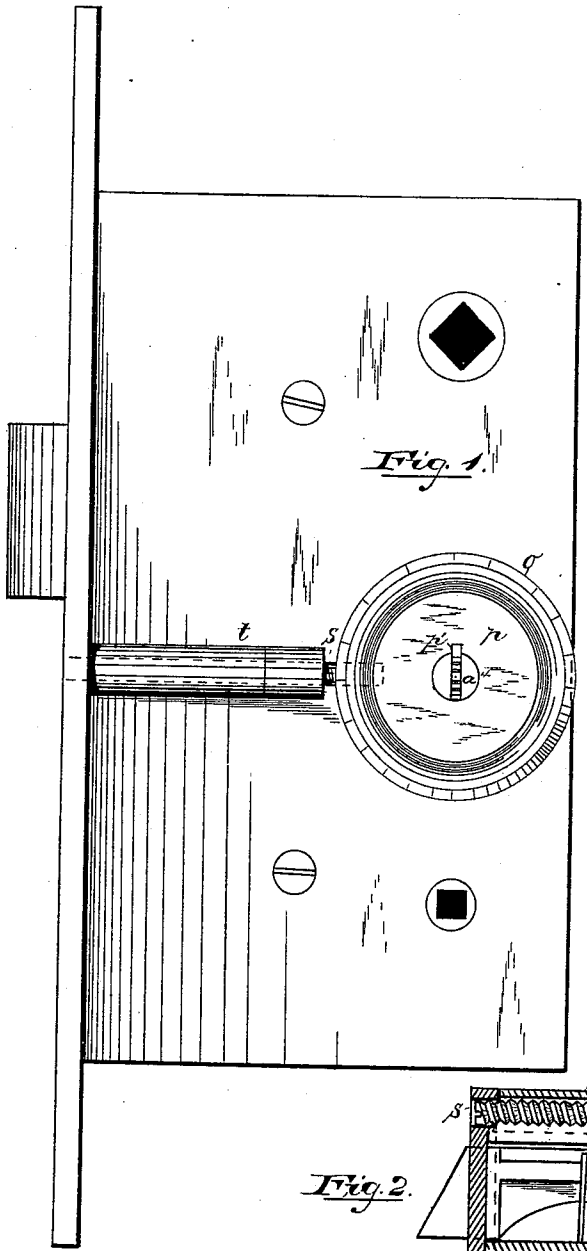
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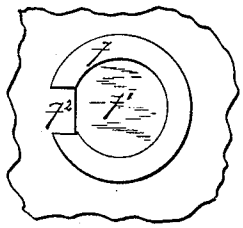
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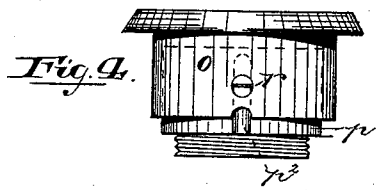
A. KELLY.

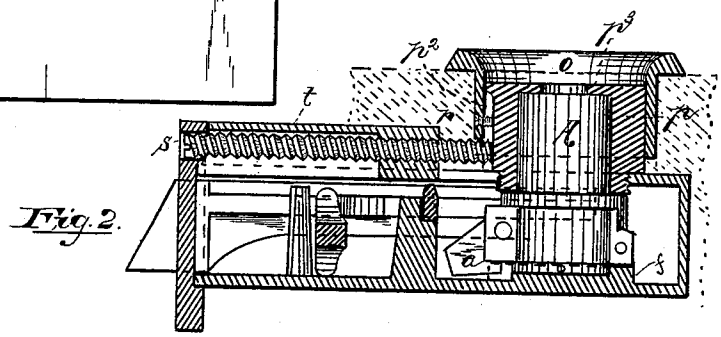
LOCK.

No. 326,507. Patented Sept. 15, 1885.









Attest:

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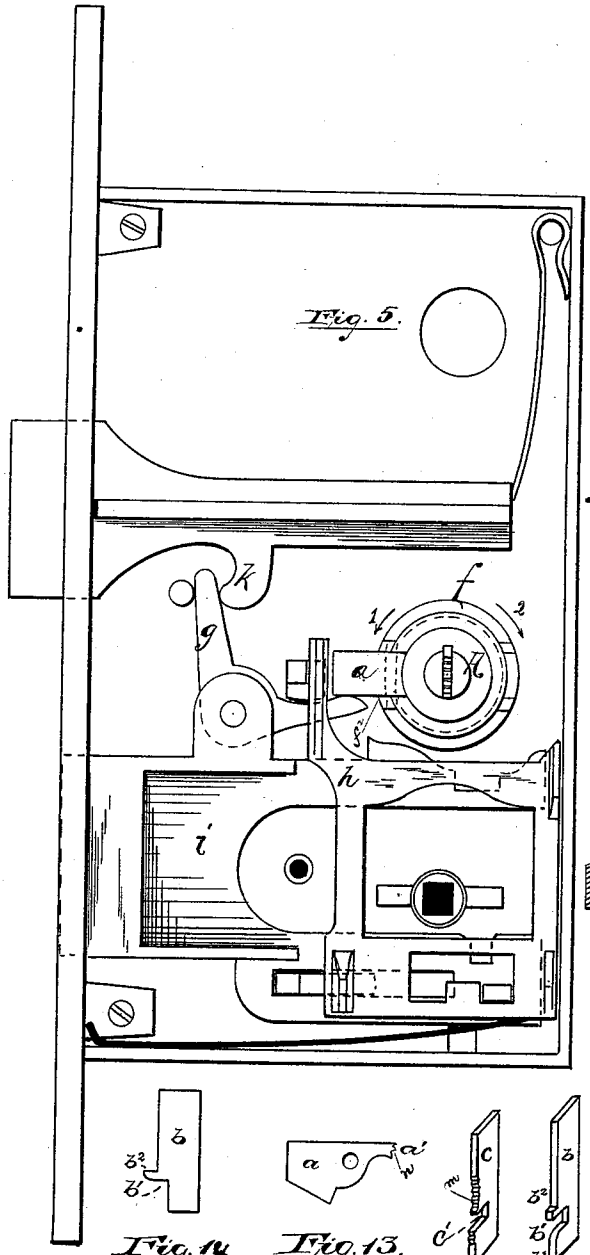
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2 Sheets—Sheet 2.

A. KELLY.

LOCK.

No. 326,507. Patented Sept. 15, 1885.



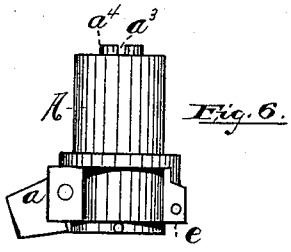


Fig. 6.

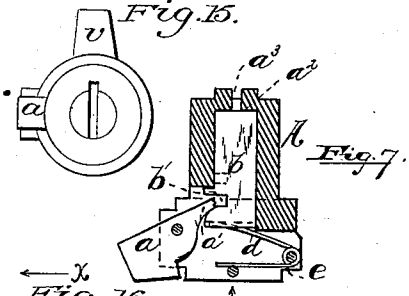


Fig. 15.

Fig. 7.

Fig. 16.

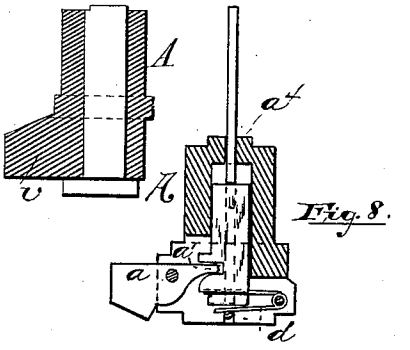


Fig. 8.

Fig. 14.

Fig. 13.

Fig. 12. Fig. 11.

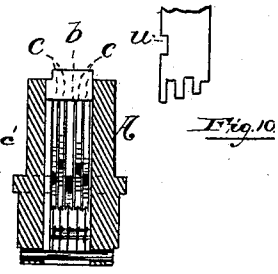


Fig. 9. Fig. 10.

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UNITED STATES PATENT OFFICE.

ARCHIBALD KELLY, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE HOPKINS & DICKINSON MANUFACTURING COMPANY, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 326,507, dated September 15, 1885.

Application filed May 2, 1835. (Model.)

To all whom it may concern:

Be it known that I, ARCHIBALD KELLY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Locks; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In said drawings, embodied in two sheets, Figure 1 is a plan of a lock illustrating certain features of my invention. Fig. 2 is a sectional view taken through line *x* of Fig. 1. Fig. 3 is a plan of the barrel recess, and Fig. 4 is an elevation of an adjustable escutcheon. On Sheet 2, Fig. 5 is a plan of the interior of a lock, showing one adaptation of my invention, certain latch-operating mechanism in the upper portion of case being omitted. Fig. 6 is a side elevation of a catch or bolt operating device. Figs. 7 and 8 are sections on line *x* of Fig. 5 through the latch, &c. Device shown in Fig. 6. Fig. 9 is a section of Fig. 7 through *y*. Fig. 10 is a view of the end of a key, and Figs. 11, 12, 13, and 14 are detail views of different parts to be specifically referred to hereinafter; and Figs. 15 and 16 are respectively a plan of the rotating barrel and a vertical section thereof similar to Fig. 9, said views illustrating a modified construction.

The invention relates generically to improvements in locks, and specifically and primarily to latch or bolt operating devices, and is designed to provide a simple, effective, and economically manufactured device adapted to be used in locks or latches of any description, to draw the latch or shoot or return the bolt. The invention is also intended to secure an adjustable escutcheon adapted to be employed with the latch or bolt actuating mechanism, whereby the lock or latch may be used upon doors of varying thickness either for rim or mortise locks.

The latch or bolt operating device is illustrated in the drawings; and it consists of a barrel or cylinder, A, having an arm or lever, *a*, pivoted thereto and projecting therefrom, formed, preferably, as indicated in Figs. 5, 6, 7, &c., the inner end, *a'*, of which projects into the hollow interior of the cylinder and engages with a notch, *b'*, in a central bridge-plate, *b*. The bridge-plate *b* is about the width of the upper part of the interior of the cylinder, and is provided with a projection, b^2, which engages with and depresses the end *a'* of the lever *a* when the said plate is lowered by the action of the key. The portion b^3 of the bridge-plate *b*, which forms the lower side of the notch, is preferably used, as it facilitates the operation of the parts by holding the end *a'* away from the tumblers *c;* but the plate may be formed without said portion, as indicated in Fig. 14.

Arranged on either or both sides of the bridge-plates are one or more tumblers, *c*, having deep notches *c'*, cut at different points, as indicated in Fig. 9, and adapted to be brought in a line with the notch in the bridge-plate when depressed by a key suitably cut.

Springs *d* engage with the grooved end of the tumblers and hold them up within the barrel against the shoulder a^2 on each side of and across the key-slot a^3.

The operation of the tumblers and the bridge-plate and their effect thereof upon the pivoted arm *a* is as follows: The key, the end of which is suitably cut, as indicated in Fig. 10, is inserted in the slot a^3, and acting first upon the tumblers *c* depresses them until the deep notches therein are in a straight line with the notch *b'* in the bridge-plate *b*. The key then acts upon all of the tumblers and the bridge-plate, and presses them down to the position indicated in Fig. 8. During the first part of the operation, while the notches in the tumblers are being brought in a line with the notch *b'* in the bridge-plate, there is no movement of the pivoted arm *a;* but as soon as the notches are brought in line the downward movement of all of the tumblers and bridge-plate depresses the end *a'* of the pivoted arm and raises the opposite end thereof, as indicated in Fig. 8.

As will be noticed, in Figs. 6 to 9 tom of the cylinder A is reduced in diameter, forming a shoulder, *e*, which rests in and upon a collar, *f*, and cylinder-recess *f'*, cast or otherwise formed on the casing, Figs. 2 and 3.

The periphery of the collar is cut at f^2, within which cut the projecting end of the pivoted arm normally rests, as indicated in Figs. 2 and 5, and while in this position prevents the cylinder from being turned.

By the operation of raising the projecting end of the pivoted arm, previously described, the said end is lifted clear of the sides of the cut, and the barrel may be turned either in the direction indicated by the arrow 1—when the projecting arm engages with a lever, *g*, which, co-operating therewith, draws the latch—or said barrel may be rotated as indicated by the arrow 2, and, depressing the tumbler *h*, shoot or return the locking-bolt *i*. Small notches *m n* are cut in the tumblers *c* and end *a'* of the pivoted arm, respectively, which act as safety-catches to prevent the picking of the lock.

The construction of the actuating device may be varied to admit of an indefinite number of combinations, whereby the same key will not operate two different locks. This is accomplished by changing the number and thickness of the tumblers and the relative position of the notches *c*, necessiting a different formation of the slots and projections in the end of the key. (Illustrated in Fig. 10.)

The arrangement of the latch and bolt operating device in relation to the lock mechanism shown in the drawings is merely employed to illustrate one form of lock to which the said device is applicable, to which the invention is in no wise limited.

The actuating device may be employed to operate a latch or a bolt used independently, as in a simple night-latch, and engage with an arm, as *k*, upon the latch or actuate the latch or bolt through one or more levers suitably arranged, one of which is illustrated in Fig. 6.

In Figs. 1, 2, and 4 is shown an adjustable or telescopic escutcheon composed of an outer sliding collar, *o*, adjustably secured upon a cylinder, *p*, having an opening in the top to receive the raised top a^4 of the barrel A, with a recess, *p'*, in the periphery of the opening. The cylinder *p* is preferably screwed into the lock-casing, and is hollow to receive the barrel A, as shown in Fig. 2.

The inner cylinder, *p*, is grooved at p^2, with which a set-screw, *r*, engages and holds the adjustable collar in any desired position, as in Fig. 2; also a screw, *s*, extending through the rim of the lock, and a raised portion, *t*, formed upon the casing, projects into said groove, as indicated in Fig. 2, and prevents the escutcheon from being unscrewed when secured in place in a door.

By referring to the drawings it will be seen that the key-slot is longer than the diameter of raised top a^4, and consequently than the opening in the cylinder *p*, so that when the escutcheon and barrel are arranged in proper relation the recess *p'* in the cylinder *p* is in line with the key-slot, as in Fig. 1, and the entire opening is of the same length as the key-slot in the barrel A. By reason of this construction it is necessary to cut a slot, *u*, in the key to allow the same to be turned around the shoulder p^3 of the cylinder.

The advantage arising from this construction is that it obviates the necessity of holding the key in the slot in turning the same, as the slot *u*, engaging with the shoulder, holds the said key in position.

This escutcheon is not only adapted for the lock, &c., shown in the drawings, which is a mortise-lock, but also rim-locks or latches, and enables the same lock to be used on doors of varying thickness without necessitating any change in the construction thereof.

I am aware that the barrel may be enlarged so that the end of the pivoted arm or lever *a* falls within the outer circumference of the barrel, or that the end of the said lever *a* which projects beyond the circumference of the barrel may be cut off, the lower end of the lever resting in the cut f^2 in the collar, and acting simply as a stop to prevent the turning of the barrel, and hence do not wish to limit myself to that feature of the invention. When the lever does not project from the barrel, I form an arm, *v*, Figs. 15 and 16, on the barrel, integral therewith, which engages with the latch or bolt and operates the same; also, a single tumbler or bridge-plate may be used in a latch in which safety is not an essential feature; but I prefer to use one or more tumblers, *c*, with a bridge-plate, as described. When the latch-actuating device is intended to turn in but one direction, a simple detent or stop upon the casing may be used instead of the collar.

To adapt the telescopic escutcheon for ordinary use, a key-hole may be made in the top of the cylinder *p*, instead of the opening shown in the drawing.

Having thus described my invention, what I claim is—

1. In a lock or latch operating device, in combination, a barrel or cylinder, a lever pivoted to said barrel, a bridge-plate in engagement with one end of said lever and adapted, when depressed, to lower one end and raise the other end of said lever, and a stop or detent with which said lever engages when not depressed by the bridge-plate, for the purposes set forth.

2. In a latch or bolt operating device, in combination, a barrel or cylinder, a lever pivoted thereto, a bridge-plate having a projection in permanent engagement with one end of said lever, and one or more tumblers having notches at different points therein adapted, when brought in a line to co-operate with the said bridge-plate, to lower one end and raise the other end of said lever, for the purpose set forth.

3. In a lock or latch, the combination, with a barrel or cylinder, a lever pivoted thereto and projecting therefrom, a bridge-plate having a projection in permanent engagement

with one end of said lever, and one or more tumblers having notches at different points therein adapted, when brought in a line to co operate with the said bridge-plate, to lower one end and raise the other end of said lever, of a holding or detaining device, substantially as described, adapted to engage with the free end of said lever when said free end is lowered, for the purposes set forth.

4. In a lock or latch, the combination, with a barrel or cylinder, a lever pivoted thereto and projecting therefrom, a bridge-plate having a projection in permanent engagement with one end of said lever, and one or more tumblers having notches at different points therein adapted, when brought in a line to co-operate with the said bridge-plate, to lower one end and raise the other end of said lever, of a collar within which the said barrel rests and rotates, having a cut in the periphery, with which the free end of the lever engages, substantially as and for the purposes set forth.

5. In a lock, in combination, a latch having an arm thereon, a rotating barrel having a lever pivoted thereto, a bridge-plate having projections b^2 b^3 thereon with a notch, b', therebetween, one or more tumblers provided with notches at different points therein adapted, when brought in a line with the notch b' in the bridge-plate, to co-operate therewith, to lower one end and raise the other end of said lever, and a collar within which said barrel or cylinder rests and rotates, having a cut, f^2, in the periphery, with which the free end of the lever engages when lowered, substantially as and for the purposes set forth.

6. In a latch or bolt operating device, in combination, a recessed barrel having a key-slot therein, a lever pivoted thereto, a tumbler or bridge-plate having projections b^2 b^3 thereon with a notch therebetween, one or more tumblers provided with notches at different points therein adapted, when brought in a line with the notch in the bridge-plate to co-operate therewith, to lower one end and raise the other end of said lever, springs arranged and operating to hold the said tumblers and bridge-plate up within the barrel, and a key adapted to depress the tumblers and bridge-plate, substantially as and for the purposes set forth.

7. In a lock, in combination, a barrel, p, having a key-hole therein, and a groove, p^2, and the lock-casing to which such barrel is secured, a collar sliding on and around said barrel, provided with a set-screw engaging with said groove, and a screw, s, also engaging with said groove, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of April, 1885.

ARCHIBALD KELLY.

Witnesses:

FREDK. F. CAMPBELL,

WM. T. HUMES.