

No. 682,446.

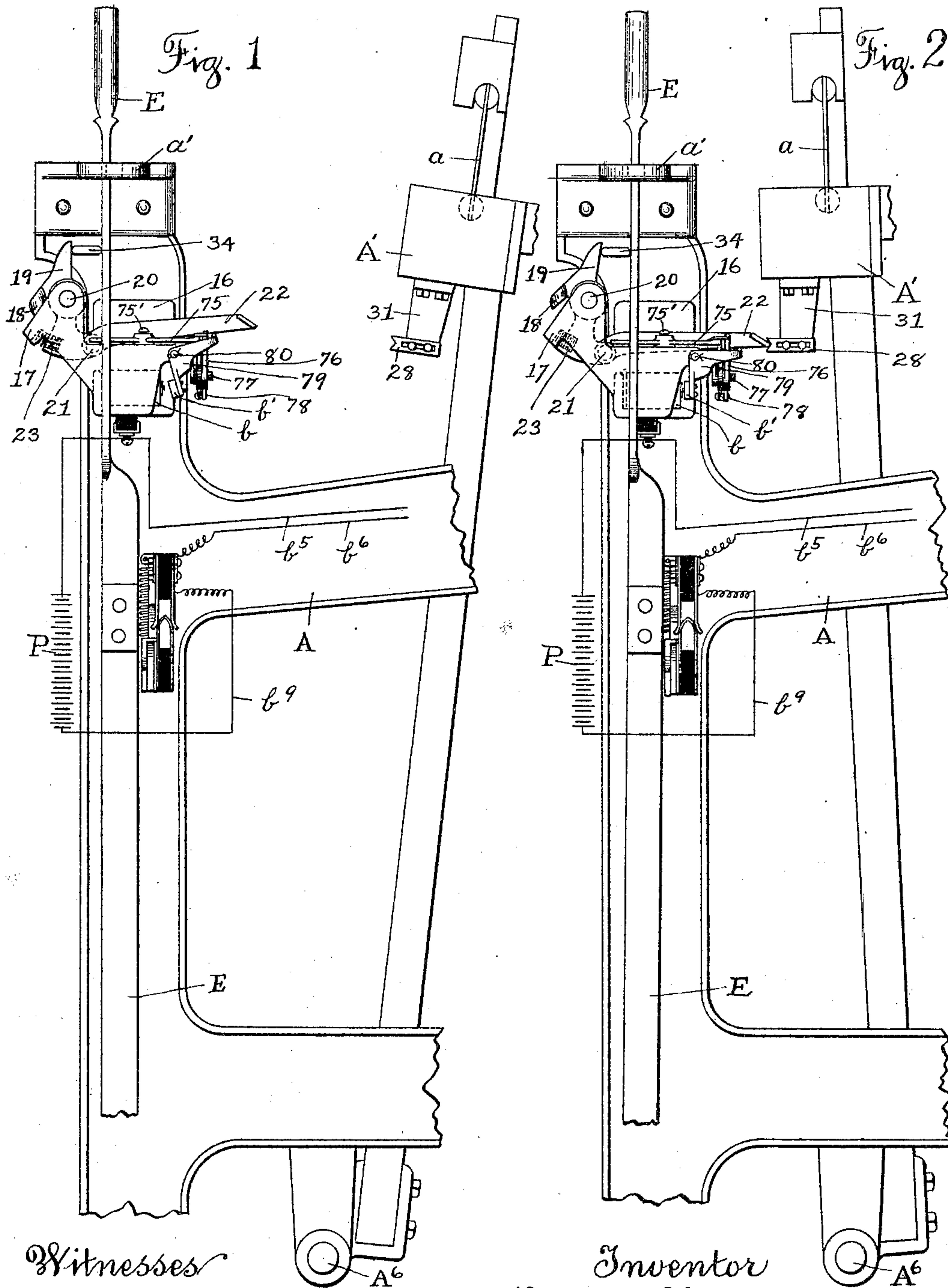
Patented Sept. 10, 1901.

H. WYMAN.
STOP MOTION FOR LOOMS.

(Application filed June 7, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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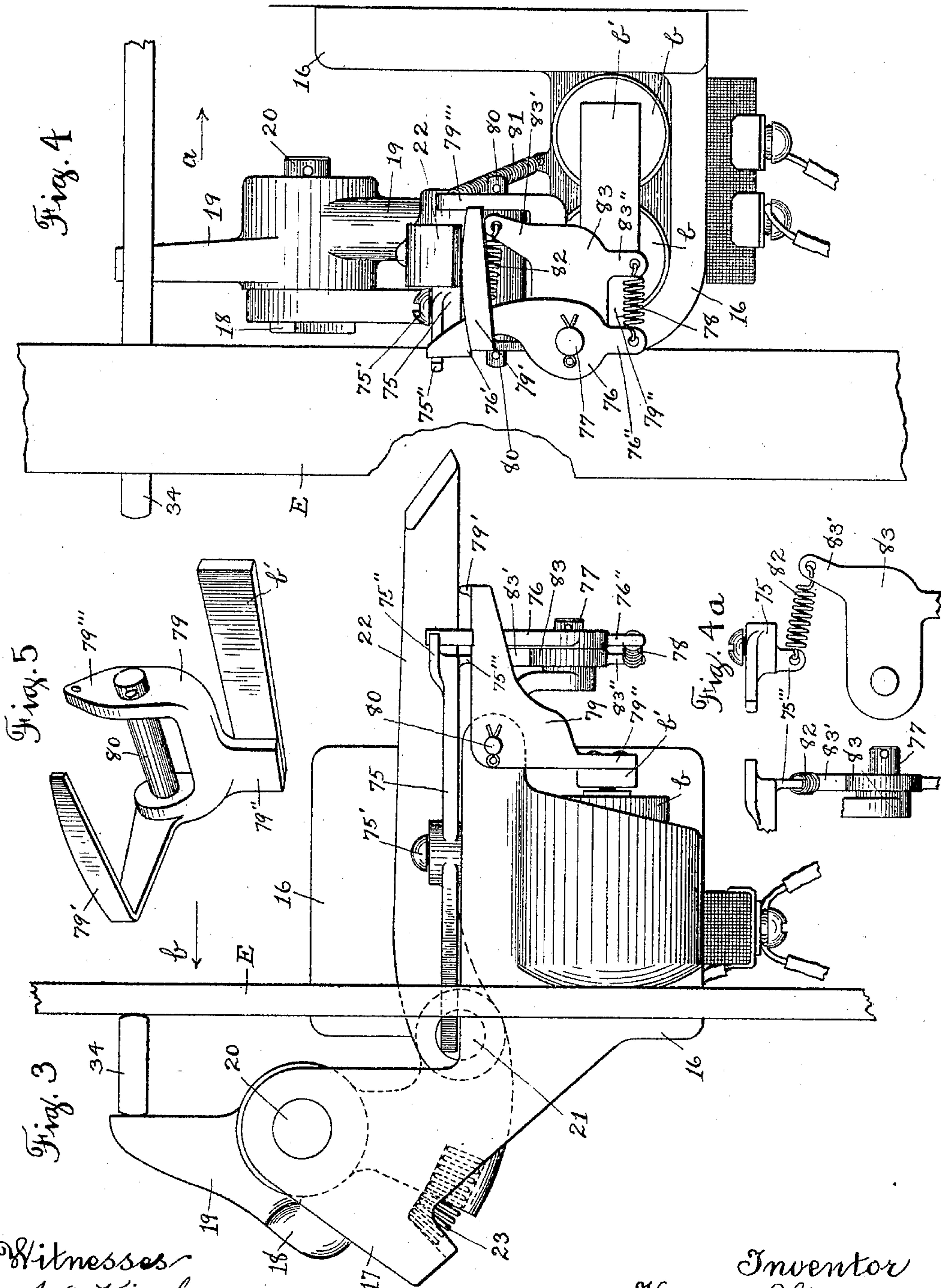
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UNITED STATES PATENT OFFICE.

HORACE WYMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
CROMPTON & KNOWLES LOOM WORKS, OF SAME PLACE.

STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 682,446, dated September 10, 1901.

Application filed June 7, 1901. Serial No. 63,587. (No model.)

To all whom it may concern:

Be it known that I, HORACE WYMAN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Stop-Motions for Looms, of which the following is a specification.

My invention relates to stop-motions for looms, and more particularly to an improvement in the warp stop-motion shown and described in my United States Letters Patent No. 665,591, dated January 8, 1901, in which an electrical detecting device is used.

As is well-known, the purpose of a warp stop-motion for looms is to instantly stop the loom when a warp-thread breaks or becomes too slack.

The object of my invention is to improve upon and simplify that portion of the warp stop-motion shown and described in said Patent No. 665,591 which is located at the front portion of the loom on the frame to operate the shipper-handle.

My invention consists in certain novel features of construction of my improvements in warp stop-motions for looms, as will be hereinafter fully described.

I have only shown in the drawings sufficient portions of the warp stop-motion shown in the drawings of said Patent No. 665,591 with my improvements applied thereto to enable those skilled in the art to which my invention belongs to understand the construction and operation of the same.

Referring to the drawings, Figure 1 is a right-hand side elevation of the front portion of the loom with my improvements applied thereto and showing the lay in its backward position. Fig. 2 corresponds to Fig. 1, but shows the lay in its forward position and the stop mechanism in its opposite position. Fig. 3 shows, on an enlarged scale, parts of the stop mechanism shown in Fig. 1 looking in the direction of arrow *a*, Fig. 4. Fig. 4 is a rear view of the parts shown in Fig. 3 looking in the direction of arrow *b*, same figure. Fig. 4^a is an edge and side view of parts shown in Fig. 4 detached, and Fig. 5 is a perspective view of the lever 77 detached.

I have used in the drawings the same let-

ters and figures of reference as I used on the corresponding parts in said Patent No. 665,591.

In the accompanying drawings, A is a portion of the loom-frame, and A' the lay, pivoted at A⁶ and carrying the reed *a*. The shipper-lever E extends at its upper end in a slot in the extension *a'*, having a notch at one side and connected with the loom-frame at one end of the breast-beam. (Not shown.) All of these parts are of the ordinary construction.

I will now describe the warp-stop mechanism with my improvements applied thereto.

A stand 16 is secured to the loom side adjacent to the shipper-lever E and has an ear 17 thereon, against which normally rests a toe 18 of the dagger-carrier 19, mounted to turn on a pivot or stud 20 on the stand 16. The lower end of the dagger-carrier 19 has jointed to it at 21 the dagger 22. A spring 23, interposed between the lower end of said dagger-carrier 19 and the under side of the ear 17, acts to normally maintain the pivot 21 in the position shown in Fig. 1 of the drawings.

Preferably below the dagger-carrier 19 and supported by the stand 16 is an electromagnet *b*, whose armature *b'* is secured to the dagger-lifter 79, (shown detached in Fig. 5,) which is pivoted at 80 (see Fig. 3,) and has three arms or branches—one (79') which extends to the right, as shown in Fig. 3, and then to the right again, as shown in Fig. 4, to pass under and support the free end of the dagger 22, one (79'') which extends downward and has fast thereon the armature *b'*, and one (79''') which extends upward to the right and has attached to the upper end the coil-spring 81.

A lever 75 is centrally pivoted on the stand 16 at 75', and one end extends in the path of and is adapted to be engaged by the shipper-lever E, while an extension 75'' on its other end is adapted to engage the upper end of a latch 76, pivoted at 77. A spring 82, (see Fig. 4^a,) attached at one end to an ear 75''' on the lever 75 and at its other end to an extension 83' on the plate 83, secured to the stand 16, acts to move the lever 75 and cause it to operate the latch 76 when the other end of the lever 75 is released from engagement with the

shipper-lever E by the movement of the shipper-lever E out of its retaining-notch through the movement of the lever 34. Said latch 76 has an extension 76' thereon, which is adapted
 5 to extend over the upper edge of the lifter 79, as shown in Fig. 4. A spring 78, attached at one end to an extension 76'' on the latch 76 and at its other end to an extension 83'' on the plate 83, acts to move the latch 76 and hold
 10 the extension 76' over the edge of the dagger-lifter 79.

On a stand 31, secured to the lower side of the lay A', is the bunter 28.

The electromagnet *b* is by means of the
 15 wires *b*⁵, *b*⁶, and *b*⁹ in electric circuit with the binding-posts on that part of the warp stop-motion at the rear of the loom. (Not shown herein, but fully shown and described in Patent No. 665,591, above referred to.)

20 When a warp-thread breaks or becomes too slack, the electromagnet *b* is put into electric connection to complete the circuit and establish a current derived from the battery P or any usual source of electrical energy and energize the electromagnet *b*. Under said conditions it is evident that the armature *b*' will be drawn toward the electromagnet *b* and the angle-lever 79 moved in opposition to the spring 81 to allow the dagger 22 to fall into
 30 the path of the bunter 28, as shown in Fig. 2. The downward movement of the dagger-lifter 79 will allow the spring 78 to move the latch 76 and cause the extension 76' thereon to engage and extend over the upper edge of the lifter 79, as shown in Fig. 4. The dagger

35 22 is now in the position to be struck by the approaching bunter 28 to turn the dagger-carrier 19 on its pivot 20 and through the knock-off lever 34 to disengage the shipper-lever E from its holding-notch in the extension *a*', and thus stop the loom. The movement of the shipper-lever E releases the centrally-pivoted lever 75 and allows the spring 82 to act to move said lever and through said
 40 lever to move the latch 76 out of engagement with the lifter 79 against the action of the spring 78 and allow the spring 81 to act to move the dagger-lifter 79 and withdraw the armature *b*' from the magnet *b*, thus inter-

rupting the circuit as the loom is stopped. 50
 The movement of the lifter 79 raises the dagger 22 to hold the same out of the path of the bunter 28, as shown in Fig. 1. When the operator moves the shipper-lever E to start the loom, it engages the end of the centrally-pivoted lever 75 and moves it away from the latch 76 and leaves the parts in operative position, as shown in Fig. 1. 55

The advantages of my improvements will be readily appreciated by those skilled in the art. 60

It will be understood that the details of construction of my improvements may be varied, if desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 65

1. In a loom, the combination with a dagger, and a shipper-lever, of a pivoted dagger-lifter having an armature thereon, and an extension under the dagger, and a spring attached to said lifter to move the same and withdraw the armature, and a centrally-pivoted lever extending in the path of the shipper-lever to be engaged and moved thereby, and a spring 75 to move the centrally-pivoted lever in the opposite direction, substantially as shown and described.

2. In a loom, the combination with a dagger, and a shipper-lever, of a pivoted dagger-lifter 80 having an armature thereon, and an extension under the dagger, and a spring attached to said lifter to move the same and withdraw the armature, and a centrally-pivoted lever extending in the path of the shipper-lever to be engaged and moved thereby, and a spring to move the centrally-pivoted lever in the opposite direction, and a spring-actuated pivoted latch having an extension to engage the dagger-lifter when in its lowered position, said 85 latch engaged by the centrally-pivoted lever to be moved out of engagement with the dagger-lifter, substantially as shown and described. 90

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Witnesses:

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