

W. TAYLOR.

Weft-Stop Mechanisms for Looms.

No. 151,728.

Patented June 9, 1874.

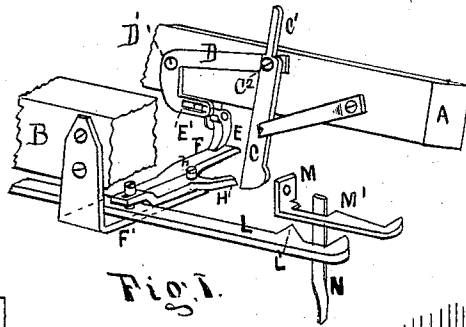


Fig. 1.

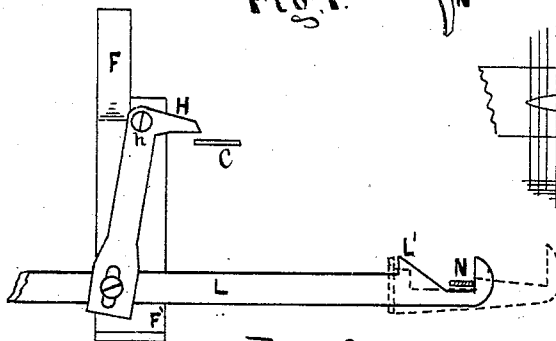


Fig. 2.

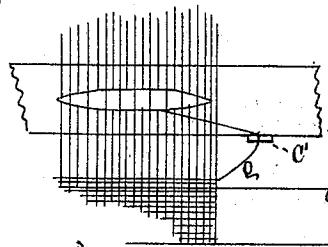


Fig. 4.

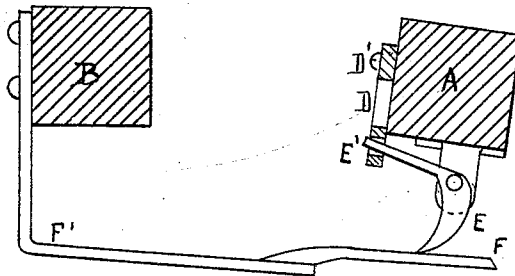


Fig. 3.

Witnesses

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WILLIAM TAYLOR, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
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IMPROVEMENT IN WEFT-STOP MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. **151,728**, dated June 9, 1874; application filed
January 13, 1874.

To all whom it may concern:

Be it known that I, WILLIAM TAYLOR, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Weft-Stop Mechanism for Looms, of which the following is a specification:

The nature of the invention consists in combining with the lay of a loom, between the edge of the warp and the shuttle-boxes, a pendent swinging lever, which has a vertical motion to correspond with the throw of the lay—that is, its upper end is raised above the top of the lay during the back stroke, and is dropped below during the forward stroke, so as, during the first part of the back stroke, to be out of the way of the weft-thread that extends from the shuttle in the box to the edge of the cloth, and to be in the way of the weft-thread that is connected with the shuttle that is passing through the shed, so that this thread, if unbroken, will pull, in the direction of its flight, the upper part of the lever over, and consequently swing the lower part so that it shall pass the knock-off device and not stop the loom; but in case the thread is broken, then the pendent lever will remain upright, and its lower end will come in contact with the knock-off device, and stop the loom. My invention also consists in the details of this device.

Figure 1 shows the invention in perspective. Fig. 2 is a plan of the knock-off device. Fig. 3 is a vertical section, showing a part in detail. Fig. 4 is a drawing to illustrate the action of a weft-thread.

Let A represent the lay of a loom, and B the breast-beam. To the lay of the loom I attach a bent lever, D, Figs. 1 and 3, by a pivot, D'. To the end of this bent lever I hang by a pivot, C², a pendent lever, C¹ C, Fig. 1. The lever D, and through it the lever C¹ C, is operated by the bent lever E E', which is hung, as shown in Fig. 3, to the under side of the lay. The end E' of this lever projects through the lever D, as shown in Figs. 1 and 3.

Motion is communicated to the lever E E' by the cam-arm F' F, Figs. 1 and 3, which is made fast to the breast-beam B, as shown in Figs. 1

and 3, the rear end F of this cam-arm being higher than the part near the breast-beam, so that, as the lay advances toward the breast-beam, the part E' of the lever falls, allowing the lever D to fall and take with it the pendent lever C¹ C; but when the lay falls back, then the lever E E' comes in contact with the high part of the cam-arm F, which throws up E', and, consequently, the pendent lever C¹ C. Thus, at each stroke of the lay, the pendent lever C¹ C has a vertical motion. The swinging motion of the levers C C¹ is given to it by the weft-thread Q, Fig. 4. Thus, at each time that a shuttle is thrown across the lay, the weft-thread Q forms a loop, as shown in Fig. 4, and draws the upper end C¹ of the lever C down, so as to throw the lower end C away from the knock-off device H, Figs. 1 and 2. The knock-off device consists of a horizontal bent lever, H, Figs. 1 and 2, affixed to the cam-arm F F' by a pivot, h, upon which it swings, and a slide, L. This slide L has at its end a wedge, L', which, acting against the shipping-lever N, forces it out of the notch M' in the holder M, Fig. 1.

The pendent lever C is so placed in relation to the knock-off lever H, (see Figs. 1 and 2,) that if it is allowed to hang straight down, it would hit the knock-off lever H at every back stroke of the lay, and throw off the belt; but, as explained above, at each flight of the shuttle, the weft-thread Q, if unbroken, forms a loop around the pendent lever C¹, as shown in Fig. 4, and draws its lower end C away from the knock-off lever H. If the weft-thread Q is broken, then no force will act on the lever C¹, and it will hang vertically, thus allowing the lower end C to come in contact with the knock-off lever H, Fig. 2, so as to throw it around and force the slide L forward, so as to throw off the shipping-lever N, and thus stop the loom. The end of the knock-off lever H is made inclined at its rear at H, as shown in Fig. 2, so that, though the pendent lever C C¹ may hang vertically at the forward stroke, it will simply slip by the end of the lever H, having no effect. It is during the backward stroke of the lay that this device is intended to operate on the shipping movement, and the parts are

so arranged that, if the weft-thread is present, it will tip this pendent lever C C¹ just at the time, in the backward stroke of the lay, that it, (the lever,) if perpendicular—that is, not held by the thread—would come in contact with the inside of the point of the bent lever H, Fig. 2, and swing it around so as to act on the shipping device.

From the above it will be seen that, though the lever C C¹ may be perpendicular during the whole of the forward stroke, it can have no effect upon the shipping device. It can only act during the back stroke.

In the drawing I have shown but one weft-detector; but, in practice, one is placed at each end of the loom.

It will be observed that the vertical swing-lever C¹ C has three functions—first, its upper arm C¹, operating as a weft-detector, indicating the breaking or absence of a weft-thread by remaining perpendicular; second, serving to prevent the threads already beaten up from falling back onto the lay and becoming entangled with the thread being thrown, and also

preventing the performance of its first function, as above; third, its lower arm C acts as a knock-off when the weft-thread, being absent or broken, has not drawn it out of the perpendicular.

I claim as my invention—

1. In combination with the lay of a loom, the pendent lever C C¹, connected thereto substantially as described, having a vertical and swinging motion, operating as and for the purpose set forth.

2. The combination of the pendent lever C C¹, the bent lever D, and the lever E E' with the cam-arm F F', all operating substantially as described, and for the purpose set forth.

3. The pendent lever C C¹, connected, substantially as described, with the lay, combined with the bent lever H and shipping device L L' N M M', all operating as and for the purpose set forth.

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Witnesses:

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