

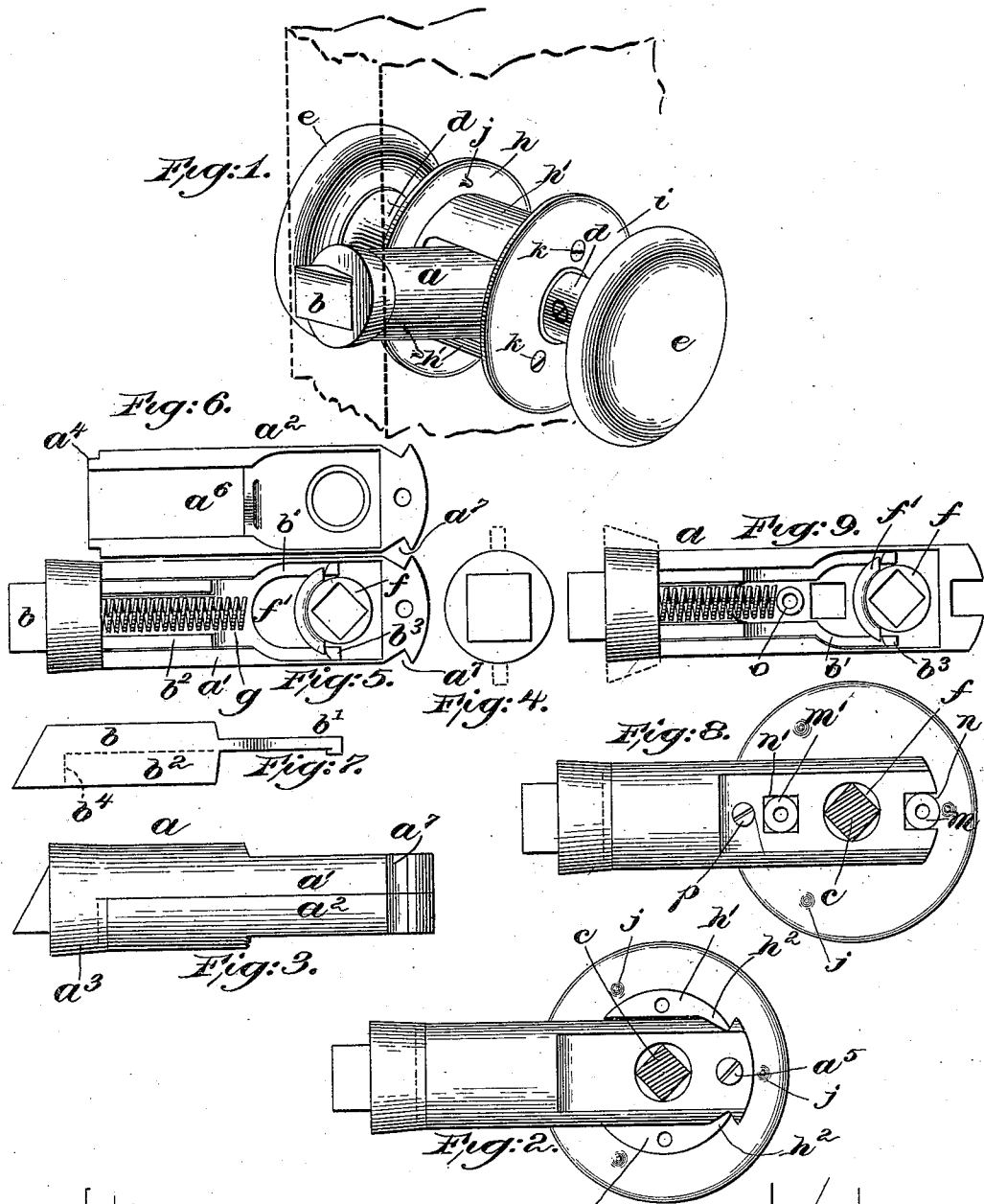
(No Model.)

2 Sheets—Sheet 1.

C. H. BRIGDEN.
DOOR LATCH AND LOCK.

No. 560,389.

Patented May 19, 1896.



Witnesses.
Arthur J. Randall;
C. C. Stecher

Inventor.
Charles H. Brigden
by A. W. Crosskey
his atty

(No Model.)

2 Sheets—Sheet 2.

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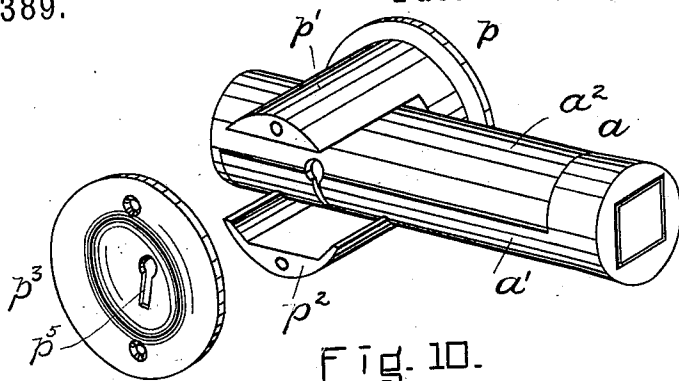


Fig. 10.

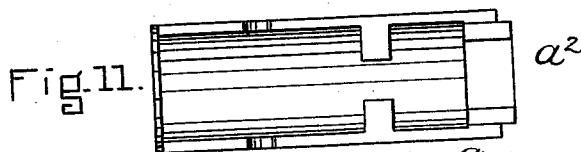


Fig. 11.

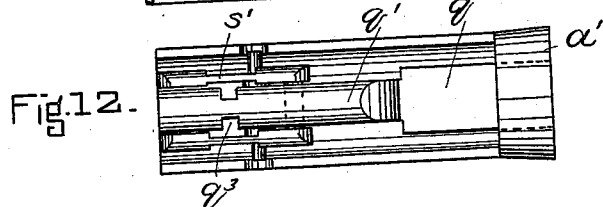


Fig. 12.

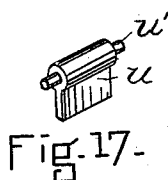


Fig. 17.

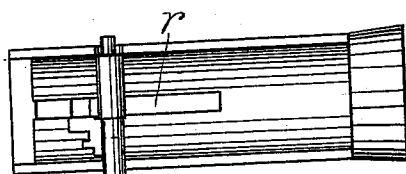


Fig. 13.

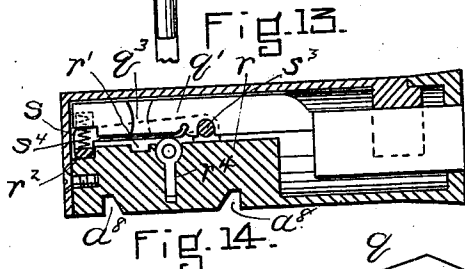


Fig. 14.

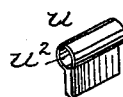


Fig. 19.

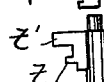


Fig. 20.

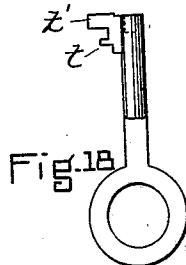


Fig. 18.

WITNESSES.
Matthew M. Blunt.
C. C. Stecher.

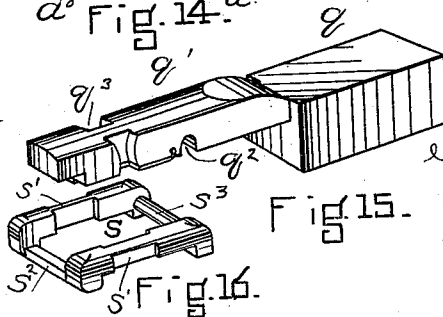


Fig. 15.

Fig. 16.

INVENTOR.

Charles H. Brigden

by

W. W. Wessley

his ATT'Y.

UNITED STATES PATENT OFFICE.

CHARLES H. BRIGDEN, OF WALTHAM, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO S. M. HAWES, JR., OF YONKERS, NEW YORK.

DOOR LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 560,389, dated May 19, 1896.

Application filed September 23, 1895. Serial No. 563,465. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BRIGDEN, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Door Latches and Locks, of which the following is a specification.

This invention relates to locks and latches of the class in which a cylindrical casing is employed to receive the locking mechanism; and it consists in the combination, with a cylindrical casing in which the locking mechanism is placed, of a rose or escutcheon having arms to engage the casing and hold it in position, and a second rose adapted to be secured to the said arms.

It also consists of a novel device for closing one keyhole when a key is inserted in the opposing one and of the hereinafter-described tumbler for locking the bolt in either of two positions in the casing, which latter is provided with a rib, on which the tumbler slides and which is notched to receive the end bar of the tumbler.

It further consists in the various features of construction and arrangement which will be hereinafter described with more particularity, and pointed out in the appended claims.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

In the drawings, Figure 1 is a perspective view of my invention, the door being shown in dotted lines. Fig. 2 is a side view of the casing, showing one of the roses, the spindle being in section. Fig. 3 is a plan view of the casing. Fig. 4 is an end view of the casing and the latch. Fig. 5 is a side view of the casing with the side lifted off, so as to show the latching mechanism. Fig. 6 shows the removable side reversed to show its interior face. Fig. 7 is a plan view of the latch-bar. Fig. 8 is a side view of a slightly-modified casing and one of the roses; and Fig. 9 is a side elevation of the casing with the side thereof removed, so as to show the latching mechanism. Fig. 10 is a perspective view of the casing when employed for a lock. Fig. 11 shows the interior of the upper removable side of the casing. Fig. 12 shows in plan the

casing with the removable side off, so as to show the locking mechanism. Fig. 13 shows the same with the bolt removed, so as to show the device for closing the keyhole. Fig. 14 is a central vertical sectional view of the casing with the parts therein. Figs. 15 and 16 are perspective views of the bolt and the tumbler. Figs. 17 and 18 illustrate the keyhole-closing device and a hollow key. Figs. 19 and 20 illustrate a slightly-modified keyhole-closing device with a pin or solid key.

My invention is equally applicable to both locks and latches, and for the purposes of illustration I have shown one part of it in Figs. 1 to 9, inclusive, in connection with a door-spindle and a latching mechanism actuated thereby, and in Figs. 10 to 20 another part of it in connection with a lock or bolt.

Referring to Figs. 1 to 9, inclusive, I employ an elongated casing *a*, preferably cylindrical, in which is mounted and secured a lock-bar or latch *b*, the latter being in this case actuated by a spindle *c*, to which are secured the shanks *d* of the knobs *e*. The casing *a* is formed in two halves *a'* *a''*, of which one has a flaring tubular end *a'''*, and the other has a cut-away end *a''''* to be inserted therein, as shown in Figs. 5 and 6. The two halves are secured by inserting the end *a''''* in the tubular portion *a'''* of the half *a'* and by passing a screw *a''''''* through the other ends of the halves, which have threaded apertures to receive it. The latch-bar *b* lies in the hollowed-out portion of the casing and side walls *b''*. The arms *b'* are each provided with a lug *b'''*, with which a fin or flange *f'* on a cylindrical bushing *f* can engage to draw back the latch-bar as the bushing is rotated in either direction. The bushing *f* is mounted in the casing, and has a square aperture *f''* to receive the knob-spindle *c*. The spring *g* lies between the side walls *b''* of the latch and bears against a lug *a''''''* on the removable side *a''''* of the casing, with the other end resting against the end *b''''* of the latch. Said spring holds the latch-bar normally in the position shown in Fig. 5, but allows it to be drawn back, as is obvious.

h i are the roses which surround the shanks *d* of the knobs, and consist of flat or ornamented metallic ring-like plates, which are secured to the door by spikes *j*, projecting in-

wardly from them. The rose h is provided with two inwardly-extending bars or arms h' h' , which have curved exterior surfaces and inner flat parallel surfaces sufficiently far apart to permit the casing a to be inserted between them. They have inwardly-extending converging edges $h^2 h^2$, which project into notches a' in the inner end of the casing and prevent the latter from being withdrawn. The rose i is secured to the bars $h' h'$ by means of screws k , the two roses of course being on opposite sides of the door.

The manner of mounting the latching device in the door is as follows: A cylindrical mortise is bored in from the edge of the door of a sufficient size to receive the casing, and a cylindrical aperture somewhat larger in diameter is bored in from the sides of the door to intersect it at its inner end. The casing is then inserted in its mortise (with the notches horizontal) until its end face is flush with the edge of the door, and the bars or arms $h' h'$ of the rose h are then driven into the aperture prepared for them, the edges $h^2 h^2$ of the bars sliding in the notches a' . The rose h is driven against the door until the spikes j enters the fibers thereof, and the rose i is then put in place on the other side of the door and is secured to the bars $h' h'$ by the screws $k k$. The square spindle c , to which one of the shanks d is secured by a screw or otherwise, is passed through the apertures in the roses and through the square apertures in the bushing f in the casing, and the other knob-spindle is secured to it. Thus it will be seen that the whole mechanism can be quickly and easily inserted in place in the apertures which may be prepared with the aid of any suitable boring-tool. If desired, the casing can be cast with ribs l (shown in dotted lines in Fig. 4) to assist the bars k' in preventing it from turning when it is once inserted in the mortise prepared for it.

In Figs. 8 and 9 I have illustrated a device modified as to the means for holding the casing in place. In this case the rose h is cast with the two inwardly-extending arms or bars $m m'$, one of which, m , extends through a notch n in the end of the casing, and the other, m' , passes directly through an aperture n' in the casing in front of the bushing f . The forked arms of the latch are made a little longer than they are in the other construction and the arm m' passes through the casing between them. The spring g bears against a standard o , extending up from the bottom of the half a of the casing between the arms of the latch-bar, and which is provided with a threaded aperture to receive screw p , which passes through an aperture in the half a' of the casing and secures the two halves together. In using a rose-plate constructed in this way it is necessary to bore three small holes intersecting the casing-socket, one for the spindle and two for the arms $m m'$. Latching mechanism constructed in this manner can be made cheaply and have few parts to get out of order.

The casing can be easily inserted in its mortise and by reason of the flaring end a^3 can be wedged tightly in place. Although I have shown and described the casing as being cylindrical, yet it can be made polygonal in shape without departing from the spirit and scope of my invention. It will be observed that but a very small metallic surface is exposed at the edge of the door and that there are no screws required to hold the casing in place. The only screws which are required to hold the whole mechanism in place are those which secure the roses i to the arms $h' h'$ of the rose h .

Referring now to Figs. 10 to 20, inclusive, I have shown how the casing and roses may be employed in connection with a key-actuated lock. In this case the casing a is of substantially the same external shape as that hereinbefore described and has the lower half a' and the removable part a^2 . The rose or escutcheon p is provided with the two inwardly-projecting arms $p' p^2$, which are curved exteriorly and which are far enough apart to receive between them the end of the casing a . The arm p^2 is provided with inwardly-extending edges, which project into notches or grooves a^8 in the lower part of the casing. The other rose or escutcheon, p^3 , is secured to the bars or arms $p' p^2$ by screws. Instead of passing a spindle through the roses and through the casing to actuate the bolt I form a keyhole in the rose or escutcheon p and a keyhole p^5 in the escutcheon or rose p^3 , so that a key may be inserted into holes in the sides of the casing to actuate the bolt q . The notch n and the aperture n' in Fig. 8 and the notches a^7 in Figs. 1 and 2 are the equivalents of the notches a^8 , as shown in Fig. 14, in that they all cooperate with the arms on the rose to hold the casing in place, and I do not limit myself to the particular location of the notches. The lower part of the casing is cast with a central vertical rib r , and the bolt q has a rearwardly-extending end q' , which slides above it, the bolt being held in place by the sides of the casing. s is a tumbler consisting of a frame having two side bars $s' s'$ and two end bars $s^2 s^3$, the end bar s^2 sliding on the forward end of web r and the end bar s^3 adapted to slide on the rear part of the web and to drop into sockets $r^2 r^2$. The side bars $s' s'$ lie on either side of the web, where they can be engaged by the wards of a key. The end bar s^3 fits in a socket q^2 in the under side of the end q' of the bolt, so that when the other end bar, s^2 , of the tumbler is in one of the recesses $r^2 r^2$ the bolt cannot be reciprocated. I insert a spring s^4 in a socket in the end of the bolt, between the latter and the end bar s^2 , so as to cause the latter to drop into the recesses r^2 and r' . The key is inserted into the casing through an aperture on either side thereof, as shown in Fig. 13, until the end of the ward touches the web r . Then by turning the key the ward t lifts the side bar of the tumbler until the end bar s^2 is free from the

recess, so as to allow the tumbler and the bolt to slide, and a further turning of the key causes the ward t' to enter a recess q^3 in the bolt and positively move the bolt forward until the end bar s^2 drops into the recess r' . The bolt q is provided with duplicate recesses q^3 , one on each side, so that the operation of sliding the bolt is accomplished in the same way whether the key is inserted from either side of the casing. In order to prevent the key from being grasped by pincers or a similar tool from the opposite side of the door and being turned, I provide means for closing the keyhole opposite to that in which the key is inserted. The web r has a slot r^4 , in which is mounted a sliding piece u , corresponding somewhat in cross-section to the shape of the keyhole and a little greater in length than the distance between the edge of the web and the interior of the casing. It is directly in line with the keyholes, but is so shaped as to be impossible of being pushed therethrough. When a key is inserted from one side of the casing, the piece u is pushed so as to close the opposite keyhole, as illustrated in Fig. 13. Then by partially turning the key, so that its ward is out of line with the keyhole, it is impossible to enter the opposite keyhole or move the sliding piece which is thus locked in position. For convenience I provide the sliding piece u with pins u' on the ends, so that when the key is inserted into the keyhole the pin will enter the socket in the end of the key and serve as a bearing when the key is turned. When a solid key is employed, I form the sliding piece u with sockets u^2 , as shown in Fig. 19, to receive a pin on the end of the key.

By the foregoing description it will be seen that I have provided a lock or latch mechanism which is well adapted for use by reason of the compactness, simplicity, and small number of parts. The casing may be inserted in the door by simply boring a hole therein, and is held in place by one of the roses or escutcheons. The bolt in the lock mechanism is locked against movement, except when a particular key is employed, and the lock is rendered burglar-proof by means of the sliding keyhole-closer.

Having thus explained the nature of the invention and described a way of construct-

ing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. In a lock or latch mechanism, the combination with the cylindrical casing having an exterior transverse notch of a rose provided with an inwardly-extending bar entering said notch for preventing the turning or withdrawal of the casing.

2. In a lock or latch mechanism, a cylindrical casing having an exterior transverse notch, and a rose having two bars straddling said casing, one of said bars entering the notch in the casing, and a second rose adapted to be secured to the said bars.

3. In a lock mechanism, the combination with the cylindrical casing, having an internal notched rib, and a sliding key-actuated bolt, of a key-actuated tumbler having one end connected with the bolt, and sliding on said rib, and a spring for forcing the free end of said tumbler to engage either one of the notches.

4. A lock mechanism comprising in its construction a cylindrical casing having an internal longitudinal rib with a transverse groove, and two opposing keyholes in the lines of said groove, and a device mounted to slide in said groove and operating to close either of said keyholes when a key is inserted in the other.

5. A lock mechanism, comprising in its construction a cylindrical casing having two opposing keyholes and an internal central longitudinal rib grooved transversely, a bolt in said casing having a portion broader than said rib and extending back over the same whereby it may be engaged by a key, and a device lying under the bolt and sliding in the transverse groove in the rib, to close the opposing keyhole when a key is inserted in one of them.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of August, A. D. 1895.

CHARLES H. BRIGDEN.

Witnesses:

M. B. MAY,

ARTHUR W. CROSSLEY.