No. 803,318. PATENTED OCT. 31, 1905.

H. WYMAN.

WARP STOP MOTION FOR LOOMS.

APPLICATION FILED JAN. 15, 1904.

Fig. 1.

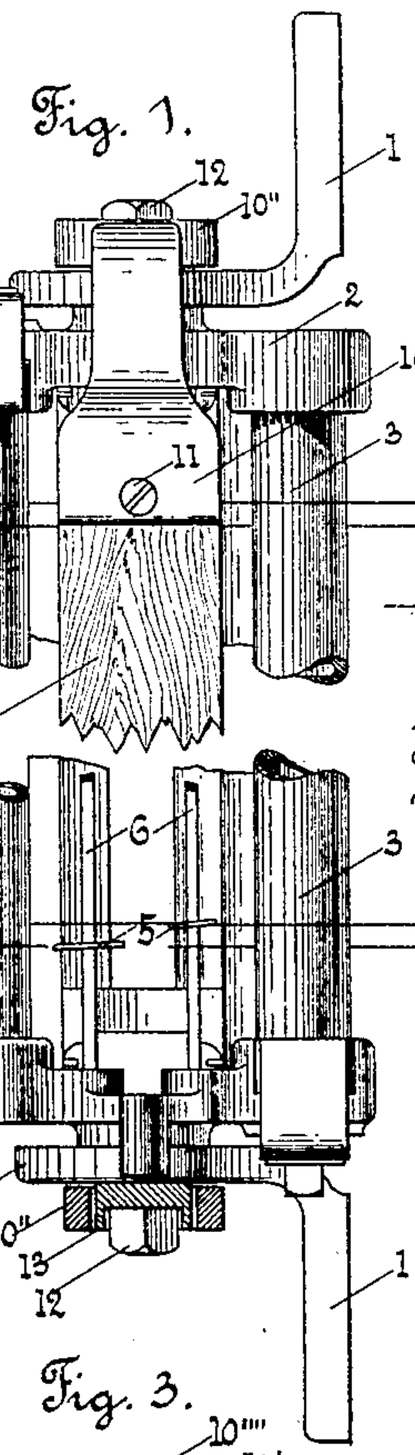


Fig. 2.

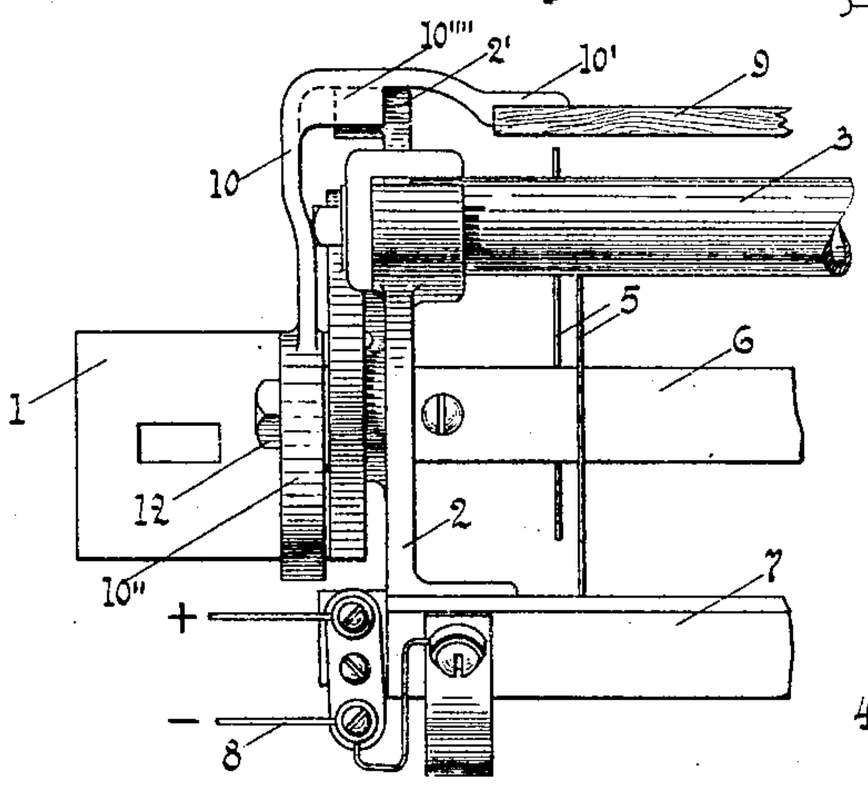


Fig. 4.

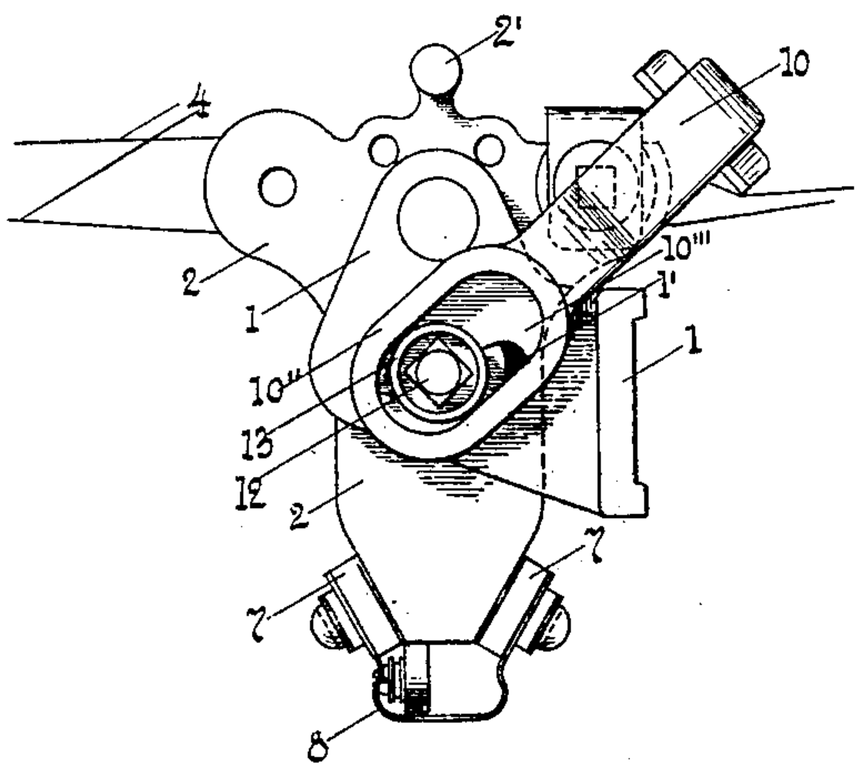
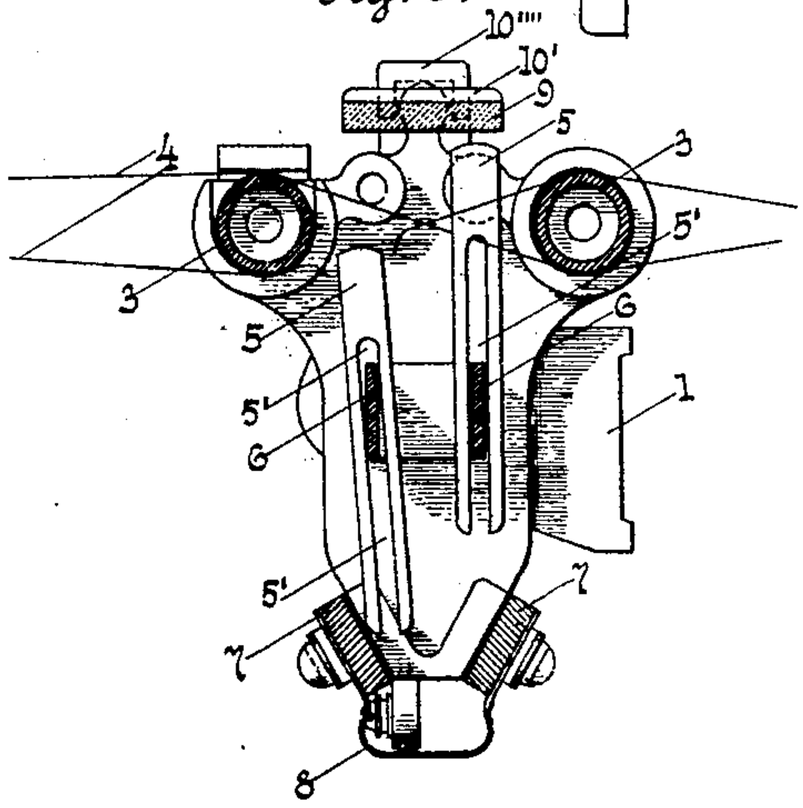


Fig. 3.



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UNITED STATES PATENT OFFICE.

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WARP STOP-MOTION FOR LOOMS.

No. 803,318. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed January 15, 1904. Serial No. 189,090.

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 for looms and to that class of warp stop-motions in which one or more series of drop-bars are supported on the warp-threads and the breaking of a warp-thread or too much slackness causes the bar to drop and to put into operation mechanism to stop the loom in the well-known way.

My invention particularly relates to a supplemental mechanism adapted to be combined with a warp stop-motion of any ordinary construction to prevent the drop-bars from jumping off of the warp-threads on which they are supported during the operation of the loom.

The object of my invention is to provide a supplemental mechanism of simple construction which can be readily attached to a warp stop-motion of ordinary construction and be held in position above the upper ends of the drop-bars to prevent them from jumping off of the warp-threads and also moved away from the upper ends of the drop-bars without being detached from the warp stop-motion.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have shown in the drawings parts of a warp stop-motion of a well-known type and which is fully shown and described in my United States Letters Patent No. 714,090, dated November 18, 1902, with which motion I have in this instance combined my improvements.

Referring to the drawings, Figure 1 is a plan view of parts of the warp stop-motion and of my improvements applied thereto. At the lower part of the figure the retaining-bar of my improvements is shown broken away, and the supporting-arm is in section. Fig. 2 is a side view of the parts shown in the upper part of Fig. 1 looking in the direction of arrow *a*, same figure. Fig. 3 is a cross-section on line 3 3, Fig. 1, looking in the direction of arrow *b*, same figure; and Fig. 4 is an end view of the parts shown in Fig. 1 looking in the direction of arrow *c*, same figure, but shows also the retaining-bar and its supporting-arm moved to one side and in its inoperative position.

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 end frames 2.

The warp-threads 4 are in this instance divided into two planes by the rods 3. There are two series of drop-bars 5, each series supported on one-half of the warp-threads and having open-end slots 5′ therein, through which extend the guide-bars or terminals 6, supported at their ends on the end frames 2. Below the drop-bars 5 are two inclined bars or terminals 7, supported on the end frames 2 and connected by an electric wire 8.

All of the above-mentioned parts are of well-known construction and operation and fully shown and described in my said Patent No. 714,090.

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

A strip or bar 9, preferably made of wood, extends longitudinally through the warp stop-motion between the warp-supporting rods 3 and just above and out of contact with the drop-bars 5. The bar 9 is of sufficient width to extend over both series of drop-bars 5 and is in this instance supported at each end on one arm 10′ of an angle support or arm 10 and permanently secured thereto in this instance by a screw 11. The other arm 10″ of the angle-arm 10 extends parallel to the end frame 2 and has an elongated slot or opening 10‴ therein, through which extends a bolt 12, secured on the outer side of the end frame 2. The bolt 12 also extends through a slot or opening 1′ in the supports 1, as shown in Fig. 4, to support the end frame 2 on the bracket 1. On the bolt 12 is a collar or washer 13, (see Figs. 1 and 4,) which fits within the elongated opening 10‴ in the arm 10″ of the angle-arm 10 and acts as a guide and bearing for the angle-arm 10, so that it can be raised and lowered and also have a pivotal motion. Upon the under side of the upper arm 10′ of the angle-lever 10 is in this instance a recess 10⁗, which is adapted to fit onto and receive a projection 2′ on the upper edge of the end frame 2. The engage-

ment of the recess 10'''' on the angle-arm 10 with the projection 2' on the end frame 2 supports and holds the angle-arm 10, and with it the bar 9, in operative position over the drop-bars 5, as shown.

When it is desired to remove the bar 9 from its operative position over the drop-bars 5, the bar 9 is raised, causing the slotted ends of the angle-arms 10 to move up on the washers 13 and free the recesses 10'''' from the projections 2', leaving the bar 9 and angle-arms 10 free to be moved to one side of and away from the drop-bars, as shown in Fig. 4, and leaving free access to said drop-bars 5.

The advantages of my improvements will be readily appreciated by those skilled in the art. They are of very simple construction, and the bar 9 may be applied to any well-known type of warp stop-motion and is applied in such a way that it forms a part of the warp stop-motion, and it is not necessary to detach it at either end to move it out of operative position and away from the drop-bars.

When not in use, the bar 9 need not be detached, but is simply moved to one side, ready for immediate use.

It will be understood that the details of construction of my improvements may be varied, if desired, and they may be adapted to be applied to warp stop-motions of ordinary construction, either electric or mechanical.

I prefer to use a rigid strip or bar 9; but I may use a flexible strip or bar.

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

In a warp stop-motion, the combination with the end frames having a projection or engaging surface thereon, of angle arms or supports, carrying a strip or bar adapted to extend over the drop-bars, to limit their upward movement, and said arms or supports pivotally attached and adapted to engage with said projection or engaging surface on the end frames, and to be moved out of engagement therewith, and to one side and away from the drop-bars, to leave free access to the same, substantially as shown and described.

HORACE WYMAN.

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