and the frame of which can be moved backwards and forwards in the grooves P, P', without making any opening at these places, is let down by removing the support Q from the teeth R, so that its edge lies close to the framework of the machine S, S, S, as is shown in Fig. 1.

Before this the flap T lying underneath the conducting-board B, is opened (so that B remains open at this place), and placed round the roller U, in order to allow of the material being passed on.

The conducting-board B, now in a vertical position, and in contact with the material brought round by the endless table K and the roller L, takes the material from the latter and conducts it in the direction of the arrows round to the roller C, which throws it upon the endless table D. By this arrangement the material is continually moving round and turning over (the latter as often as there may be endless tables provided), which movements prevent the wool being dried too much on one side or not being carbonised uniformly in all its fibres, as it is always kept loose and open, thereby rendering it easily accessible to the heat.

The material can be left moving round in the machine until such time as it is thoroughly carbonised. When this is the case (which can easily be ascertained by taking out a handful at M), the conducting-board B is brought into the position as shown in Fig. 2, by which it ceases to be in contact with the material, which then falls to the ground through the opening at V. While the machine is thus emptying itself it can be filled again at the same time by means of the receptacle A. In this way a continual carbonising is made possible, without any heat being lost, as is the case more or less on the emptying of all other carbonising machines.

Drying by this machine is done by passing a constant supply of air from beneath the heating apparatus; which air, laden with moisture, is drawn out by the ventilator on top of the machine. This process has this advantage, that if the material is not thoroughly dried by once passing through the machine, it can again be subjected to the heat without being taken out of the machine, by lowering the conducting board B as above described, and sending the material round until it is thoroughly dried.

It only remains to be mentioned that the machine can also be emptied, even when the conducting board B is in the vertical position, as shown in Fig. 1. For this purpose it is only necessary to raise the flap T, and the conducting board B then serves to send the material out of the opening V.

The machine here described is a German invention and patent, and our Yorkshire readers will no doubt be able to estimate its practical value.

MESSES. ROBERT HALL AND SONS, of Hope Foundry, Bury, the makers of the improved underpick, described in our issue of the 27th ult., desire us to state that their firm, therein referred to as "Limited," is not a limited company.

News in Brief,

FROM LOCAL CORRESPONDENTS AND CONTEMPORARIES.

ENGLAND.

Barrow.

The Barrow Flax and Jute Works will be stopped from Saturday, the 8th June, until the morning of the Wednesday following, in order that some alterations may be carried out in connection with the erection of a new economiser.

Blackburn.

On Saturday, mill collections of a penny per loom were made throughout the Blackburn district towards a fund opened as a memorial to the late Dr. Stephenson, medical officer for Blackburn, whose report in 1887 gave rise to the agitation against excessive steaming in weaving sheds. The Northern Counties Amalgamation, recognising the service Dr. Stephenson rendered to the Lancashire weavers, are giving the movement every support, and recommend collections all round. The fund already exceeds £1,000.

Bolton.

The Bolton Co-operative Society, Limited, at their last quarterly meeting, voted £100 towards the Technical School scheme, and also empowered the educational committee to contribute £25 each quarter out of the money voted for educational purposes in connection with the society.

There appears to be little promise of an early settlement of the strike of spinners at Messrs. Joseph Crook and Sons. There are a few new hands working, and the employers are advertising for 24 more. The strike hands have pickets still on duty, and a few policemen are also near to prevent any disturbance. Beds have been put up in the mill for the men who are working.

Bradford.

Mr. Eolland Buck, a well-known woolstapler, lately deceased, has left to Yorkshire charities about £7,000. He accumulated a considerable fortune, most of which he had given away previously.

The plushes now being shown at the Paris Exhibition by Messrs. Bright Brothers, of Rochdale, and also those by Sir Titus Salt, Bart. and Sons, are very much admired. This will, no doubt, increase the demand for plush and pile fabrics for some time to come. Bradford is now getting into a position to supply such a demand when it comes. Pile fabrics can now be woven here in the ordinary loom, with special fittings, of course, for producing the pile; also plushes of the same style as those now exhibiting at Paris in the ordinary loom. The pile is cut by a cutting machine, which can cut for a number of looms, which cheapens the cost to a very large extent.

Church.

The Hippings Vale Spinning Co. have posted a notice that the mill will be closed in a fortnight. This is a counter-move to a notice of leaving given by the card-room hands.

The Globe Spinning and Manufacturing Co., Church, have put their Commercial Mill upon four days a week. This is a weaving shed containing about 700 looms.

Mr. John Haworth, manufacturer, Brookside, Church, is intending stopping the new portion of his weaving shed, owing to the unsatisfactory state of the weaving branch of the trade.

Darwen.

Probate of the will of the late Mr. William Bayne Ranken, of Hoddlesden Hall, Over Darwen Lane, and 99, Eaton-square, J.P., has been granted. The personalty is £12,568 1s. 4d.

Farnworth.

The mill of Messrs. Thomas Kershaw and Sons, manufacturers, Moses Gate, is closed all this week while the old boiler is being taken out and a new one put in.

A serious hoist accident occurred on Wednesday afternoon at the mill of Messrs. Top and Hindley, Long Causeway, whereby a boy named Robert Pearson, through being too venturesome, was badly crushed about the face, and lies in the Bolton Hospital in a precarious state. He was looking up the hoist when the descending cage caught his head.

Heywood.

The Mutual Mill Spinning Co. are putting in several new ring frames.

Mr. James Taylor has added some extra cardroom machinery to meet the increased requirements of his new ring frames.

The Roe Acre Mill Co. have given out orders for the covering of several double cards with hardened and tempered steel wire.

The position of carder at Wham Mill, vacant by the acceptance of the same position at Roe Acre Mills by Mr. Heap, has been filled by Mr. Joseph Taylor, formerly a card-room jobber at Wham Mill.

Huddersfield.

Messrs. George Haigh and Sons, woollen manufacturers, of Slaithwaite, near Huddersfield, are declining business.

Messrs. V. Vickerman and Sons, Limited, held their first meeting of shareholders on the 14th inst., and declared a dividend of 8 per cent., carrying £7,000 to reserve fund.

Messrs. A. Armitage and Co., of Albany Mills, Huddersfield, have entered into a partnership with Mr. William Clelland, late manager for George Croland and Sons, and Taylor and Littlewood, trading under the name of Armitage and Clelland. They have taken over Clough House Mills, and built a large weaving shed for the manufacture of fancy worsteds.

Macclesfield.

The fabrics woven by the students of the Technical School for the City and Guilds Examination in silk weaving have been sent to London. They include a few exceedingly beautiful examples of the designer's art.

Manchester.

Mr. Charles Behrens (Sir Jacob Behrens and Sons), of 34, Princess-street, has taken charge of the Mexican Consulate of this city.

We are informed that Mr. John Hesketh, who has been for 20 years the chief salesman with Mr. J. Cook, yarn agent, has commenced business on his own account at 8, Balloon-street. He will deal in single and double yarns for both the home and shipping branches of the trade, and will be pleased to receive the patronage of his friends, which he trusts to deserve by assiduous attention to their interests.

The prospectus will, we understand, shortly be issued of a new company. The Bannerman Mills Co., Limited, is formed for the purpose of taking over the mills of the well-known firm of Henry Bannerman and Sons, warehousemen and manufacturers of, York-street, Manchester; of Stalybridge, Ancoats, and Dukinfield. Messrs. Bannerman now stand in the front rank both as wholesale dry goods distributors and producers.

Mr. James Arthur Birch's will has been proved. The testator, who died on March 11th last at Blackpool, bequeaths to his wife, Mrs. Annie Marie Birch, an annuity of £200 during her widowhood, and desires that facilities may be given by the executors to his son, Mr. Arthur Birch, and his nephew, Mr. Michael J. Higginson, to carry on his business as a yarn agent; and having provided in his lifetime for his two daughters he leaves all his property, subject to his wife's annuity, to his said son.

Last week was an exceptionally busy one amongst the Manchester home-trade houses, as the city was full of buyers attracted by the great sale at the warehouses of Messrs. Rylands and Sons, Limited, of the stock of Messrs. Brown, Davis and Co., Limited, and Messrs. T. Oram and Sons. The latter firm were well-known as flannel and blanket manufacturers, their mills being situated at Hodcar and Simpson Clough, Bury. For many years Messrs. Oram have been looked upon as one of the most representative firms in their particular branch, and for a long time they transacted at their premises in Dale-street, Manchester, an extensive wholesale business.

Nottingham.

A representative meeting of the Nottingham Lace Manufacturers' Association, was held last week at the George Hotel, when the question of the wages paid in the curtain branch of the trade was brought under consideration. It was decided to give notice to the curtain hands of a proposed reduction, amounting to 40 per cent. upon the present rate of pay. The manufacturers, in explanation of the step which they thus deem to be necessary, point out that they have to cope with serious external competition, and it is stated that the wages paid by employers outside the borough amount to from 60 to 70 per cent. less than in the town. The following is the resolution passed at the above meeting (a copy of which has been forwarded to the secretary of the Amalgamated Society of Operative Lace-makers): "That the Lace Curtain Manufacturers of Nottingham, coming into serious competition with manufacturers outside the borough who are paying their workmen wages varying from 60 to 70 per cent. less than the wages paid in Nottingham, demand a reduction of 40 per cent. upon the wages paid to their twist hands at the present time, and, being desirous of fixing the prices to be paid by the