

No. 692,431.

Patented Feb. 4, 1902.

J. V. & E. CUNNIFF.
WARP STOP MOTION FOR LOOMS.

(Application filed Mar. 25, 1901.)

(No Model.)

Fig. 1.

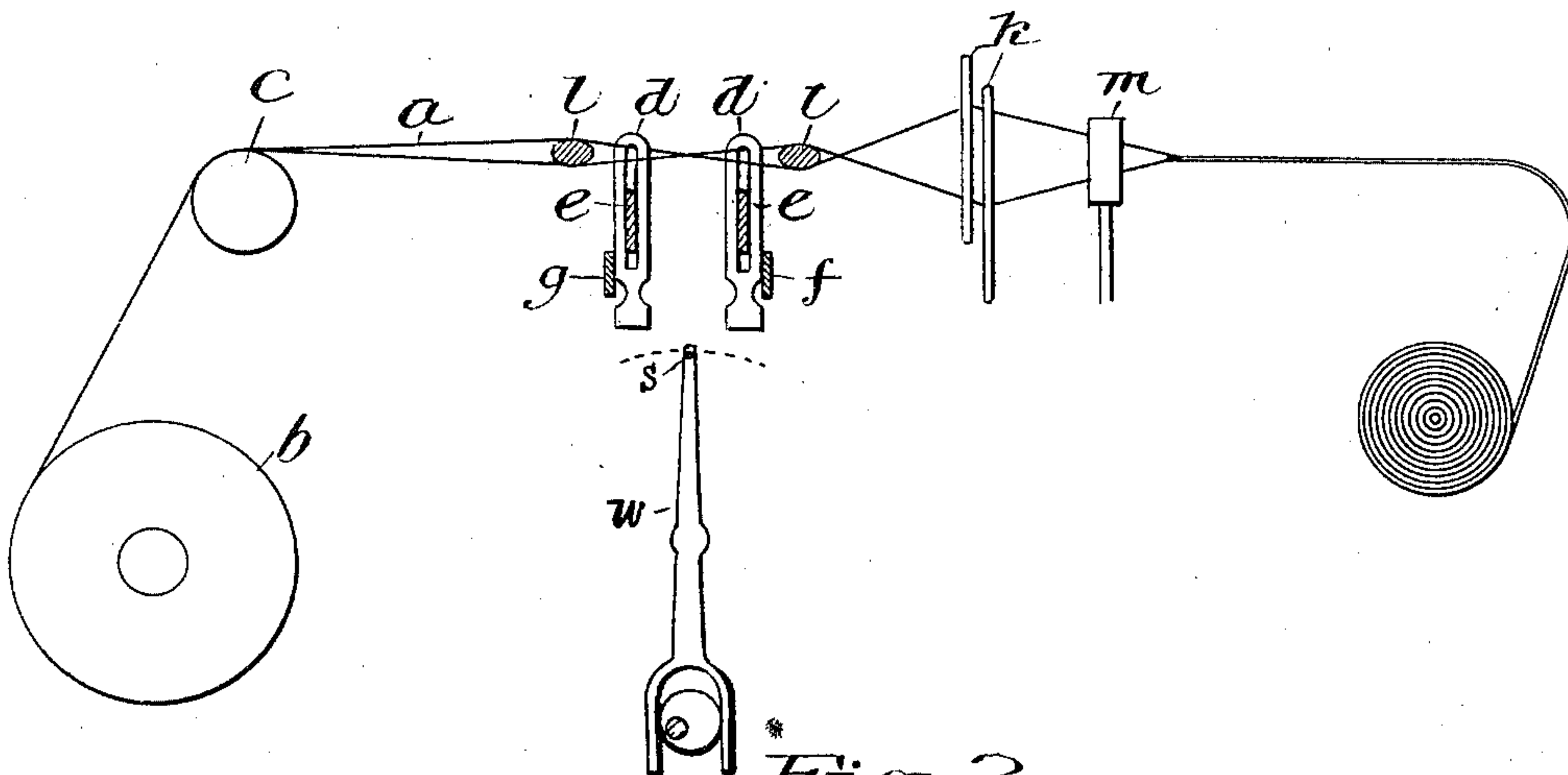


Fig. 2.

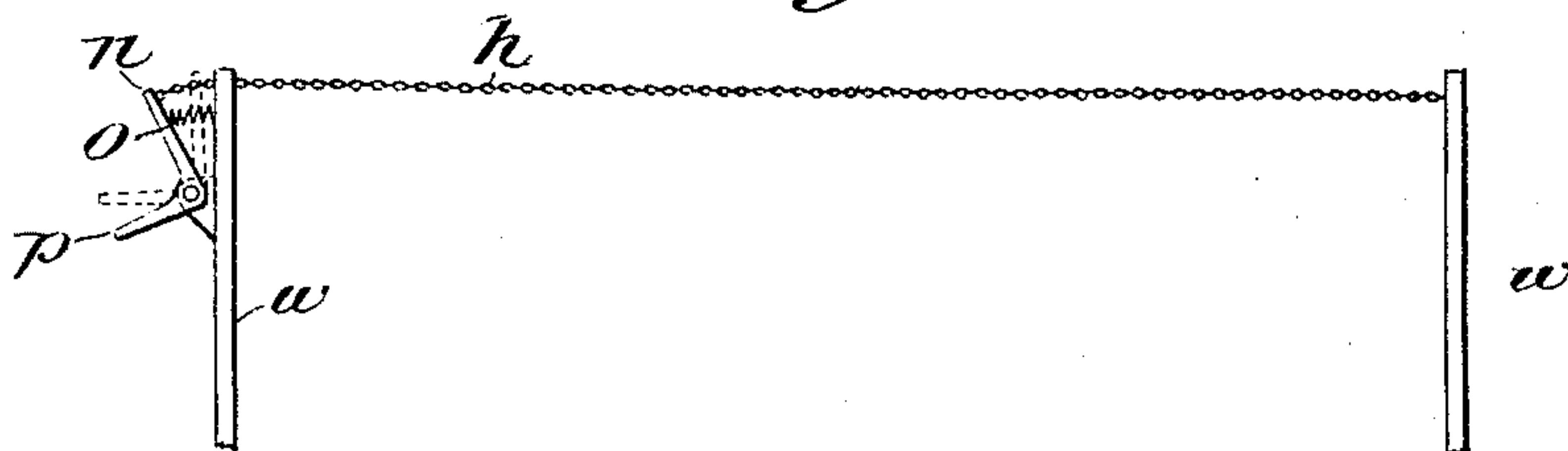


Fig. 3.

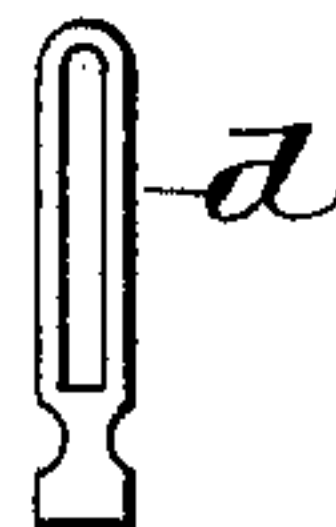
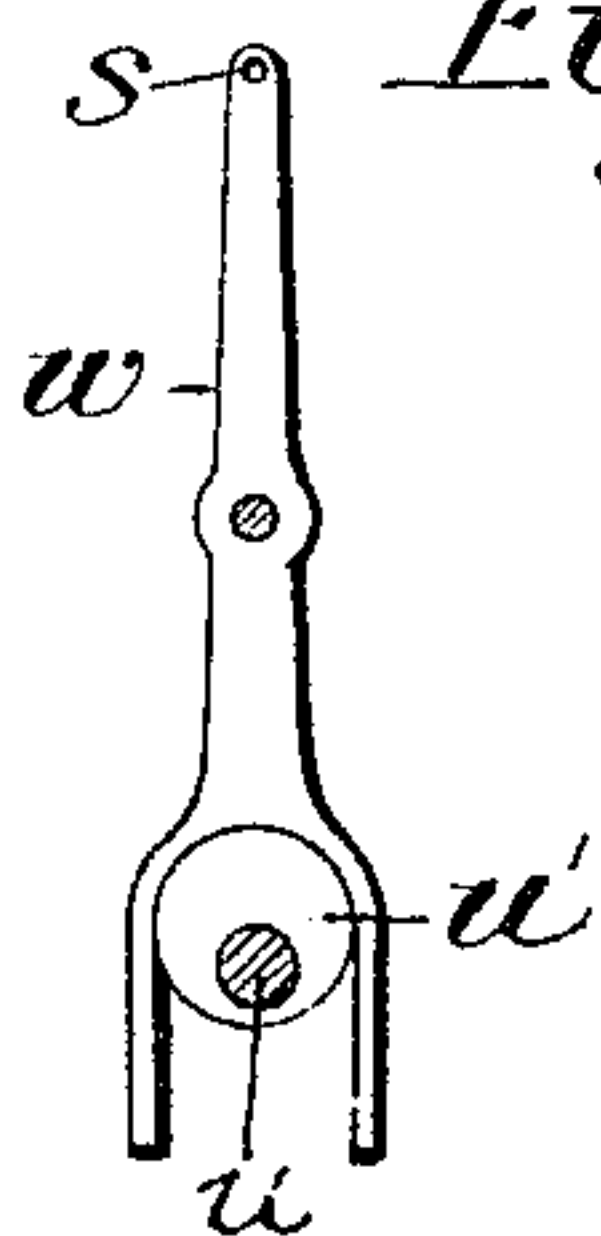


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN V. CUNNIFF AND EDWARD CUNNIFF, OF NEW BEDFORD, MASSACHUSETTS, ASSIGNORS OF ONE-HALF TO ANDREW E. HATHAWAY, OF NEW BEDFORD, MASSACHUSETTS.

WARP STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 692,431, dated February 4, 1902.

Application filed March 25, 1901. Serial No. 52,825. (No model.)

To all whom it may concern:

Be it known that we, JOHN V. CUNNIFF and EDWARD CUNNIFF, citizens of the United States of America, and residents of New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Warp Stop-Motions for Looms, of which the following is a specification.

Our invention relates particularly to devices used for stopping the loom when a warp-thread breaks; and it consists of a series of thin metallic detectors slotted and normally supported by the warp-threads and abnormally supported by transverse bars extending across the loom passing through their slots and a cord or light chain stretched across the loom, one end of which is secured to a latch connecting at certain times with the mechanism for stopping the loom, said chain having an oscillating motion directly under the lower ends of said detectors.

The accompanying drawings illustrate our invention, in which—

Figure 1 is a side view of a portion of a loom sufficient to represent our invention. Fig. 2 is a front view of the oscillating chain and latch, showing its supports in section. Fig. 3 is an enlarged view of one of the metallic detectors. Fig. 4 is a detail view of one of the oscillating arms carrying the improved stopping means embodied in our invention.

Similar letters refer to like parts in the several views.

The letter *a* represents the warp-threads, which pass from the warp-beam *b*, over the warp-roll *c*, around the lease-rods *l*, through the slots in the detectors *d d*, and through the heddles *k* and reed *m* to the cloth.

The detectors *d d* are made of thin metal, preferably of brass, as that metal is not magnetic, and are slotted, as shown. One of these detectors is provided for each warp-thread, and they are abnormally supported on two parallel bars *e e*, which have their bearings in the sides of the loom, half of said detectors being supported on each of said bars *e e*.

w w designate oscillating arms of any suitable form or construction to best adapt them

to the purposes for which they are intended. These arms are so disposed that when oscillated their free ends will rock back and forth in a line directly beneath the lower ends of the detectors *d d*. We have shown these arms *w w* as actuated by means of an eccentric *u'*, mounted on a shaft *u*, arranged transversely of the loom; but it is obvious that any approved means may be employed in order to obtain the result desired.

h designates a chain or cord extending transversely of the loom, one end of said chain being securely fastened to one of the oscillating arms *w*, its other end passing through an aperture *s* in the free end of the other oscillating arm and connected with the arm *n* of an L-shaped latch *p*, which is pivotally mounted upon the last-mentioned oscillating arm.

Interposed between the arm *n* of the latch and the oscillating arm upon which the said latch is mounted is a spring *o*, which exerts its expansive strength against the arm *n* to force said arm away from the oscillating arm *w*, and thus hold the latch *p* out of engagement with the stopping means and at the same time render the chain *h* taut.

The operation of our improvement is as follows: Each one of the warp-threads is passed through the slot of one of the detectors, which raises the detector from its abnormal position, as supported by the bar *e*, to its normal position, as supported by the warp-thread, and when the detectors are thus supported by the warp-threads their lower ends are raised out of the path of the oscillating chain *h*. Now when in the operation of weaving a warp-thread breaks the detector supported by that thread falls to its abnormal position and is supported by the bar *e*, and its lower end comes within the path of the oscillating chain *h* and by contact therewith raises the latch *p* to its position shown in dotted lines, when it connects in a well-known manner with the stopping mechanism of the loom and causes the same to stop until the thread is pieced up and supports the detector in its normal position.

The letters *f* and *g* represent bars which extend across the loom and assist in making the

detectors more rigid to resist the pressure of the oscillating chain when they drop within its path.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A warp-stop for looms, comprising a series of detectors, normally supported on the warp-threads, oscillating arms below the warp-threads, one of said arms having an aperture, a latch pivoted on the said arm, a chain secured to the other of the arms and having its other end projected through the aperture in the first-mentioned arm and secured to the latch, and a spring to hold the latch depressed and the chain taut.

2. A warp stop-motion for looms, comprising detectors normally supported on the warp-threads, oscillating arms below the warp-threads, a latch pivoted on one of the said

arms, a chain having one end secured to the other arm and its other end secured to the latch and means to hold the latch depressed and the chain taut.

3. A warp stop-motion for looms, comprising detectors supported on the warp-threads, oscillating arms below the warp-threads, one of said arms having an aperture, stopping means pivoted on the last-mentioned arm, a chain secured to the other of the arms and having its other end projected through the aperture in the last-mentioned arm and secured to the stopping means thereon.

Signed by us at New Bedford, Massachusetts, this 7th day of February, 1901.

JOHN V. CUNNIFF.
EDWARD CUNNIFF.

Witnesses:

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