

W. TAYLOR.

Weft-Stop Mechanisms for Looms.

No. 151,729.

Patented June 9, 1874.

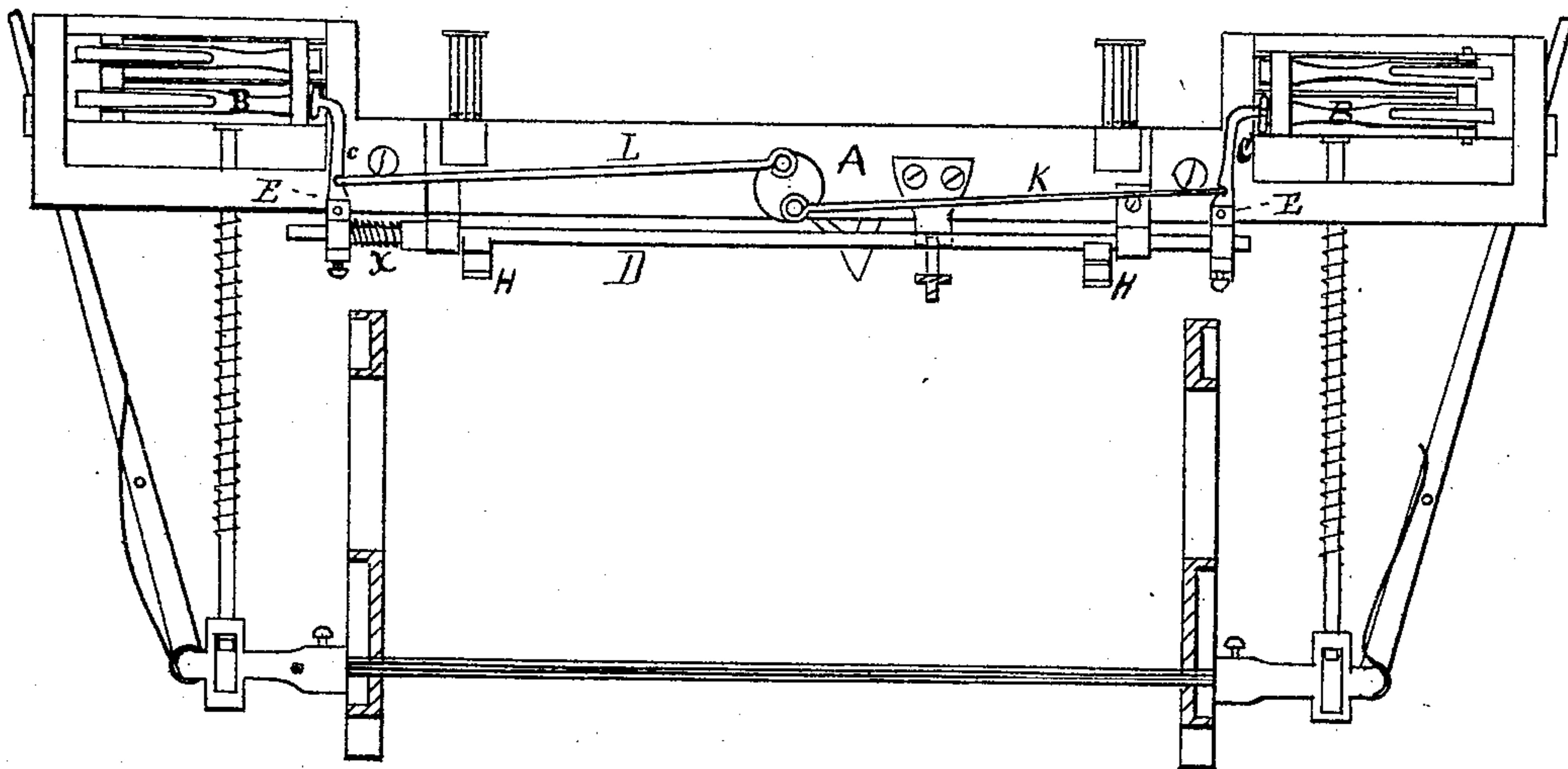


Fig. 1.

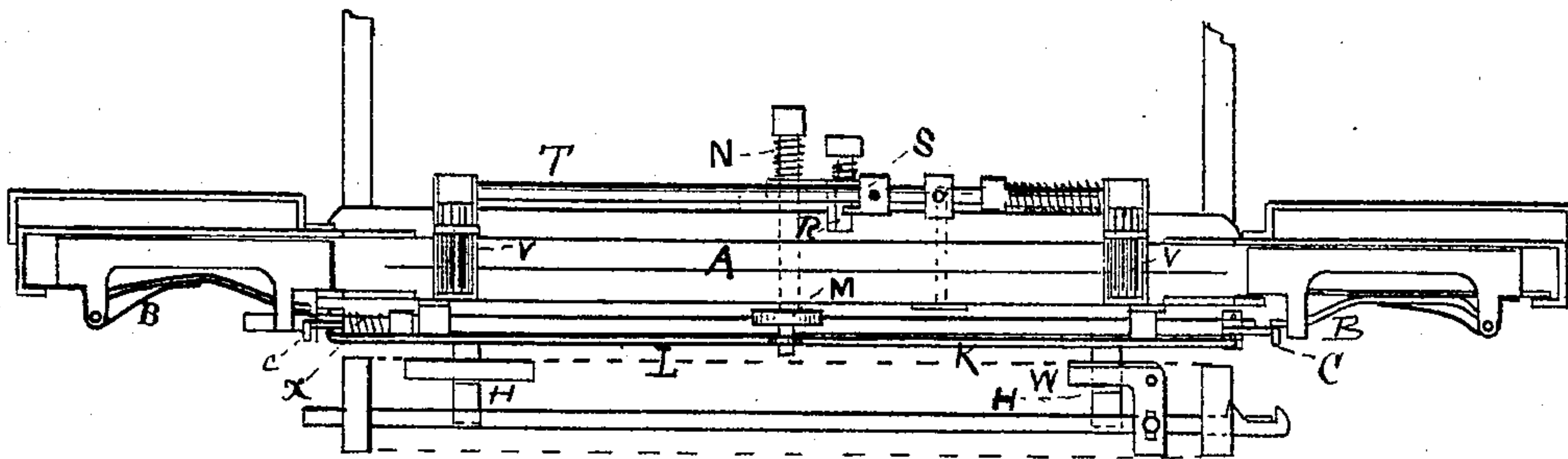


Fig. 2.

Witnesses

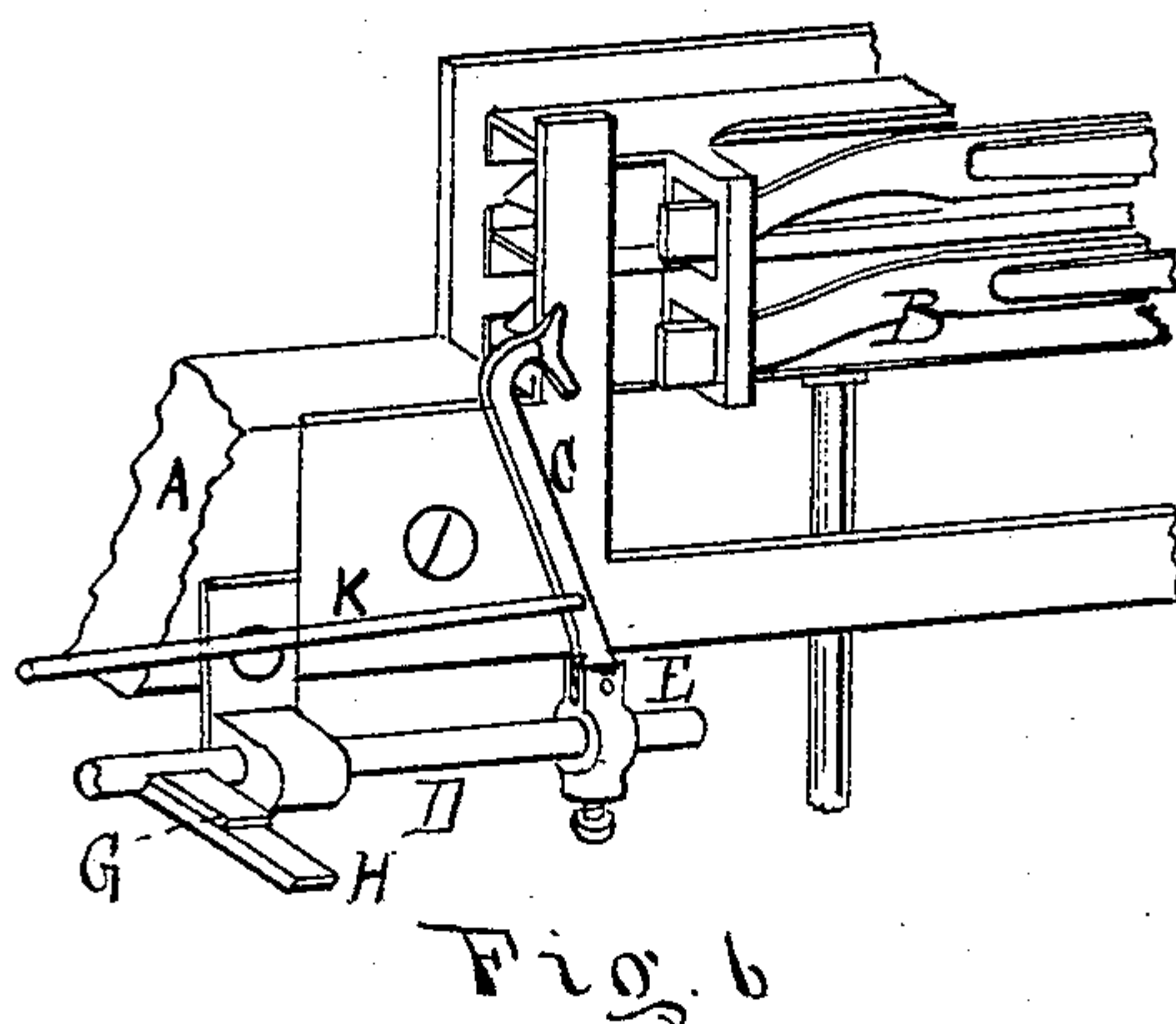
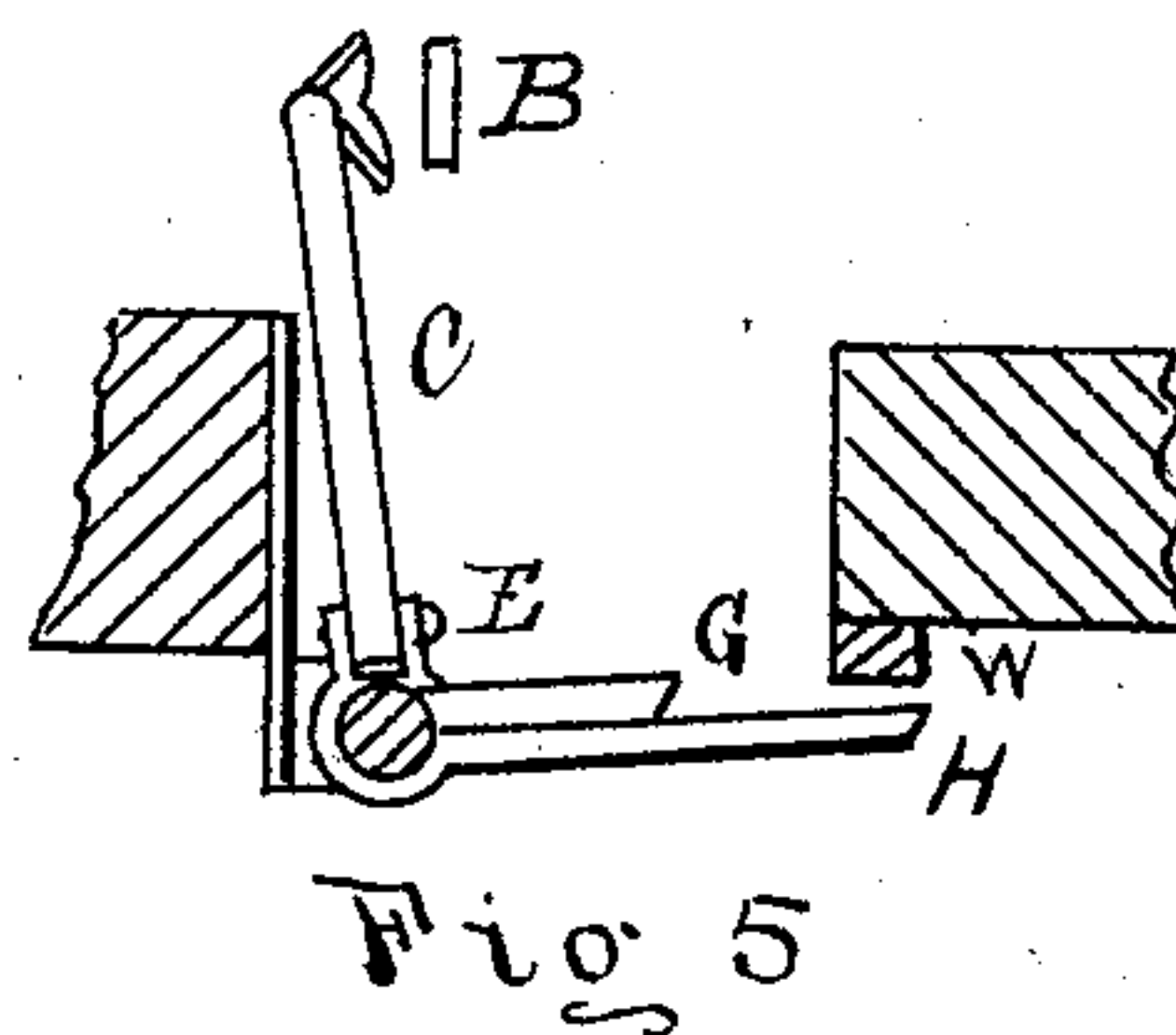
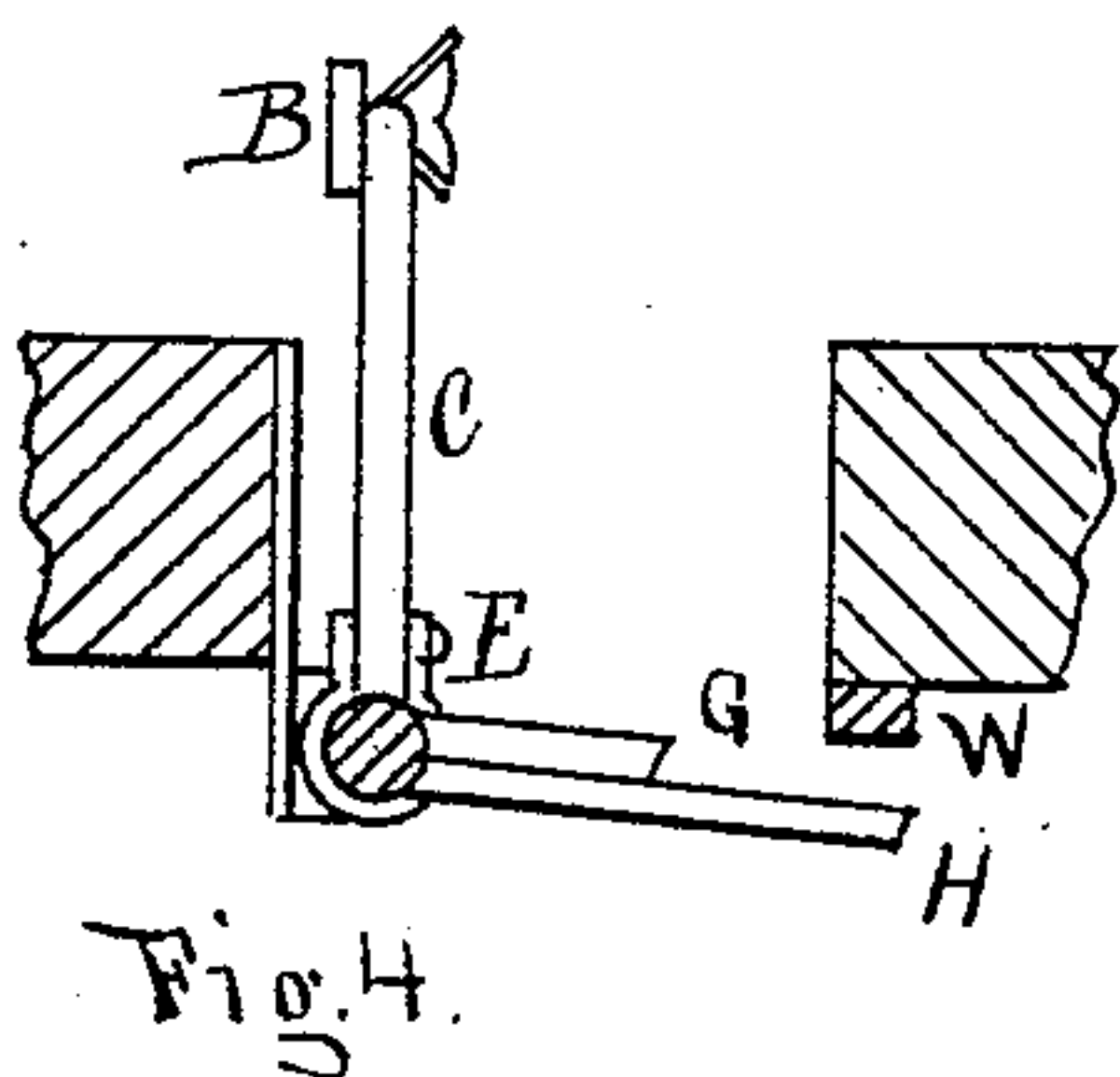
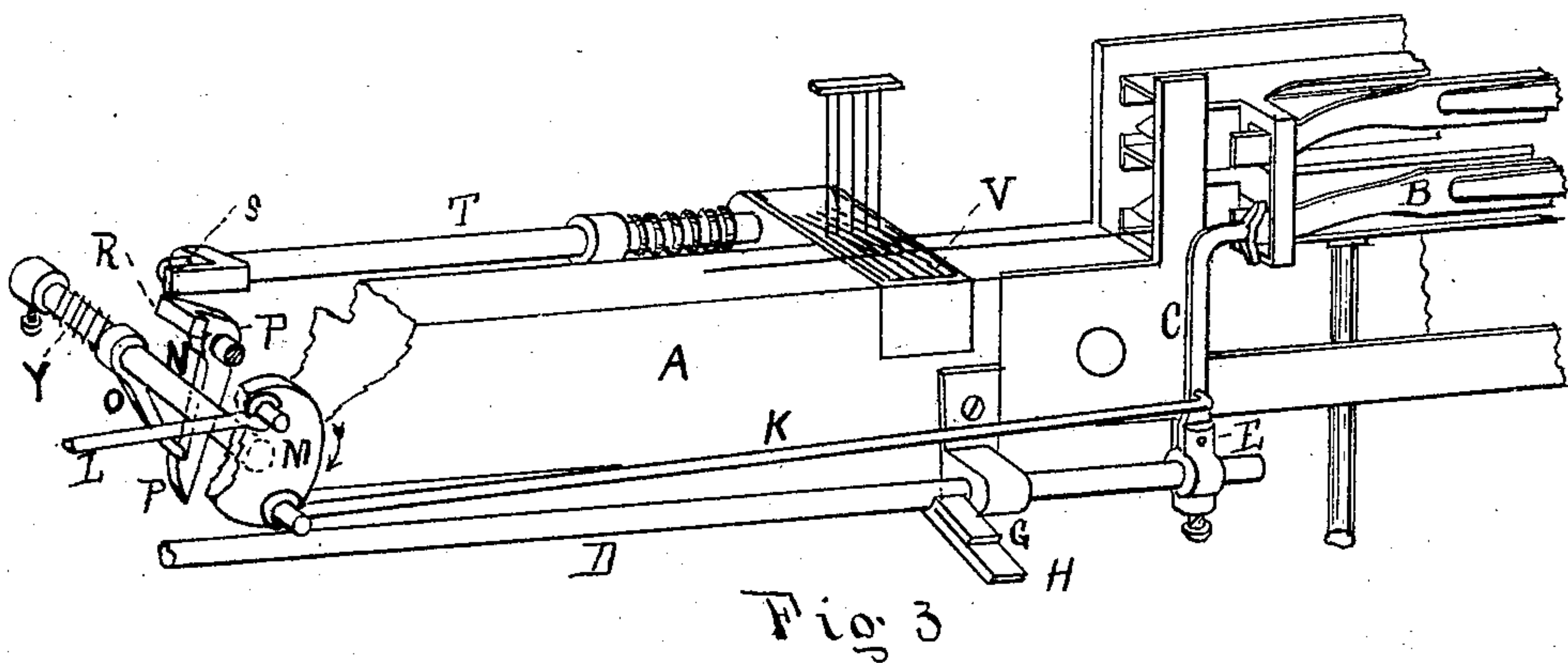
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Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM TAYLOR, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
AMERICAN STOP-MOTION COMPANY, OF SAME PLACE.

IMPROVEMENT IN WEFT-STOP MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. 151,729, dated June 9, 1874; application filed
April 15, 1874.

To all whom it may concern:

Be it known that I, WILLIAM TAYLOR, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Weft-Stop Mechanism for Looms, of which the following is a specification:

My invention relates to looms, in which a positive stopping device is actuated by the shuttle-binders; and also by the weft-detectors placed at both ends of the lay.

It consists in devices, by means of which one protector-rod provided with two daggers of different length, or with a two-pointed dagger, serves to connect the knock-off lever with the shuttle-binder and with the weft-detector, in such manner that the loom is stopped at the required time, both when the shuttle fails to box and when the weft-thread is absent.

Figure 1 shows the lay of a loom in elevation. Fig. 2 shows a plan of the same, also a part of the stopping and belt-shipping device. Fig. 3 is a perspective view, showing one end of the lay and my attachment. Figs. 4 and 5 are part sections, showing the action of the jointed fingers of the protector-rod and the protector-rod daggers. Fig. 6 is a perspective view of a part of the lay and shuttle-boxes and binders, and shows one of the protector-fingers C as it appears when drawn off from the shuttle-binder B by the action of the weft-detector in the absence of a thread.

In the drawing, A represents the lay of a loom, having drop-boxes. B is one of the shuttle-binders, made in the usual manner. C and c are the fingers of the protector-rod D, which are made like the ordinary fingers, except that they are jointed at E and act in the same manner in connection with the shuttle-binder B, protector-rod D, and dagger H. By means of the jointed fingers C c and a supplemental dagger the protector-rod is made to perform a double function, viz., to stop the loom when the shuttle falls, and also when the weft-thread is absent. The daggers may be joined in one piece, as shown at G, Figs. 3, 4, and 5, or they may be made separate, and each connected to the protector-rod by a nut, screw or pin.

So long as the ends of the fingers C c rest

on the shuttle-binders B, Figs. 1, 3, and 4, and the shuttle is in place, the dagger H will remain as shown in Fig. 4—that is, so as to pass under the knock-off device W, and not stop the loom. If the shuttle be out of place, then the binders B will fall back and allow the dagger H to strike the knock-off device, and thus perform its ordinary function of stopping the loom when a shuttle has failed to reach its box.

In order to allow the supplemental dagger G to stop the loom when a weft-thread breaks, I connect the fingers C c with the let-off device, as shown in Fig. 3. This connection I will now describe.

K and L, Figs. 1, 2, and 3, represent rods, which serve to connect the swinging parts of the fingers C c with a cross-lever or disk, M, so that if the cross-lever or disk M is moved it will, acting through the rods K and L, cause a corresponding motion of the fingers C and c—that is, if the disk M is moved in the direction indicated by the arrows, Fig. 3, it will draw the upper ends of the fingers off from the ends of the shuttle-binder, as shown in Fig. 6, and thus allow them (the fingers) to fall back, which will allow the protector-rod to revolve and throw up the dagger H, so that the supplemental part G will strike the knock-off lever W. (See Fig. 5.) This action, caused by the detectors falling through the grills V in the absence of the weft-threads, as will be explained, can only take place when the lay is so near the breast-beam that the point H of the dagger has passed under the knock-off W, and thus cannot act upon it. This may be understood if we remember that the detectors do not fall until after the shuttle has passed—that is, until the forward motion of the lay is nearly completed. When the daggers are actuated by the yielding of the fingers C c from the absence of the shuttle this action takes place during the first part of the forward stroke of the lay, and the longer part H of the dagger has time to rise into position to strike the knock-off W. The protector-rod D is held by a spring, X, Fig. 1, so as to press the fingers C and c against the shuttle-binders B.

The let-off device is made as follows: The

disk M, Figs. 1 and 3, is attached to a shaft, N, Figs. 2 and 3, which passes through the lay, and has an arm, O, attached to it. This arm O is held by a pivoted latch, P, which is provided with an arm, R, so arranged in connection with the finger S on the detector-rod T that when the finger S is lowered by the fall of the detector through the grill V, (in case of the absence of the weft-thread,) the arm R will be thrown down and the latch P disconnected from the arm O. This action will cause the spring Y to throw the shaft N and disk M around in the direction of the arrow, and thus pull the fingers C and c off from the shuttle-binders, which action, as already stated, will allow the dagger H to be thrown up, so that the supplemental part G will come in contact with the knock-off device W and stop the loom. This stopping of the lay takes place at the time when the lay is nearly at the end of its forward stroke—that is, when the cranks of the shaft are nearly on center, and, consequently, at a time when the lay is

moving comparatively slow. Thus the shock of abruptly stopping the lay is relatively slight.

I claim as my invention—

1. The jointed fingers C c upon the protector-rod D, connected with, and operating in accord with a weft-detector mechanism, substantially as described, and for the purpose set forth.

2. The combination of the weft-stop let-off device, the finger S, the arm R, the latch P, the arm O, and shaft N, with the disk M and rods L K, operating to move the fingers C c, substantially as described, and for the purpose set forth.

3. In combination with the weft-detectors and shuttle-binders, the two-pointed dagger upon the protector-rod, as and for the purpose set forth.

WILLIAM TAYLOR.

Witnesses:

WILLIAM EDSON,
SAML. HAPEN.