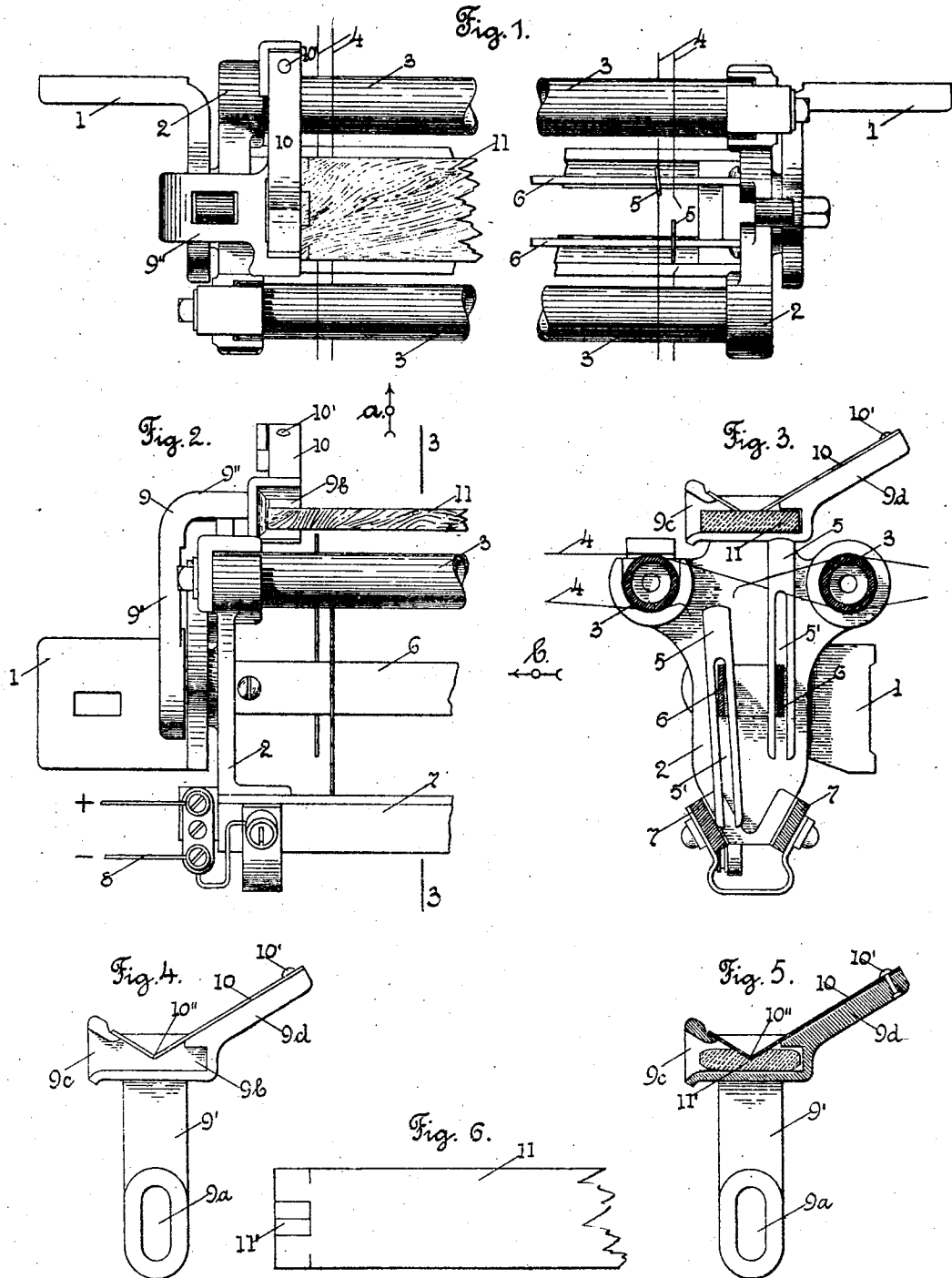


No. 762,569.

PATENTED JUNE 14, 1904.

H. WYMAN.  
WARP STOP MOTION FOR LOOMS.  
APPLICATION FILED MAR. 26, 1904.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## WARP STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 762,569, dated June 14, 1904.

Application filed March 26, 1904. Serial No. 200,087. (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 Warp Stop-Motions for Looms, of which the following is a specification.

My invention relates to warp stop-motions, and particularly to that class of warp stop-motion in which two warp-supporting rods are used to divide the warps into two planes and two sets of drop-bars are used, which are supported on the warp-threads; and preferably have elongated open end slots at their lower ends, through which extend terminals or guide-bars.

In the case of an electric warp stop-motion on the breaking of a warp-thread and the dropping of the drop-bar thereon the lower end of the drop-bar will engage a terminal to close the circuit and through mechanism of any ordinary construction stop the loom.

In the case of a mechanical warp stop-motion the dropping of a drop-bar will bring the lower end thereof in the path of a reciprocating blade to stop the same and through intermediate mechanism stop the loom in the well-known way.

It is found in practice in the class of warp stop-motions above referred to in the operation of the loom that the drop-bars supported on the warp-threads are apt to jump up and be disconnected from the warp-threads, and different devices have been employed to prevent the drop-bars from jumping up from the warp-threads. Some of these devices are permanently attached to some part of the warp stop-motion and others, which are of flexible or elastic material, are made detachable.

It is especially desirable to have the device which extends over the drop-bars to prevent their jumping up on the warp-threads of rigid or non-flexible material, so that there will be no sagging or yielding of the device. It is also especially desirable to have said device readily and quickly detachable from the warp

stop-motion, so that the attendant can quickly remove the same to obtain ready access to the drop-bars and the warp-threads below the device.

The object of my invention is to provide a rigid or non-flexible device to extend above the drop-bars and prevent them from jumping off of the warp-threads, which device is detachable and may be readily detached and removed without removing screws or any attaching devices.

In my improvements I preferably provide at each end of the warp stop-motion above the warp-supporting rods a stand having a recess therein to receive the ends of the rigid or non-flexible strip or bar which extends directly over the drop-bars and also to provide means made separate from and not connected with said strip or bar to hold the same in said recesses.

I have only shown in the drawings sufficient portions of a warp stop-motion embodying my improvements to enable those skilled in the art to which my invention belongs to make and use the same.

Referring to the drawings, Figure 1 is a plan view of parts of an electric warp stop-motion with my improvements applied thereto. At the right of said figure the retaining-bar and the supporting-stand therefor is not shown. Fig. 2 is a side view of the parts shown in Fig. 1 looking in the direction of arrow *a*, same figure. Fig. 3 is a section on line 3-3, Fig. 2, looking in the direction of arrow *b*, same figure. Fig. 4 is a detached view of the stand which holds one end of the retaining-bar. Fig. 5 corresponds to Fig. 4, but shows a sectional view of the holder and the bar held therein; and Fig. 6 is a plan view of one end of the retaining-bar detached.

In the accompanying drawings, 1 represents the brackets or supports for the end frames 2 of the warp stop-motion. 3 represents the warp-supporting rods, supported at their ends on the frames 2, and 4 represents the warp-threads, divided in this instance into two planes by the rods 3, as shown in Fig. 3.

There are two sets of drop-bars 5, each set supported on one-half of the warp-threads 4 and having open-end slots 5' therein, through which extend the terminals 6, supported at their ends on the end frames 2.

Below the drop-bars 5 are two inclined terminals 7, supported on the end frames 2 and connected by a wire 8.

All of the above-mentioned parts may be of the ordinary construction and are fully shown and described in my Letters Patent No. 714,090.

I will now describe my improvements combined in this instance with the parts of the electric warp stop-motion above described.

A stand 9, preferably of the shape shown, is permanently secured at each end of the warp stop-motion. The vertical portion 9' of the stand 9 in this instance has an elongated slot 9" therein, by means of which it may be adjustably attached to the end of the warp-stop-motion frame. The horizontal portion 9" of the stand 9 extends over the upper part of the warp stop-motion at each end in a horizontal plane, as shown in Fig. 2. Said part 9" is recessed or grooved to form a horizontal recess or opening 9<sup>b</sup>, preferably closed at one end and open at the other. The open end preferably has a flaring mouth or opening 9<sup>c</sup>, as shown in Fig. 4. Extending up from the horizontal portion 9' is an arm 9<sup>d</sup>, to the upper end of which is in this instance attached by a rivet 10' one end of a leaf-spring 10. The free end of the leaf-spring 10 is preferably bent, as shown, to form the angular portion 10", which is adapted to extend into an angular recess 11' in the upper side of the rigid strip or bar 11 at the end thereof. The bar 11 is preferably made of wood and is of sufficient length to extend across the warp stop-motion on the upper part thereof just above the drop-bars 5. Each end of the bar 11 is preferably supported and detachably held in position over the drop-bars 5 by the stand 9, having the recess or opening 9<sup>b</sup> therein to receive the end of the bar 11 and the holding-spring 10 or its equivalent to detachably hold the bar in said track or way 9<sup>b</sup>.

By means of the angular or downward projection 10" in the spring 10 and the recess 11' in the end of the bar 11 the bar is locked or held in operative position and is moved out of operative position and detached by simply drawing it out of the ways 9<sup>b</sup> in the stand 9,

the springs 10 yielding to release the ends of the bar 11.

The advantages of my improvements will be readily appreciated by those skilled in the art. They are of very simple construction and may be readily applied with very little expense to any warp stop-motion of any ordinary construction, either electrical or mechanical. The rigidity or non-flexibility of the bar 11 prevents any sagging of said bar intermediate its ends.

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—

1. In a warp stop-motion, the combination with the end frames, of stands permanently secured thereto and having a recess therein to receive the ends of a strip or bar extending over the drop-bars, and said strip or bar and means for holding said strip or bar in said recess, substantially as shown and described.

2. In a warp stop-motion of a loom, the combination with brackets or stands at the ends of the warp stop-motion, said brackets having recesses therein to receive the ends of a bar or strip extending over the drop-bars, of said bar or strip adapted to be supported in said recesses, and means for holding it in said recesses, substantially as shown and described.

3. In a warp stop-motion of a loom, the combination with brackets or stands adapted to be secured to the ends of the warp stop-motion, and having recesses therein to receive the ends of a strip or bar, and a spring secured to said brackets, of a strip or bar adapted to be supported at its ends in said recesses and be held therein by said spring, substantially as shown and described.

4. In a warp stop-motion of a loom, the combination with brackets or stands adapted to be secured to the ends of the warp stop-motion, and having recesses therein to receive the ends of a strip or bar, of a strip or bar having recesses at its ends and adapted to be held thereby, substantially as shown and described.

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