

(No Model.)

J. J. SHANAHAN.
STOP MOTION FOR LOOMS.

No. 482,930.

Patented Sept. 20, 1892.

Fig. 1.

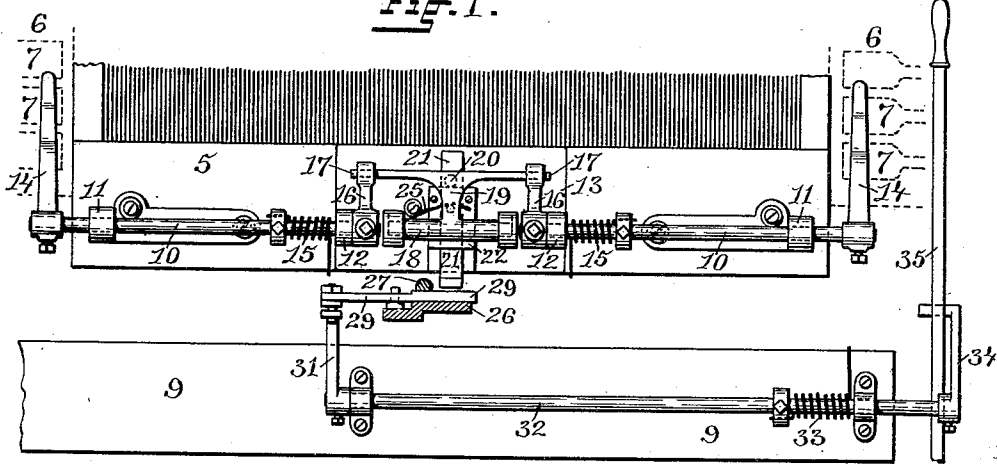


Fig. 2.

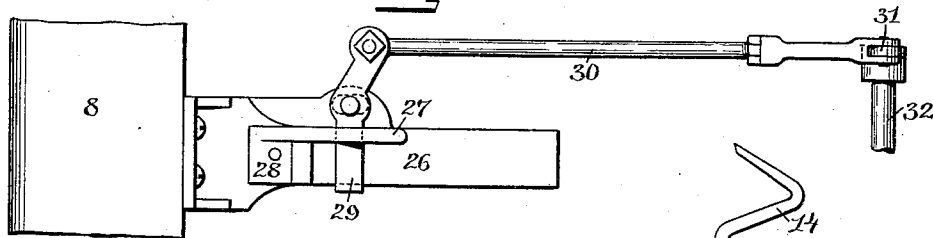
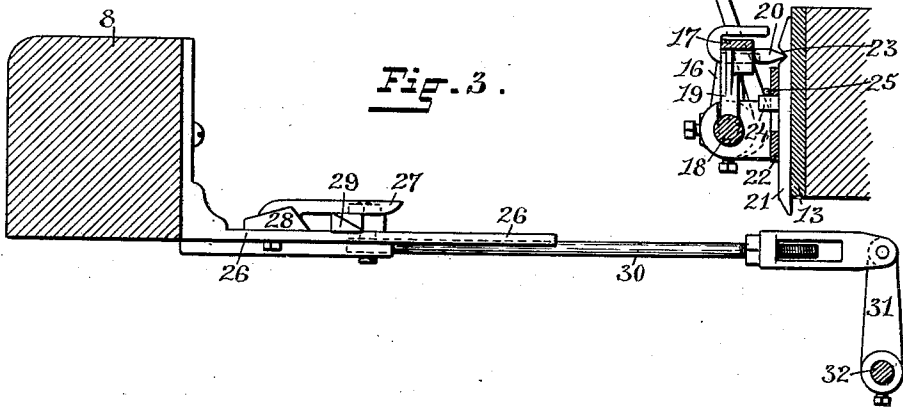


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 482,930, dated September 20, 1892.

Application filed April 13, 1892. Serial No. 428,966. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. SHANAHAN, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Stop-Motions for Looms; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in devices for automatically stopping the operation of the picker-motion of a loom under certain defective positions of the shuttles.

The object of the invention is to produce a stop-motion for looms which shall be simple and durable in construction and effective in operation.

This invention consists in the combination, with a loom, of detector-fingers carried by rock-shafts, peculiar mechanism operated by the rock-shafts to release a plunger, and a device operated by said plunger when depressed to ship the lever controlling the picker-motion to stop the same, as will hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a view of the lay of an ordinary loom provided with my improved stop mechanism, the breast-beam being removed to more clearly indicate the construction and operation of the device. Fig. 2 represents a view of a portion of the breast-beam, showing a bracket secured thereto and carrying a pivoted arm, by the moving of which motion is imparted to ship the lever controlling the picker-motion. Fig. 3 represents a sectional view of the breast-beam and lay, with the mechanism carried thereby, indicating the operation of the same.

Similar numbers of reference designate corresponding parts throughout.

In the drawings, 5 indicates the lay of a loom, which is provided with the shuttle-boxes 6 6, furnished with swell-fingers 7 7, adapted to operate in the usual manner.

8 is the breast-beam of the loom, and 9 indicates a strengthening-bar extending in a direction parallel to the lay and below the same, the ends of this beam being supported by the side frames of the loom. At each end

of the lay and upon the face thereof opposite the breast-beam 8 is mounted a rock-shaft 10, which turns in the bearings 11, secured to this face of the lay, and in the bearing 12, secured to the plate 13. These rock-shafts are provided at their outer ends with the detector-fingers 14 14, which are pressed against the swell-fingers 7 7 by the coiled springs 15 15, secured at one end to collars clamped on the rock-shafts and the other end pressing against the face of the breast-beam.

To the inner ends of the rock-shafts 10 are secured the arms 16 16, having at their upper ends transverse bearing-grooves which engage with the ends of the cross-bar 17 of a latching device, consisting of a post 19, mounted on a shaft 18, which is suitably journaled in bearings carried by the plate 13. The post 19 is furnished with a spur 20, which when the latch is held upright by the pressure of the arms 16 on the ends of the cross-bar 17 is engaged with a slot in the plunger 21.

Secured to the central portion of the plate 13 is a vertical guide 22, in which the plunger 21, having a transverse slot 23 at the upper portion and a tapering lower end, is free to move. Extending through a slot in the guide 22 is, however, a stud 24, secured to the plunger 21 and depressed by the spring 25, carried by the plate 13, this spring tending to assist the downward movement of the plunger when the spur 20 is withdrawn from the slot in the plunger.

The bracket-plate 26 is secured to the breast-beam 8 and is furnished with a guide-finger 27, formed in part with the beveled block 28. To the upper surface of this plate 26 is pivoted the arm 29, capable of a horizontal movement and adapted to be swung under the guide-finger 27. The outward edge of the pivoted arm is beveled and the end extending beyond the edge of the plate 26 is pivotally connected by an adjustable rod 30 with the upper end of the arm 31. The lower end of the arm 31 is secured to the inner end of a rock-shaft 32, journaled in suitable bearings on the face of the beam 9 opposite the breast-beam. The rotation of this shaft in the direction of the breast-beam is assisted by the coiled spring 33, secured at one end to a ring on said shaft and bearing with the other end

against the face of the beam. To the outer end of the rock-shaft is secured the crank 34, the throwing of which toward the breast-beam operates the picker-lever 35 to stop the picker-motion. This will be readily understood by those familiar with the art and upon reference to United States Patent No. 439,606, granted to me October 28, 1890. When the shuttle is about to make a pick, the pocket in the drop-box at the other end of the race from where the shuttle is about to be thrown should be empty in order to receive the same at the end of its flight. When the two pockets of the drop-box at the respective ends of the race each contain a shuttle, the loom should be stopped in order to prevent a smash, and it is obvious that, as the picker mechanism controls the movement of the shuttles, the quickest means of stopping this movement is most efficacious in preventing a smash.

In my improved device the detector-fingers 14 are pressed outward by shuttles entering the pockets of the drop-box through the usual medium of the swell-fingers, against which the detectors press. If both of these detector-fingers are pressed outward at the same time, the cross-bar 17 is released by the fingers 16 and drops outward, turning on the shaft 18, the spur 20 is withdrawn from the slot 23 in the plunger 21, and this plunger is forced downward. As the lay beats up, the beveled end of the plunger rides over the beveled portion of the pivoted arm 29, and on the backward motion of the lay the lower end of the plunger will engage the back of this arm and will turn the same on its pivot. This motion will be conveyed by the adjustable rod 30 to rock the shaft 32 and to throw the crank 34 forward, thus shifting the lever 35 to ship the belt and stop the picker mechanism.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination, with the lay, the drop-boxes, and the swell-fingers, the spring-operated rock-shafts 10 10, provided with the detector-fingers 14 14 and the arms 16 16, a pivoted latch-post having the transverse bar 17, adapted to be engaged by said arms 16 16, and a vertically-sliding plunger normally sustained by said latch-post, of the breast-beam 8, the picker-lever for controlling the picker-motion, a bracket-plate secured to the breast-beam, an arm pivoted to said plate and adapted to be engaged by said plunger when depressed, and mechanism intermediate said pivoted arm and the picker-lever, whereby said lever is operated, as described.

2. The combination, as hereinbefore described, with the breast-beam 8, the bracket-plate 26, provided with the guide-finger 27 and the beveled block 28, the arm 29, pivoted to such plate, the shipper-lever for controlling the picker-motion, and mechanism intermediate said pivoted arm 29 and the picker-lever, of the lay, the drop-boxes, swell-fingers in said boxes and detector-fingers pressing against said swells, a vertically-sliding plunger carried by the lay and adapted to engage the pivoted arm 29 when depressed, and means intermediate said plunger and the detector-fingers to support the same under normal conditions and adapted to release the same when the detector-fingers are pressed outward, as described.

In witness whereof I have hereunto set my hand.

JOHN J. SHANAHAN.

Witnesses:

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HENRY J. MILLER.