(Model.) 2 Sheets—Sheet 1.

J. B. HUTSON.

COMBINED LATCH AND LOCK.

No. 343,376. Patented June 8, 1886.

Fig. 1.

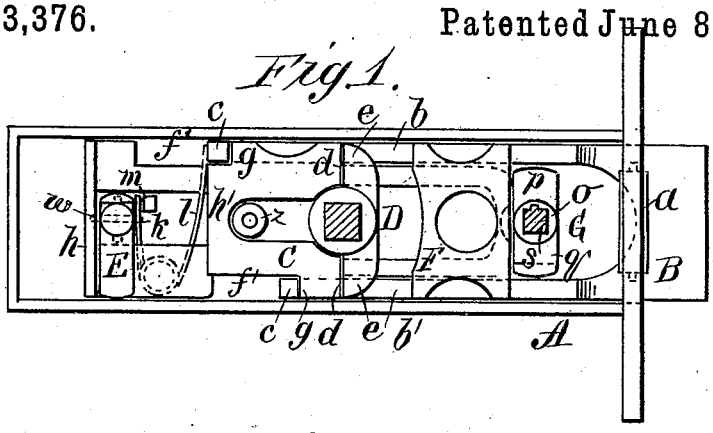


Fig. 2.

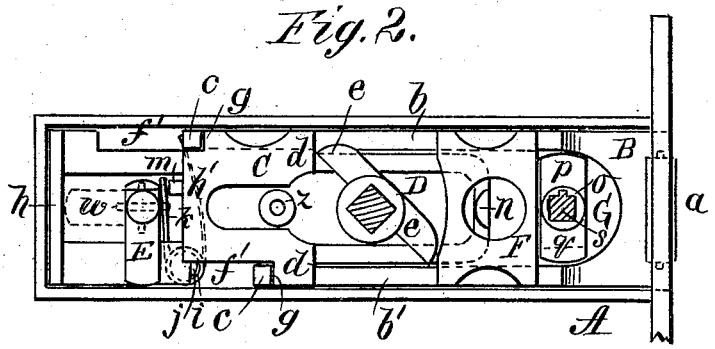


Fig. 3.

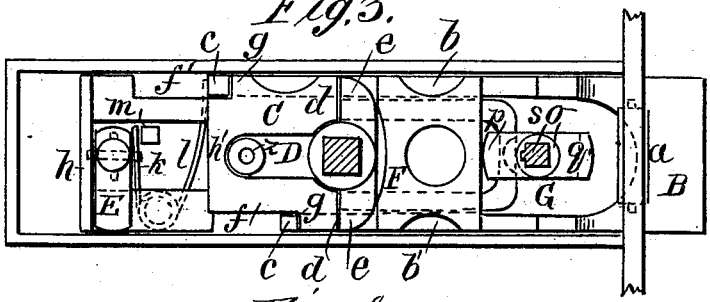
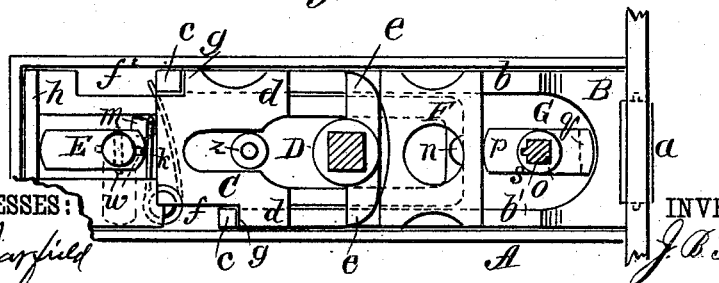


Fig. 4.



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(Model.) 2 Sheets—Sheet 2.

J. B. HUTSON.

COMBINED LATCH AND LOCK.

No. 343,376. Patented June 8, 1886.

Fig. 6.

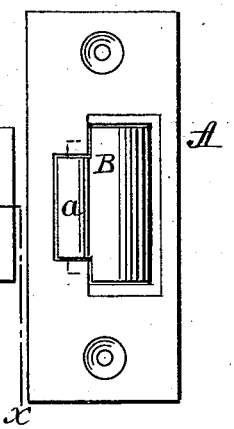


Fig. 5.

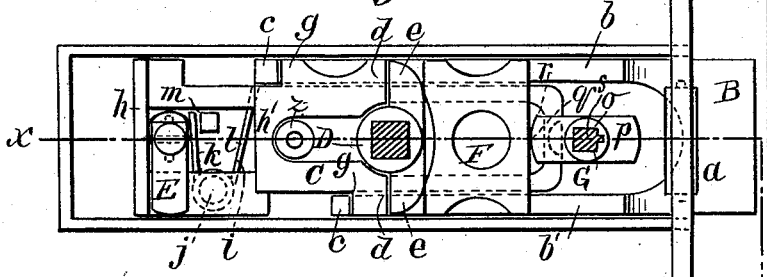


Fig. 7.

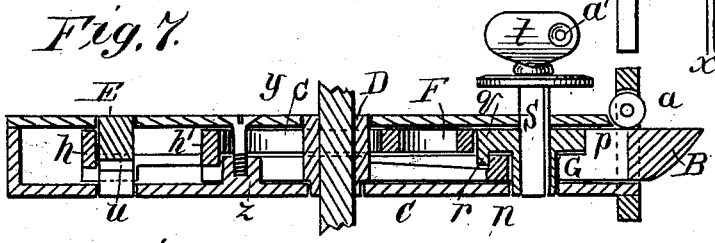


Fig. 8.

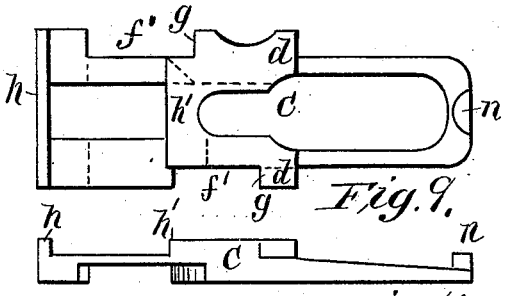


Fig. 9.

Fig. 10.

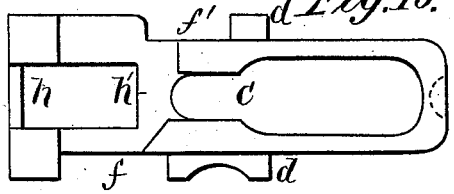


Fig. 11.

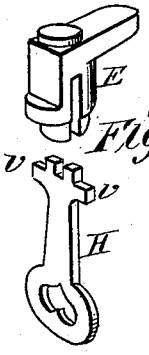


Fig. 12.

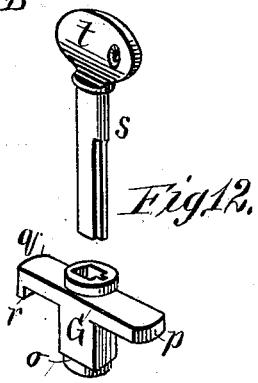


Fig. 13.

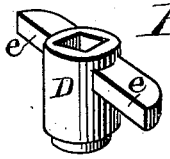
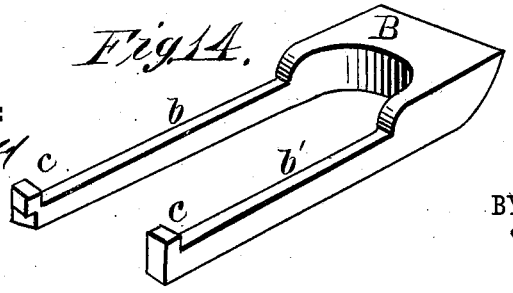


Fig. 14.



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UNITED STATES PATENT OFFICE.

JOSHUA B. HUTSON, OF RICHMOND, VIRGINIA.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 343,376, dated June 8, 1886.

Application filed March 2, 1886. Serial No. 193,732. (Model.)

To all whom it may concern:

Be it known that I, JOSHUA B. HUTSON, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Improvement in Combined Latches and Locks, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side elevation with the cover removed showing the parts of the lock in position to be operated by the knob-nut. Fig. 2 is a side elevation with the cover removed showing the bolt withdrawn by the knob-nut. Fig. 3 is a side elevation with the cover removed showing the parts arranged to be operated by a latch-key. Fig. 4 is a side elevation with the cover removed showing the bolt withdrawn by the latch-key. Fig. 5 is a side elevation with the cover removed showing the unlocking mechanism secured so as to prevent the unlocking of the bolt by means of the latch-key or knob-nut. Fig. 6 is an end elevation. Fig. 7 is a longitudinal section taken on line *x x* in Fig. 5. Fig. 8 is a front elevation of a frame, through the medium of which the bolt is operated by means of the key or knob-nut. Fig. 9 is an edge view. Fig. 10 is a rear elevation of the same. Fig. 11 is a detail perspective view of the cam-key and the key. Fig. 12 is a detail perspective view of the latch for controlling the locking and unlocking of the bolt. Fig. 13 is a detail perspective view of the knob-nut. Fig. 14 is a detail perspective view of the bolt.

Similar letters of reference indicate corresponding parts in the different figures of the drawings.

My present invention is an improvement on the locking-latch for which Letters Patent No. 269,421 were issued to me December 19, 1882.

The object of my invention is to simplify the lock and render it more efficient.

My invention consists in the combination, with the sliding bolt of the lock, of a sliding frame intermediate between the knob-nut and key and the bolt of the lock, and in means for locking the sliding frame to prevent it from being moved by the knob-nut or key, while permitting of the free movement of the bolt independently of the sliding frame and parts connected therewith, as hereinafter more fully described.

To the case A, which is rectangular in cross-section, is fitted a bolt, B, which projects through the face-plate of the lock and is guided by the sides of the case; and in the face-plate is journaled a roller, *a*, for receiving the pressure of the bolt when the bolt comes into contact with the striker. The bolt B has its outer end beveled in the usual way, and the inner end is formed of two parallel prongs, *b b'*, of unequal length, the prong *b'* being shorter than the prong *b*, both prongs being provided with lugs *c*.

To the space between the prongs *b b'* is fitted a frame, C, which is slotted longitudinally, and provided with shoulders *d*, above the prongs *b*, and in position to be engaged by the knob-nut D, which is journaled in the sides of the lock-casing, and is provided with arms *e*, for engaging the shoulders *d*.

In opposite edges of the frame C are formed rectangular notches *f f'*, for receiving the lugs *c c* of the prongs *b b'* of the bolt, shoulders *g* being formed at the ends of the notches for engaging the lugs *c*. The frame C is grooved transversely across its wider face, forming a space for receiving the key-cam E, which is journaled in the sides of the lock-casing, and is adapted to engage ledges *h h'* upon opposite sides of the groove, for moving the frame C, or locking it, as hereinafter more fully described.

A spiral spring, *i*, received on a stud, *j*, in the back of the lock-casing, and having arms *k l*, is employed to press the bolt B forward, the arm *k* of the spring resting between the lug *m* in the lock-casing and the key-cam E. This arrangement of the spring prevents the key-nut from being turned, except by the key adapted to it. It also prevents the key-nut from accidentally getting out of place.

Upon the face of the frame C, at its outer extremity, is formed a semi-cylindrical lug, *n*, and upon the frame C and the prongs *b b'* of the bolt B is loosely placed a plate, F. Beyond the end of the frame C, and within the end of the bolt and lock-casing is journaled a latch, G, formed of a nut, *o*, having arms *p q* of equal length projecting in opposite direc-

tions from the nut, the arm *p* being of about the same thickness as the plate F, and adapted to engage the edge of the plate F when the arms are turned parallel with the lock-casing, and from the under surface of the arm *q* a lug, *r*, projects in position to engage the lug *n*, projecting from the frame C, when it is desired to prevent the lock from being operated by the key-cam E or the knob nut D. A spindle, *s*, which is provided with a squared end, having a tongue formed on one side thereof, is received in the square aperture of the latch G, the tongue upon the spindle *s* being received in a groove in the side of the hole in the latch to cause the thumb-piece *t* of the spindle to register with the arms *p q* of the latch. The key-cam E is slotted to receive the key H, and is provided with a ward, *u*, or arranged in any other suitable way to prevent it from being turned by any other key but the one belonging to the lock. The key is provided with a notched end to receive the ward, and has arms *v*, which are received in slots *w* in the lock-casing at the side of the opening in which the key-cam E turns. When the key is inserted in the lock, one of the arms *v* pushes the arm *k* of the spring I beyond the lug *m*, permitting the turning of the key-nut. When the key is removed, the spring-arm *k* regains its normal position between the lug *m* and the key-cam E.

All the parts of my improved lock are held in place by the cover which is secured to the lock-casing by a screw, *y*, which passes through the cover and enters a boss, *z*, in the opposite side of the lock-casing.

With the parts of the lock in the position shown in Fig. 1, the bolt B is free to be forced into the lock by the engagement of its beveled end with the striker on the door-jamb. It will be pushed in against the pressure of the arm *l* of the spring, and when it passes the edge of the striker the spring will project the bolt into the mortise in the door-jamb, and the door will be latched, and it can be unlatched by turning the knob-nut D, by means of the knob or spindle received therein, or by turning the key-cam E, as shown in Fig. 2.

When it is desired to arrange the lock to be opened by the key alone, the knob-nut D is secured by turning the latch G, so as to bring the arm *p* against the edge of the plate F and hold the plate in contact with the knob-nut, as shown Fig. 3. The bolt B is still free to be pressed inward in the operation of closing, as before described, but the knob-nut D will be prevented from turning by the engagement with it of the plate F; but the key-cam E may be turned by the employment of the key, as shown in Fig. 4, so as to withdraw the bolt B.

When the parts are in the position indicated in Fig. 3, the frame C will be locked by turning the key-cam E through one-quarter of a revolution, bringing it into engagement with the ledge *h'*. By means of this arrangement the bolt is secured, so that it cannot be moved from the inside of a door. This is often advantageous in buildings where a part of the rooms are vacant and in stores self unoccupied.

When it is desired to arrange the lock from the inner side of a door so that the frame C and the bolt B cannot be moved by means of the key-cam or the knob-nut, the latch G is turned so as to bring the lug *r* into engagement with the lug *n* on the frame C, as shown in Figs. 5 and 7. This will hold the frame so that it cannot be moved by the knob-nut or key, but will not in any way interfere with the free movement of the bolt when the door is being closed.

To indicate the position of the latch-key, I have formed a hole, *a'*, in the head *t* of the spindle *s*.

By my improvement I produce a self-locking spring-lock, with one strong bolt, which answers all the purposes for which a door-lock is required. It acts as a knob-latch, spring-lock, key-lock, and a night-latch. The bolt under all circumstances is in condition to move freely backward into the lock, thus avoiding the danger of breakage from slamming the door. There being no key-hole through the lock, perfect privacy is insured.

My improved lock requires but one spring, and is therefore less liable to derangement than other locks requiring a number of springs. The roller against which the bolt presses when the door is being closed, reduces the friction of the bolt and renders the action of the lock easy and noiseless.

The lock can be used without any change for a right and left hand door, and the key may be inserted either side up, and may be turned in either direction to unlock the door. The lock being very narrow, does not require the cutting away and consequent weakening of the door.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lock, the combination, with the bolt B, provided with the prongs *b b'*, having lugs *c* formed thereon, of the sliding frame C, provided with shoulders *g g* for engaging the lugs *c*, and having the ledges *h h'*, the key-cam E, adapted to engage the ledges *h h'*, and the spring *i*, adapted to press the bolt B outward, substantially as herein shown and described.

2. The combination, in a lock, of the bolt B, provided with the prongs *b b'*, having lugs *c* formed on the ends thereof, the frame C, having shoulders *d g* and ledges *h h'*, the key-cam E and the knob-nut D, substantially as herein shown and described.

3. The combination, with the bolt B, having the prongs *b b'*, with lugs *c* formed on the ends thereof, the frame C, provided with shoulders *d g*, and the knob-nut D, provided with arms *e*, of the plate F, and latch G, adapted to hold the plate in engagement with the knob-nut, substantially as herein shown and described.

4. The combination of the bolt B, provided with the prongs *b b'*, the frame C, having shoul-

ders *d g* and ledges *h h'*, and the semi-cylindrical lug *n*, the key-cam E, the knob-nut D, and the latch G, provided with the arm *q*, having the lug *r*, adapted to engage the lug *n*, substantially as herein shown and described.

5. The combination of the casing A, the bolt B, provided with the prongs *b b'*, having lugs *c* formed thereon, the frame C, fitted between the prongs of the bolt and having shoulders *d g* and ledges *h h'*, the spring *i*, engaging the inner end of the bolt, the key-cam E, the knob-nut D, provided with arms *e*, the plate F, the latch G, provided with the arm *p*, and the arm *q*, having the lug *r*, substantially as herein shown and described.

JOSHUA B. HUTSON.

Witnesses:
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H. C. JOHNSTON.