(No Model.)

J. HAYES.

STOPPING MECHANISM FOR LOOMS.

No. 458,624. Patented Sept. 1, 1891.

Fig. 1.

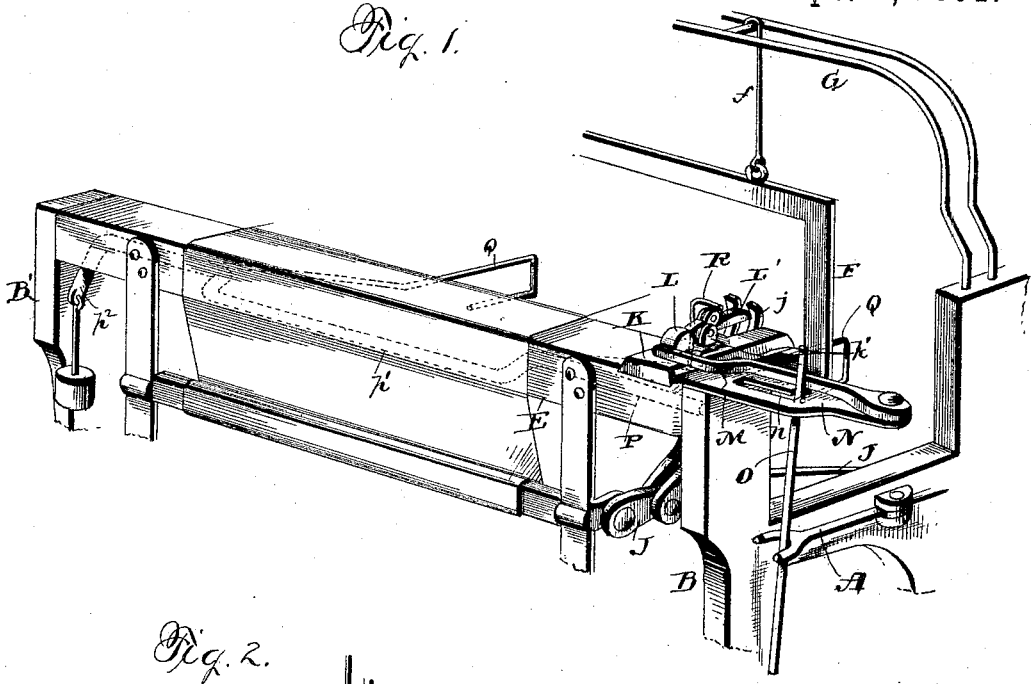


Fig. 2.

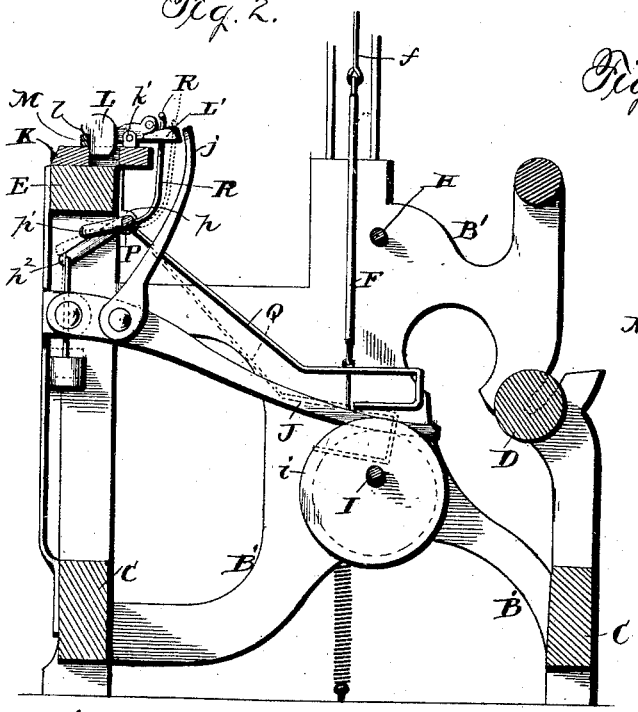
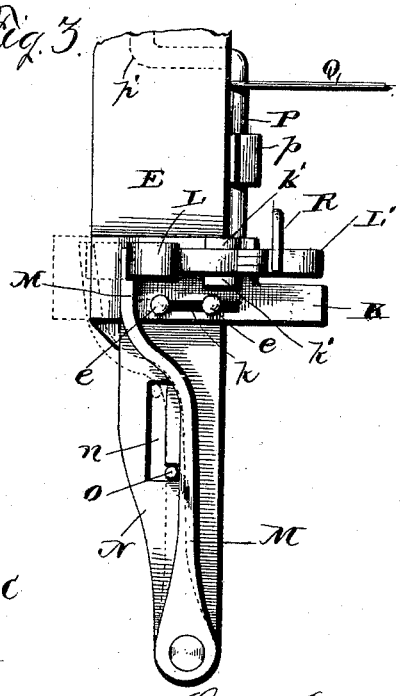


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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STOPPING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 458,624, dated September 1, 1891.

Application filed March 13, 1891. Serial No. 384,932. (No model.)

To all whom it may concern:

Be it known that I, JOHN HAYES, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Stopping Mechanism for Looms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to stop-motion for looms, and aims to provide a simple and efficient device for instantly stopping the machine in the event of the thread breaking.

The improvement consists of the novel features and the peculiar construction and combination of the parts which hereinafter will more fully appear, and be designated in the appended claims.

In the drawings, Figure 1 is a perspective view of portion of a loom of ordinary construction embodying my invention. Fig. 2 is a transverse section. Fig. 3 is a top plan view of the stop-motion, showing the operation of the same in dotted lines.

The loom is of ordinary construction, and is provided with the usual mechanism for starting and stopping, the lever A being provided and connected with the said mechanism to actuate the same at the proper time to throw the machine in and out of gear.

The frame of the machine comprises the side pieces B and B′, suitable cross-bars C, the yarn-beam D, and the breast-beam E. The leashes or harness F is suspended from the beam G by means of the strings, wires, or rods *f* in any well-known manner, and is operated in the usual way. The main shaft I is provided with the cam *i*, on which the end of the monkey-tail J rides. The plate K, provided with the slot *k*, is placed on the breast-beam E, and is held thereon by the headed fastenings *e*, which pass through the slot *k* and enter the beam E. The weighted dog L is pivoted between the vertical lugs *k′* on the plate K and is provided at its outer end with the extension L′, which is pivoted thereto by a rule-joint, which holds the said extension in the horizontal position and permits it to turn up when struck by the vertical portion *j* of the monkey-tail J. The weighted end of the dog L enters an opening in the plate *k*, and its rear end is provided with the depression *l* to receive the free end of the trip-lever M, which is pivoted at its outer end to the plate N, that is projected from the breast-beam E. The stop-lever O, secured at its lower end to the side piece B, projects vertically through the slot *n* in the plate N, and is preferably elastic to operate in a positive manner to move the lever A to stop the machine in the event of a break. The shaft P is journaled near its ends in hangers *p*, depending from the breast-beam E, and has the straight crank portion *p′* and the bent end p^2, the latter being weighted and extending in the same direction as the crank portion *p′*. The arms Q, projected from the shaft P, extend beneath the leashes or harness F and are counterbalanced by the crank portion *p′* and the weighted end p^2 of the shaft P. The detent R extends vertically from the shaft P and has its upper end bent and projected over the pivoted extension L′ of the weighted dog L to retain the said extension L′ within the path of the vertical portion *j* of the monkey-tail J.

When the loom is in working order, the stop-lever O is drawn to the outer end of the slot in the plate N, and is held there by a depression in the side of the slot *n*. The plate K is moved forward until the end of the trip-lever M comes behind the weighted dog L. In this disposition of the parts the trip-lever passes in the rear of the stop-lever O, and the bent end of the detent R is sufficiently far above the pivoted extension L′ to permit the latter to turn each time it is struck by the vertical portion *j* of the monkey-tail. In the event of a break in the suspending means of the harness it will fall on one or the other of the arms Q and turn the shaft P in its bearings and cause the bent end of the detent R to engage with the pivoted extension L′ of the weighted dog and hold it down. The vertical portion *j* of the monkey-tail striking the end of the extesion L′ causes the plate K to move outward, which, carrying the free end of the trip-lever M with it, disengages the stop-lever from the notch in the slot *n*. The stop-lever, being free, moves by its elasticity to the

inner end of the slot n and effects a stopping of the machine. The weighted end of the dog L remains stationary under normal conditions, and the pivoted end L′ turns up when struck by the vertical portion j, except when held down by the detent R, in the manner hereinbefore stated.

Having thus described my invention, what I claim to be new, and wish to secure by Letters Patent, is—

1. In a stop-motion for looms, the combination, with the shipper-lever, the trip-rod, the sliding plate K, the dog L, pivoted to the plate and having a pivoted extension, the monkey-tail, and cam i, of the shaft P, having a crank portion p' and a weighted arm p^2, the detent R, projected from the shaft P and extending within the path of the pivoted end of the dog L, and arm Q, having connection with the said shaft, and the harness adapted to strike arm Q should the harness-suspending means break, substantially as shown and described.

2. In a stop-motion for looms, the combination, with the slotted plate N, the levers O and M, the sliding plate K, the weighted dog pivoted to the plate K and having a pivoted extension, and the harness, of shaft P, the counterbalanced arms Q, projected from shaft P and extending beneath the harness, the detent R, which is adapted to engage with the pivoted end of the weighted dog, the monkey-tail J, and the cam i, substantially as shown, and for the purpose specified.

3. In a stop-motion for looms, the combination of a slotted plate N, levers O and M, sliding plate K, the weighted dog L, pivoted on the plate K and having a pivoted extension, the monkey-tail, cam i, the harness-shaft P, having a straight crank portion p' and having a weighted bent end p^2, the arms Q, projected from the shaft P and adapted to extend beyond the harness, and the detent R, connected with the shaft P and having its upper end bent and extended within the path of the pivoted end of the dog, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN HAYES.

Witnesses:
JOSEPH CLIFTON,
THOMAS P. HICKS.