(No Model.)

C. H. BRIGDEN.

LATCH MECHANISM.

No. 604,516. Patented May 24, 1898.

FIG. 1.

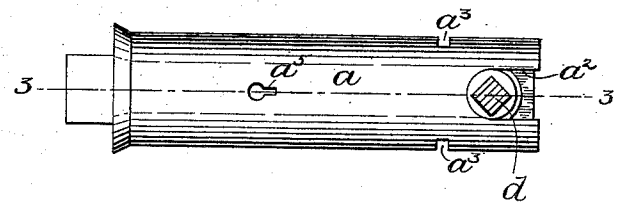


FIG. 4.

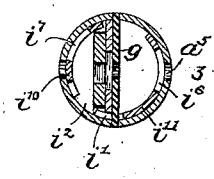


FIG. 2.

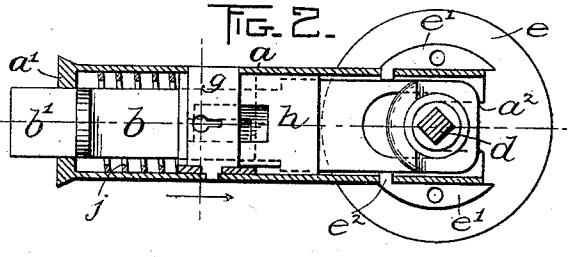


FIG. 7.

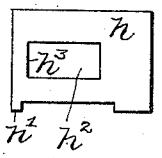


FIG. 5.

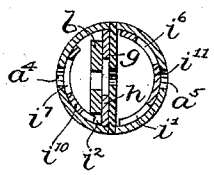


FIG. 3.

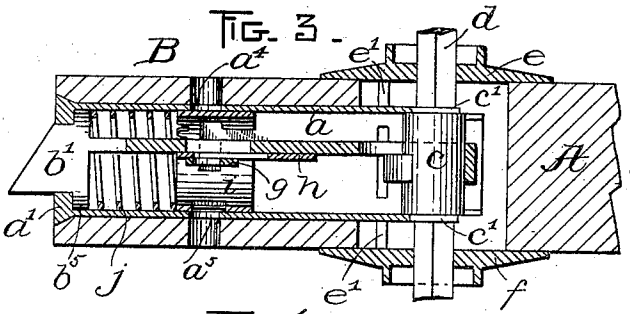


FIG. 8.

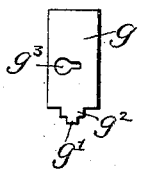


FIG. 6.

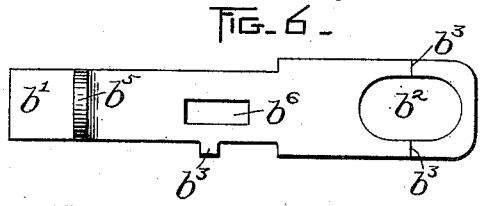


FIG. 9.

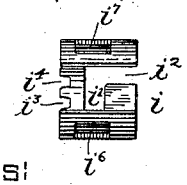


FIG. 11.

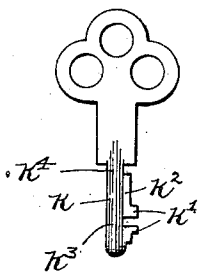
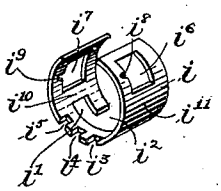


FIG. 10.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. BRIGDEN, OF CANTON, MASSACHUSETTS, ASSIGNOR TO S. M. HAWES, JR., OF YONKERS, NEW YORK.

LATCH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 604,516, dated May 24, 1898.

Application filed February 13, 1897. Serial No. 623,249. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BRIGDEN, of Canton Junction, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Latch Mechanisms, of which the following is a specification.

This invention has relation to latches for doors between communicating rooms which it is desired to lock on one side or the other, so as to prevent the door from being opened on the opposite side.

It is the object of the invention to provide such improvements in latches of this character that they will be rendered more highly serviceable and efficient in operation, less liable to wear out or get out of order, cheaper in their cost of construction, and proof against being picked by burglars or other evil-minded persons.

To these ends the invention consists of such improvements in latches as are illustrated upon the drawings and now to be described in detail, and pointed out in the claims, and which improvements comprise a latch the latch-bar of which may be locked by the insertion of a key from either side of the casing and in which the opposite keyhole is automatically closed when the latch-bar is locked.

Reference is to be had to the accompanying 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.

Of the drawings, Figure 1 is a side elevation of a latch-casing in which is placed the mechanism embodying my improvements. Fig. 2 represents a vertical section through the same. Fig. 3 represents a horizontal section of my improved latch mechanism, taken on the line 3 3 of Figs. 1 and 2, respectively, the door being also shown in section. Figs. 4 and 5 represent cross-sections on the line 4 4 of Fig. 2 and showing the device for closing the keyholes in two different positions. Fig. 6 illustrates in detail the latch-bar detached. Fig. 7 shows the sliding tumbler in detail. Fig. 8 illustrates the stud which is secured in the casing and serves as a bearing for the key. Figs. 9 and 10 are views illustrating the keyhole-closing device. Fig. 11 shows the key which is employed for shifting the keyhole-closing device and locking the latch-bar.

The mechanism is mounted within a tubular casing a, which is closed at its front end a', except for a square aperture to receive the head b' of the latch-bar b. The rear end is open and is slotted, as at a^2, to receive and form bearings for the reduced cylindrical ends c' of the barrel c through a squared central aperture in which the knob-spindle d extends.

Escutcheons e f are secured on either side of the door A, and one of them is provided with parallel arms e', which have ribs e^2, engaging notches a^3 in the casing, so as to hold the latter rigidly in position. The escutcheon f is secured to the ends of these arms e' by means of screws, (not shown,) so that after the escutcheons have been properly placed the casing is locked in the door and the knob-spindle is held in operative relation to the latch-bar. The said latch-bar b extends throughout the length of the casing and is apertured at its rear end, as at b^2, to receive the spindle, being provided with shoulders b^3, with which the ends of a fin c^2 on the barrel may engage to withdraw the latch-bar.

A stud g is forced into the casing about centrally between the spindle and the end of the casing through an aperture therein and has a lug or teat g', projecting into a small aperture and which may be upset to hold it in place. Its end is cut away or reduced at g^2 for a purpose to be described, and it forms a guide and support for a rectangular sliding tumbler h, which is inserted between it and the latch-bar b and which has a central aperture h^2.

The casing is provided in its sides with two diametrically opposite keyholes a^4 a^5, and the support or stud is also formed with a keyhole-slot g^3 in line therewith, so that the key may be supported by the casing and the stud at two points.

A steel bushing i of the shape shown in Figs. 9 and 10 is placed in the casing and fits snugly in the interior thereof. It approximates a tubular cylinder and is capable of a limited movement about its axis for a purpose to be set forth. It is formed with a slot

i' to receive the reduced end g^2 of the support, which holds it against axial movement, and into which also projects a lug b^4 on the latch-bar b. It also has an axially-extending slot i^2, connecting with the slot i', so that it may be adjusted to permit the lug b^4 on the latch-bar to slide freely back and forth in the slot i^2 or to lock the latch-bar against movement, as will be readily understood.

The front edge of the bushing has slots or notches i^3 i^4 i^5, into either one of which a lug h' on the front end tumbler may be inserted to lock the bushing against movement, said tumbler being equal in width at its rear end to the internal diameter of the casing, so as to fit snugly therein.

A strong spiral spring j is inserted in the front end of the casing and is arranged to have one end bear against laterally-projecting lugs b^5 on the latch-bar, (which also bear against the end of the casing,) and to have its other end bear against the bushing and the front end of the sliding tumbler, so as to hold the lug on the latter in one of the three slots or notches i^3 i^4 i^5. The bushing is also provided with two apertures i^6 and i^7 to receive the key, and with two additional notches i^8 i^9, into each of which a ward on the key may project to revolve the bushing. The apertures are so placed that diametrically opposite that at i^6 is an imperforate part i^{10}, and diametrically opposite the aperture i^7 is an imperforate part i^{11}, said parts i^{10} i^{11} being guards to alternately close the keyholes a^4 a^5.

The latch-bar is perforated at b^6 to allow the key to project through it when inserted in one of the keyholes, and the key is formed with a pin k, two outwardly-extended wards k', and a smaller ward k^2.

Under normal conditions the lug h' of the tumbler is inserted in the notch i^4 of the bushing and the latter is held so that the lug b^4 of the latch-bar is in alinement with and free to slide in the slot i^2. At this time the knob-spindle may be turned on either side of the door to withdraw the latch-bar, so that the door may be opened as well on one side as the other. In case, however, it be desired to lock the latch to prevent the latch-bar from being actuated from the outside of the door (indicated by B in Fig. 3) the key is inserted in the keyhole a^5 until it projects through the stud and at the points k^3 k^4 respectively rests upon the casing and the support. Then upon turning it one of the wards k' engages the sliding tumbler at the edge h^3 and forces it forward against the tension of the spring j far enough to release the bushing, whereupon the ward k^2 enters the notch i^3 and partially revolves the bushing, and as the key is turned the ward k' permits the sliding tumbler to be forced back by the spring j into the notch i^3 and lock the bushing against further movement. This partial revolution of the bushing throws the lug b^4 out of alinement with the slot i^2, so as to prevent the latch-bar from being withdrawn, and also places the guard i^{10} in alinement with the keyhole a^4, so as to prevent the insertion thereinto of a key. Now it is impossible to unlatch the door until the bushing is returned to its original position, after which the door may be locked from the other side in precisely the same way as just described.

From the foregoing it will be seen that I provide a latch mechanism which is fashioned of but few and simple parts, all of which may be manufactured in large quantities by machinery, and which is most efficient in operation and difficult to pick.

The bushing, which obstructs one of the keyholes at a time, also locks the latch-bar against movement and is itself locked against movement by a movable tumbler which must be operated by a ward before the latch can be withdrawn. The parts are thus all utilized to their greatest extent, and even the spring j performs two functions—namely, that of holding the latch-bar yieldingly forward and of maintaining the tumbler in engagement with one of the notches in the movable bushing.

The wards of the key may be longitudinally corrugated, or they may be differently shaped and the keyholes changed in accordance therewith, so that each mechanism will require a different key.

Having thus explained the nature of the invention and described a way of constructing 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, I declare that what I claim is—

1. A latch mechanism having a longitudinally-movable latch-bar, a key-operated revoluble bushing, and a tumbler directly engaged and operated by the key, and arranged to normally lock the bushing against movement.

2. A latch mechanism having a longitudinally-movable latch-bar, a key-actuated revoluble bushing formed to lock the latch-bar against movement, and a longitudinally-sliding tumbler normally locking the bushing, and unlocked therefrom directly by the engagement of the key therewith.

3. A latch mechanism having a casing with opposing keyholes, a key-actuated oscillatory bushing formed to close either of said keyholes, and a tumbler arranged in the path of the key so as to be directly engaged thereby, said tumbler normally locking the bushing against movement.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of January, A. D. 1897.

CHARLES H. BRIGDEN.

Witnesses:
A. D. HARRISON,
P. W. PEZZETTI.