

Machinery and Appliances.

THE DOBCROSS LOOM.

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Owing to the very late hour at which the illustration of this loom came to hand last week, we were unable to make direct reference to the details shewn therein. The following is therefore a supplementary description, which will tend to make some points a little more easy to understand:—

Attached to this loom is a very valuable improvement in the take-up motion. Heretofore, in the majority of power-looms arranged with a positive take-up motion, there is no provision made for the "lagging back" or taking out of wrong weft. Anyone who has had experience with positive motions will have encountered

Fig. 1 represents an end elevation and Fig. 2 a front elevation of sufficient of the loom-frame and Jacquard to illustrate the principle on which it is worked. A and B are respectively the top and bottom chills of the well-known Hollingworth and Knowles' patent loom, revolving in directions indicated by arrows. These are driven by bevel wheels c, d on upright shaft e, which is driven from the crank shaft of loom f in the ordinary way. The top harness chill a, in place of being attached to top centre-shaft as aforesaid, is mounted on a barrel or sleeve g revolving in bearings in Jacquard frame h. This sleeve g extends through the bearing to receive the bevel wheel i, which is keyed on to it. Alongside of the top harness chill a works the box section chill k, both of them being attached to sleeve g. Through centre of sleeve g works a horizontal shaft l, fitted with a driving catch-box m, capable of being placed into gear with either of the bevel wheels i, by means of suitable connections from the front of the loom, which wheels by reason of engaging with upright shaft

e and k, consequently causing the pattern cylinder to revolve in the right direction for forward weaving. Also by means of endless chain, train of wheels, q, r, s, u, v, worm and wheel x, y, the positive take-up beam moves in the right direction for taking up the cloth as it is woven. When, however, the pattern chain is required to be reversed for finding broken or wrong weft, catch-box m is placed in gear with bevel wheel i, in which case the motion of the pattern cylinder, and likewise the direction of motion of the positive take-up beam, will be reversed, turning back the distance equal to the amount of weft which has been taken out. By the adoption of this motion, when the loom is ready for starting again the take-up beam and pattern cylinder will be at the correct position for the weaving being continued without shewing a faulty place in the cloth. This motion is so arranged that it can be worked conditionally if required.

Working loose on the boss of worm x is a lever 2, carrying catches 3, which fold over and engage with catch wheel 4, which is keyed on

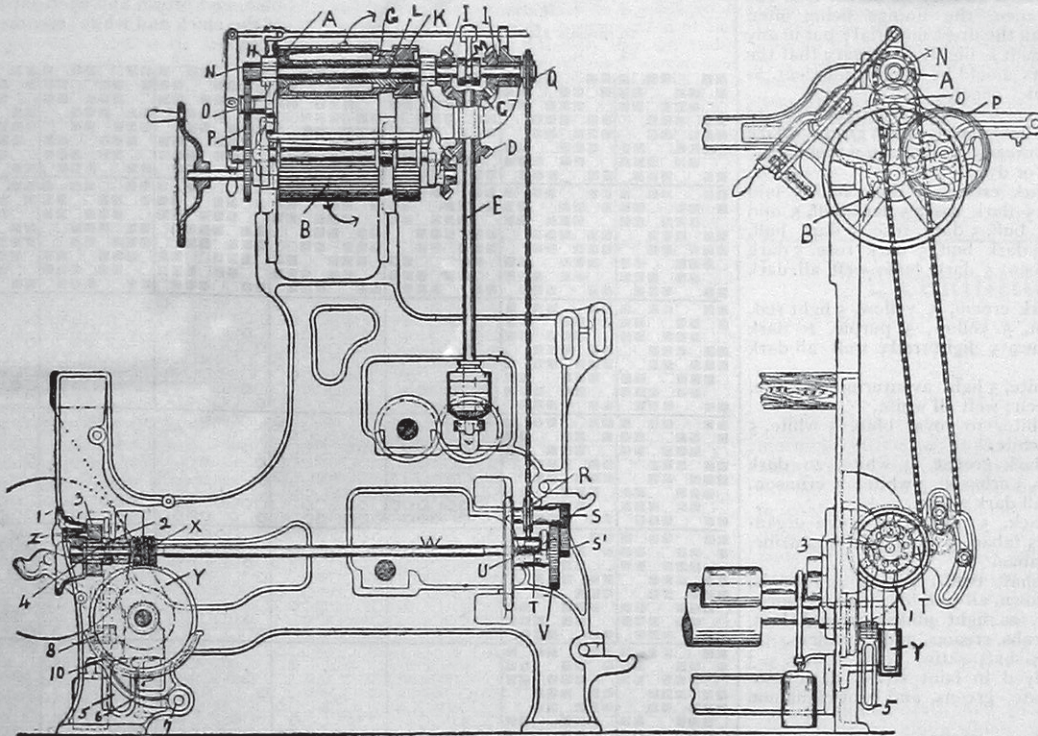


FIG. 1.

FIG. 2.

this difficulty, and it has been one great objection against their use. Supposing it be necessary to take out say five picks. If the positive taking-up beam does not move back the corresponding distance which has been taken up by those picks in the woven cloth, when the weaving is resumed a faulty place in the woven fabric will be made. In the majority of positive motions no provision is made for overcoming this, it being often-times left to the weaver to turn the positive take-up beam back a distance which he or she might think would compensate for the amount of wrong weft that had been taken out. It will readily be seen by anyone who is acquainted with power looms that this is a very risky practice, especially in the hands of an inexperienced weaver, and to overcome this difficulty of producing faulty fabrics, Mr. Edward Hollingworth has brought out this new patent positive take-up motion, which is worked from the Jacquard, so that when the Jacquard pattern cylinder is reversed for taking out wrong or broken weft, the positive take-up cloth beam is reversed also.

bevel c, are caused to revolve in opposite directions.

On the end of the horizontal shaft l is a pinion n, gearing with the intermediate o, which gears with the pattern cylinder wheel p on the end of cylinder which carries the pattern chain. On the other end of this horizontal shaft is a nugged chain wheel q, over which passes an endless chain extending down over nugged chain wheel r, working with positive motion gears. Attached to chain wheel r is a pinion s, into which pinion the change wheel s can be placed by means of radial arm t. Attached to change wheel s is a pinion u, gearing with wheel v, keyed on horizontal shaft w, on which is a worm x, gearing with positive take-up beam wheel y. On the end of horizontal shaft w is a spline knob z, which can be drawn out, so that the positive beam can be turned by means of hand-wheel i, for adjusting, if required, without the horizontal shaft having to move.

When the catch box m is placed in gear with bevel wheel i, the horizontal shaft l is caused to revolve in the same direction as the chills

to the boss of the said worm x. This lever 2, has a vertical rod 5, attached to it at the end, which rod is capable of being lifted every time the lay moves back, by means of arm 6 (which is attached to lay-sword pin 7), grazing under pulley 10 in vertical rod. This rod 5, is also arranged to carry the weights 8, required to give the necessary tension to the woven cloth. These weights can be increased or decreased according to the number of picks required. To effect the change from positive to conditional, all that is necessary is to draw out spline knob z, in which case worm x, and horizontal shaft w, are disconnected the one from the other. Catches 3, are then placed on the teeth of catch wheel 4, and the necessary weight placed on vertical rod 5, to give the required number of picks.

The loom is one of the finest that we have ever seen, and well deserves the careful examination of every user of this class of machinery.

MR. JOSEPH HADWIN, manager of the Queen Mills, Bombay, died of heat apoplexy on the morning of the 13th ult.