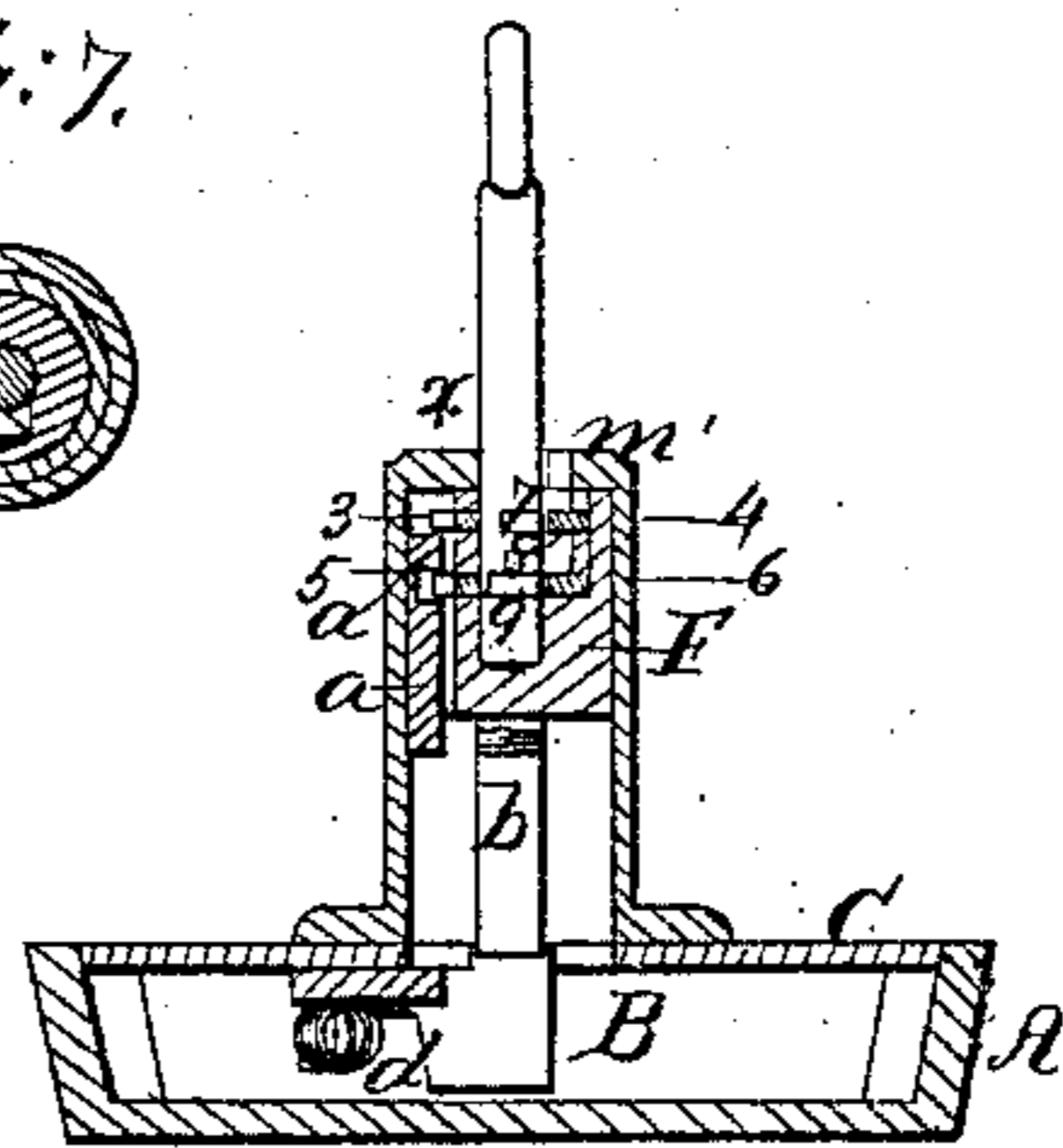
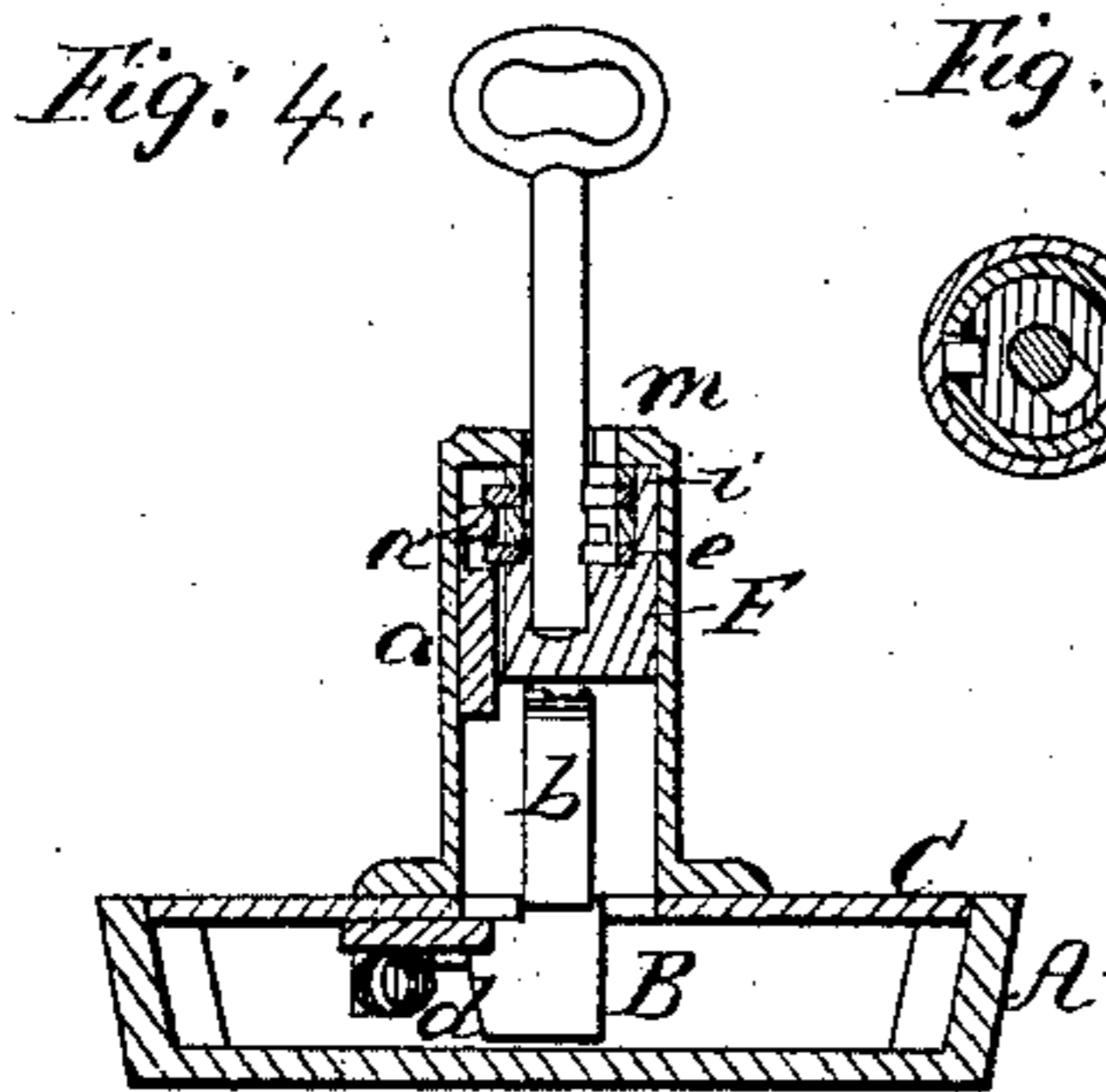
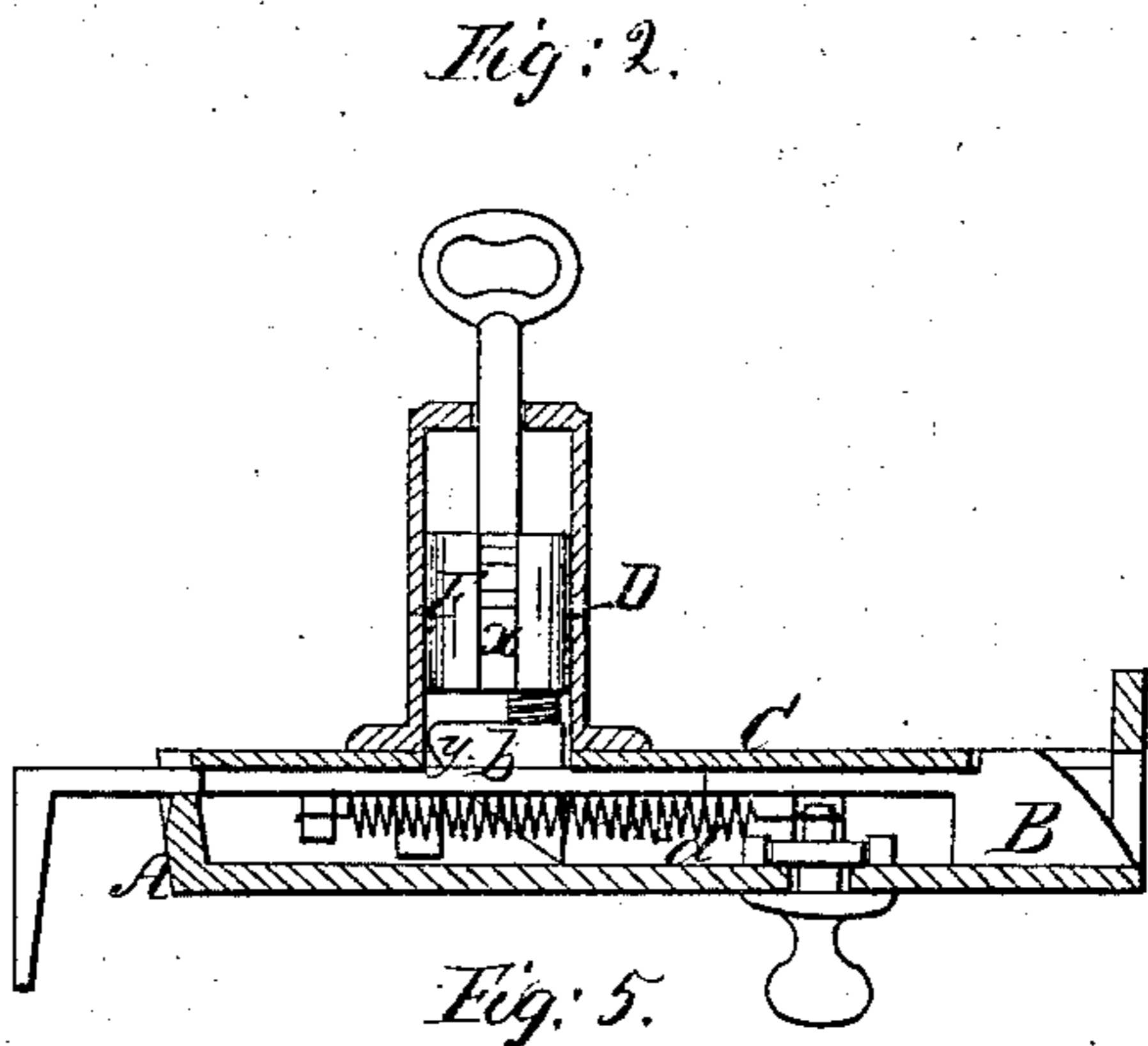
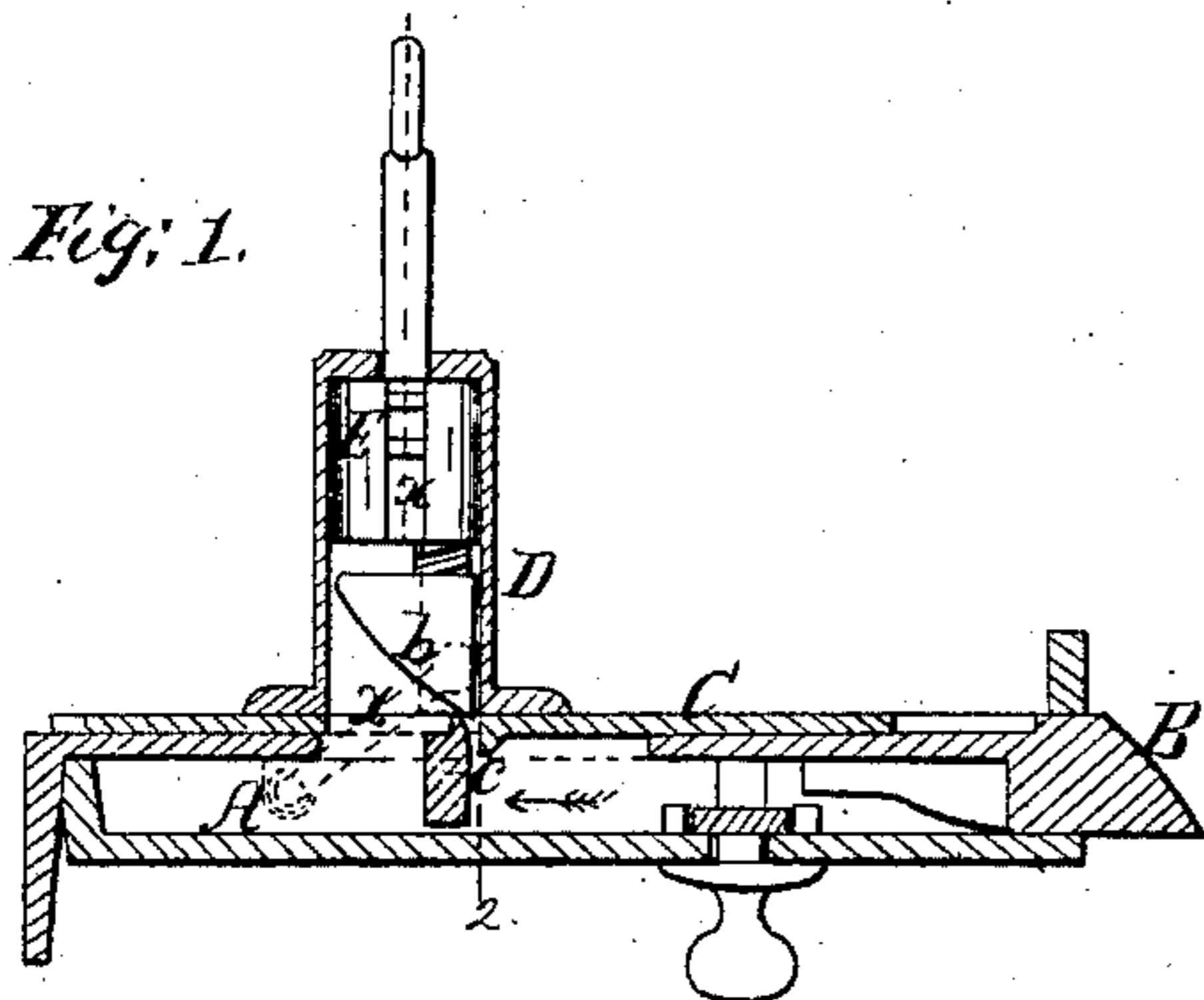


*H. & S. W. Budd,*

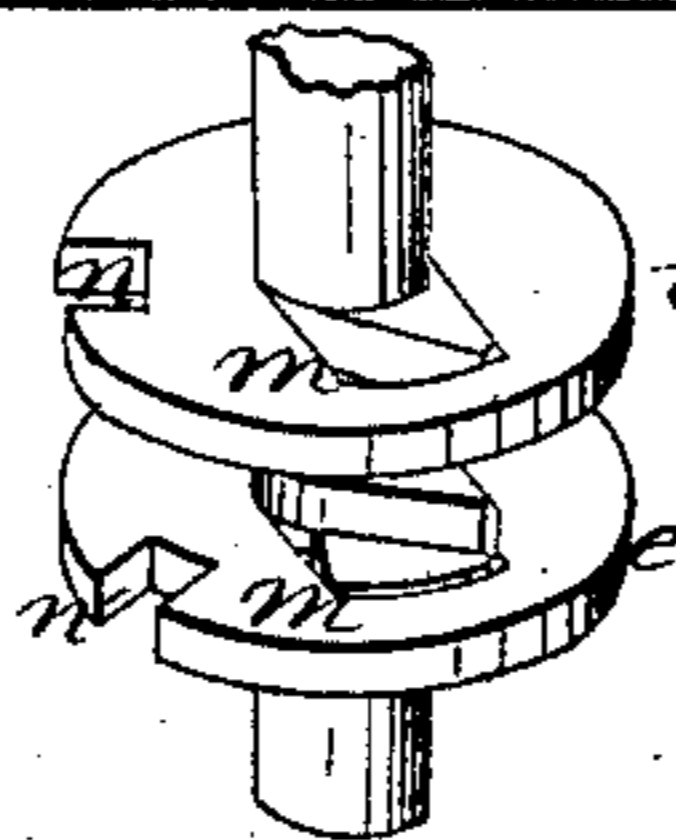
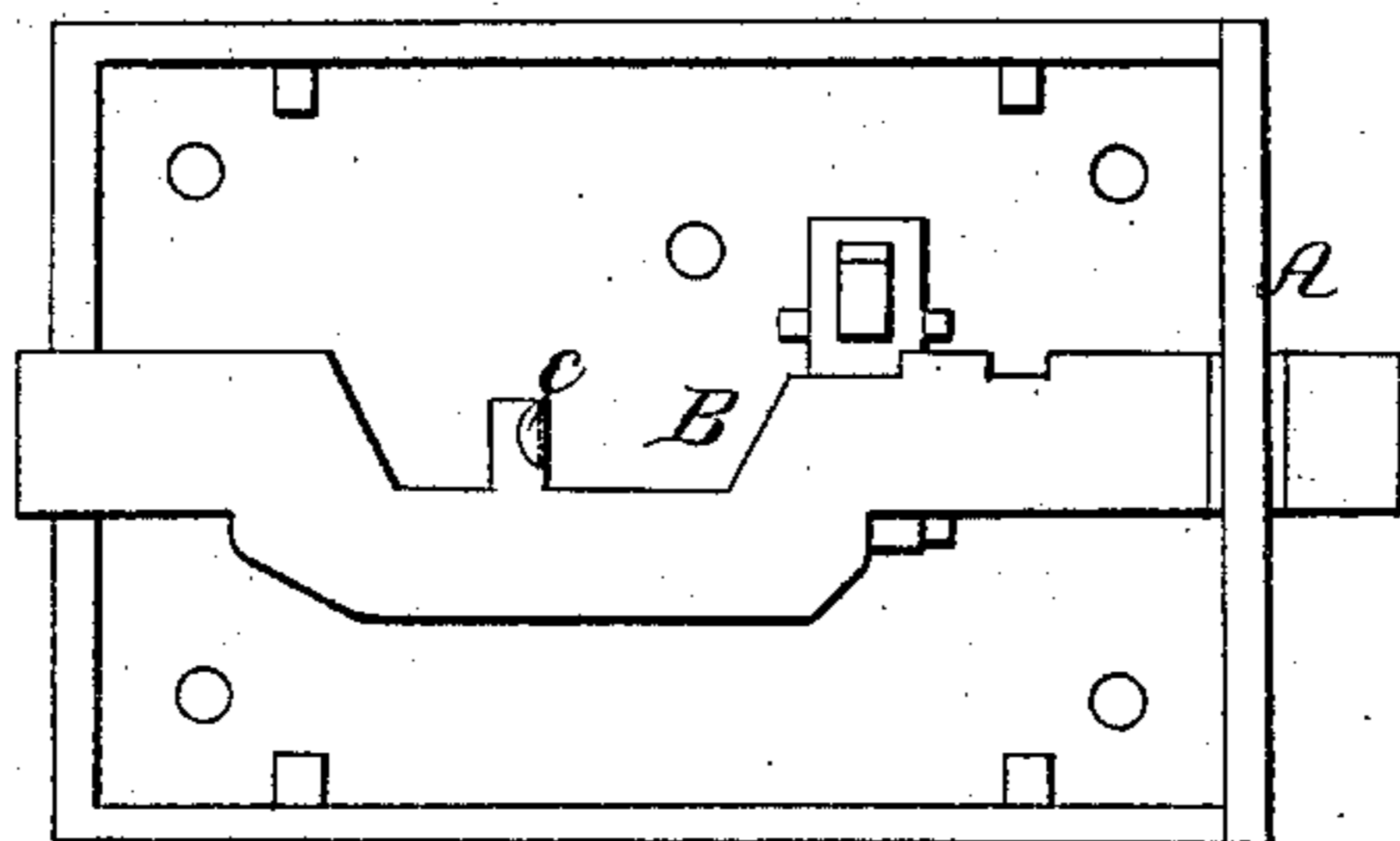
*Latch.*

*N<sup>o</sup> 55,814.*

*Patented June 26, 1866.*



*Fig: 3.*



*Witnesses:*

*Wm. Hunt Steel  
John Parker,*

*Inventors:*

*H. Budd  
S. W. Budd  
By their attorney  
Henry Bowser*

# UNITED STATES PATENT OFFICE.

HENRY BUDD AND SAMUEL W. BUDD, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 55,814, dated June 26, 1866.

*To all whom it may concern:*

Be it known that we, H. BUDD and S. W. BUDD, of Philadelphia, Pennsylvania, have invented certain Improvements in Locks; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention consists in certain devices, fully described hereinafter, combined with the bolt of a lock, so that the latter may be readily operated without the necessity of employing the complex mechanism heretofore required for this purpose; and our invention further consists in devices whereby the withdrawal of the bolt by unauthorized persons is effectually prevented.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figures 1 and 2 are longitudinal sections of our improved lock, showing the parts in different positions; Fig. 3, a plan view of the lock, the cap-plate being removed; Figs. 4 and 5, sections on the line 1 2, Fig. 1, showing the parts in different positions; Fig. 6, a section on the line 3 4, Fig. 5; Fig. 7, a section on the line 5 6, Fig. 5; and Fig. 8, a detached view of part of the lock and key drawn to an enlarged scale.

Similar letters refer to similar parts throughout the several views.

A is the casing of the lock, in which slides a bolt, B, and to the casing is fitted the usual detachable cover-plate C.

At the upper side of the plate C is a hollow cylinder, D, in which slides a block, F, the latter being prevented from turning by a rib, *a*, which projects from the inner side of the cylinder into a recess, *x*, in the block. A short distance above the rib *a* is a lug or projection, *a'*, for a purpose described hereinafter.

At the under side of the block F is a plate, *b*, having an inclined edge, which bears against a lug, *c*, on the bolt B, so that when the block is depressed the bolt will be moved back, a spring, *d*, connected to the bolt restoring it, when the pressure is removed from the block, to its first position.

In the block F turn two disks or tumblers, *e* and *i*, the latter being such a distance above the tumbler *e* that the projection *a'* can be readily introduced between them. In the outer edge of each tumbler is a recess, *n*, and in the center is an opening, *m*, which corresponds in shape with that of an opening, *m'*, in the top of the cylinder D.

On the shaft of the key G is a bit, consisting of three projections, 7 8 9, which are of the form and are arranged as shown in the drawings.

When the block F is at the limit of its upward motion, the bolt being shoved forward and the key withdrawn, the tumblers *i e* will be turned to such a position as to obstruct the opening *x* above and below the projection *a'*, so that the block cannot be moved from its place, all the parts being in the position shown in Figs. 1 and 4.

When the bolt is to be drawn back the key is inserted, through the opening *m'*, into the block F until the projection 9 occupies a position in the opening *m* in the tumbler *e* and the projection 7 is in the opening in the tumbler *i*. The key is then turned (the sides of the projections 7 and 9 being brought against the sides of the openings *m m*) until the projection 8 strikes a stop in the block F, when the recesses *n n* in the edges of the tumblers will coincide with the recess *x* in the block F. The key is then forced inward, carrying with it the block F and the plate *b*, the inclined edges of the latter being brought against the lug *c*, so that the bolt is moved back in the direction of the arrow, Fig. 1. When the pressure on the key is removed the bolt will be thrown forward by the action of the spring *d*, and the block will be then raised to its first position. The key is then turned until the tumblers are brought to their first position, when it may be withdrawn.

As the tumblers cannot be turned until they are both above the rib *a*, and as the withdrawal of the key is prevented until the tumblers are turned so as to obstruct the recess *x*, the operator may know that when the key is removed the block is securely fastened in its position.

It will be evident that the devices above described are much more simple than and are as efficient as the ordinary complex mechanism used for operating the bolts of locks.

It will also be seen that large bolts may thus be moved by means of very light and delicate keys, the cumbersome keys hitherto required in such cases being dispensed with.

It will be apparent, also, that by the arrangement of tumblers in the block F, in combination with the projections in the casing, the block may be so securely fastened in its position as to render it almost impossible for unauthorized persons to withdraw the bolt, and that the lock may be rendered more secure by increasing the number of tumblers.

Although we prefer to use the plate *b*, other devices may be used for communicating the motion from the block to the bolt. For instance, a rod, X, Fig. 1, jointed to both the bolt and the block, may be substituted for the plate.

Without confining ourselves to the precise construction and arrangement of parts herein

described, we claim as our invention and desire to secure by Letters Patent—

1. The bolt B and its spring *d*, in combination with the sliding block F and plate *b*, or its equivalent, the whole being constructed and operating substantially as and for the purpose described.

2. A series of tumblers, in combination with the block F and with projections in the casing D, the whole being constructed and operating substantially as and for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HENRY BUDD.

SAMUEL W. BUDD.

Witnesses:

CHARLES E. FOSTER,

JOHN WHITE.