

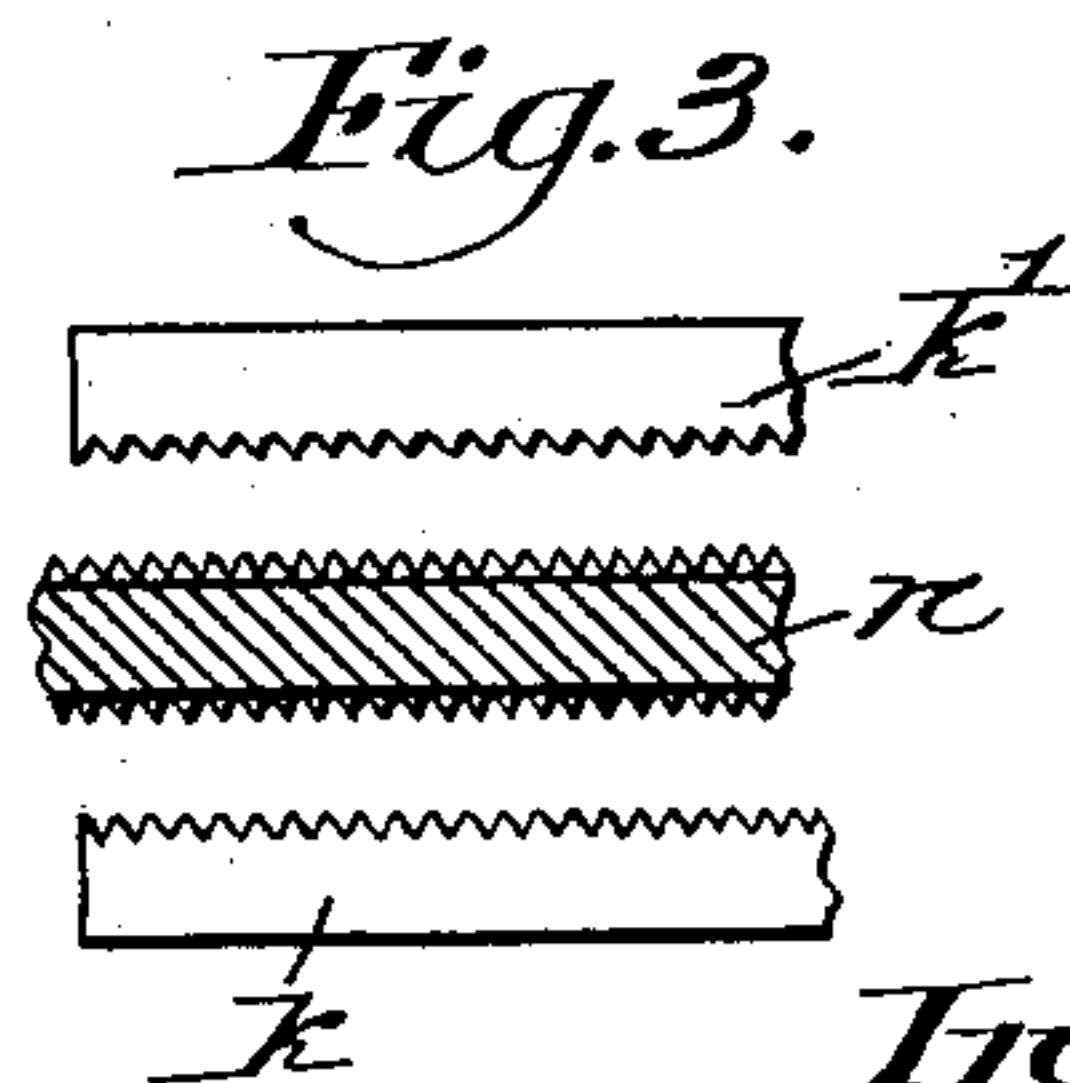
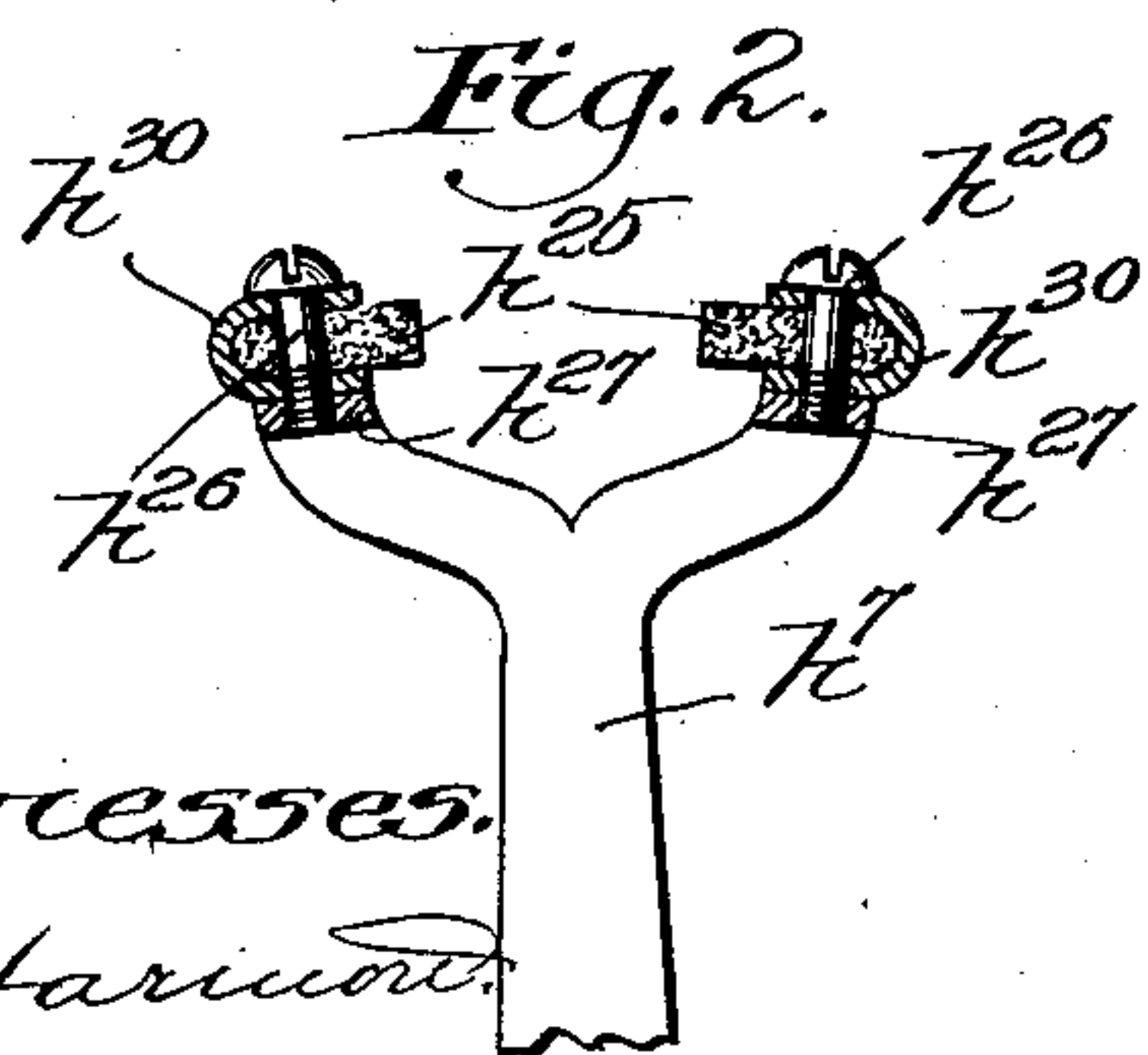
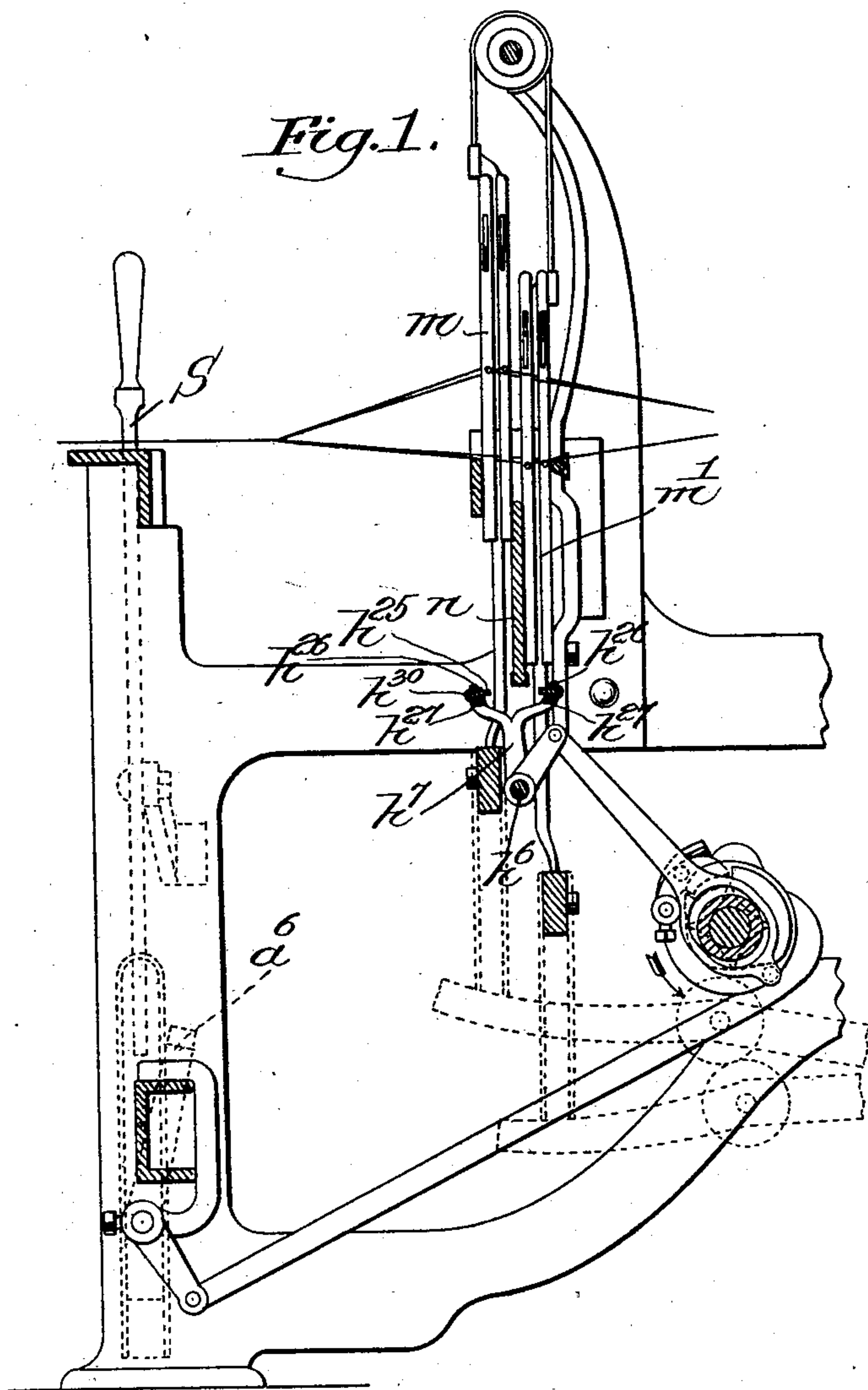
No. 608,558.

Patented Aug. 2, 1898.

J. H. NORTHROP.
WARP STOP MOTION FOR LOOMS.

(Application filed Feb. 25, 1898.)

(No Model.)



Witnesses.
A. G. Harrison.
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UNITED STATES PATENT OFFICE.

JAMES H. NORTHROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE
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WARP STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 608,558, dated August 2, 1898.

Application filed February 25, 1898. Serial No. 671,562. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. NORTHROP, a subject of the Queen of Great Britain, residing at Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Warp Stop-Motions for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In United States Patent No. 594,355, dated November 23, 1897, a well-known type of warp stop-motion is shown wherein the breakage or undue slackness of a warp-thread is made operative to effect stoppage of the loom by or through the movement of an actuating-detector into position to engage and stop a normally-vibrating feeler. The detectors are usually made of thin flat strips of sheet metal, each having a warp-receiving eye, and the feeler engages the upright edge of an abnormally-positioned detector, the edge of the feeler being serrated to prevent any undue lateral twisting of the engaged detector.

Various forms of feeler have been devised with the object of minimizing the possible damage to detectors when engaged; and my present invention relates more particularly to the construction of the feeler.

Figure 1 is a transverse sectional view of a loom having a warp stop-motion applied thereto embodying my invention. Fig. 2 is an enlarged cross-section of the feeler shown in Fig. 1; and Fig. 3, in plan view, is a detail showing the form of feeler and back-stop as illustrated in the United States patent referred to hereinbefore.

Referring to Fig. 1, the shipper-lever S, the knock-off arm a^6 and its actuating mechanism, the vertically-reciprocated frames supporting the warp-stop-motion-actuating detectors $m m'$, and the rock-shaft h^6 and its operating mechanism may be and are substantially as in the patent referred to, like parts being similarly lettered herein. The rock-shaft has fast thereon yoke-like arms h^7 , to the upper ends of which are attached two like and parallel vibrators or feelers to cooperate with the two sets of detectors $m m'$, the latter being separated at their lower ends by a flat plate or bar n , preventing their in-

termingling and serving also as a stop for a dropped detector when engaged by a vibrator.

In my present invention the acting portion of the vibrator or feeler is made of yielding material, such as felt or rubber, which will give or yield when engaging the edge of the detector, preventing bending or twisting thereof.

The strip h^{25} of yielding material, of felt, rubber, or other suitable material, may be conveniently held in a strip of metal h^{30} , bent into substantially U shape and attached to the arms h^7 by suitable screws or rivets h^{26} , Fig. 2. Preferably these screws enter a plate or bar h^{27} , extended the length of the holder h^{30} and suitably secured to the arms to afford a firm support for the feeler or vibrator.

In the United States patent referred to both the feelers $k k'$ and the plate n are provided with serrated acting edges or faces to hold a dropped detector between them, as in Fig. 3; but by my novel construction herein I obviate the necessity for the serrations and attain the same results with less danger to the detectors.

My invention is not restricted to the precise construction herein shown, nor to the arrangement of detectors illustrated, for obviously a feeler or vibrator having a yielding edge portion to engage the detector may be employed with other arrangements of detectors and with any suitable mechanism for effecting stoppage of the loom when the movement of the feeler is stopped by engagement with a dropped detector.

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

1. In a loom, a series of warp-stop-motion-actuating detectors movable into operative position by breakage or undue slackness of the warp-threads, a cooperating vibrator comprising a strip of yielding material, and a holder of rigid material having two opposed walls between which the yielding material is held and beyond the edges of which it projects, to engage a dropped detector, and stopping mechanism for the loom, operated by or through stoppage of the movement of the vibrator.

2. In a warp-stop-motion mechanism for

looms, a series of actuating-detectors movable into operative position by failure or undue slackness of the warp-threads, and a co-operating vibrator comprising a substantially
5 U-shaped holder and a strip of yielding material held therein and projecting from between its edges, to engage a dropped detector.

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

JAMES H. NORTHROP.

Witnesses:

HERBERT S. MANLEY,
GEO. OTIS DRAPER.