

No. 636,503.

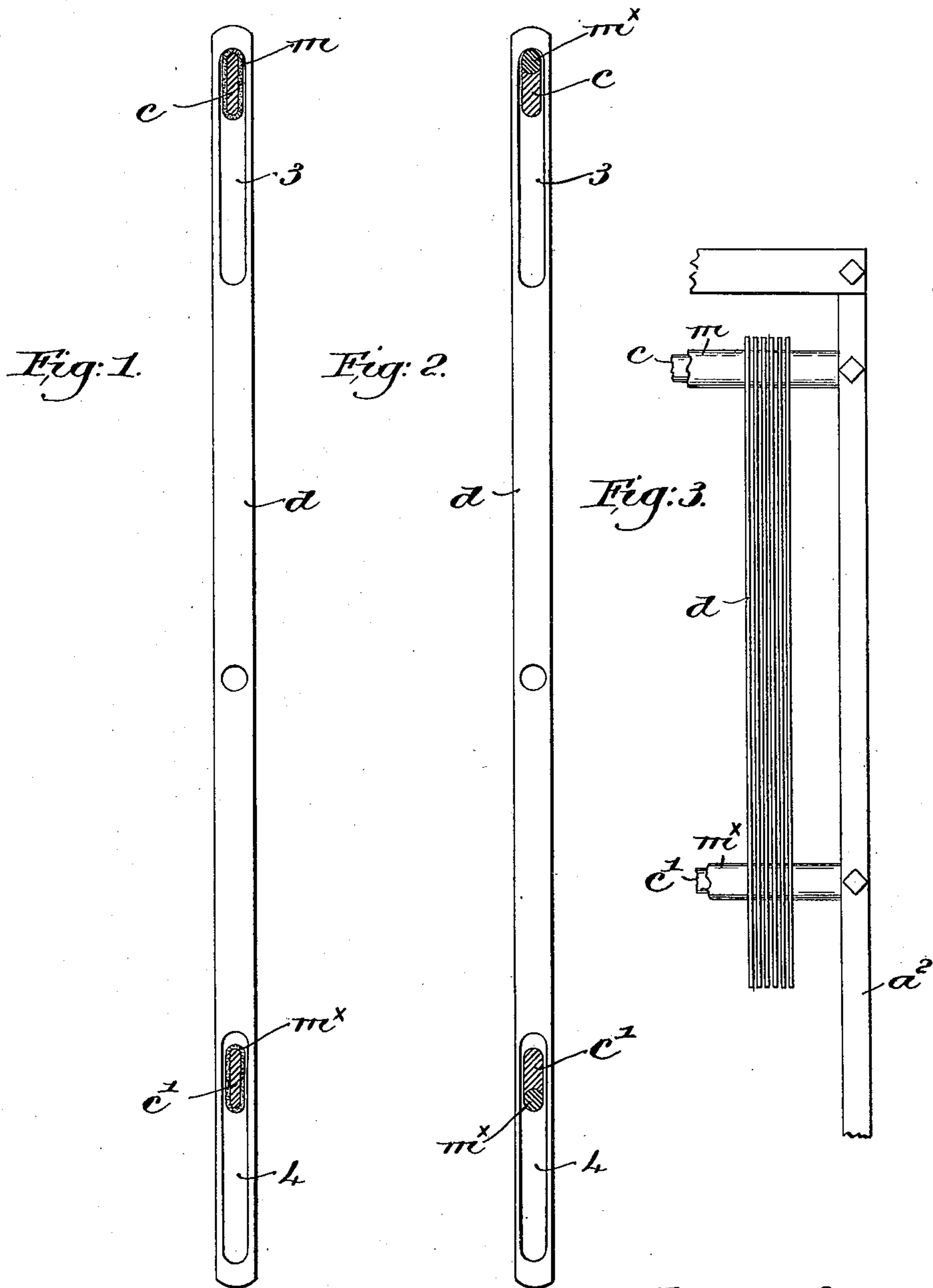
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W. F. DRAPER.

WARP STOP MOTION FOR LOOMS.

(Application filed July 8, 1899.)

(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. 636,503, dated November 7, 1899.

Application filed July 8, 1899. Serial No. 723,131. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. DRAPER, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Warp-Stop-Motion Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 In one very widely used form of warp-stop-motion mechanism for looms the detectors, made of thin flat strips of metal, preferably hardened steel, are strung on a transverse metallic bar forming a part of the harness-frame, said detectors being longitudinally slotted to receive the supporting-bar and having a limited movement relative thereto in the direction of their length. These detectors also serve as heddles in such construction, the warp-threads passing through suitable eyes in the "detector-heddles," as they may be termed, substantially as shown in United States Patent No. 536,969, dated April 2, 1895. In practice it has been found

25 that when such detector-heddles are used the constant and quick tapping of the transverse bar upon the detectors at the ends of the slots therein causes magnetization of the detectors, the action corresponding, so far as known, to the well-known manner of magnetizing one metallic bar with another continuously and in rapid succession. Such magnetization of the detectors interferes with their proper freedom of movement, as they

30 stick together or become sluggish in their movements, so that the quality of the cloth being woven is impaired. It has also been found that this contact of metal to metal prevents any give or yield in the detector when

40 a knot or bunch on the warp-yarn is passing through the eye, thereby causing breakage of yarn.

My present invention has for its object the production of means to prevent the foregoing objectionable features in warp-stop-motion mechanism of the described form.

Figure 1 is a side elevation of one form of metallic detector, the supporting-bar shown in cross-section illustrating one embodiment

of my invention. Fig. 2 is a similar view illustrating another mode of obviating the contact of metal to metal; and Fig. 3 is a front elevation, on a smaller scale, of a portion of the harness or heddle frame with my invention applied thereto.

The harness or heddle frame usually comprises parallel side bars a^2 , only one of which is shown, and upper and lower cross-bars $c c'$, extended through corresponding longitudinal slots 3 and 4 in the detector-heddle d .

In Figs. 1 and 3 the supporting-bars c are surrounded or covered with a non-metallic yielding buffer m , of felt or other suitable material, so interposed between the bar and the detector-heddles that the impact of metal with metal is prevented and the force of the blow also softened. By such means magnetization of the detector-heddles is prevented, and the buffer also acts as a yielding cushion when a bunch or knot on the warp-thread engages the eye of the detector, permitting sufficient give to prevent breakage of the thread.

I prefer to practically surround or incase the supporting-bar with the buffer, especially when it is desired to obviate magnetization of the detectors; but when it is desired more particularly to use the buffer to prevent yarn breakage it may be constructed as shown in Fig. 2, the buffer m^x being applied to the upper edge of the bar c , and if two bars are used, as herein, the lower edge of the bar c' will also be provided with the yielding buffer m^x , which is made of felt, rubber, or other yielding non-metallic material.

The detectors herein shown are provided with two slots near their ends, and two cross-bars are used in connection therewith; but my invention is not restricted thereto, for other forms of detectors may be employed—such, for instance, as shown in United States Patent No. 594,213, dated November 23, 1897, wherein the detectors are provided with only one slot each for a single supporting-bar.

Having fully described my invention and illustrated a practical embodiment thereof, without limiting my invention to such precise construction and arrangement, what I

claim, and desire to secure by Letters Patent, is—

1. In warp-stop-motion mechanism for looms, a series of longitudinally-slotted, metallic detectors provided with warp-receiving openings, a transverse supporting-bar extended through the slots of the detectors, and a non-metallic buffer interposed between the engaging edge of said supporting-bar and the detectors.

2. In warp-stop-motion mechanism for looms, a series of longitudinally-slotted, metallic detector-heddles having warp-receiving openings, a reciprocating frame having a transverse supporting-bar extended through the slots of the detector-heddles, and a yielding, non-metallic buffer carried by said support and interposed between its engaging edge and the detector-heddles.

3. In warp-stop-motion mechanism for looms, a reciprocating support, metallic detectors longitudinally slotted to receive said support and having limited longitudinal movement relative thereto, and yielding, non-metallic material interposed between the engaging edge of the support and the detectors,

to prevent direct contact of said support and detectors.

4. In warp-stop-motion mechanism for looms, a series of vertically-reciprocating, longitudinally-slotted metallic detectors normally controlled by the warp-threads, a support for and extended through the slots of the detectors, and a non-metallic buffer enveloping the support.

5. In warp-stop-motion mechanism for looms, a metallic, reciprocating support, thin, flat, steel detector-heddles longitudinally slotted to receive said support and having limited longitudinal movement relative thereto, and a non-metallic, yielding buffer interposed between the engaging edge of the support and the detector-heddles, to prevent magnetization of the latter.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM F. DRAPER.

Witnesses:

GEORGE OTIS DRAPER,
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