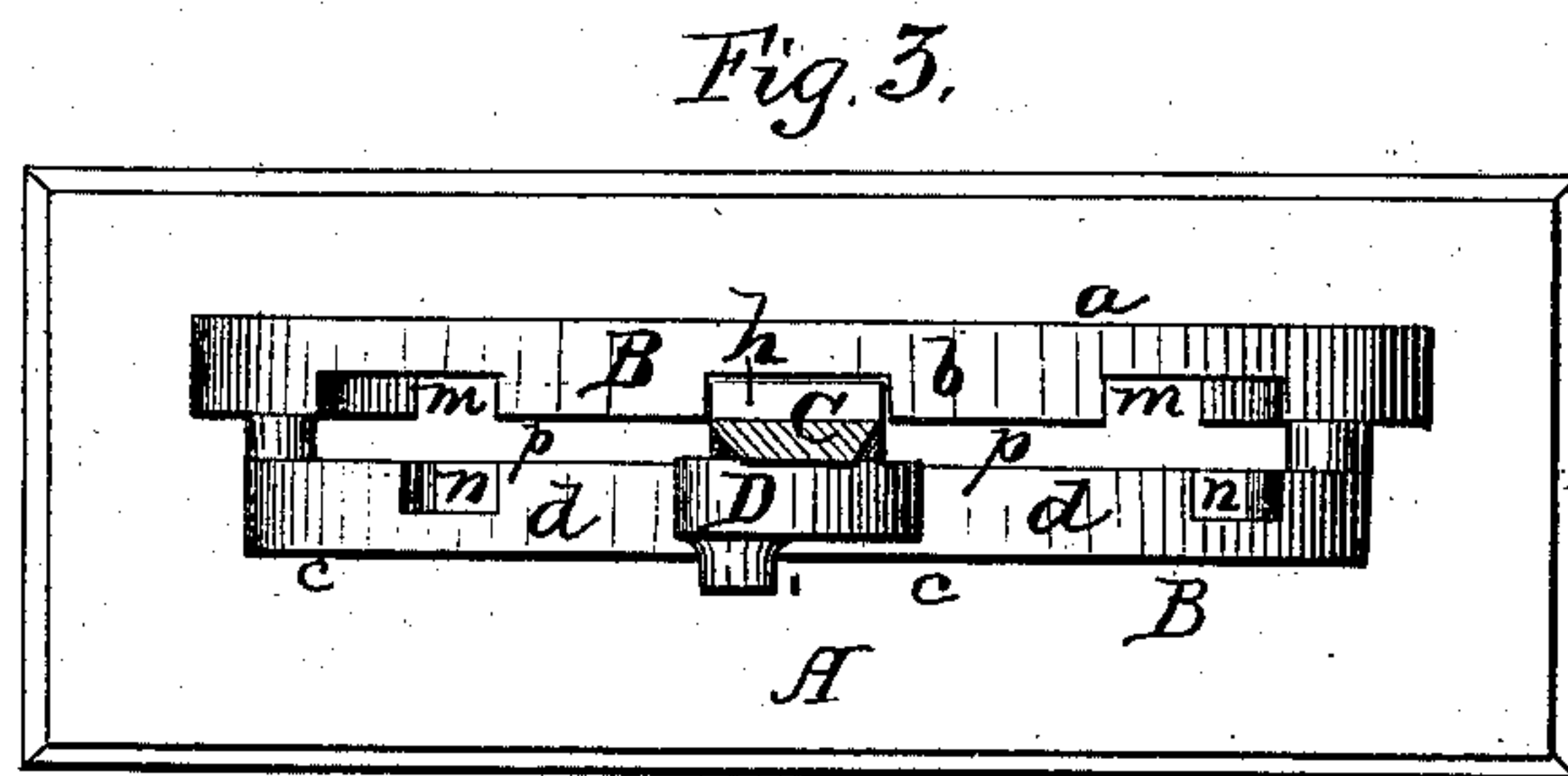
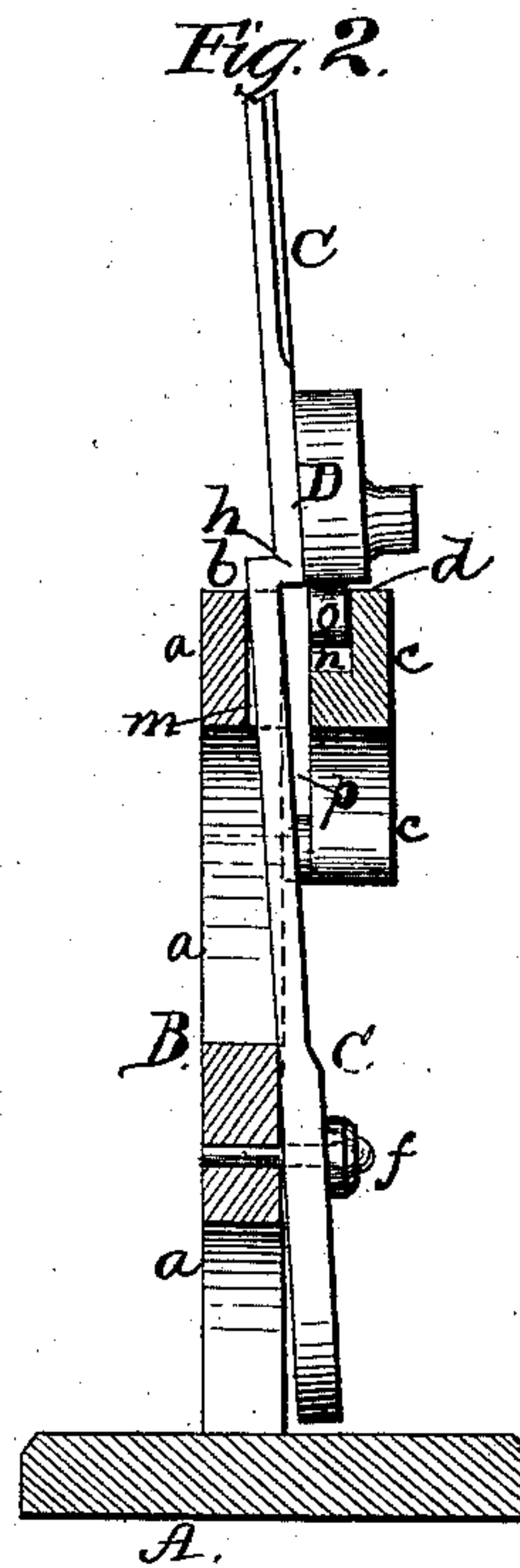
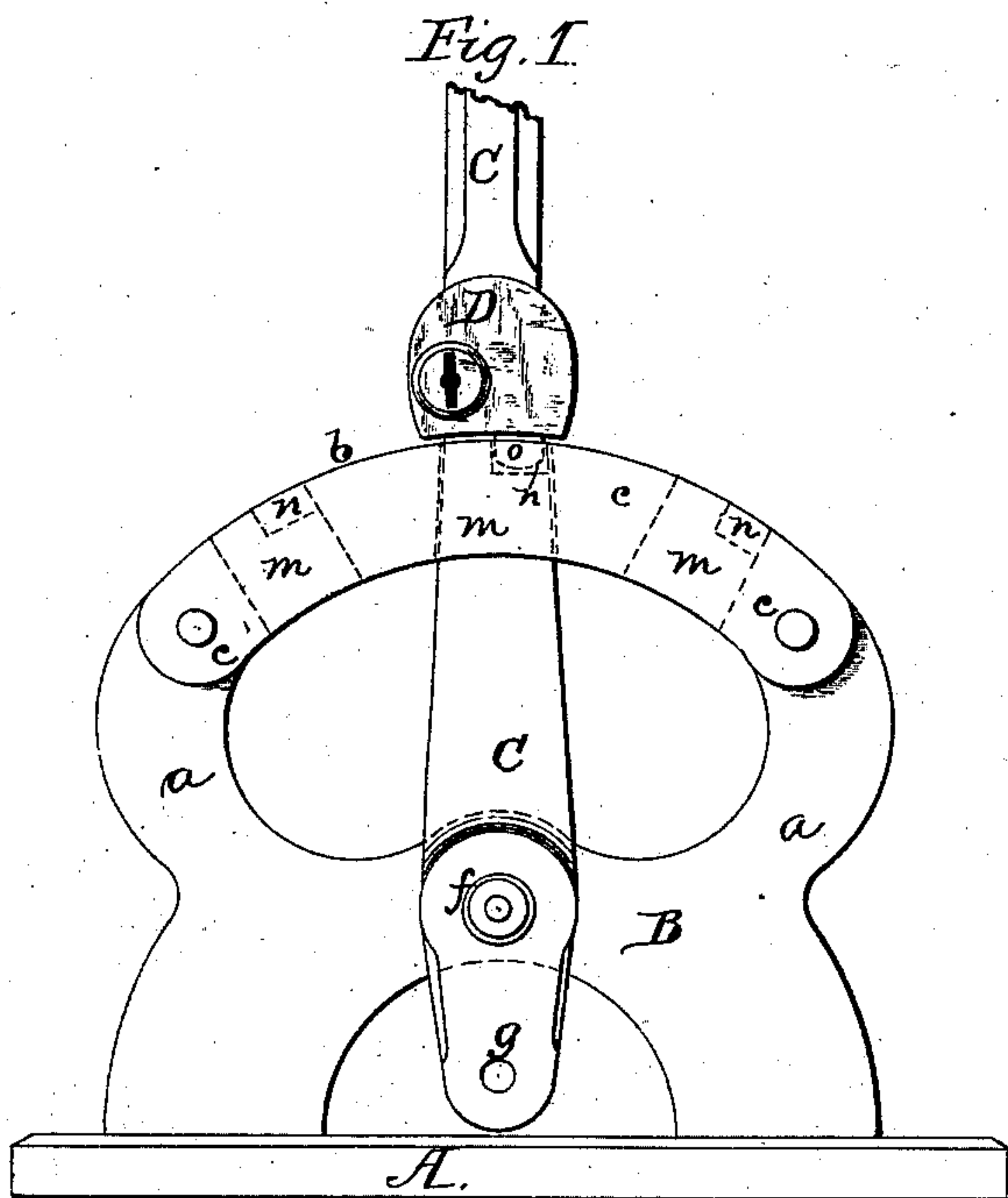


J. W. REINHART.
Locked Switch.

No. 224,953.

Patented Feb. 24, 1880.



Attest:
G. B. Brock
J. F. Knight

Inventor:
Joseph H. Reinhart,
by J. H. Hannay
Att'y

UNITED STATES PATENT OFFICE.

JOSEPH W. REINHART, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
JAMES McHENRY REINHART, OF SAME PLACE.

LOCKED SWITCH.

SPECIFICATION forming part of Letters Patent No. 224,953, dated February 24, 1880.

Application filed July 31, 1879.

To all whom it may concern:

Be it known that I, JOSEPH W. REINHART, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain
5 new and useful Improvements in Locked Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and
10 use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a side elevation of a
15 switch-lever and its stand or frame having my improvements applied thereto; and Fig. 2, a central vertical cross-section of the same, but showing the lever and its automatic lock in elevation. Fig. 3 represents a plan view of
20 Fig. 1.

My invention relates to that class of switch-lever and stand devices termed a two or three throw switch-lever and stand.

I am aware that switch-levers of this class
25 have heretofore been used in connection with automatic locks; but these have been so constructed as to throw all the thrust and strain from the switch-rods, on the passage of a train of cars, upon the bolt of the lock. This speed-
30 ily puts it out of order and renders it inoperative.

The main object of my invention is to remedy this trouble.

The invention consists in a new and im-
35 proved construction of the switch-lever and stand, so that when combined with an automatic lock the strain of the switch-rod will be thrown upon the switch-lever and stand, and not upon the lock-bolt of the lock.

To enable others skilled in the art to make,
40 construct, and use my invention, I will now proceed to describe its parts in detail, omitting a particular description of such parts of a switch and of the automatic lock as are non-
45 essential to a full understanding of the present improvement.

In the drawings, A represents a stout bed frame or plate, upon which is securely erected the switch-stand B. Stand B consists of a
50 stout metal frame, *a*, curved on its upper edge,

b, so as to coincide with a circular line drawn from a radius having its center at the center of the pivotal pin of the switch-lever C, and extending to the under edge of the lock D on said lever C.

To the side of frame *a* is secured a stout plate of metal, *c*, whose upper edge, *d*, is also curved to coincide with the upper edge, *b*, of stand *a*. The frame and plate *c* are so secured to each other by any suitable and known means
55 as to leave a space of sufficient width between their adjoining faces to permit the lever C to pass freely between them. (See Fig. 3.)

On the inner face of stand *a* are cut three radial slots or grooves, *m*, of a width sufficient
60 to receive the upper end of the lower half of the bent switch-lever C. On the inner face of plate *c* are also cut three notches, *n*, said notches being so arranged and cut with respect to the three slots or grooves *m* as to respect-
65 ively correspond therewith, so that when the lever C is engaged with either of the slots *m* in the stand *a*, then the corresponding notch *n* in plate *c* will be directly opposite the lock-
70 bolt *o* of lock D, ready to receive the latter as soon as the lever is forced back into either of the grooves *m*. The bottom side of notches *n* prevents any one from forcing back the lock-
75 bolt without the aid of the key.

C represents the switch-lever, pivoted at *f*,
80 and having an opening, *g*, near its lower end for receiving the pivotal bolt of the switch-rod. Lever C is bent squarely outward toward plate *c* at a point slightly above or beyond the curved edge *d* of plate *c*, as shown in Fig. 2,
85 so that when not locked to the stand B the bend *h* of said lever may project over plate *c*, for a purpose hereinafter to be described.

To the lever C, at its bend *h*, is firmly se-
90 cured an automatic lock, D, having a spring lock-bolt, *o*. This lock I prefer to be so constructed that when its lock-bolt is not projected so as to lock the lever to stand B the key cannot be withdrawn therefrom until the
95 switch-lever has been locked to the stand. Still such is not an essential feature.

The operation is as follows: Suppose lever C to be locked to the stand, as shown in the drawings, and it is desired to move the switch,
100 say, from the main track to a siding, then the

key is inserted into the lock and operated so as to withdraw spring lock-bolt *o* from notch *n* of the plate *c*, and there held until the lever *C* is withdrawn from the groove *m* of frame *a*.
5 This brings the edge of the lever in line with the space *p* between the frame *a* and plate *c*, when it can be moved in either direction within space *p*, according to the movement of the switch required, until it reaches the proper
10 corresponding groove *m* in frame *a*, when it is then sprung back into groove *m*, and when securely home there locked by bolt *o*, (and which, during the movement of the lever, has been held back in its unlocked position by the upper edge, *d*, of plate *c*,) which, being released
15 by being brought opposite the notch *n* in plate *c*, is suddenly projected into said notch by the reaction of its spring. The same operation is repeated each time the switch is changed.
20 Notches *n* are made slightly wider than the width of the lock-bolt *o*, as shown in Fig. 2, as the latter is not intended to have any bearing against the edges of the notches, but only against the back of the latter, with the sole
25 view of holding the lever *C* firmly within the grooves *m* of frame *a*. By this arrangement

it will be apparent that all strain and thrust from the switch-rod will be borne by lever *C*, and not by the lock-bolt of the lock.

As a rule, sufficient spring will be found in 30 the lever *C* to permit of its being sprung back into the grooves *m*; but, if desired, a little side play may be allowed to it on its pivotal pin.

Having described my invention, what I 35 claim as new, and desire to secure by Letters Patent, is—

1. The combination of a bent switch-lever, *C*, and a holding or fastening device with a stand, *B*, having grooves *m* and notches *n*, ar- 40 ranged substantially as set forth.

2. The combination of a bent switch-lever, *C*, and stand *B*, having grooves *m* and notches *n*, with an automatic lock, arranged substan- 45 tially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of July, 1879.

JOSEPH W. REINHART.

Witnesses:

F. B. BROCK,
H. A. HALL.