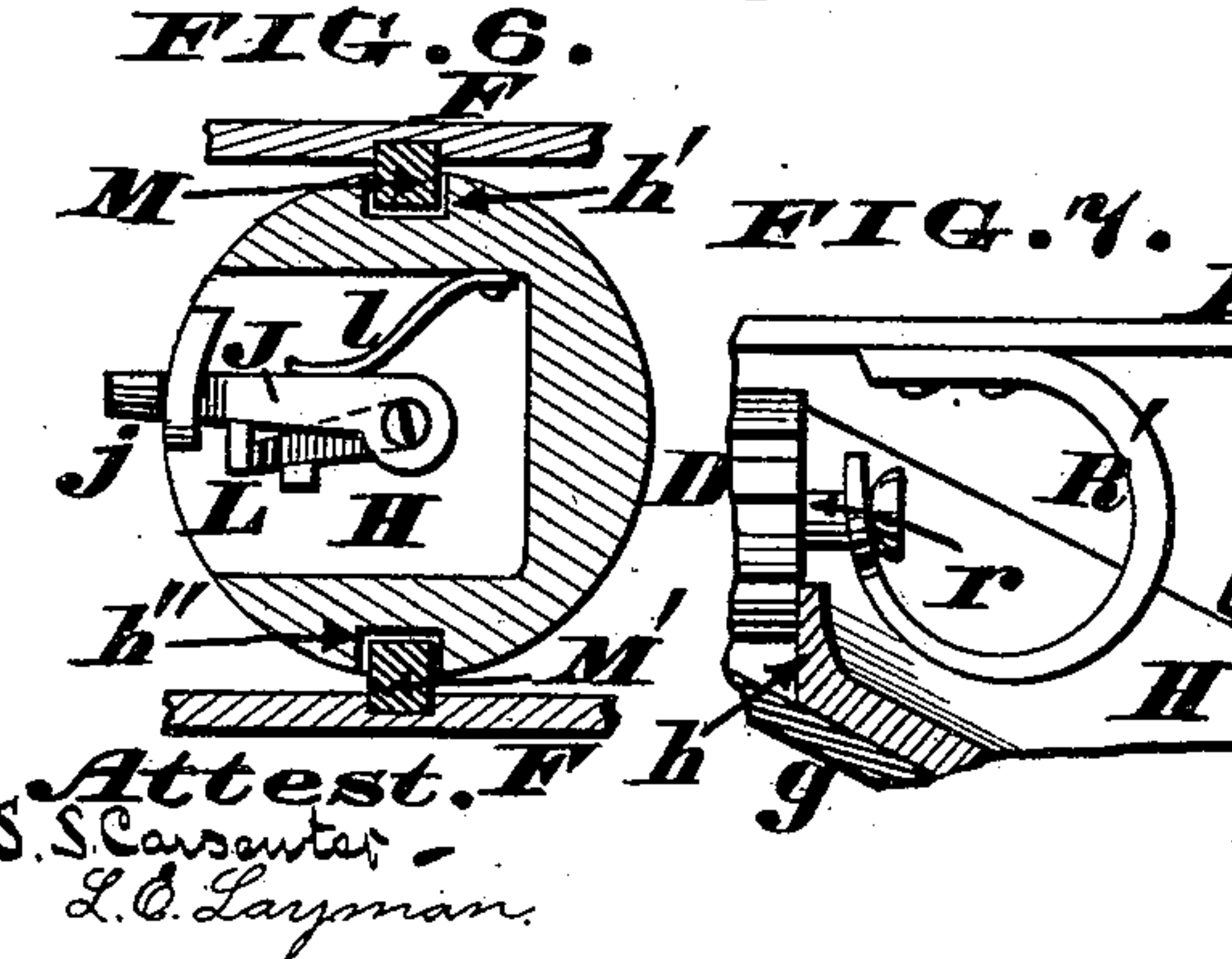
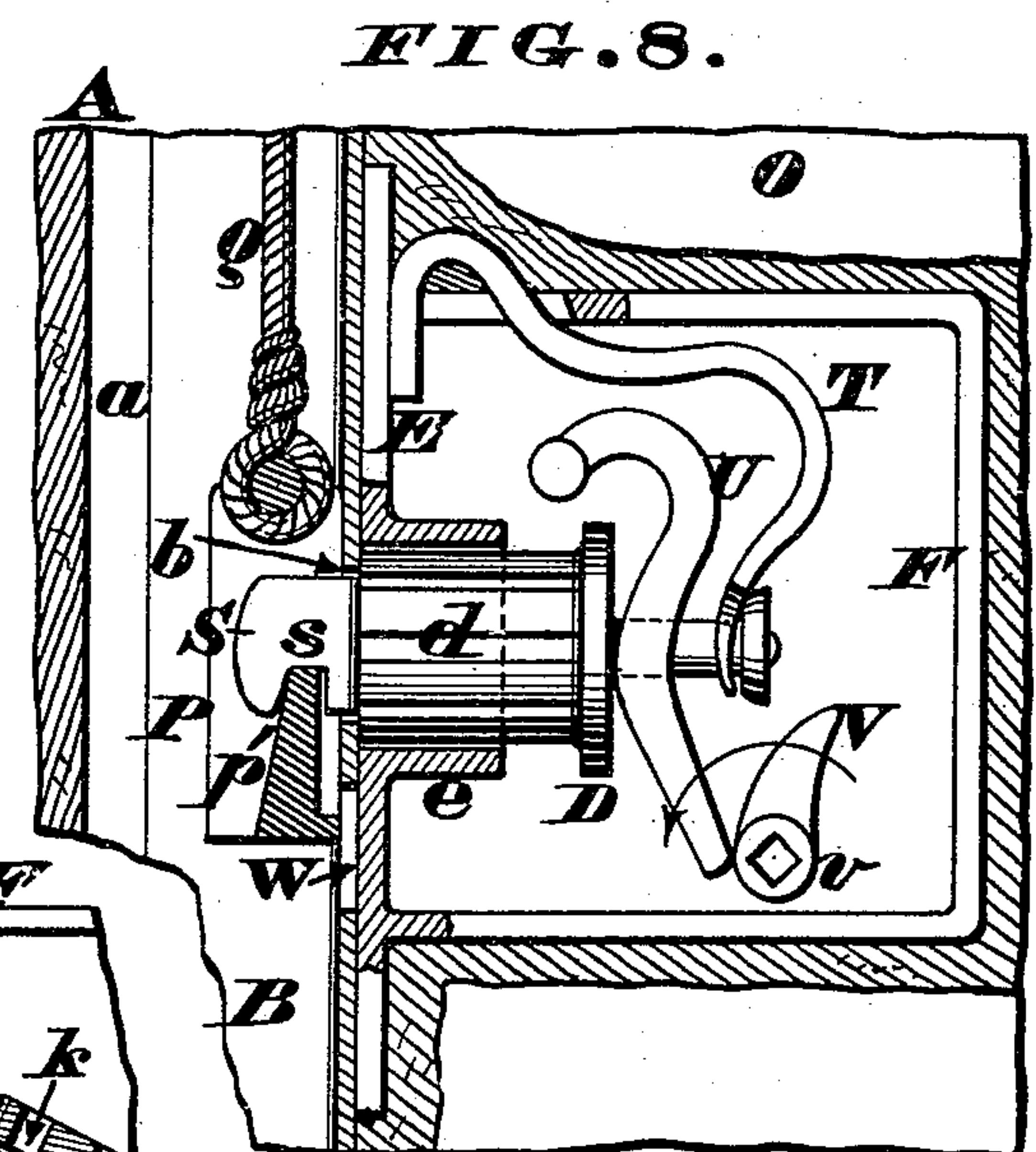
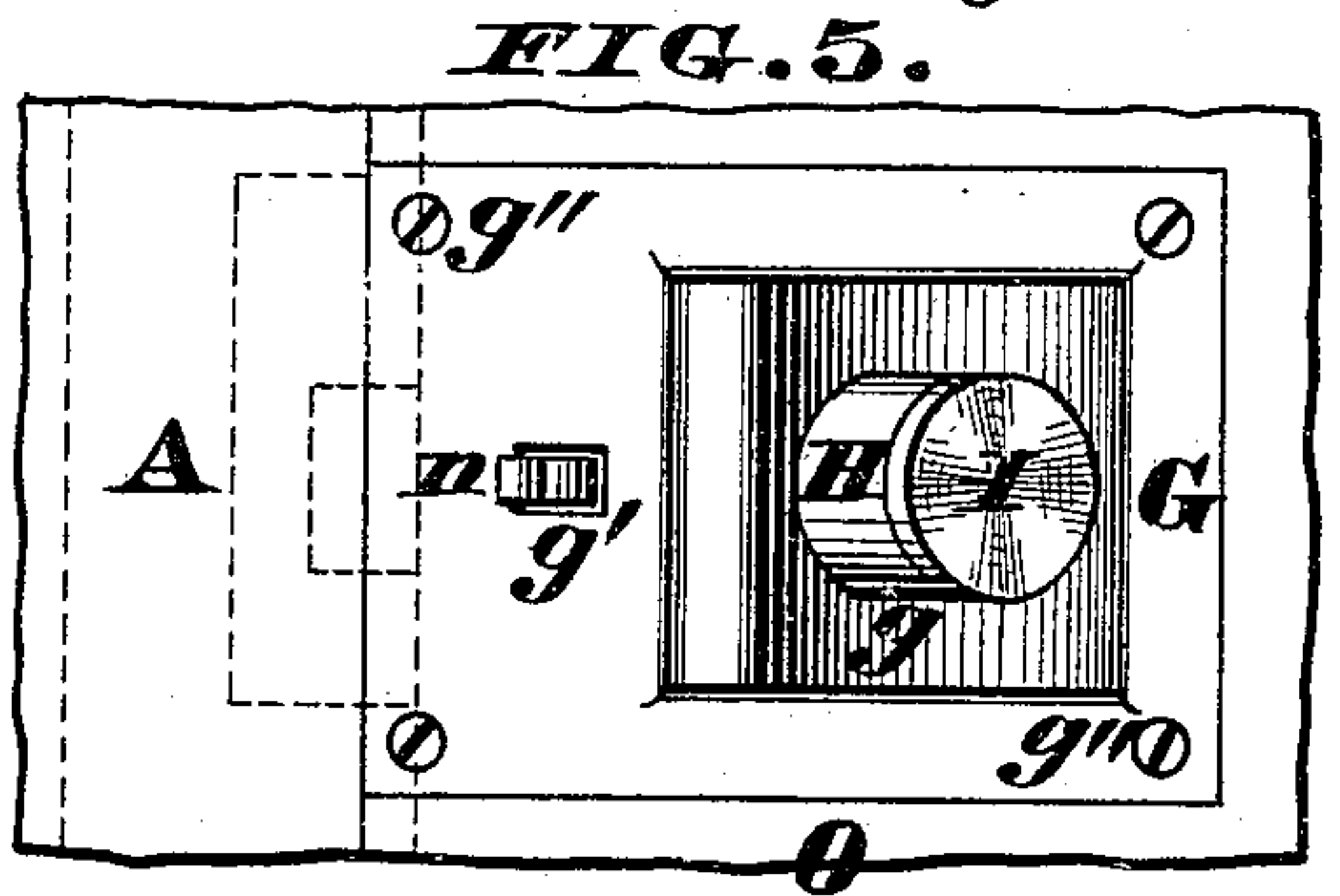
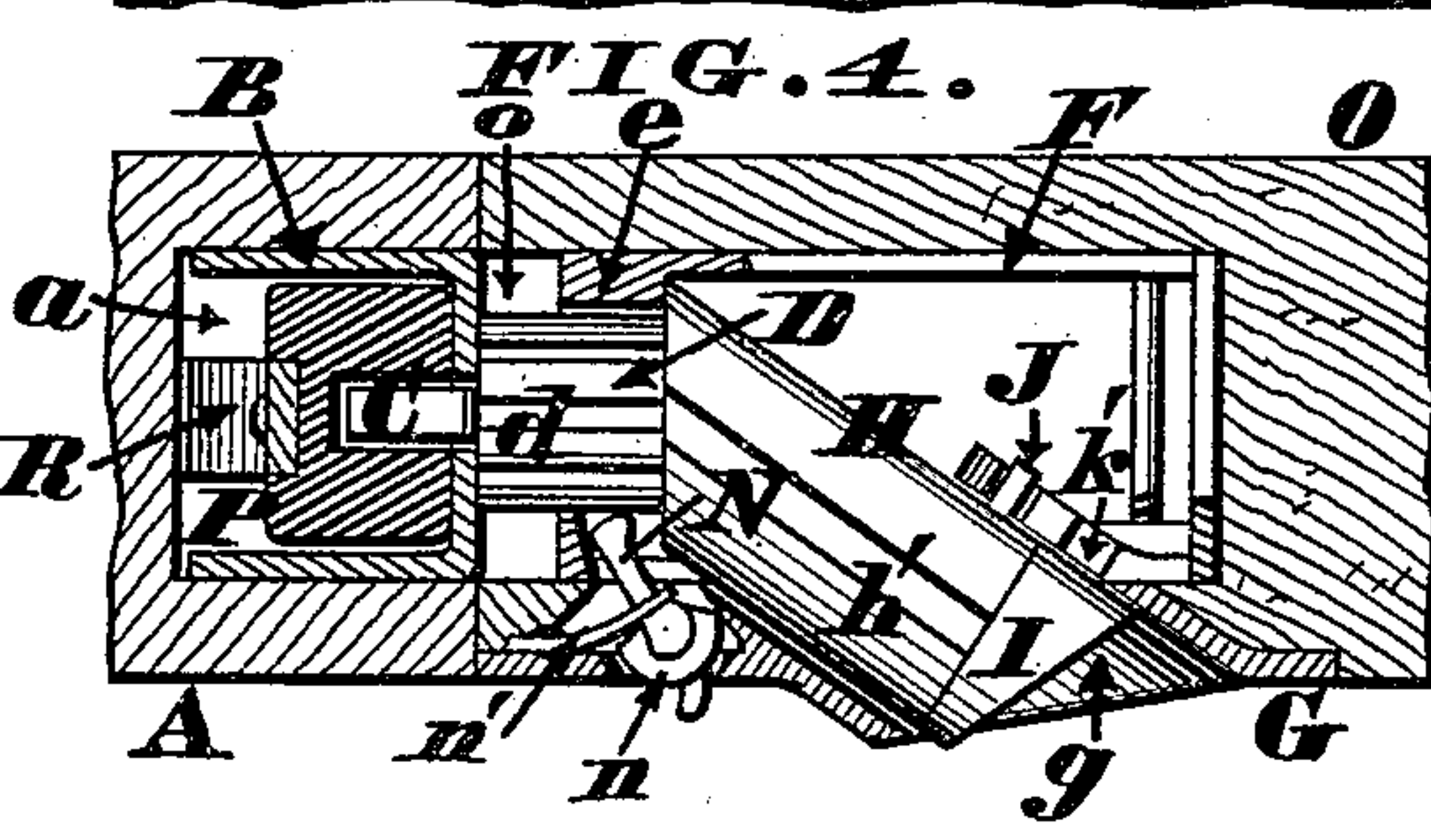
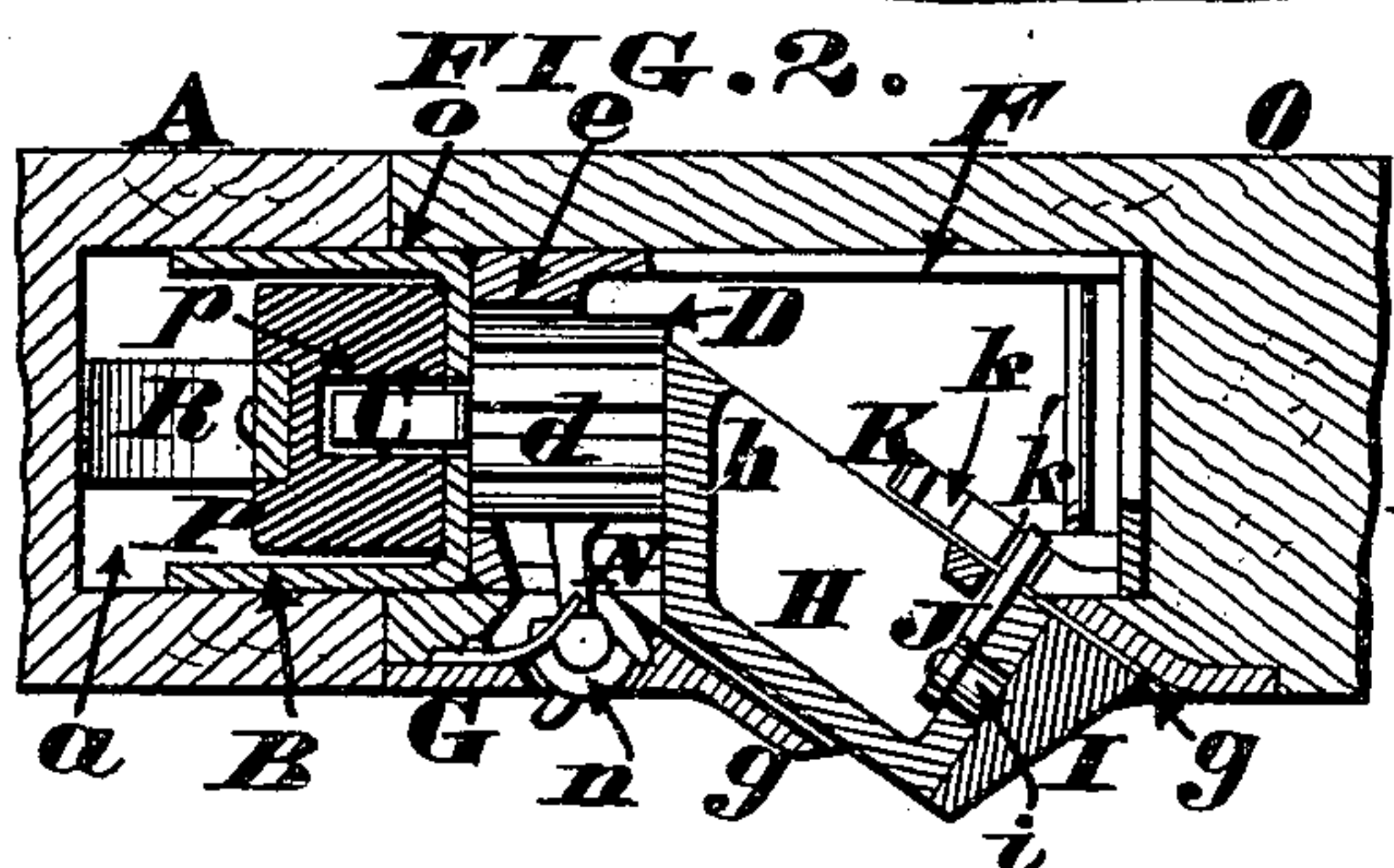
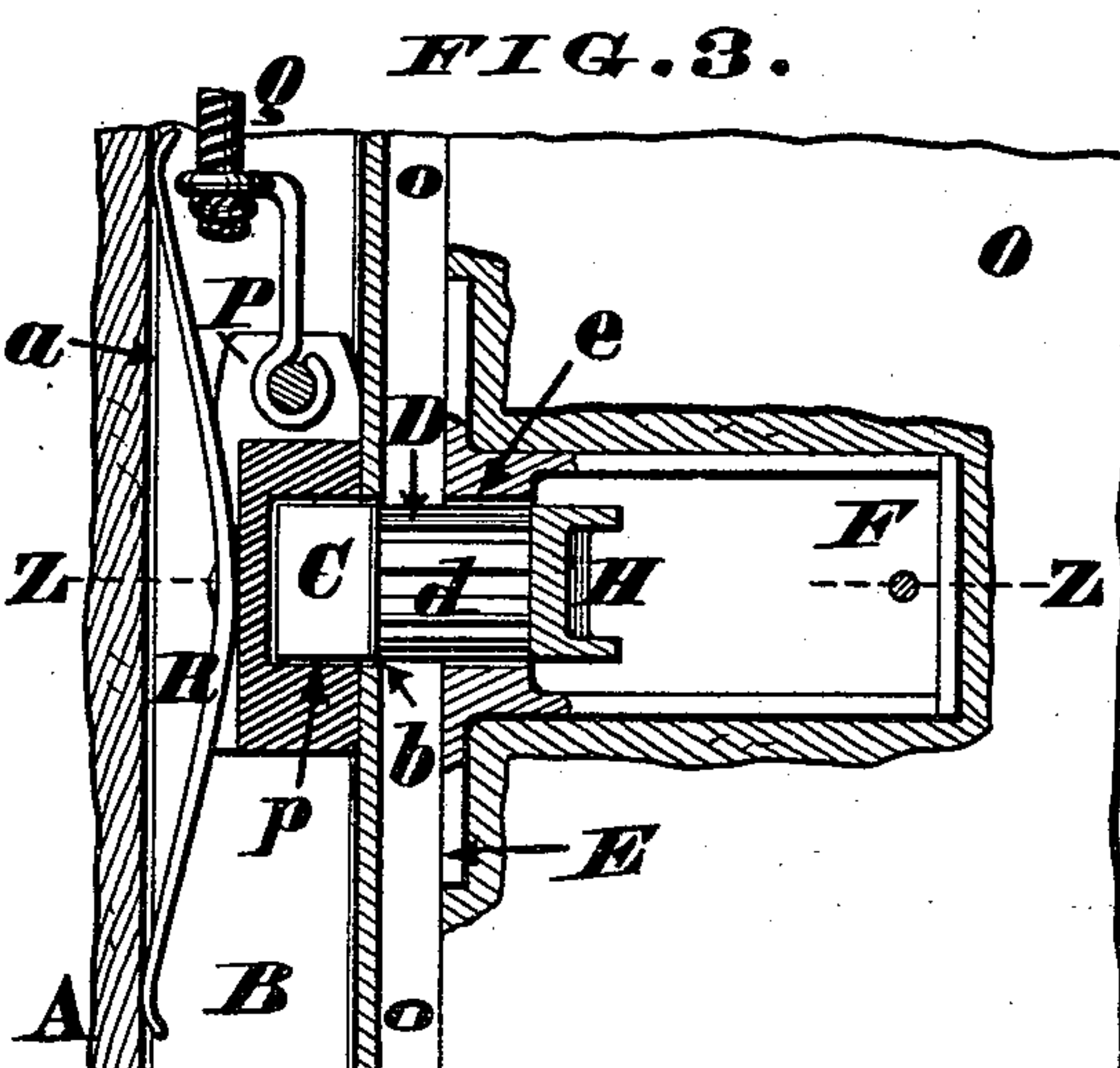
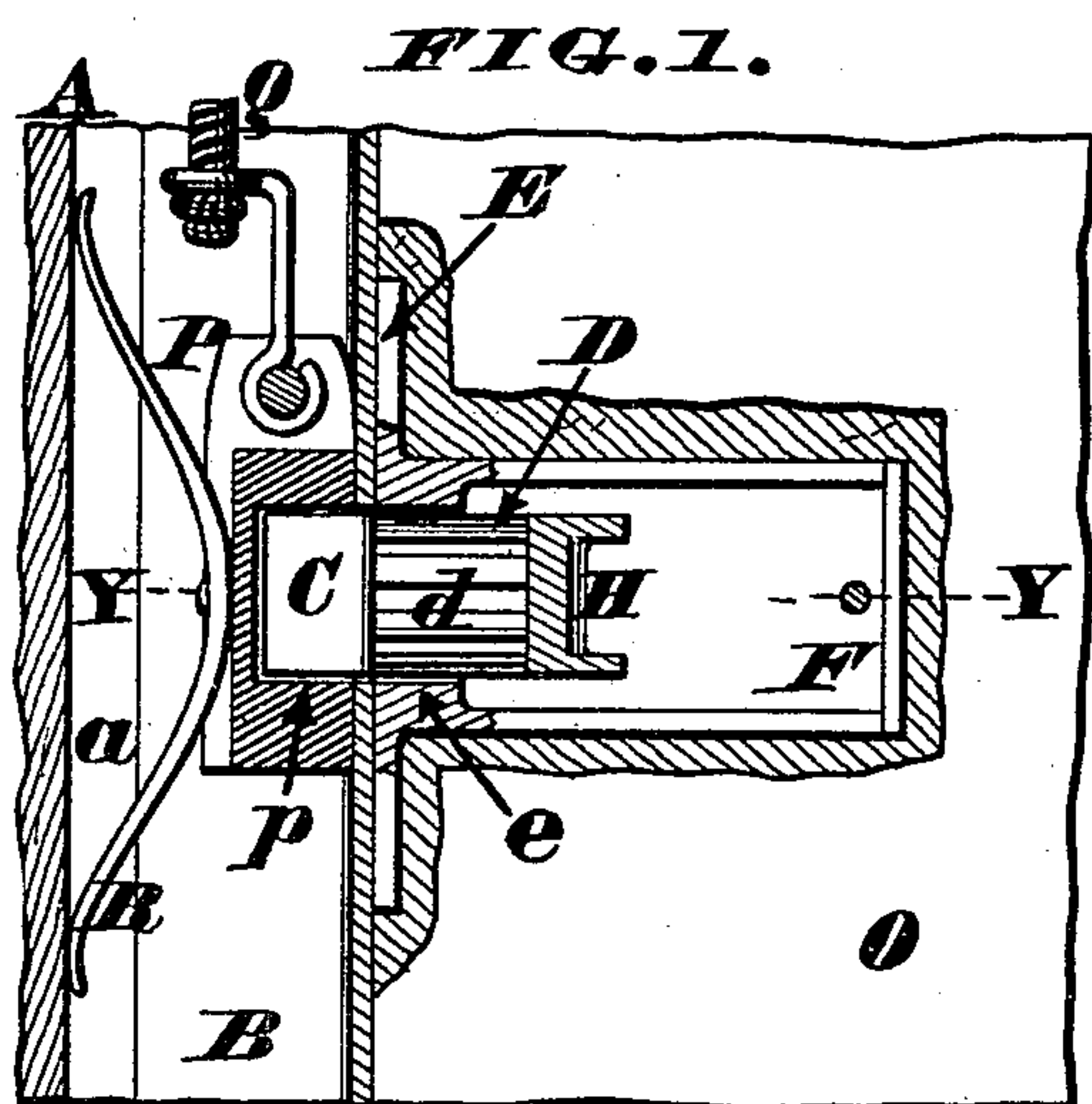


(No Model.)

J. H. FOOTE.
WINDOW SASH.

No. 426,793.

Patented Apr. 29, 1890.



Attest.
S. S. Carpenter
L. C. Layman.

Inventor.
James H. Foote.
By James H. Layman
Atty.

UNITED STATES PATENT OFFICE.

JAMES H. FOOTE, OF CINCINNATI, OHIO.

WINDOW-SASH.

SPECIFICATION forming part of Letters Patent No. 426,793, dated April 29, 1890.

Application filed July 6, 1889. Serial No. 316,724. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. FOOTE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Window-Sashes; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to those window-sashes which can be raised and lowered within vertical grooves of a frame or casing or turned on a pair of pivots, so as to be either horizontal or inclined at any desired angle; and the first part of my improvement consists in the provision of a spring which normally tends to hold a hollow guide in engagement with a groove of the sash. This spring may be fitted either within the guide and adapted to bear against the sash-cord fastener, or it may be located within the case of the pivot mechanism; but in either event its duty is to temporarily couple the guide to the sash, so as to compel the latter to travel in a vertical path, as hereinafter more fully described.

The second part of my improvements comprises a novel push-pin which is fitted to the pivot-case and can be readily advanced by a person's thumb for the purpose of forcing the hollow guide into the frame-groove, and thereby supporting the sash wholly upon its pivot-bearings, in order that said sash may be conveniently turned, as hereinafter more fully described.

The third part of my improvements comprises a novel combination of devices for locking this push-pin both in its advanced and retracted positions, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a sectionized side elevation of one of my pivot-bearings for a sliding and swinging window-sash, said sash being arranged to be raised and lowered with the hollow guide. Fig. 2 is a horizontal section of said bearing taken at the line Y Y. Fig. 3 is another sectionized side elevation, but showing the sash supported by the pivot, so as to be turned thereon. Fig. 4 is a horizontal section thereof, taken at the line Z Z. Fig. 5 is a front ele-

vation of the face-plate of the case that contains the pivot mechanism. Fig. 6 is an enlarged transverse section of the push-pin. Figs. 7 and 8 are two different modifications of the spring arrangement.

A represents a portion of a box window frame or casing, and *a* is a vertical groove therein, which groove is traversed by a hollow three-sided guide B, that is preferably made of sheet metal and is usually as long as is the sash to which it is applied. This hollow guide has near its mid-length a vertical slot *b*, through which passes a lug C, projecting horizontally from the end of a short cylindrical barrel D, whose periphery is grooved or fluted longitudinally, as at *d*. This barrel is adapted to slide freely within a cylindrical neck *e* of the edge plate E of a case F, within which the principal operative parts are housed in the manner shown. The outer or face plate G of this case has a cylindrical bearing *g* for a reciprocating push-pin H, which is chambered out, as seen in Figs. 2 and 6, and has an oblique end *h*, adapted to press against the barrel D. The opposite end of this chambered push-pin is also closed and is traversed by a pivot *i* of a head I, that may be milled or roughened to enable a person's thumb to bear against it more effectually.

Loosely coupled to the inner end of the pivot *i* is a latch J, the advancing edge of which is beveled off, as seen at *j* in Fig. 6, in order that said latch may readily ride over the notches *k k'* of a bar or plate K, secured within the case F.

L is a lifter rigidly secured to the pivot *i* and adapted to raise the latch J when the head I is properly turned. *l* is a spring that retains said latch in its normal or closed position.

Push-pin H is grooved longitudinally on its upper and lower sides, as seen at *h' h''*, which grooves admit guides M M', secured to the top and bottom plates of the case, by which arrangement this pin is confined to a proper path and is prevented turning within the cylindrical bearing *g*. Face-plate G is slotted horizontally at *g'* for the passage of the rounded portion *n* of a swinging catch N, suitably pivoted to the rear of said plate, the free end of this catch being adapted to enter either

one of the grooves d of barrel D. The pivot of this catch has a pair of flat facets, against either one of which the spring n' bears, and thus holds said catch either in or out of gear with the aforesaid barrel. Face-plate G is secured by screws g'' to the sash O, the latter being grooved vertically at o to admit a portion of the guide B.

P is a sash-cord fastener sliding freely within said guide and having a socket p to admit the lug C of barrel D, the cord or chain Q being attached to said fastener in any suitable manner, but preferably as shown.

R is a spring secured at its center to the fastener P, and having its end portion at all times in contact with the back of frame-groove a .

When the various parts of my window-sash are in their normal positions, the stress of spring R forces the cord-fastener P into the guide B and advances the latter within the groove o until it comes in contact with the edge plate E of case F, as seen in Figs. 1 and 2, and the lug C, being engaged with the socket p , couples the sash O to said fastener, and by it to the cord or chain Q. It is evident the sash is now suspended from the cord, and as the hollow guide B is inserted in part within the groove a of the frame and in part within the groove o of the sash, it is apparent said sash is incapable of being swung or turned in either direction, but is free to be raised and lowered in the usual manner, the guide B confining the sash to a strict vertical path; but when it is desired to swing or turn the sash the catch N is first thrown out of engagement with the barrel D and the push-pin H is forced bodily back within the cylindrical bearing g , the chamfered edge j of latch J enabling the latter to readily escape from the notch k' with which it was previously engaged. The push-pin is forced back until said latch engages with the other notch k' , by which time the various parts will have reached the position seen in Fig. 4. Reference to this illustration shows that the push-pin has advanced until arrested by the neck e , and in so doing the oblique end h of said pin has acted as a wedge to drive the barrel D a suitable distance out of said neck. Consequently the guide B is forced entirely out of the sash-groove o and is driven into the frame-groove a ; hence it is apparent that the sash O is supported entirely upon the barrel D, which serves as a pivot or bearing around which the neck e turns with perfect freedom, and when the sash has been turned until the desired position is reached the catch N is brought into service, and by engaging with another one of the barrel-grooves locks the sash immovably in position. Although the sash is now inclined, or perfectly horizontal, if desired, it can be raised or lowered, as before, but cannot accidentally turn upon its pivots. To restore the sash to a vertical position, the catch N must first be intentionally disengaged from the barrel D, as previously de-

scribed, after which act the head I is turned so as to lift the latch J out of the notch k , and thus liberate the push-pin H. The stress of spring R now drives the guide B into the groove o and advances the push-pin H until its latch re-engages with the first notch k' , and then all the parts are again in their normal positions.

The above is a description of the preferred form of my invention; but if the construction of the window-frame is such as to prevent the use of the spring within the frame-groove the expedient seen in Fig. 7 may be adopted. Here the spring R' is housed within the case F and its free end is forked to grasp an integral shank r of the barrel D, and thus pull the latter toward said spring. In this event the barrel should have a hook to engage over a bar or projection of the cord-fastener, so as to pull said fastener against the hollow guide. In the other modification (seen in Fig. 8) the barrel is traversed by a hook S, whose notch s engages over a rib or flange p' of the sash-cord fastener, and is held in contact with said rib by a spring T. The barrel D is advanced so as to force the guide into the frame-groove by a bent lever U, operated by a cam V on rock-shaft v , the latter being turned by an external handle or knob.

W is a slot in the guide B to permit access to the interior of the same when the sash is turned over to a horizontal position, so as to liberate the sash-cord fastener.

I claim as my invention—

1. The combination of a vertically-grooved window-frame, a vertically-grooved sash applied thereto, a laterally-shiftable hollow guide traversing the groove of said frame, a sash-cord fastener suspended within said guide and having the sash-pivot engaged therewith, a spring that advances the guide into the sash-groove, and means for forcing said guide back into the frame-groove, substantially as herein described.
2. The combination of a vertically-grooved window-frame, a vertically-grooved sash applied thereto, a laterally-shiftable hollow guide traversing the groove of said frame, a sash-cord fastener suspended within said guide and having the sash-pivot engaged therewith, a spring that advances the guide into the sash-groove, and a push-pin that forces said guide back into the frame-groove, substantially as herein described.
3. The combination of a vertically-grooved window-frame, a vertically-grooved sash applied thereto, a laterally-shiftable hollow guide traversing the groove of said frame, a sash-cord fastener suspended within said guide and having the sash-pivot engaged therewith, a spring that advances the guide into the sash-groove, a push-pin that forces said guide back into the frame-groove, and a device that locks said push-pin both when it is shoved in and pushed out, as herein described.
4. The combination of a vertically-grooved

10 window-frame A *a*, a vertically-grooved sash
O *o* applied thereto, a laterally-shiftable hol-
low guide B, traversing the groove *a*, a sock-
eted sash-cord fastener P *p*, suspended within
5 said guide, a sash-cord Q, attached to said fast-
ener, a lug C, projecting from the barrel D *d*
and entering said socket *p*, a push-pin H, that
advances said barrel, a catch, as N, that locks
it, and a spring R, which forces said guide B
10 into the groove *o*, all as herein described.

5. The combination, with the longitudinally-
shiftable barrel D, of a window-sash bearing,
the reciprocating push-pin H, head I, pivot *i*,

latch J *j*, notches *k k'*, lifter L, and spring *l*,
for the purpose described. 15

6. In a window-sash bearing, the case F,
having guides M M', in combination with the
reciprocating push-pin H, having longitudi-
nal grooves *h' h''*, for the purpose stated.

In testimony whereof I affix my signature in 20
presence of two witnesses.

JAMES H. FOOTE.

Witnesses:

JAMES H. LAYMAN,
W. G. CAMERON.