

No. 686,499.

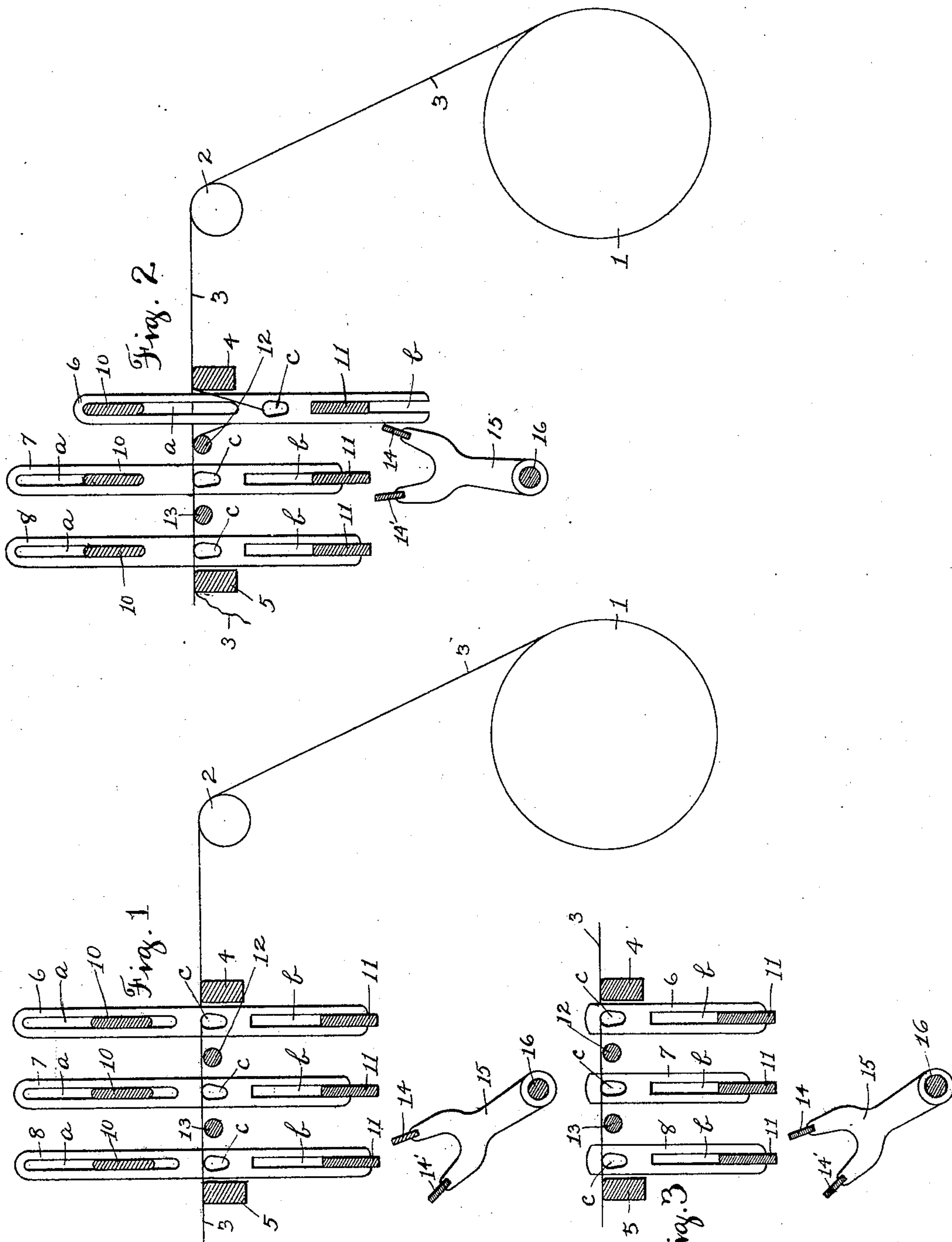
Patented Nov. 12, 1901.

H. WYMAN.

WARP STOP DETECTOR FOR LOOMS.

(Application filed June 22, 1901.)

(No Model.)



Witnesses
A. A. Kinsley
M. Haas.

By

Inventor
Horace Wyman
John C. Servey
Atty

UNITED STATES PATENT OFFICE.

HORACE WYMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

WARP STOP-DETECTOR FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 686,499, dated November 12, 1901.

Application filed June 22, 1901. Serial No. 65,673. (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 Looms, of which the following is a specification.

My invention relates to warp stop-motions for looms, and more particularly to that class of warp stop-motions shown and described in United States Patent No. 627,963, of July 4, 1899, in which the drop devices are so located as not to use and fall with the harnesses, but are independent of the shedding mechanism.

It has been found in practice in certain classes of fabrics, as silks, where there are a great many warp-threads and fine warp-threads very close together and crowded into a fixed width of space, that it is impossible to utilize the warp stop-motions of ordinary construction, for the reason that there is not room for all the drop devices, one for each warp-thread, and even if there is room the crowding together of the drop devices prevents them from working properly.

The object of my invention is to overcome the objections to the warp stop-motions of ordinary construction above referred to and to provide a warp stop-motion in which there will be room for a greater number of drop devices and in which they will not be crowded and prevented from working properly in the finest class of goods, as silks, &c.

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

I have shown in the drawings sufficient portions of a warp stop-motion to illustrate the nature of my improvements.

Referring to the drawings, Figure 1 is a vertical cross-section through a warp stop-motion embodying my improvements. Fig. 2 corresponds to Fig. 1, but shows one of the drop devices in its lowered position and the vibrating feeler-blade in a different position; and Fig. 3 shows a modified construction of the drop device shown in Figs. 1 and 2.

In the accompanying drawings, Figs. 1 and 2, the warp let-off beam is marked 1, and 2 is the back roll, over which in this instance

all the warp-threads 3 pass. 4 and 5 are warp-supporting bars extending transversely across the loom and supported at their ends in a frame (not shown) in the ordinary way. Between the warp-supporting bars 4 and 5 are in this instance three sets of drop devices 6, 7, and 8, arranged in three parallel rows. Each drop device has an elongated opening *a* in its upper part and an elongated opening *b* in its lower part, which has one end open, as shown, and there is an opening or warp-eye *c* in the central part between the openings *a* and *b* for a warp-thread to pass through and by means of which the drop device is supported in its normal position when the warp-thread is not broken or too slack.

There is a guide-bar 10 for each set of drop devices, which extends through the upper openings *a*, as shown, and guides and holds the drop devices at their upper ends and also limits the downward motion or drop of said devices when a warp-thread is broken or becomes too slack, as shown at the right in Fig. 2. There is a second guide and holding bar 11 for each set of drop devices, which extends through the lower openings *b*, as shown, and guides and holds the drop devices at their lower ends.

Between the drop devices extend two transverse rods or bars 12 and 13, supported at their ends, and which act to support the warp-threads between the drop devices.

In connection with the drop devices and forming a part of the warp stop-motion are employed in this instance two feeler-blades 14 and 14', secured at their ends upon the forked end of a rocking arm 15, fast on a rock-shaft 16, to which a regular rocking motion is communicated by mechanism (not shown) in the ordinary way and which is connected with the shipper mechanism of the loom to stop the loom in case one of the feeler-blades 14 or 14' engages with one of the drop devices, as shown in Fig. 2. It will be seen that the feeler-blades 14 and 14' on the rocking arm move in the arc of a circle, and consequently if the lower ends of the three sets of drop devices 6, 7, and 8 are in the same horizontal plane the lower ends of the middle set of drop devices 7 will be nearer the arc of

movement of the feeler-blades 14 and 14' than the outside drop devices 6 and 8. I therefore preferably shorten the middle set of drop devices 7 at their lower ends, so that in
5 case of any slight slackness of the warp they will not be lowered sufficiently to come in the path of or be engaged by the feeler-blades 14 and 14'.

In Fig. 3 I have shown a modified construction of the drop devices 6, 7, and 8. The
10 drop devices are cut off or shortened at their upper ends, so as to extend slightly above the plane of the warp-threads, as shown in said Fig. 3. In this construction of the drop de-
15 vices the upper set of guide-bars 10 are dispensed with, the lower set of guide-bars 11 serving to guide and hold the drop devices.

I prefer to use two feeler-blades 14 and 14', as shown, so that the rocking arm 15 will not
20 have to be moved so great a distance as it would if only one feeler-blade were used.

It will be understood that the details of construction of my improvements may be varied somewhat from what is shown and described
25 herein, 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 for looms, the combination with warp-supporting bars, and two
30 transverse rods, extending between the drop devices, and three sets of drop devices, arranged in parallel rows, and each drop device having a warp-eye, and an elongated opening in its lower part, open at one end, 35
and a guide-bar extending through said opening, of a rocking arm carrying two feeler-blades, one of which will engage a drop device in its lowered position, substantially as
40 shown and described.

2. In a warp stop-motion for looms, the combination with the warp-supporting bars, and three sets of drop devices arranged in parallel rows, each drop device having an elongated opening in its upper part, a warp-eye 45
in its central part, and an elongated opening in its lower part, open at one end, and a guide-bar extending through each elongated opening, of a rocking arm carrying two feeler-
50 blades one of which will engage a drop device in its lowered position, substantially as shown and described.

HORACE WYMAN.

Witnesses:

J. C. DEWEY,
M. HAAS.