

(No Model.)

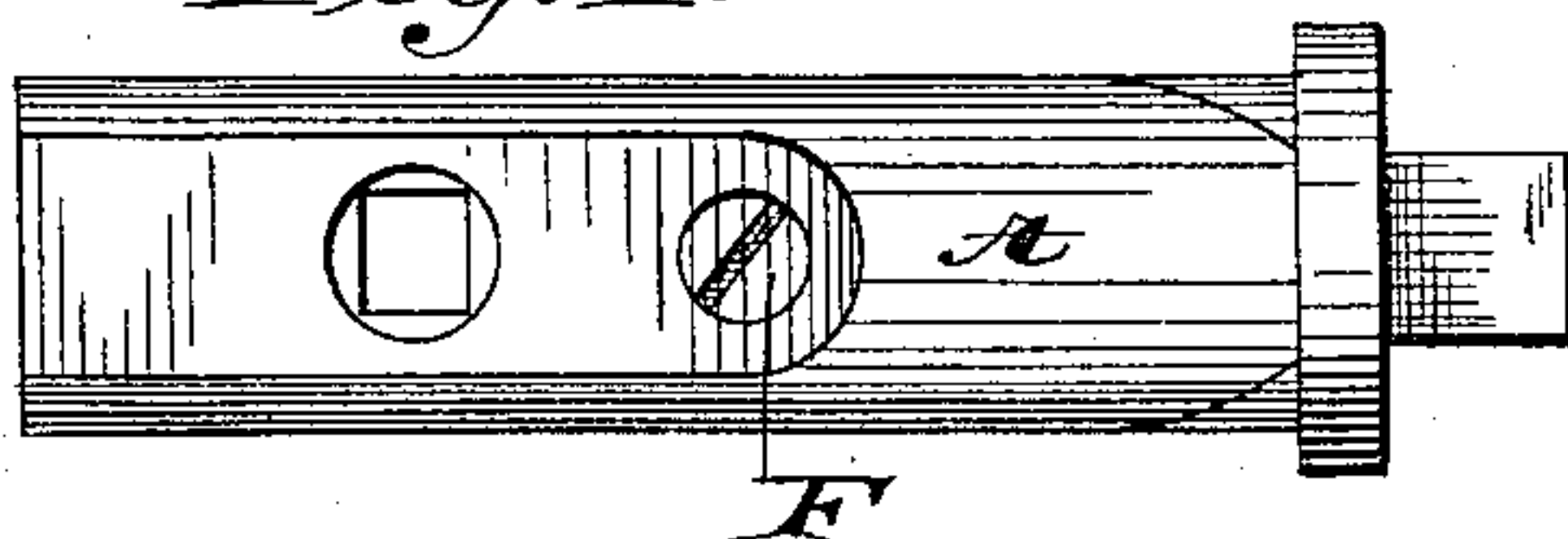
E. E. KNOWLES.

LATCH.

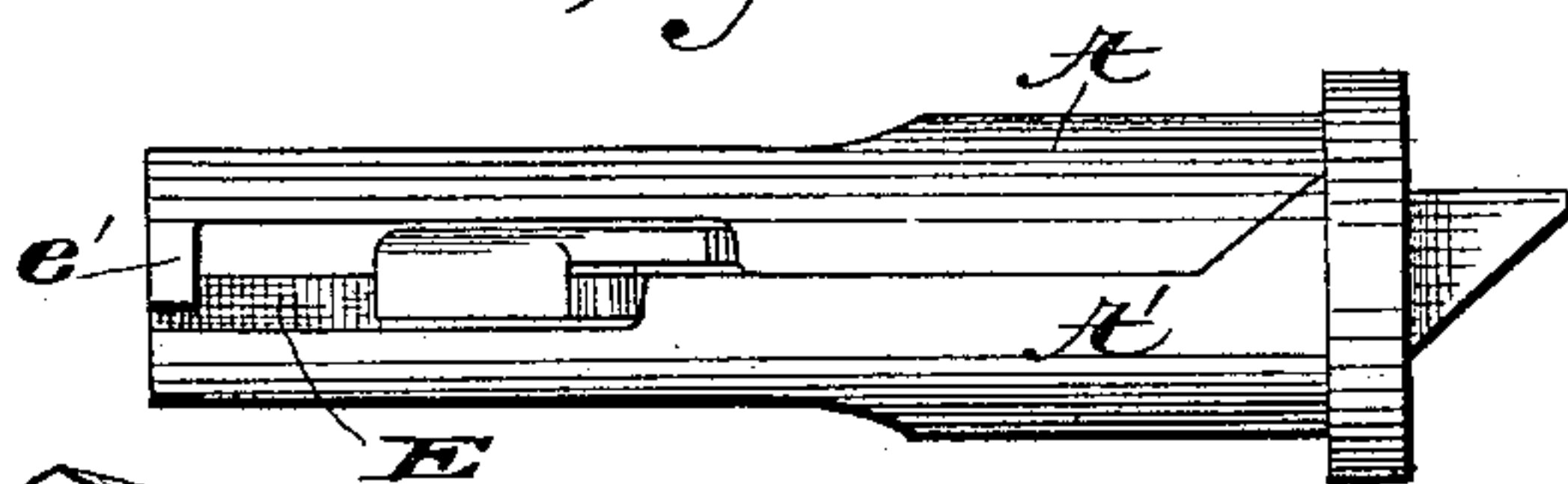
No. 389,390.

Patented Sept. 11, 1888.

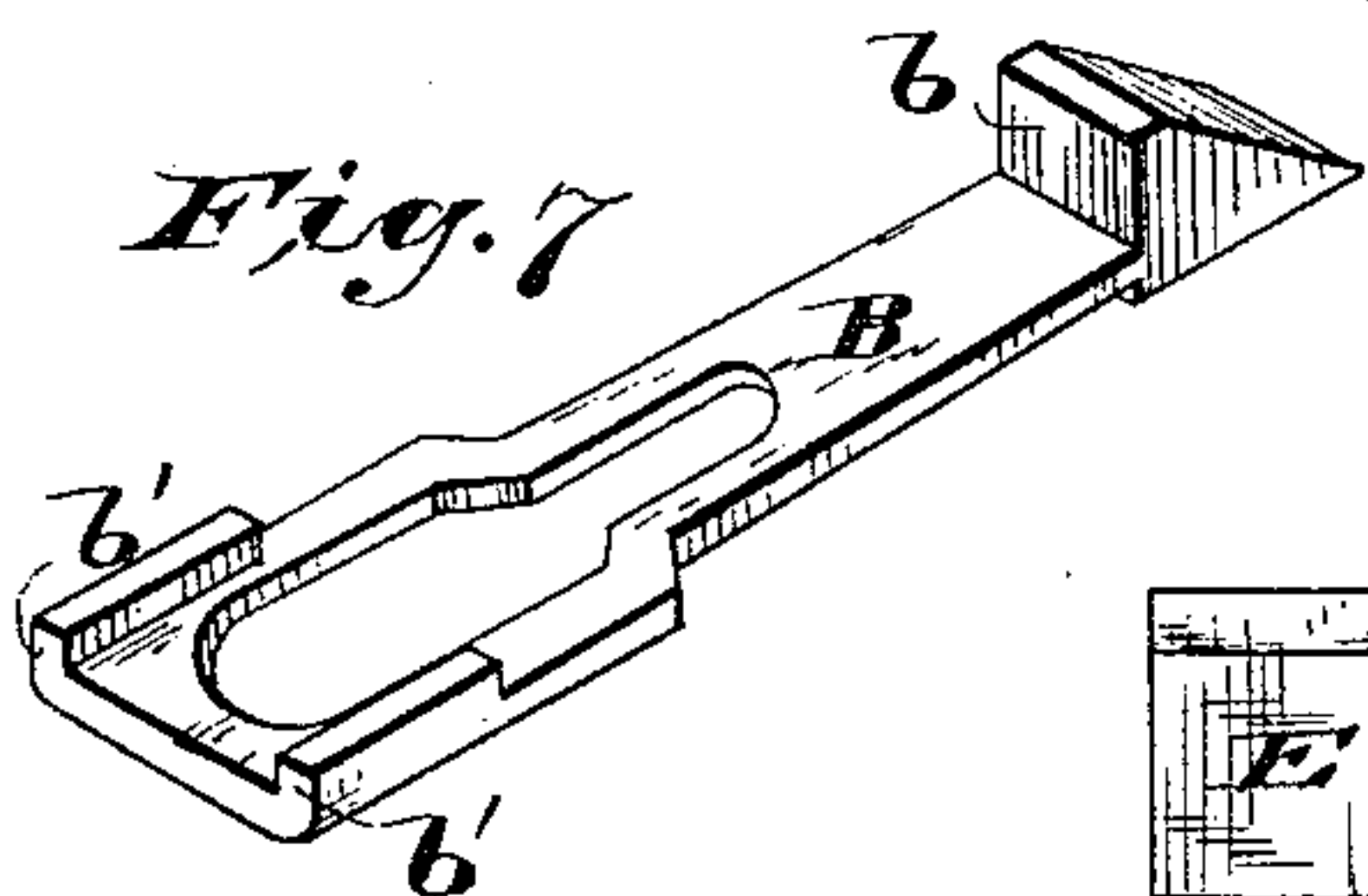
*Fig. 1.*



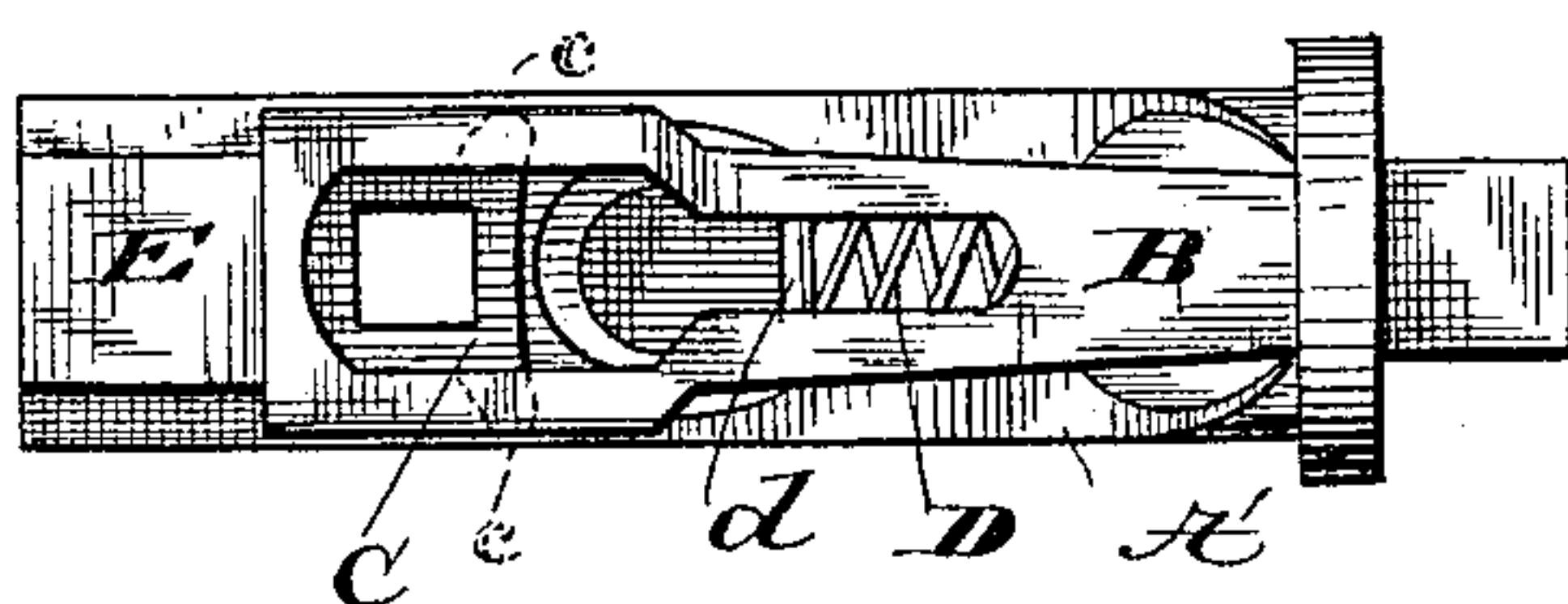
*Fig. 2.*



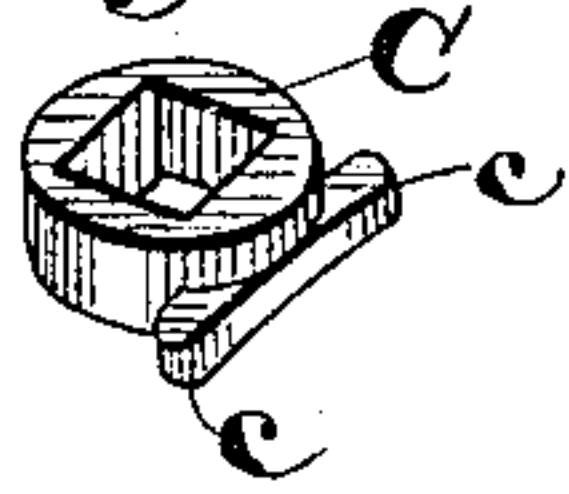
*Fig. 7.*



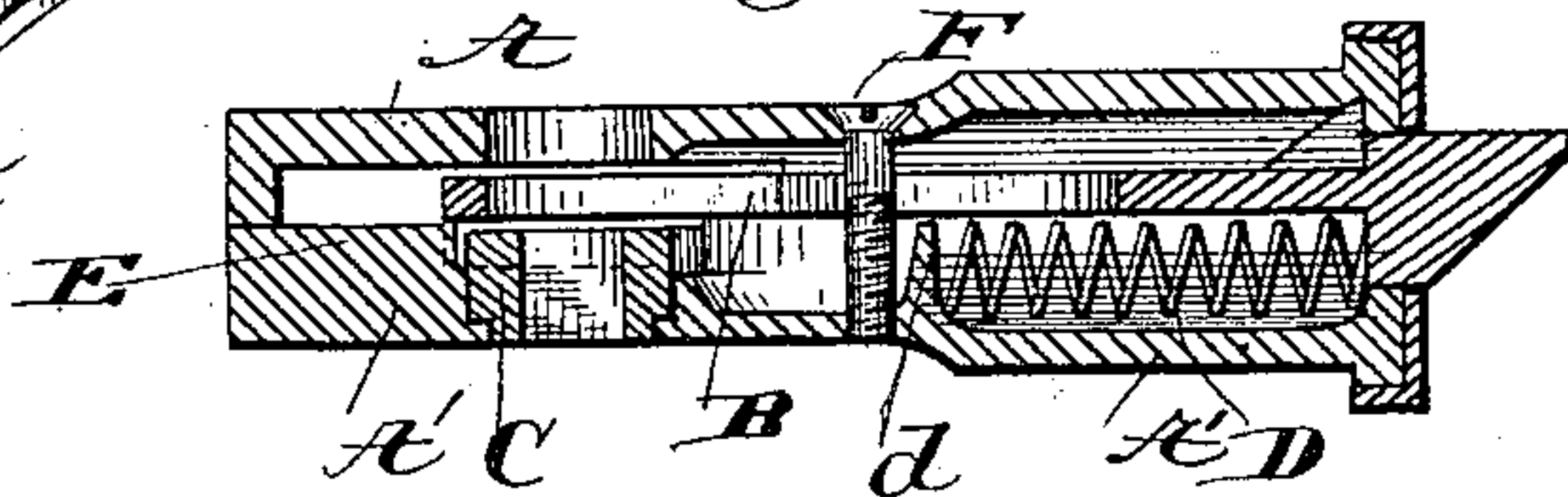
*Fig. 3.*



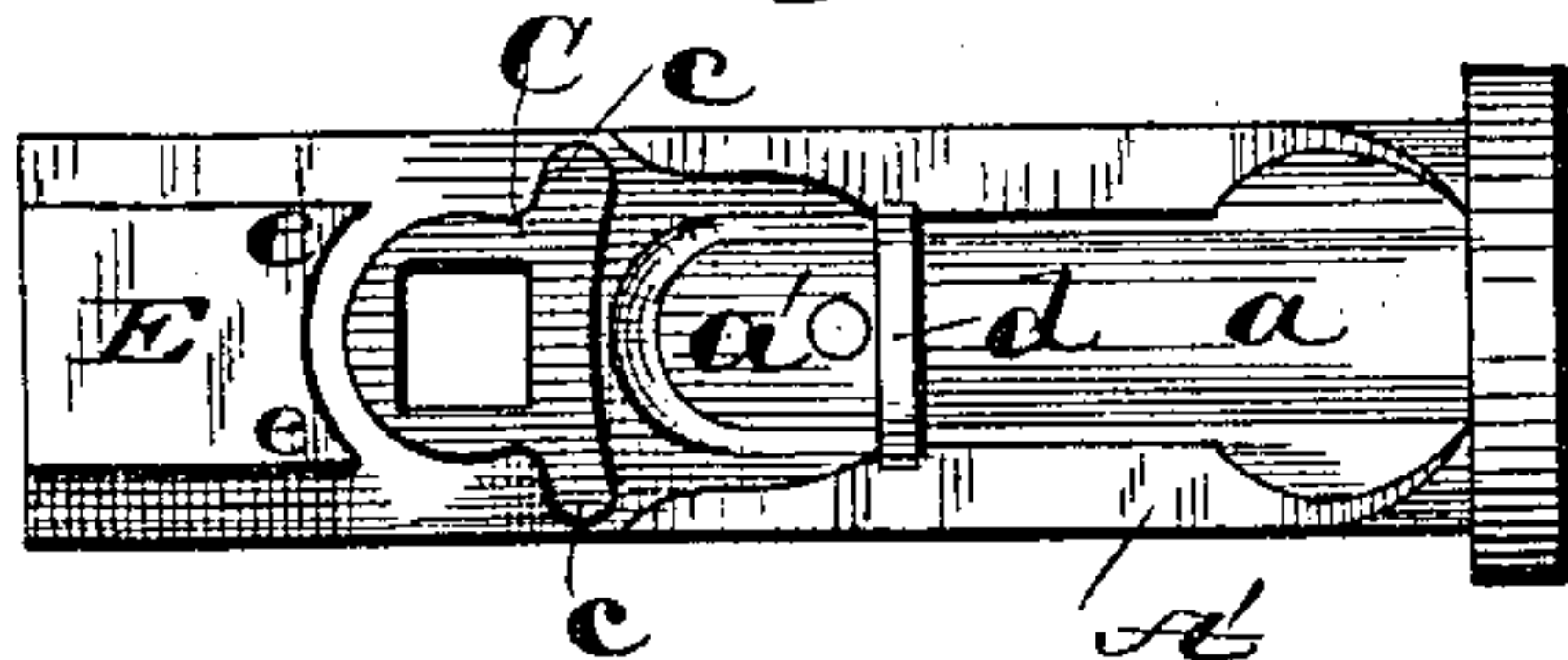
*Fig. 8.*



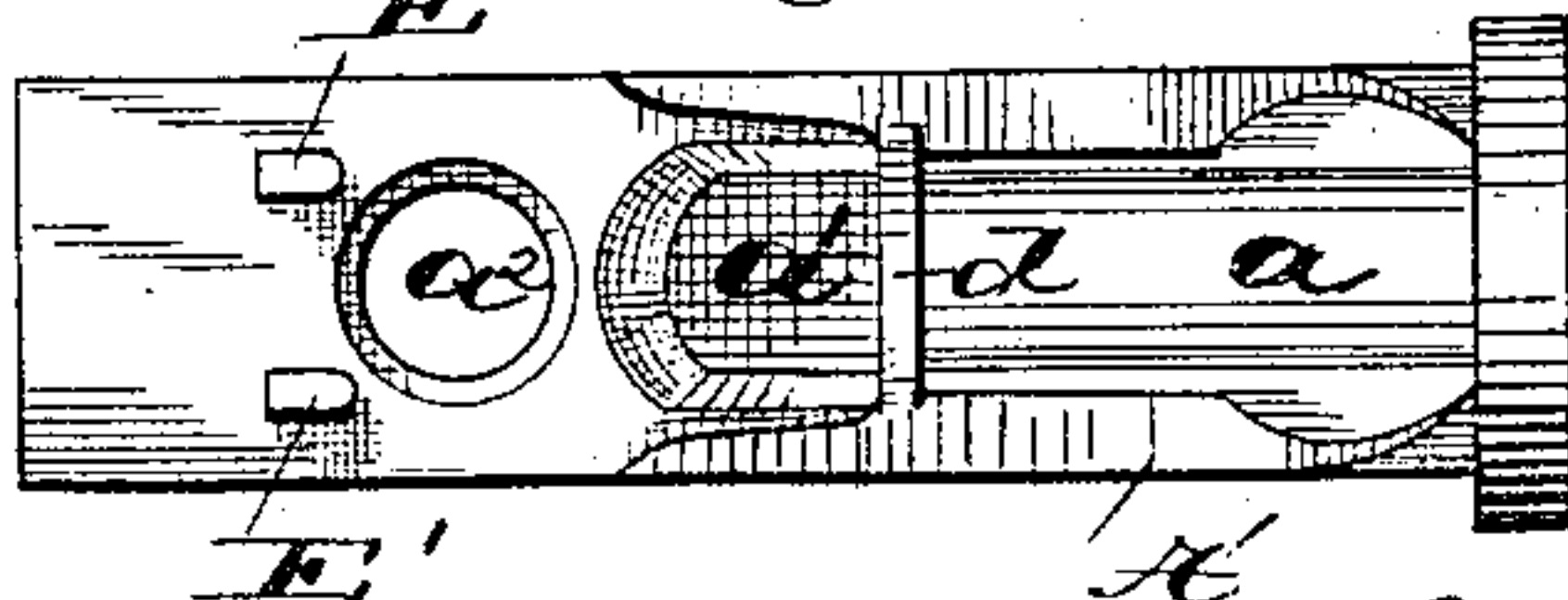
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



*witnesses:*

*E. Swank*

*L. P. Whitaker.*

*Inventor*

*Elmer E. Knowles*

*By his attys  
Whitaker & Brewster*



# UNITED STATES PATENT OFFICE.

ELMER E. KNOWLES, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE HOLLENBECK LOCK AND KNOB COMPANY, OF SAME PLACE.

## LATCH.

SPECIFICATION forming part of Letters Patent No. 389,390, dated September 11, 1888.

Application filed August 16, 1887. Serial No. 247,087. (No model.)

*To all whom it may concern:*

Be it known that I, ELMER E. KNOWLES, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Latches; 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 use the same.

My invention relates to mortise latches of the class which are inserted in the door by first boring the mortise with a bit; and it consists in a certain combination and arrangement of parts, which will be hereinafter more fully described.

The object of my invention is to simplify the construction of such latches and render the same more durable and effective, and to cheapen the cost of the same.

In the accompanying drawings I have illustrated one form in which I have contemplated applying my invention, and I have fully disclosed the same in the following specification and claim.

In the drawings, Figure 1 is a top view of the latch. Fig. 2 is a side view of the same. Fig. 3 is a similar view with the cap-plate of the latch removed. Fig. 4 is a longitudinal section of the latch, showing the operative positions of the parts. Fig. 5 is a top view of the latch having the cap-plate bolt and spring removed. Fig. 6 is a similar view of the body of the latch having a modified construction. Fig. 7 is a view of the latch-bolt. Fig. 8 represents the tumbler or spindle-barrel.

The body of the latch is composed of two parts, A and A', the part A being the cap-plate or cover. The part A' is provided with two recesses, *a* and *a'*, the recess *a* containing the spring D, which presses against the partition *d* and keeps the bolt in its forward position. The part A' is also provided with the opening *a*<sup>2</sup> for the reception of the spindle-barrel C and with the boss or raised portion E, which is formed with smooth parallel edges lengthwise of the latch.

The latch-bolt consists of a flat piece of metal, and is provided with the usual beveled head fitting in an opening in the face-plate, which is constructed so as to offer a flat bearing sur-

face at *b* to one end of the spring D. The opposite end of the bolt is provided with two projections or flanges, *b' b'*, for engaging the boss E of the body of the latch, said boss thereby forming a guide for the rear end of the bolt, preventing any lateral movement. This bolt B may be cast all in one piece; but I prefer to make the main portion of a flat piece of metal and attach the head to the same. The projections or flanges *b' b'* are in this case made by bending the side of the flat metal body-piece to form the same.

The spindle-barrel is formed, in the usual way of a cylindrical piece of metal having a central polygonal aperture for the reception of the spindle or shaft of the knob, and also with the ears or projections *c c*. These projections or ears engage the forward ends of the projections or flanges *b' b'* of the bolt, and give longitudinal motion to the bolt when the spindle-barrel is rotated by its shaft. The forward corners of the boss E are so arranged that when the spindle-barrel is rotated the projections *c c* form a stop for the ears *c c* of the barrel and prevent the bolt from being drawn backward beyond a certain point. It also prevents a complete revolution of the spindle-barrel in either direction. In Fig. 6 I have shown, instead of the boss, two projections, E' E', which serve as guides for the bolt, and also as stops for the barrel, in much the same manner as above described. This boss or the projections may be cast with the part A' or attached in any preferred way.

The cap-plate A is provided at one end with the projections *e'*, which engage the boss E, thereby holding the cap-plate in position, and the two parts A and A' are held in close engagement by means of a single screw, F. If preferred, the projections *e'* may be made to serve as the stop for the bolt by making the projections *b' b'* of the bolt so that they will touch the projections *e'* of the cap-plate when the bolt is in its retracted position.

With my construction a very durable and effective latch can be made very cheaply, as the parts are simple; hence easily made and combined. By means of the boss on the part A' and projections *b' b'* of the bolt B, I obtain a guide for the rear end of the bolt, and also a stop for the same and for the spindle-barrel,

whereby the strain, after the bolt is in its most retracted position, is upon the boss and the barrel, instead of upon the bolt or its connections.

5 What I claim, and desire to secure by Letters Patent, is—

The combination, with a latch-body provided with a bolt-guide, of a bolt provided with projections engaging the guide and a  
10 tumbler having all its parts lying in the same

plane, engaging the projections of the bolt, the projections of the bolt, the guide, and the tumbler all lying in the same plane, substantially as described.

In testimony whereof I affix my signature in 15 presence of two witnesses.

ELMER E. KNOWLES.

Witnesses:

FRANK A. HOLLENBECK,  
A. F. LEWIS.