

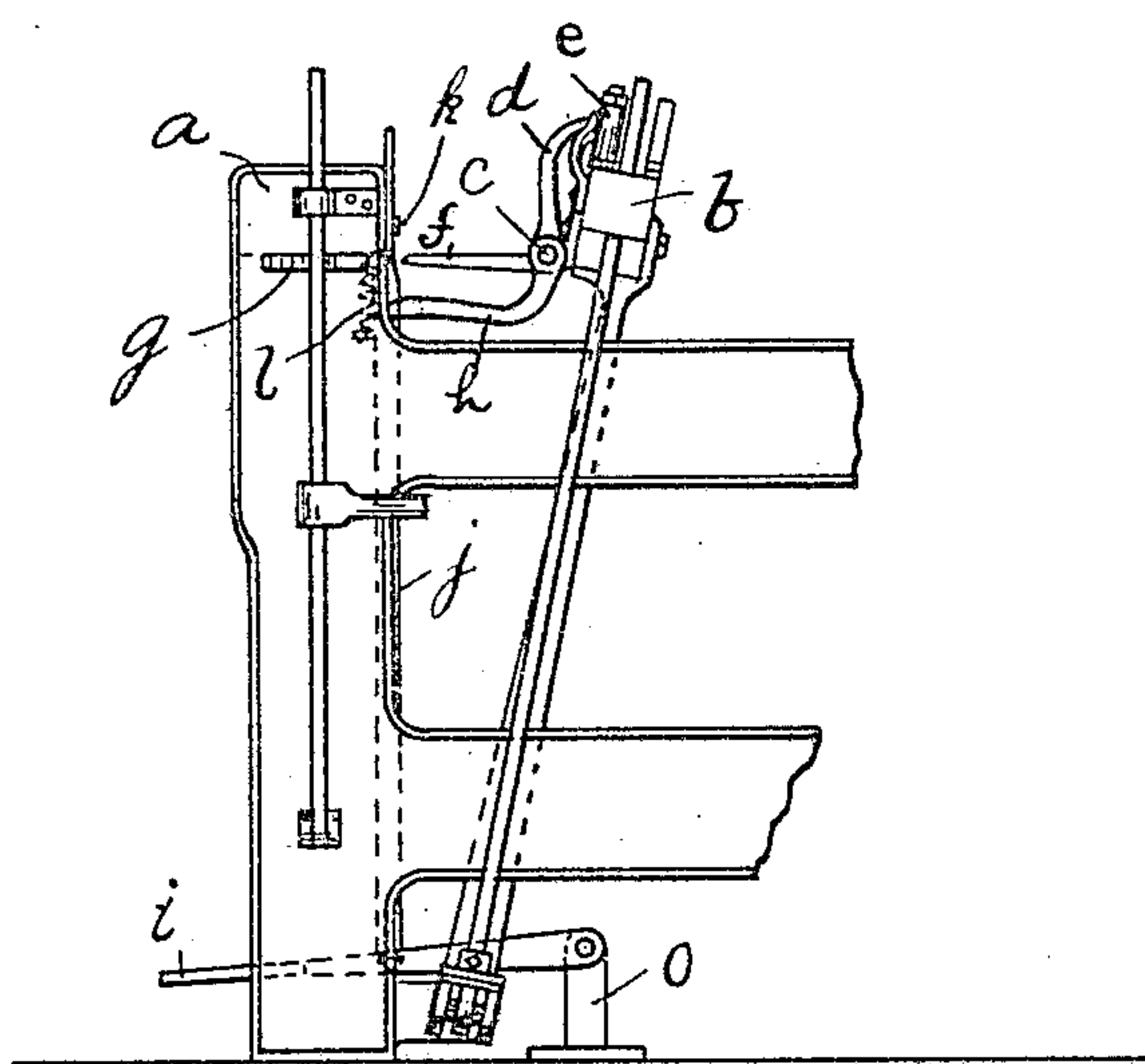
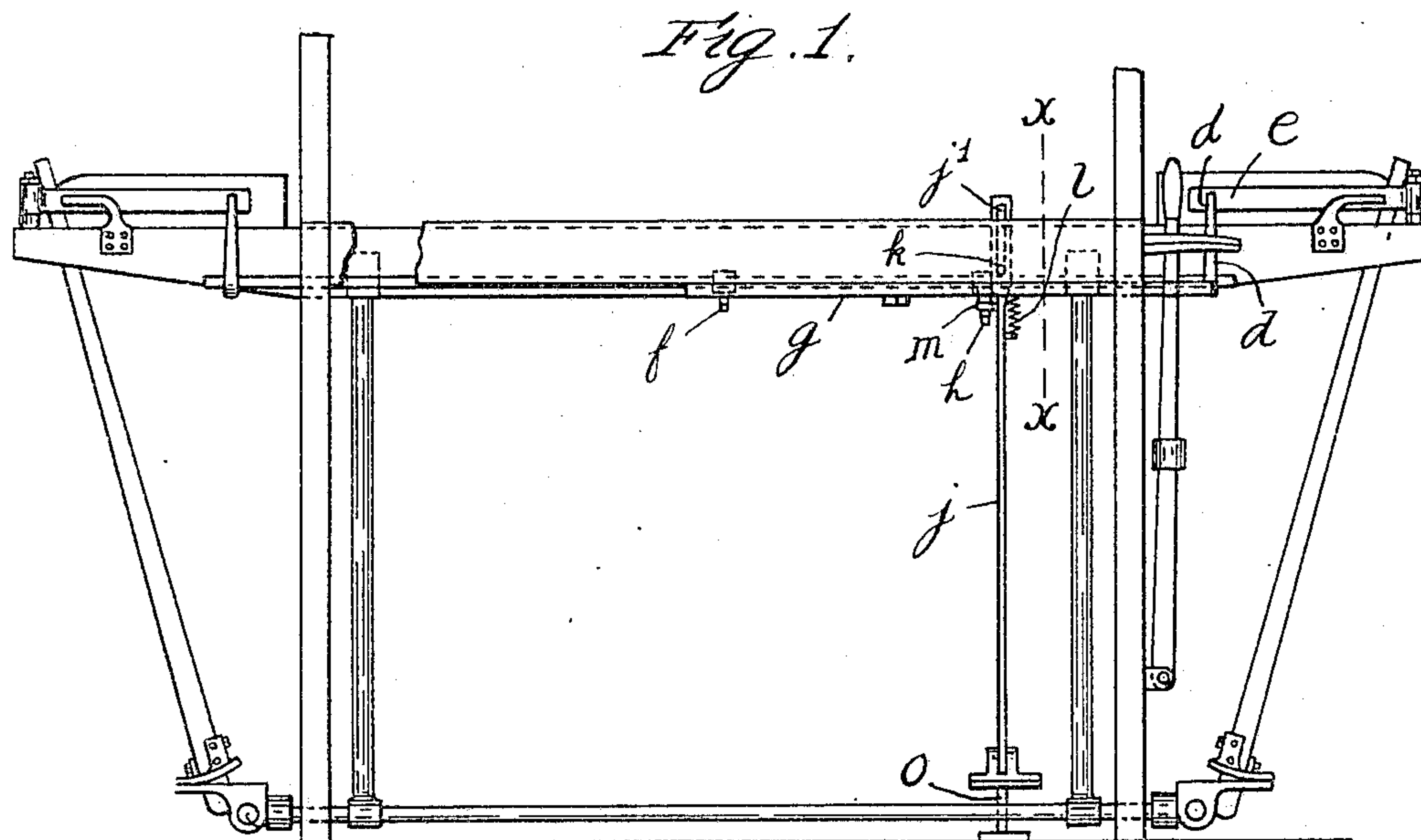
No. 787,114.

PATENTED APR. 11, 1905.

J. ROBINSON.  
LOOM PROTECTING MECHANISM CONTROLLER.

APPLICATION FILED AUG. 24, 1904.

3 SHEETS—SHEET 1.



Witnesses:  
*H. B. Davis.*  
*M. and M. Piper.*

*Fig. 2*

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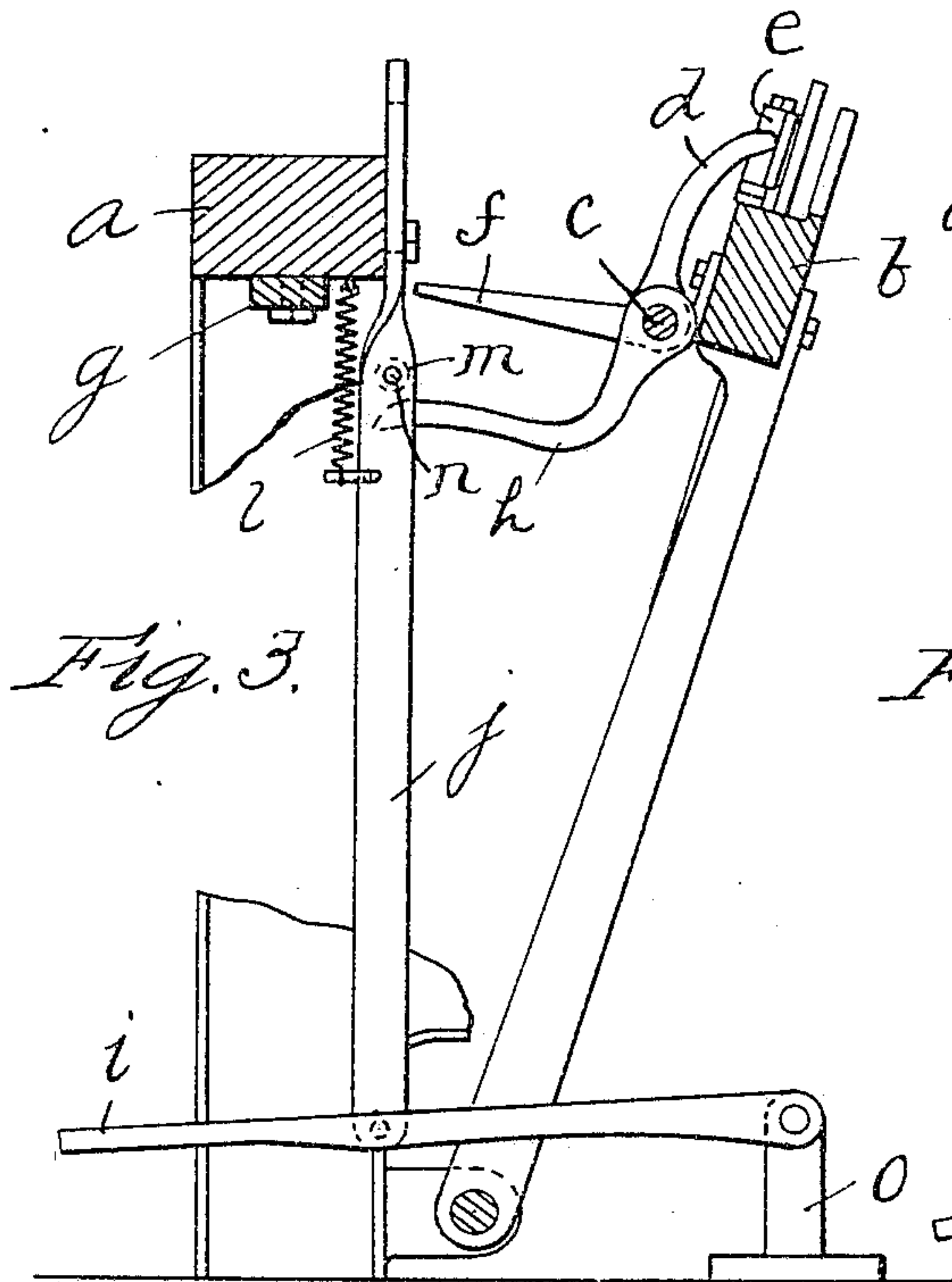


Fig. 3.

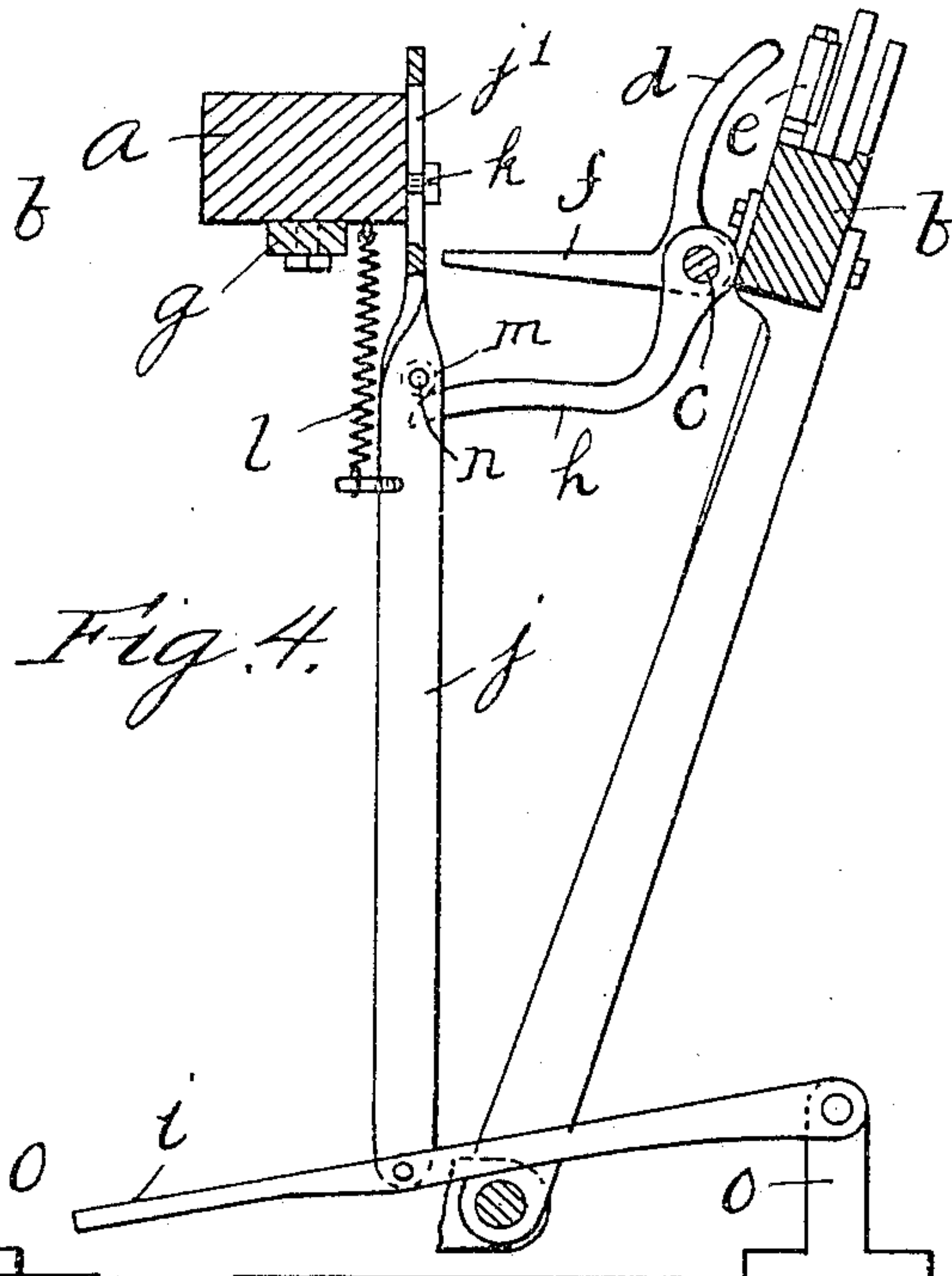


Fig. 4.

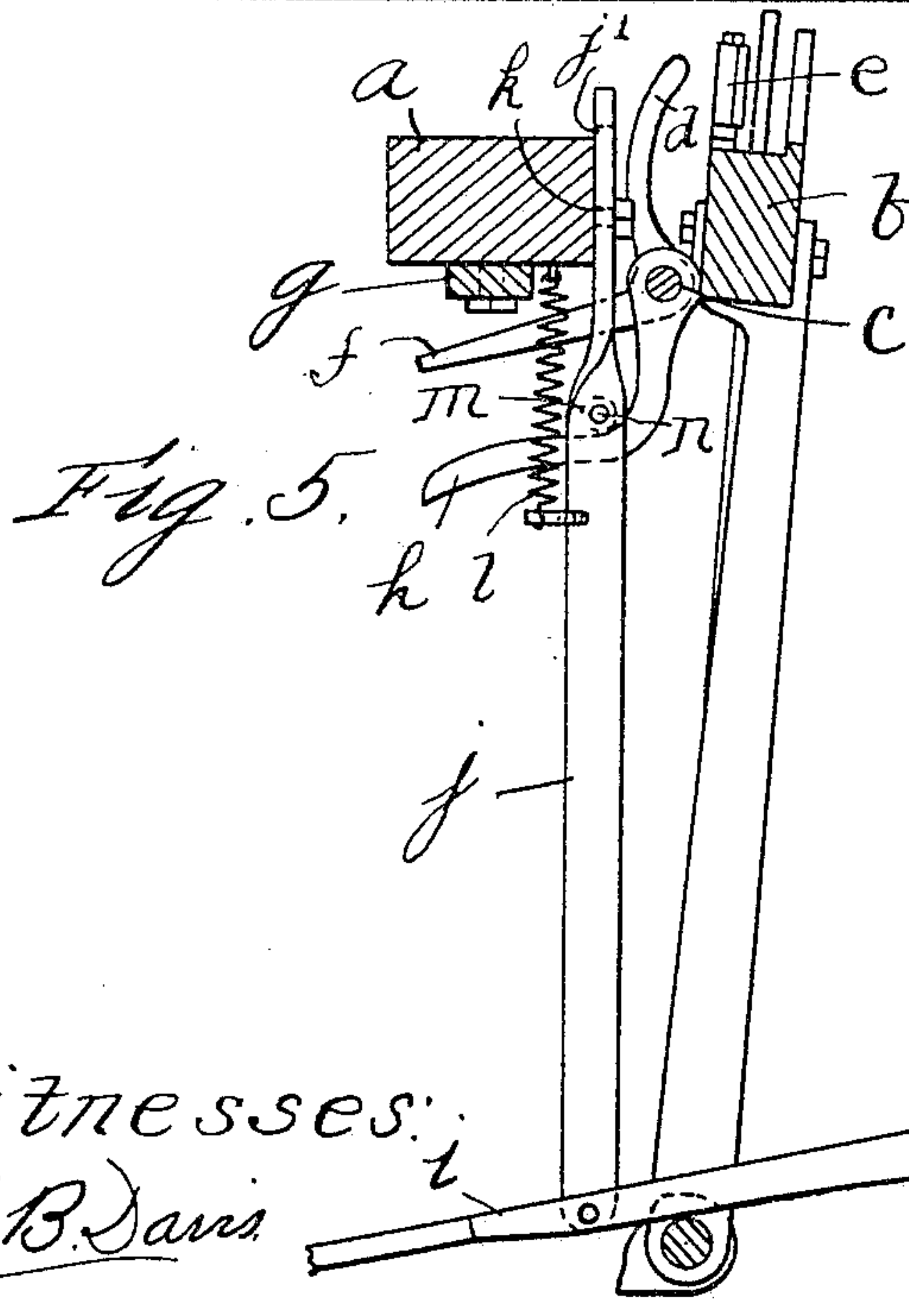


Fig. 5.

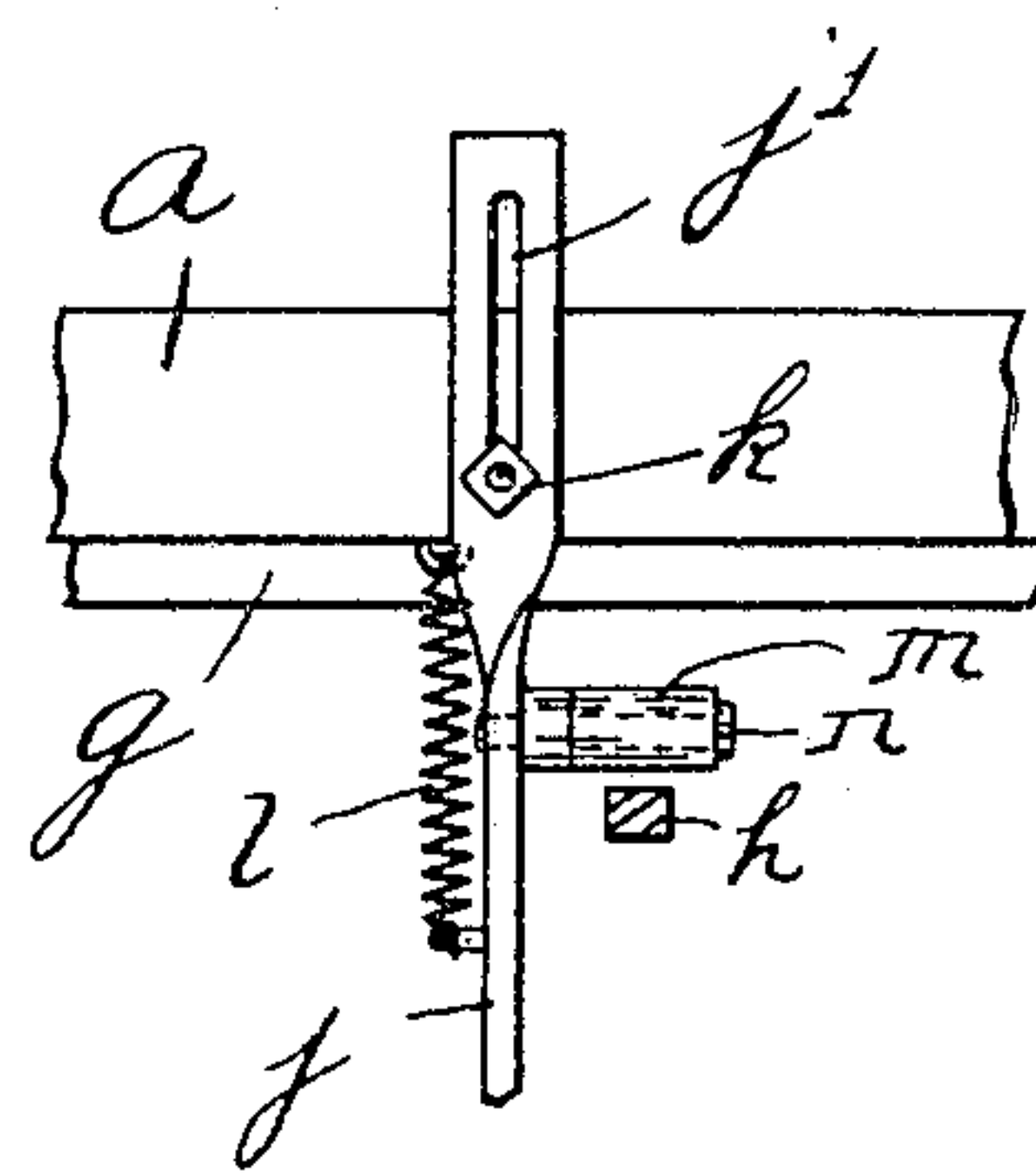


Fig. 6.

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H. B. Davis

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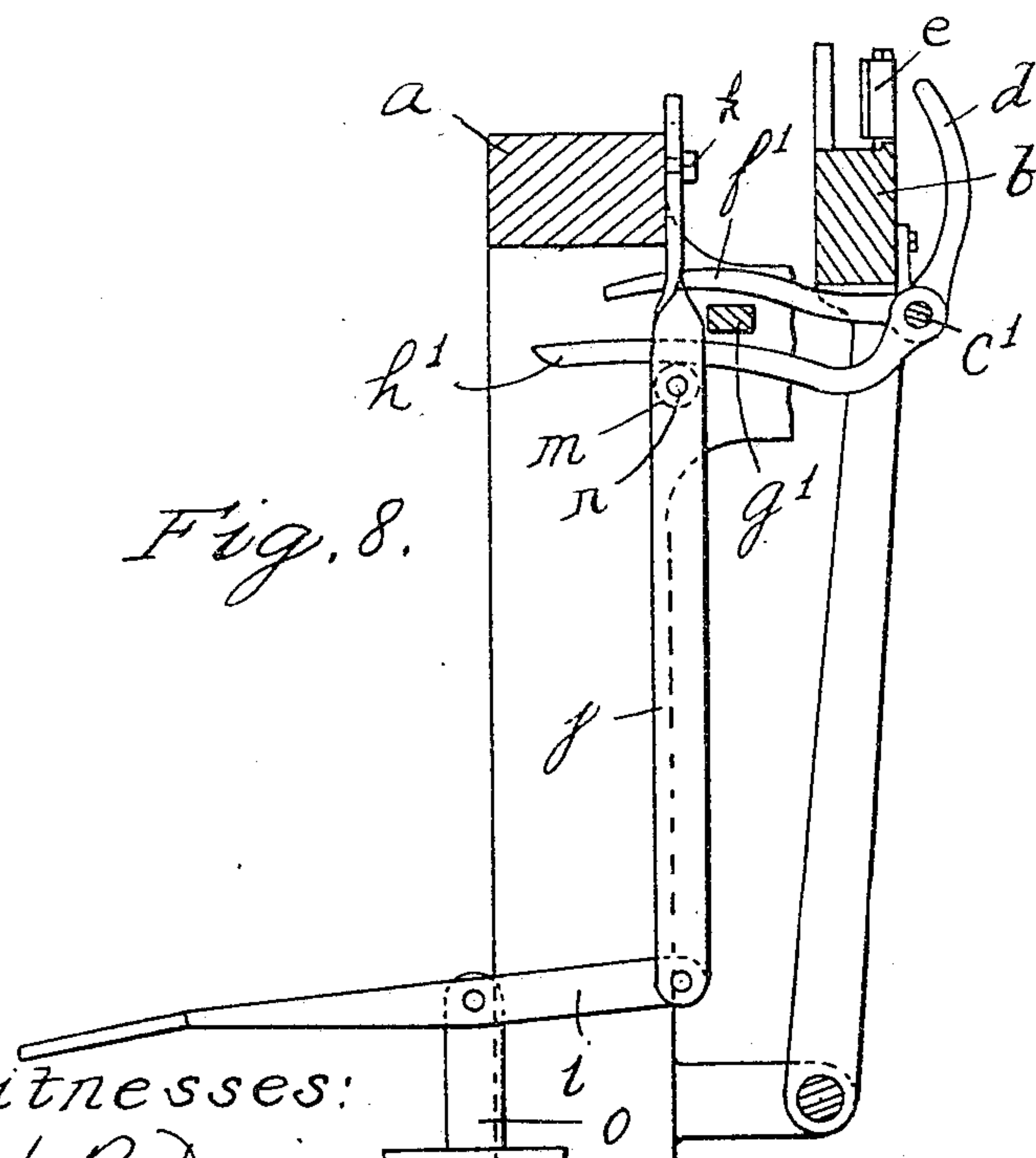
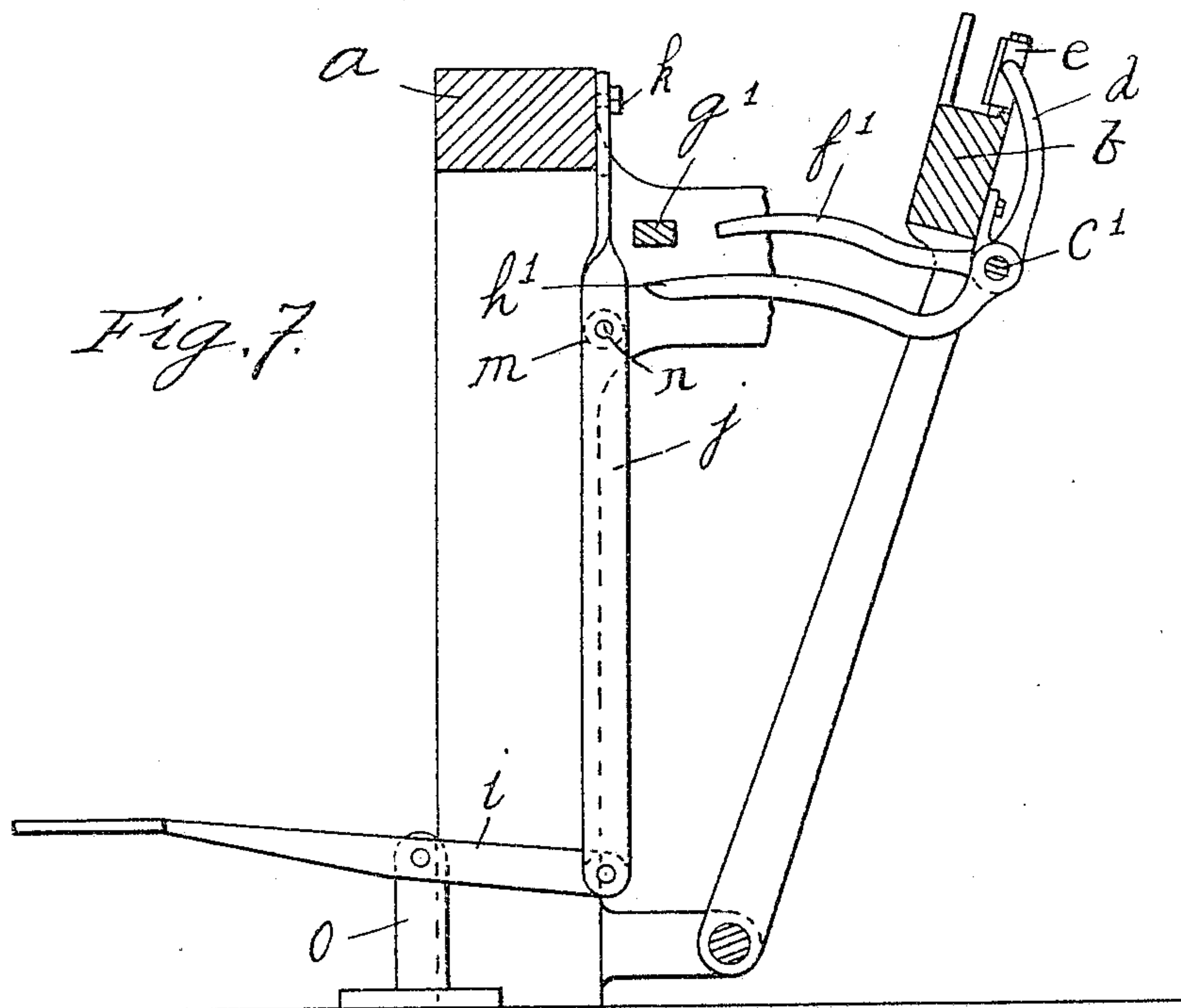
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## UNITED STATES PATENT OFFICE.

JOSHUA ROBINSON, OF LAWRENCE, MASSACHUSETTS.

## LOOM-PROTECTING-MECHANISM CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 787,114, dated April 11, 1905.

Application filed August 24, 1904. Serial No. 221,992.

*To all whom it may concern:*

Be it known that I, JOSHUA ROBINSON, of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Loom-Protecting-Mechanism Controllers, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

In the ordinary loom when the weft-thread fails and the loom stops in consequence the loom usually makes several picks beyond the pick in which the failure occurred. It then becomes necessary for the weaver to find this pick again, and in order to find it it is customary for him to turn the pattern back of the point at which the failure occurred and then weave over, usually without a shuttle, stopping the loom between each pick until the pick has been found, so that the weaving operation may be continued. It is also customary for the weaver while finding the pick in this manner to hold the protecting mechanism out of action by holding the protection-rod finger, which bears against the shuttle-binder, away from the binder to prevent the loom from being suddenly stopped by the protecting mechanism and causing the breakages in the loom and imperfections in the cloth which are often consequent. It is not only difficult for the weaver to hold the protecting mechanism out of action in this manner; but it often happens that he loses hold of the protection-rod finger and permits the loom to knock off. Moreover, it is very difficult for the weaver to throw on the shipper just long enough to cause the loom to make one pick, so that unless he stops the lay by hand before it passes the pick he will often have to turn back the pattern again and begin over. As he must have one hand on the shipper it is very difficult for him to stop the lay and hold the protection-rod out of action with the other hand.

My invention has for its object to provide a simple device which may be readily attached to any ordinary loom and which will enable the weaver to hold the protecting mechanism out of action while the loom is in motion by

simply depressing a foot-lever, so that he may have both hands free to throw the shipper and stop the lay at the desired point and so that all danger of sudden stoppage of the loom by the protecting mechanism while finding the pick without a shuttle in the loom is avoided. I accomplish this object by providing the protection-rod with a finger which is held in such a position that it is moved longitudinally as the lay swings back and forth in connection with a movable abutment which is normally held at one side of the path of said finger out of engagement therewith, but which is adapted to be moved against one side of said finger by a foot-lever, so as to move the protecting mechanism out of action as the lay advances, exactly as if the shuttle had been forced into the shuttle-box.

In the drawings, Figure 1 represents in front elevation the parts of a loom with which my attachment is directly associated. Fig. 2 is an end elevation of the parts shown in Fig. 1. Figs. 3, 4, and 5 are sectional views on the line *x-x* of Fig. 1 representing different positions of the parts. Fig. 6 is a detail view of the rear side of my attachment. Figs. 7 and 8 are views similar to Figs. 3, 4, and 5, showing a modified arrangement.

*a* indicates the usual breast-beam of a loom, and *b* the lay, the directly-associated devices being similar in every respect to those in the ordinary loom. The protection-rod *c*, which is shown as journaled on the front side of the lay in Figs. 1 to 6, is provided with the usual finger *d*, which bears against the shuttle-binder *e* of the shuttle-box.

*f* represents the usual dagger upon the protection-rod, adapted to engage the knock-off mechanism *g* when the shuttle fails to reach the shuttle-box as the lay is moved toward the breast-beam. An arm *h* is also secured to the protection-rod, said arm preferably extending downwardly and then horizontally in a direction approximately parallel to the dagger. The upper side of said arm *h* is convexly curved and has a downwardly-turned pointed end.

A foot-lever *i* is pivoted to a bracket *o* on



the floor, and an upright rod *j* is pivoted at its lower end to said lever, the upper end of said rod *j* having a longitudinal slot *j'*, through which a bolt *k* passes, said bolt being screwed into the breast-beam and serving as the guide to hold said rod *j* in a vertical position and permitting vertical reciprocating motion thereof. A spring *l* is secured to said rod and to the breast-beam and acts to draw said rod *j* upwardly until it engages bolt *k* in the lower end of the slot *j'*, said bolt serving as a stop.

An abutment-roll *m* is journaled on a spindle *n*, which passes through and is secured to the rod *j*, said abutment-roll being held directly over but normally at some distance above the arm *h*, so that as the lay swings back and forth under normal conditions the roll will not bear against said arm *h*. The arrangement is such, however, that when the treadle of lever *i* is depressed said roll *m* will be brought to bear against the upper side of the arm *h* and will swing said arm downwardly, causing the protection-rod to be rotated, the finger *d* to be drawn out of engagement with the shuttle-binder, and the dagger *f* to be held down, as the lay advances, in the same position in which it would be held if the shuttle were in the shuttle-box.

Fig. 3 represents the parts in the position which they assume when the lay starts to advance in the normal operation.

Fig. 4 represents the lever *i* depressed, lowering the dagger below the knock-off mechanism and drawing the finger *d* away from the shuttle-binder, and Fig. 5 represents the lay in its extreme forward position and showing the dagger held down below the knock-off mechanism by the foot-lever *i*.

To find the pick in a loom provided with my attachment, the weaver first turns the pattern back of the pick at which the weft-thread failed, then depresses the lever *i*, and starts up the loom without the shuttle in the box. The shipper-lever is thrown on and then off again almost immediately, and the loom is stopped on the next pick, the weaver having the free use of one hand to stop the lay before the loom makes more than a single pick. The pattern is thus advanced one pick at a time until the pick in which the thread failed has been found. Then the shuttle is inserted, the weaver takes his foot from the lever *i*, and the weaving operation is continued. By this means the finding of the pick is greatly facilitated, and the racking of the loom or breaking of its parts and the causing of imperfections in the cloth from the accidental release of the protection-rod and consequent sudden stoppage of the loom is avoided. As the shuttle-binder is opened by simply depressing the foot-lever *i* the weaver is enabled to place the shuttle in the box somewhat more easily

than is possible by pressing the shuttle in against the spring of the shuttle-binder.

It will be observed that as the abutment-roll *m* is normally held out of a position in which it may engage the arm *h* the instant the pressure on the treadle of lever *i* is removed the parts will return to their normal position and the loom will operate as if the attachment were not present. Moreover, as the parts return to an inoperative position automatically as soon as released there is no probable danger of the loom being operated with the shuttle in while the protection mechanism is held out of action.

In case the shuttle-binder is on the back side of the shuttle-box the relative position of the parts will be reversed, as shown in Figs. 7 and 8—that is, the protection-rod *c'* is journaled on the back side of the lay and the dagger *f'* is lifted, so that it will pass over the stopping means *g'* when the shuttle passes into the box. To throw the protecting means out of action, therefore, the arm *h'* must be lifted, so that the abutment-roll *m* is arranged below arm *h'*, rod *j* is pivoted to the end of lever *i*, and lever *i* is pivoted at its middle portion to bracket *o*. With this arrangement the weight of rod *j* normally holds the parts in the position of Fig. 7, and when the treadle is depressed the abutment-roll *m* is lifted against the arm *h'*, holding the protecting mechanism out of action, as shown in Fig. 8, and in a similar manner to that already described.

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

1. In a loom having the lay and the protecting mechanism thereon, an arm connected to said mechanism and movable longitudinally with the lay, a movable abutment and means for normally holding the same to one side and adjacent the path of said arm, and means whereby said abutment may be moved against said arm to hold said protecting mechanism out of action as the lay advances, substantially as described.

2. In a loom having protecting mechanism comprising a rod rotatably mounted on the lay, a horizontally-disposed arm connected at right angles to said rod, a vertically-movable abutment adjacent said arm, treadle mechanism for pressing said abutment against said arm to hold said protecting mechanism out of action as the lay moves forward, and means for automatically holding said abutment out of contact with said arm when said treadle mechanism is released, substantially as described.

3. In a loom having protecting mechanism comprising a horizontal rod rotatably mounted on the lay, a horizontally-disposed arm connected at right angles to said rod, a verti-

cally-movable rod having an abutment thereon, extending horizontally across said arm, a foot-lever connected to the lower end of said vertical rod for pressing said abutment against one side of said arm, as it is moved forward by the lay, to hold said protecting mechanism out of action, substantially as described.

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

JOSHUA ROBINSON.

Witnesses:

LOUIS H. HARRIMAN,  
H. B. DAVIS.