Machinery and Appliances.

IMPROVED WEFT WINDING MACHINE.

MESSRS. ROBERT HALL AND SONS, BURY.

The weft winding machine, though little known in some branches of the textile industries, is yet general over a very wide extent, especially in those trades in which bleached, dyed, or grundriel yarns are used; and also in

sary in all cases, excepting that of winding weft tubes for linen and jute, to form it into a cone, and as the winding is always effected by frictional contact against the surface of this cone, with a constant revolution of the spindle, a variable rate of winding takes place. The greatest speed is attained when the winding is taking place upon the largest diameter of the cop, from which point it gradually declines to a minimum at the smallest which is upon the bare tube or bobbin. With soft wefts this alteration increases the number of breakages that occur, while with hard twisted yarns there is a much greater tendency to form snarls, owing to the reeds or bobbins from

arrangements. The weft thread coming down from the hanks upon the reeves passes under the rail, and thence around the small bowl upon the balanced lever shewn, from which it goes to the pin or bobbin, upon which it is exhibited as being wound. This pin is carried upon a loose spindle, mounted in a segment of a cup, and having a cylindrical bowl on the opposite side. This arrangement is found to diminish friction, and to make a good sound hard cop, having a perfect and evenly wound cone. The loose spindle carrying the pin descends into the bosses on the top of the driving spindle, by which connection the former are driven. The automatic stopping motion

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the silk, linen, jute and carpet manufactures. Wherever the yarn is spun upon bobbins, or has to be subjected to some process before it can be used, a weft winding machine becomes a necessity. Over these wide areas, therefore, a description of the improved machine just being introduced into the market by Messrs. Robert Hall and Sons, Bury, will be read with interest.

As these machines have been hitherto constructed, they have in one or more respects been defective. Amongst the imperfections may be named the want of an arrangement for stopping a spindle separately from the others when a thread breaks, and the absence of any method of securing uniformity of speed in winding. In winding the cop for the shuttle it is neces-

which it is being drawn, overrunning the minimum rate at which it is being wound up.

As large makers of this class of machines for all the textile trades which use them, Messrs. Hall and Sons have been fully cognizant of these deficiencies of the weft winding frame as generally constructed, and have accordingly devoted time, labour, and skill to supplying the various improvements necessary to obviate its defects. This they have succeeded in doing in a simple and ingenious manner, and in the machine illustrated herewith they offer to the various trades interested therein, what they confidently believe and affirm is the most perfect winding machine yet brought under notice. Our illustration represents one of its varied consists of the balanced lever around the bowl upon which the weft passes, and which, retained in the elevated position shown when the winding is in progress, allows the two spindles to come into such contact that one drives the other. When the weft breaks or the hank or bobbin is exhausted, the lever falls into the position in the illustration, as shown without threads and in which its opposite extremity lifts the loose spindle so as to break contact between it and the driver, thus stopping the pin and avoiding the injury that usually ensues in cases where its revolution is continued. The driving spindle is operated by the friction disc and plate as shown, by which a differential speed of the spindle and uniform rate of winding is obtained, the maximum being of the cop or bobbin in
course of formation, and the minimum at its largest, which obviates the disadvantages stated above. The lateral traverse of the driving wheels and the vertical traverse of the thread guides are obtained from heart cams through the usual connections.

We may observe that the improved arrangements shown entirely dispense with the use of spindle banding and its frequent annoyances of stretching, breaking, etc., and of stopping the machine to replace or repair.

The machines are made in various styles to wind either from bobbins, spools, or to form tubular cops for the winding of tubular cops to work from the inside and for coarse yarns bevel wheel gearing is substituted for the friction disc described.

The machine is thoroughly well finished in all its details, and is in every respect consistent with the high-class work turned out from Messrs. Hall's establishment. The seating of the rails and framing are planned by special machinery, and the finish of the caps or builders is very superior to what was once deemed sufficient.

The machine has already been supplied to firms in Scotland and Ireland; in the latter country to places engaged in the manufacture of the finest cloths of linen used for hand-loom goods, and the spools for which could only hitherto be wound by hand. In Lancashire it is winding the very coarsest worsts used in the manufacture of heavy quiltings. Its wide range of adaptability is thus obvious.

The makers will be pleased to afford any further information, and to shew intending buyers a machine at work.

MESSRS. TAYLOR, LANG, AND CO., LIMITED, Stalybridge, are adding to their present departments a new one for the construction of loom frames: slubbing, intermediate, roving, and jack or fine roving frames. This department will be in charge of Mr. O. F. Ash, formerly with the well-known firm of Higgins and Co. The frames will be constructed on the well-known type of this firm, with such improvements in detail as the mechanical progress of the last few years suggests. The other day we had the pleasure of inspecting a beautiful fine roving frame just before it was despatched abroad. It contained 140 spindles, 4 cotton bobbins, gin. lift, 10m. stuff. It was on its trial, making a 14 hand roving with a roller speed of 70 revolutions. In every respect the machine was well constructed and highly finished, and contained every improvement that skill and experience could suggest.

EXTENSION OF WORKS.—We have just had the pleasure of a renewed inspection of the works of Messrs. Henry Livesey, Limited, Hamburg, Blackburn. To the growth of these works it seems as if there would be no end, as extensions have been almost continuous since their foundation. There is all present in an advanced stage of progress a further large extension of the machine-making department, consisting of additions to or enlargement of some of the moulding, grinding, smiths, fitting, erecting, and joiners' shops. When completed the capacity of the establishment will be equal to the production of 200 looms per week, and the necessary preparatory machinery. Thus in three weeks the firm could equip a good average sized weaving shed in all its details. This portion of the business is, of course, exclusive of the bobbin turning and shuttle-making sections. Altogether it is now one of the largest and most compact loom making establishments in existence, and turns out first-class work. Mr. Henry Livesey, having been a pioneer in improving the quality of the work put into looms. Any one who remembers the loom work of thirty years ago and can compare it with that of to-day will be powerfully struck by the contrast.