(Model.)

H. A. HOLT.

LOCK.

No. 397,501. Patented Feb. 12, 1889.

Fig 1.

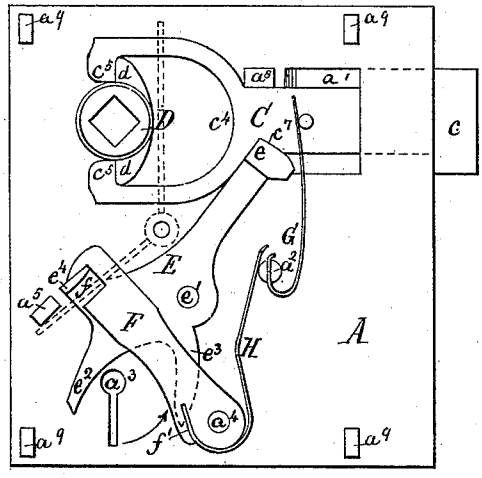


Fig 2.

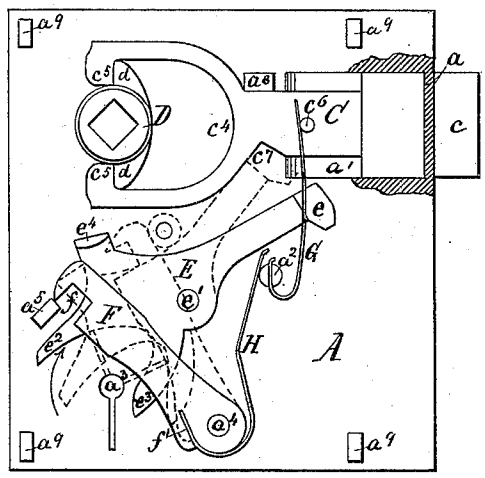


Fig 3.

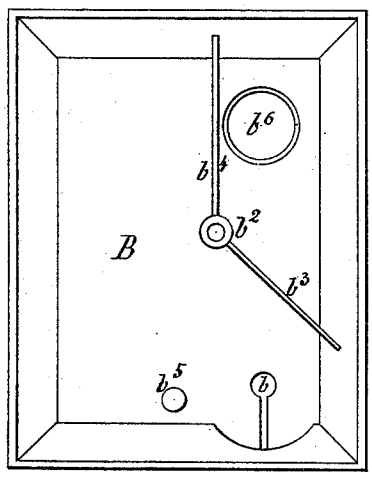


Fig 4.

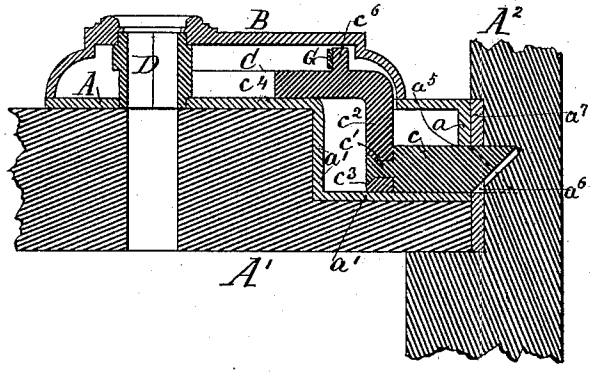
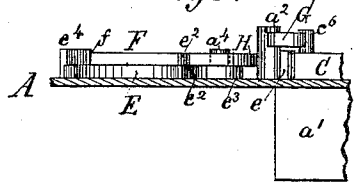


Fig 5.



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UNITED STATES PATENT OFFICE.

HILAND A. HOLT, OF NASHUA, NEW HAMPSHIRE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 397,501; dated February 12, 1889.

Application filed May 25, 1888. Serial No. 275,101. (Model.)

To all whom it may concern:

Be it known that I, HILAND A. HOLT, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in a Combined Rim and Mortise Lock; 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 consists in certain constructions, combinations, and arrangements of parts, as will be hereinafter described and claimed, whereby a very simple and reliable lock is produced, and which is rendered serviceable by reason of its construction as a rim-lock, while it possesses many of the advantages of a mortise-lock.

In the accompanying drawings, Figure 1 is an elevation of the lock, its cap or covering being removed and the latch-bolt locked. Fig. 2 is an elevation of the lock with its cap or cover removed and the latch-bolt unlocked. Fig. 3 is an inner view of the cap or cover of the lock-case. Fig. 4 is a longitudinal section through the lock and portions of a door and a door-casing or door-frame, the section being in the center line of the latch-bolt and knob-lever. Fig. 5 is a detail view of the interlocking tumblers and portions of the latch-bolt and lock-case.

The letter A in the drawings represents the main plate, and B the cap or cover of the lock-case; C, the latch-bolt; D, the knob-lever, and E and F locking-tumblers. The latch-bolt C is of angular form, as shown, and the main plate A of the case is made angular, as indicated by the letters a a', the portions a a' forming a special compartment for the angular portion c^2 of the bolt C and the latching-nose c, which is attached to the said angular portion c^2, and passes in and out through a slot, a^5, in the rim-plate a, which is set back beyond the tumbler-compartment of the case, so as to have its slot a^5 coincide with the slot a^6 in a striker or keeper plate, a^7, fastened in the edge of the door-jamb A^2 in the same manner and place that a mortise-lock striker or keeper is applied. The angular portion c^2 of the bolt and the major portion of the latching-nose c are located within and protected by the portions a and a' of the lock-case, and thus located the latching-nose c will, when the lock is fastened to the surface of the door A', with its portion a a' embedded into the door, as shown, be brought opposite the keeper or striker plate a^7, set in the edge of the jamb of the door-frame, the same as if an ordinary mortise-lock were used. Thus a rim-lock is provided which has its latching-nose c arranged on a plane between the inside and outside surfaces of the door, and all the advantages of a mortise-lock, except concealment of the lock-case, are secured, no projection of the latching-nose keeper beyond the face of the door and the door-jamb of the frame or casing being necessary with my construction, and when the door is locked the nose and keeper are perfectly concealed.

The nose of the bolt is provided with a round pivotal shank, c', which is fitted to the portion c^3 and riveted at a^3, so as to be held in place and yet by a slight force be turned around. By this construction of the latching-nose it can be reversed in position, thus making the lock a right or left hand lock, and allowing the lock to be put on either edge of a door—a great advantage—it being essential that a rim-lock shall be capable of being placed on the inside or room side, so that it shall not be accessible by means of screw-drivers or the like tools. The rear portion of the latch-bolt is forked at c^4 and provided with lugs c^5, which are operated by the arms d of an ordinary knob-lever, D. A spring, G, fastened to a slotted post, a^2, of the plate A, bears upon a pin, c^6, of the latch-bolt and gives to it the required forward tendency.

An angular notch, c^7, is provided in the straight body portion of the bolt C, into which notch the similarly-angular end portion, e, of the diagonal tumbler E enters when the latch-bolt is to be locked, and leaves the same when the latch-bolt is to be relieved, as is shown in Figs. 1 and 2, respectively. This tumbler E swings upon a pivot, e', which latter stands back of the notch c^7 sufficiently to hold the tumbler in an inclined position when locking the latch-bolt. Near the key-hole a^3 the tumbler E flares apart, forming two branches, e^2 e^3, right and left of the key-hole, which are alternately operated by the key. These branches e^2 e^3 are so shaped that when

operated by the lock-key, which is a key of ordinary and simple construction, the end portion, *e*, is either moved entirely out of the notch c^7, so firmly lodged into it, thus either relieving or locking the latch-bolt. The tumbler E is provided with a lug, e^4, formed on top of it, and occupying a part of a notch, *f*, in the end portion of a tumbler, F, pivoted at a^4 to the plate A. A spring, H, held in a kerf, f', of the tumbler F, and bearing against the post a^2, serves by its tension to hold the notched portion of it upon the lug e^4, and thereby prevent the movement of the tumbler E by any but the proper means. When the latch-bolt C is unlocked or relieved, the tumbler F is moved by the spring H upon a post, a^5, of the plate A, and is thus prevented from getting before the key-hole and preventing the insertion of the key. The same post a^5 prevents the branch e^2 from being accidentally moved so far back as to cause the branch e^3 to stand before the key-hole. The tumbler E is prevented from accidentally swinging back into the notch c^7 by the lug e^4, which comes in contact with the end portion of the tumbler F before it can enter said notch. When the latch-bolt C is to be unlocked or relieved, the key is inserted through the key-hole into the lock and turned in the direction of the arrow shown in Fig. 1. The tumbler is thereby thrown back from the lug e^4, and held away from it until the tumbler E is moved out of the notch c^7 by the pin striking and moving the branch e^2. While the tumbler E is thus moving the lug e^4 passes the tumbler F, and when the key finishes its revolution the tumbler F moves, by means of the tension of the spring H, against the post a^5, as seen in Fig. 2. When the latch-bolt is to be locked, the key is turned in the direction of the arrow shown in Fig. 2. It strikes the tumbler F at first, and swings it forward to the position shown in the dotted lines, in which it is kept until the tumbler E begins to move toward the notch c^7 in the latch-bolt, by reason of the key striking the branch e^3, when the tumbler catches over lug e^4. In order to prevent unauthorized persons from forcing the latch-bolt upward or forward, a post, a^8, is formed on the lock-plate and in the corner formed by the forked portion c^4 and the main body-portion of the latch-bolt C. The cover is provided with a key-hole, *b*, post b^5, and ribs b^3 b^4 for holding the mechanism to the case-plate A, and with a bearing, b^6, for the knob-lever D, and a fastening-post, b^2, which latter receives the ordinary fastening-screw of the lock when united with the same.

Steadying-lugs a^9, or other suitable means, are employed with the case-plate A, which hold the cover B in the proper postion. The latching-nose will in some locks be firmly fastened to or constructed homogeneously with the angular bolt, and my invention is therefore intended to include both a reversible and a non-reversible latching-nose.

What I claim is—

1. A door-lock adapted to be placed on either the inner or outer side of a door, comprising a lock-case, A, having an angular chamber, a sliding bolt having an offsetting fastening portion, which is about on a line central with the edge of the door and adapted to engage with an ordinary striker or keeper inserted in the casing or framing of the door, and a locking-tumbler mechanism comprising tumbler E, substantially as and for the purpose described.

2. The combined rim and mortise lock comprising a locking-tumbler mechanism, a sliding latch-bolt, C, having an angular portion, c^2, and a latching-nose, *c*, and a case having a main plate, A, provided with an angular rim-plate portion, *a*, and an angular protecting portion, a', and a locking-tumbler mechanism comprising tumbler E, substantially as and for the purpose described.

3. The combination of the latch-bolt C, having notch c^7, the tumbler E, having branches e^2 e^3 and lug e^4, and the tumbler F, having notch *f* and spring H, substantially as described.

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

HILAND A. HOLT.

Witnesses:

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