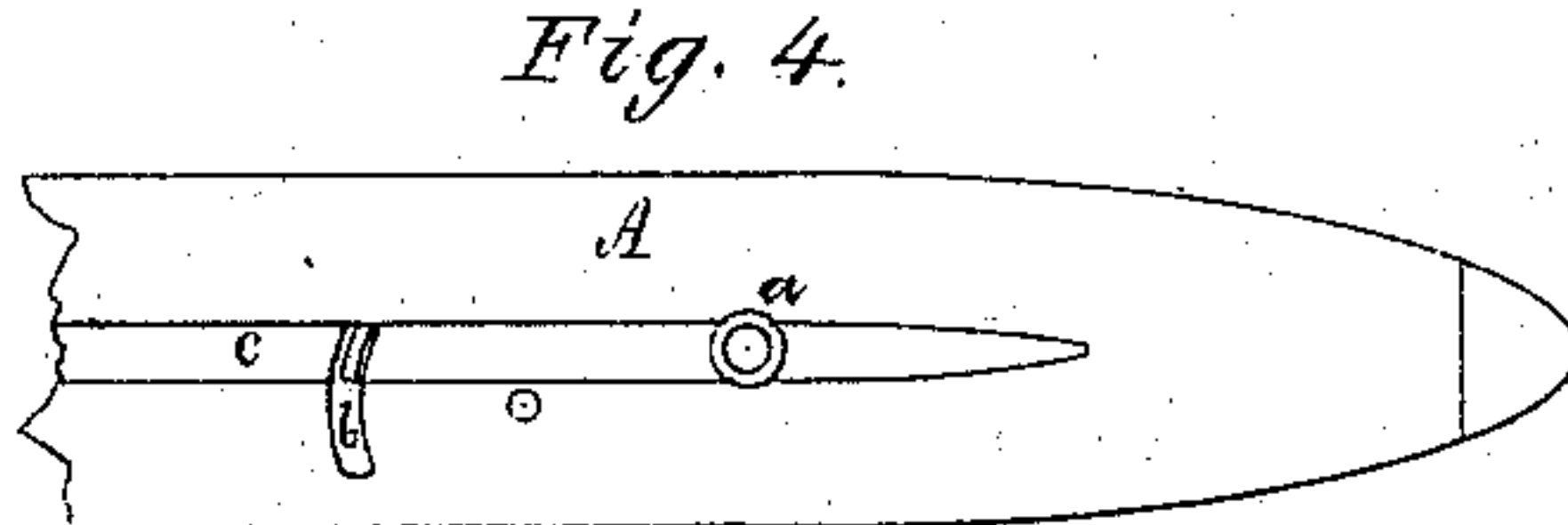
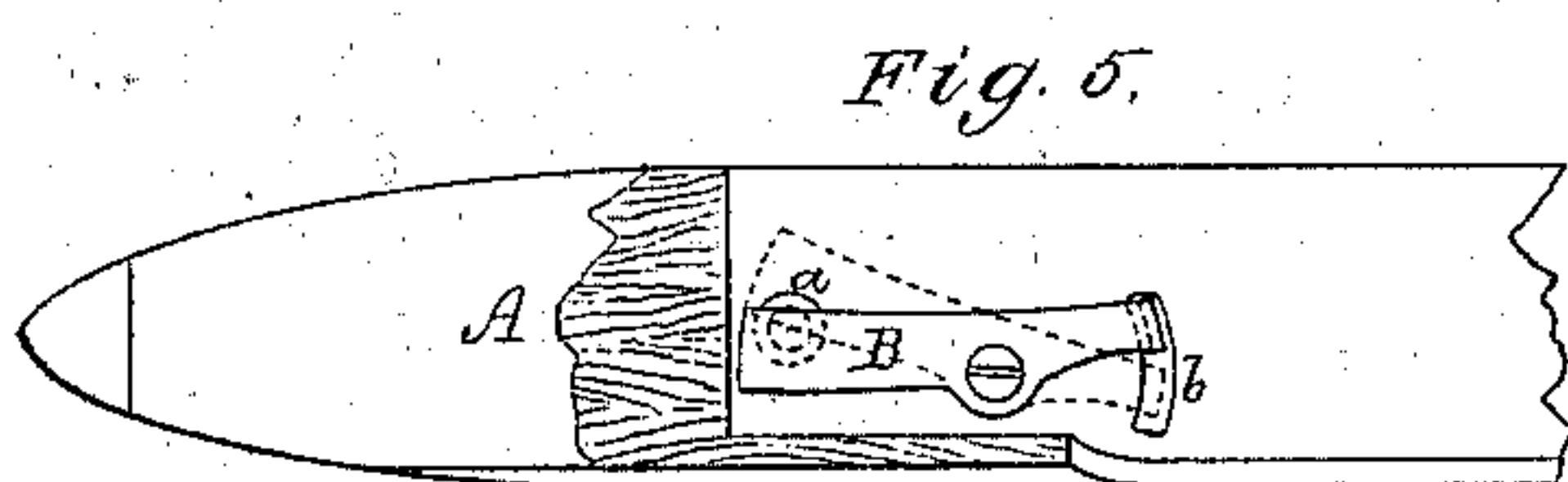
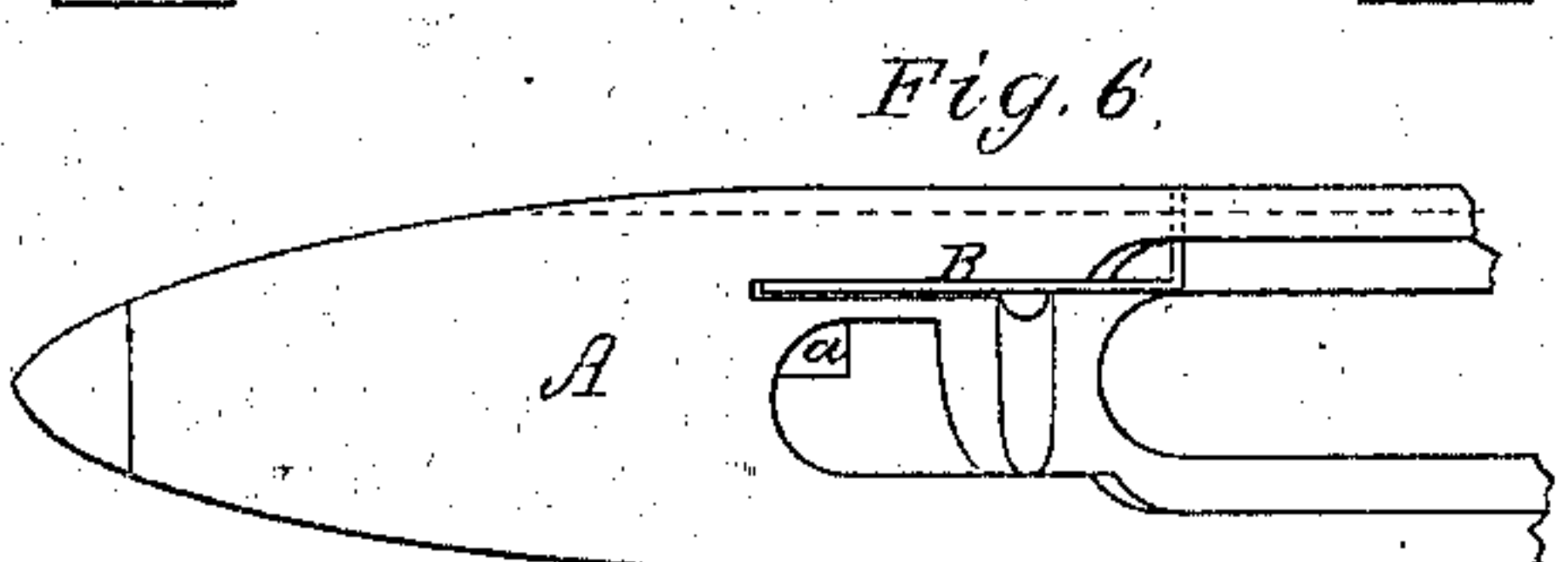
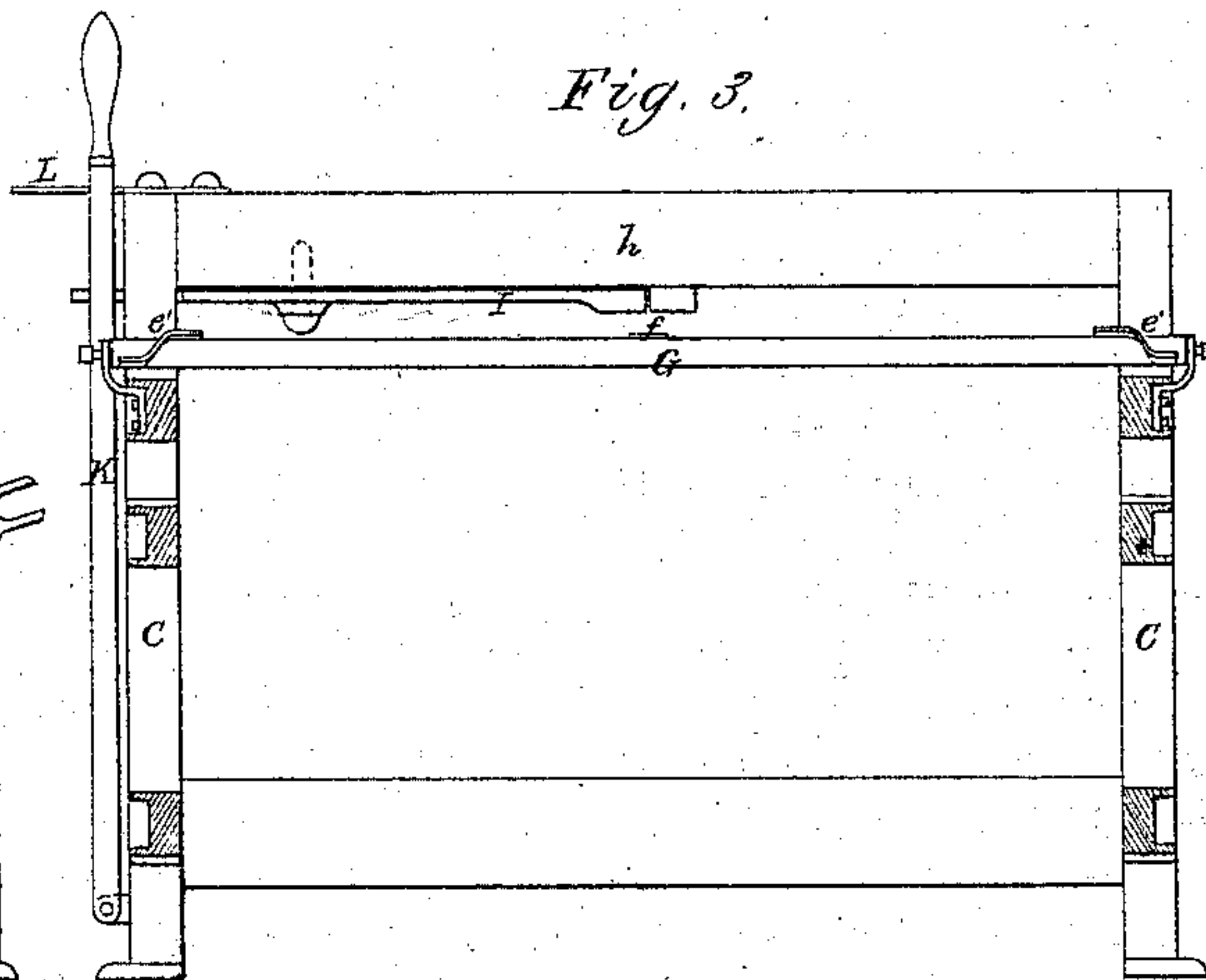
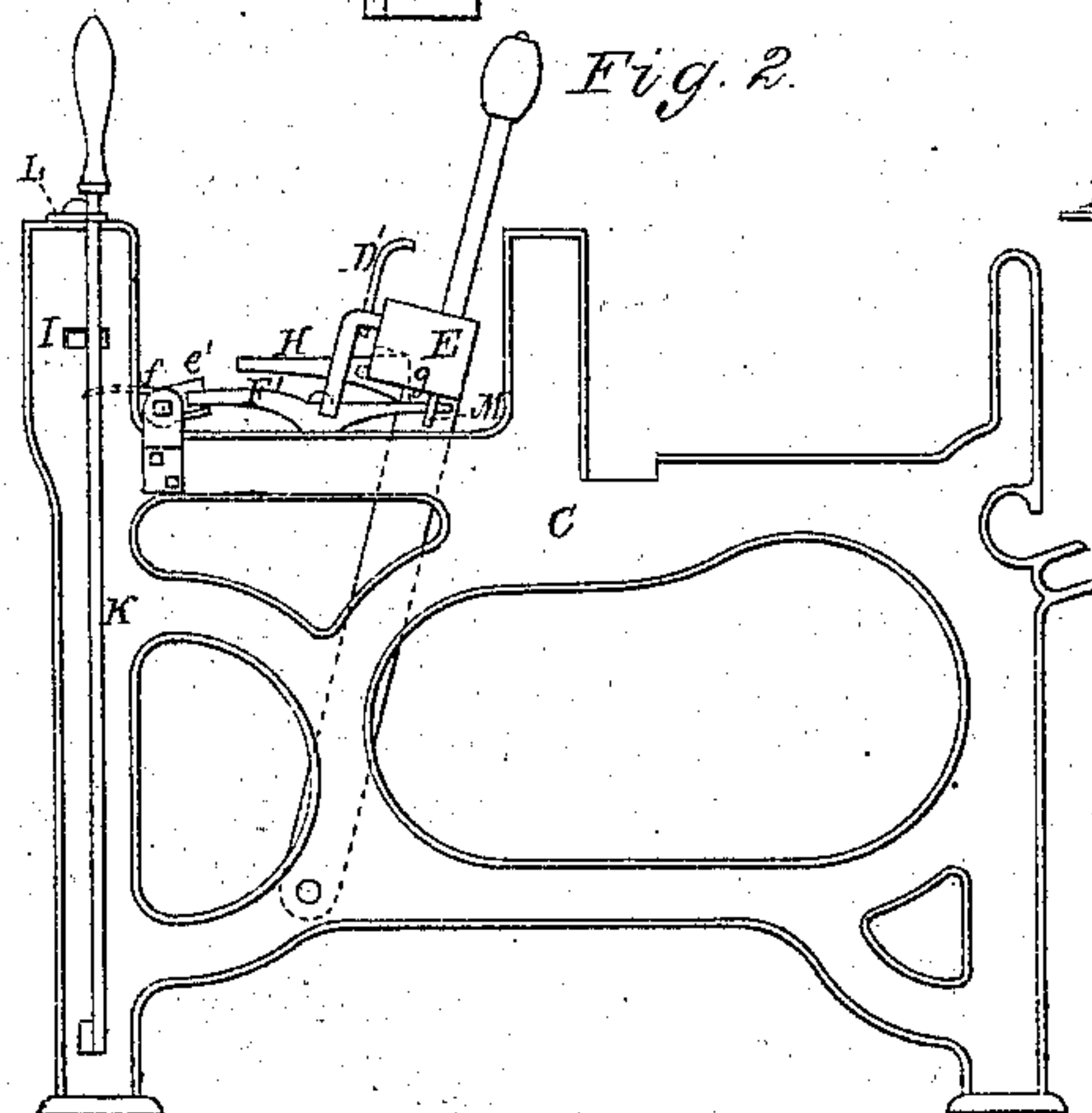
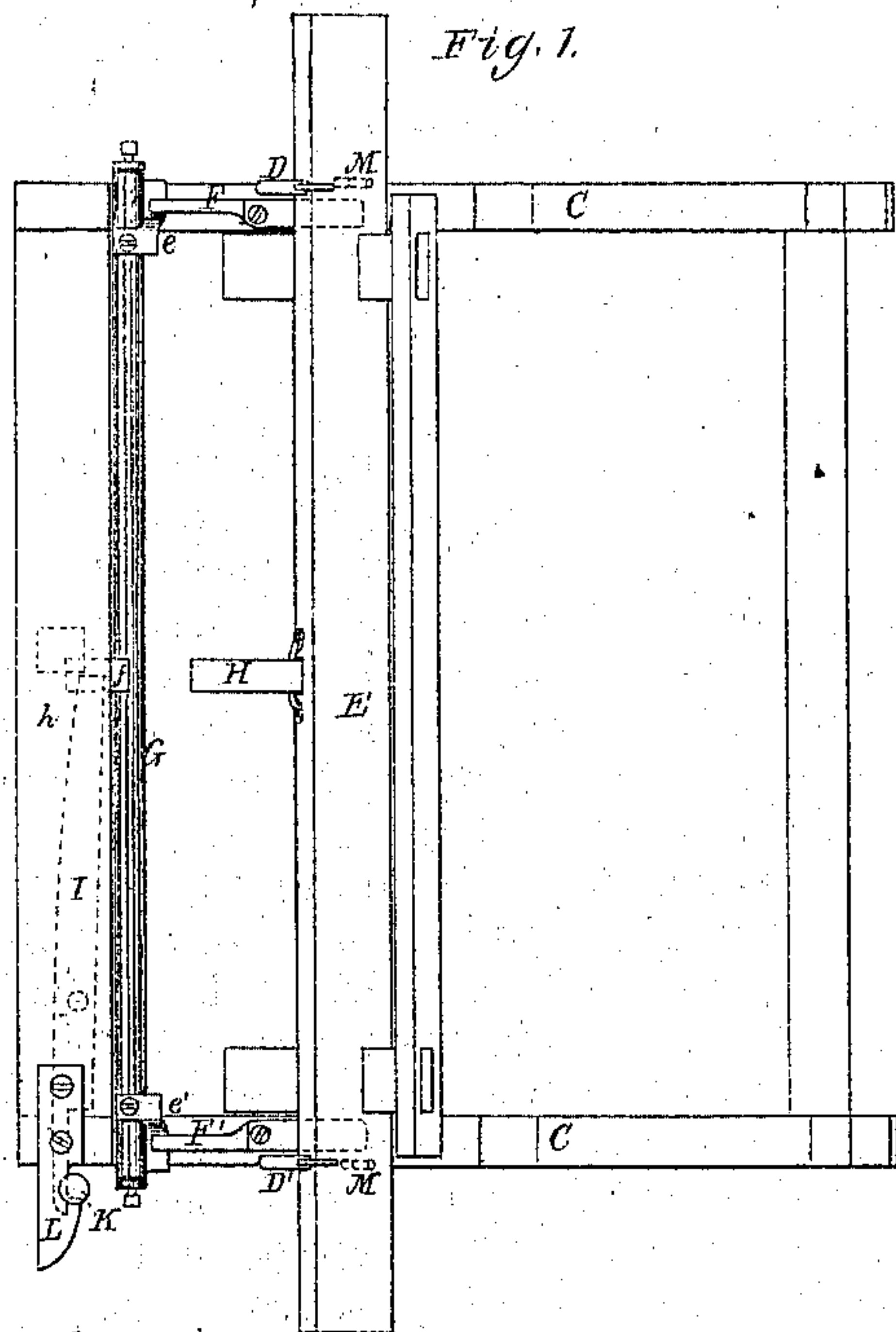


J. J. SWITZER.
Loom-Stop Mechanism.

No. 136,880.

Patented March 18, 1873.



Witnesses.
S. N. Piper.
L. N. Hölter.

John J. Switzer.
by his attorney.
R. H. Eady

UNITED STATES PATENT OFFICE.

JOHN J. SWITZER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN LOOM-STOP MECHANISMS.

Specification forming part of Letters Patent No. 136,880, dated March 18, 1873.

To all whom it may concern:

Be it known that I, JOHN J. SWITZER, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful or Improved "Stop-Motion" for a Loom for Weaving Cloth; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a longitudinal section of a loom-frame, lay, and shuttle provided with my invention. Fig. 4 is a side elevation, Fig. 5 a longitudinal section, and Fig. 6 a top view of the shuttle.

The object of the invention is to effect stoppage of the loom in case of breakage of a weft-thread, or the want of such weft-thread, in a shuttle during the process of weaving, or while the loom may be in operation.

In the drawing, A denotes the shuttle, which has a lever, B, arranged in it, as shown, such lever or one arm of it being extended through and across the educt *a*. The other arm of the lever is bent at a right angle and extended through an opening, *b*, made through the side of the shuttle. The arm also extends into a long groove, *c*, formed across the opening *b* and lengthwise in the outer surface or side of the shuttle. The lever-arm, which extends through or across the educt, should overbalance a little the other arm. The first arm, when raised up, rests on the thread while it may be passing through the educt, and will be held up thereby. On breakage of the thread, or a want of thread in the shuttle, the heavier of the lever-arms will fall and raise the lighter up into the long groove *c*, when such arm will be in a condition to come into contact with a lever on the lay during the throw of the shuttle. This lever is shown at D' as pivoted to the lay E or race-beam thereof, and having its upper arm curved (see Fig. 2) so as to enter the side groove of the shuttle during the flight of the latter. Another lever, F, arranged as shown, is pivoted to the loom-frame C, the front arm of the said lever F being extended over and upon a cam, *e*, projecting from a

rocker-shaft, G, extending across the loom-frame in manner as shown, the shaft at its ends being supported by suitable pivots. A curved arm or projection, *f*, extends forward from the middle of the shaft, and an arm, H, is pivoted to and projects forward from the middle of the race-beam of the lay, such arm being provided with a stop or extension, *g*, to prevent it from dropping too low. A lever, I, arranged underneath and pivoted to the breast-beam *h*, extends back of the loom-shipper K, when in its notch or rest L, the lever being otherwise arranged as shown. I would observe that other levers, and a cam like the levers D and F, and the cam *e*, are to be arranged at the opposite end of the loom-frame and applied thereto, the lay, and the rocker-shaft, such additional levers being marked D' F', the cam being marked *e'*, and all being arranged as shown. Furthermore, an arm, M, is projected down from the lay by the outer side of each lever F F'. This arm serves to actuate or restore the lever F to its primary position while the lay is in retreat.

Should the thread of the shuttle run out or become broken, the lever of the shuttle will rise into the groove *c*, and, while the shuttle may be in flight, will be moved against the upper arm of that lever D or D' toward which the shuttle may be moved. The said lever D or D' will then be moved so as to move the lever F or F' immediately below or aside of it. Such movement of either lever F or F' will cause the said lever to act against the cam of the rocker-shaft, so as to turn the rocker-shaft, and elevate its arm *f* into a position to cause the arm H of the lay to be forced upward and by the lay during its beat to be driven against the tripper-lever I, whereby the latter will be moved so as to force the shipper out of its holding-notch, and, as a consequence, the driving-belt will be shifted from the fast to the loose pulley of the loom, and the loom will stop weaving.

I claim as my invention as follows, viz:

1. The levers D F, the cam *e*, the rocker-shaft G, the arms *f*, M, and H, combined and arranged together and with the loom-frame,

the lay, and the operative shipper actuating lever I, such being to operate with the shuttle, provided with the lever and groove, as explained.

2. The lever and groove arranged in the shuttle and with the educt thereof, as set forth, in combination with the shaft G, the levers D F D' F', cams *e e'*, shaft G, arms M,

f, and H, and lever I, arranged and applied to the lay, the loom-frame, and the shipper substantially as specified, the whole constituting a stop-motion, for the purpose set forth.

JOHN J. SWITZER.

Witnesses:

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J. R. SNOW.