(No Model.) 2 Sheets—Sheet 1.

C. E. CANDEE.

LOCK.

No. 478,917. Patented July 12, 1892.

Fig. 1.

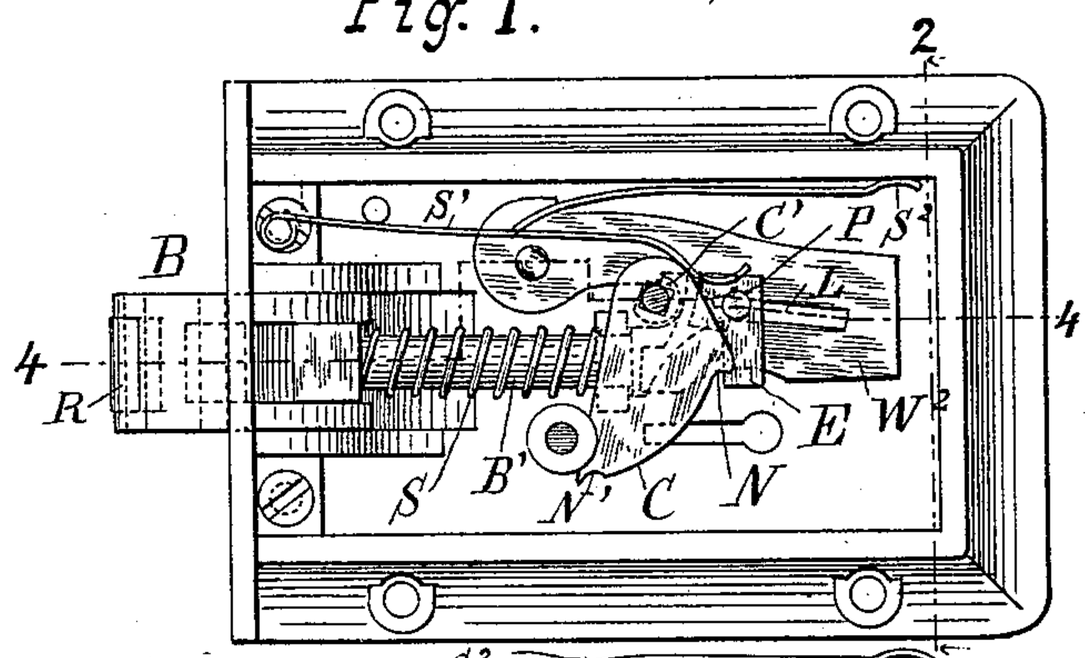


Fig. 2.

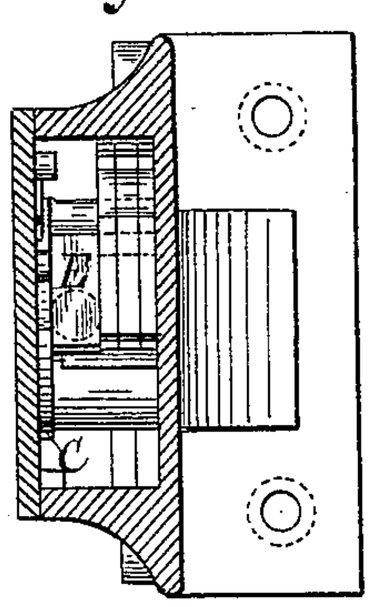


Fig. 3

Fig. 4.

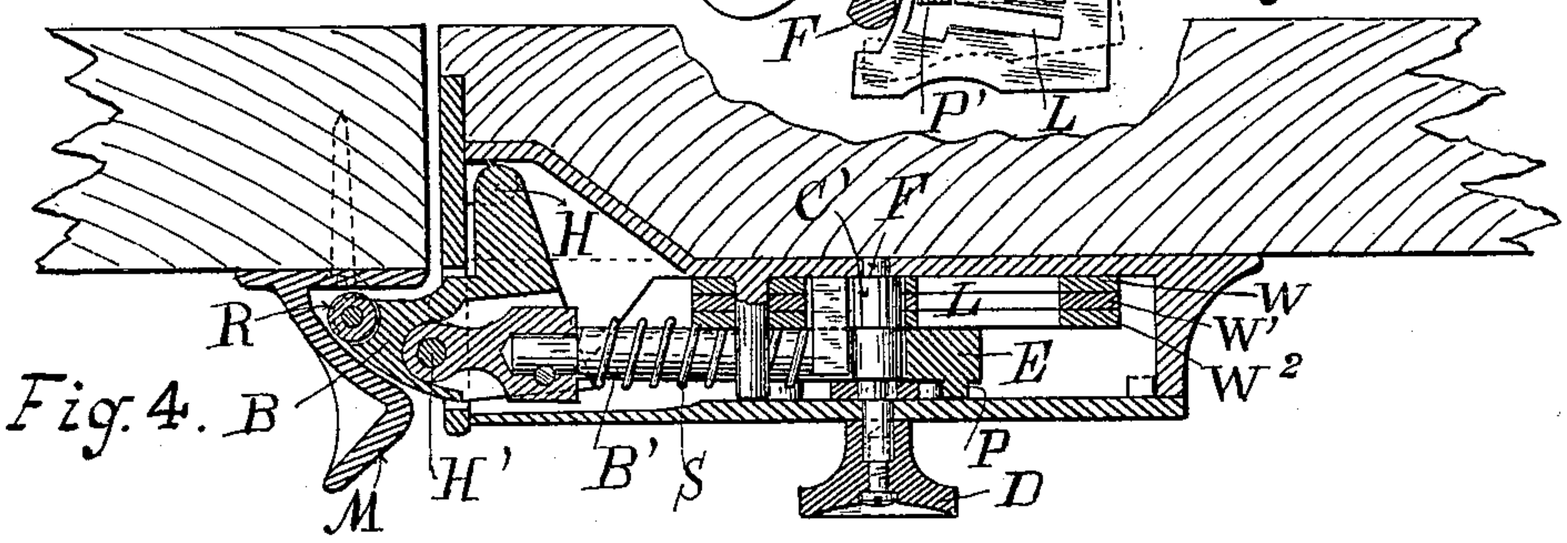
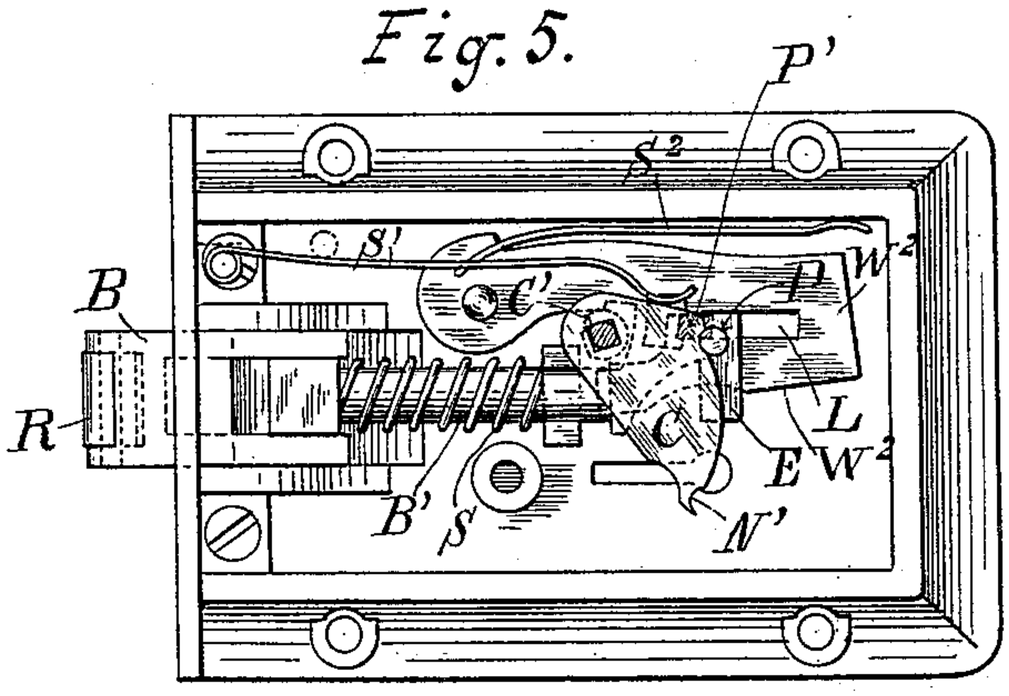


Fig. 5.



Witnesses
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Edward S. Berrall.

Charles Erwin Candee
Inventor

(No Model.) 2 Sheets—Sheet 2.

C. E. CANDEE.

LOCK.

No. 478,917. Patented July 12, 1892.

Fig. 6.

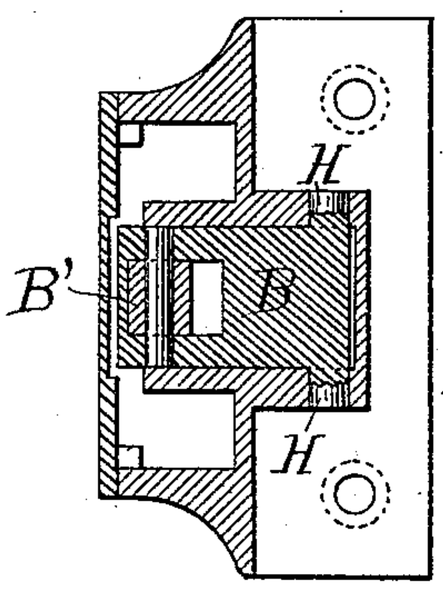


Fig. 7.

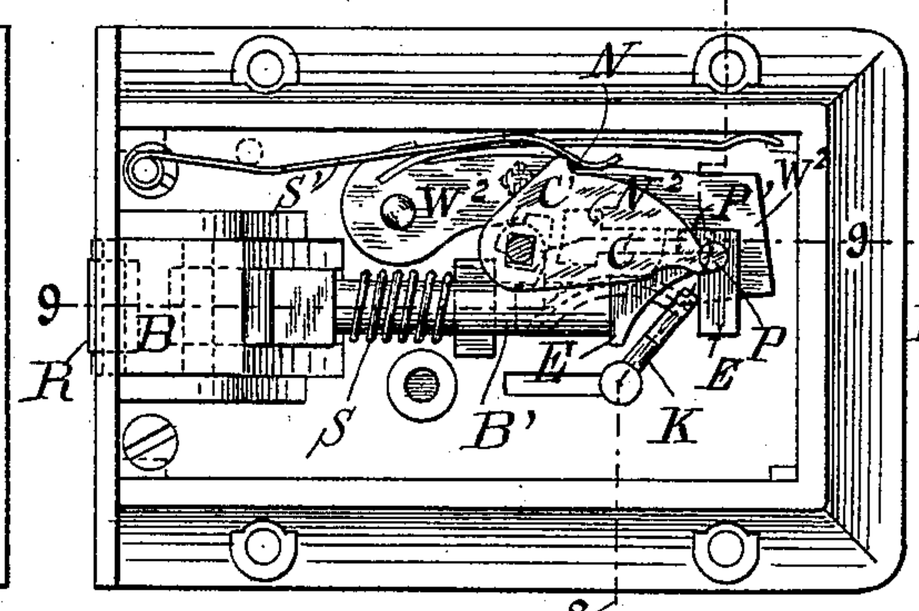


Fig. 8

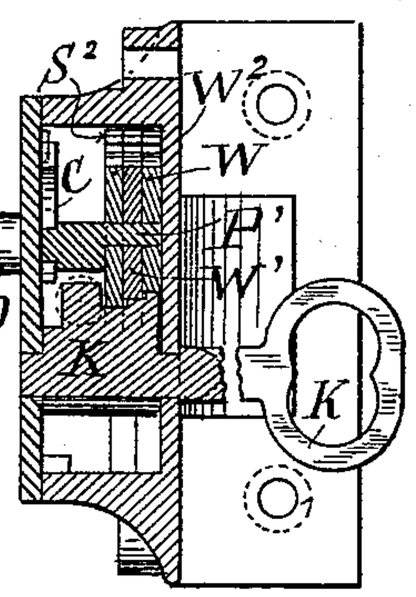


Fig. 9.

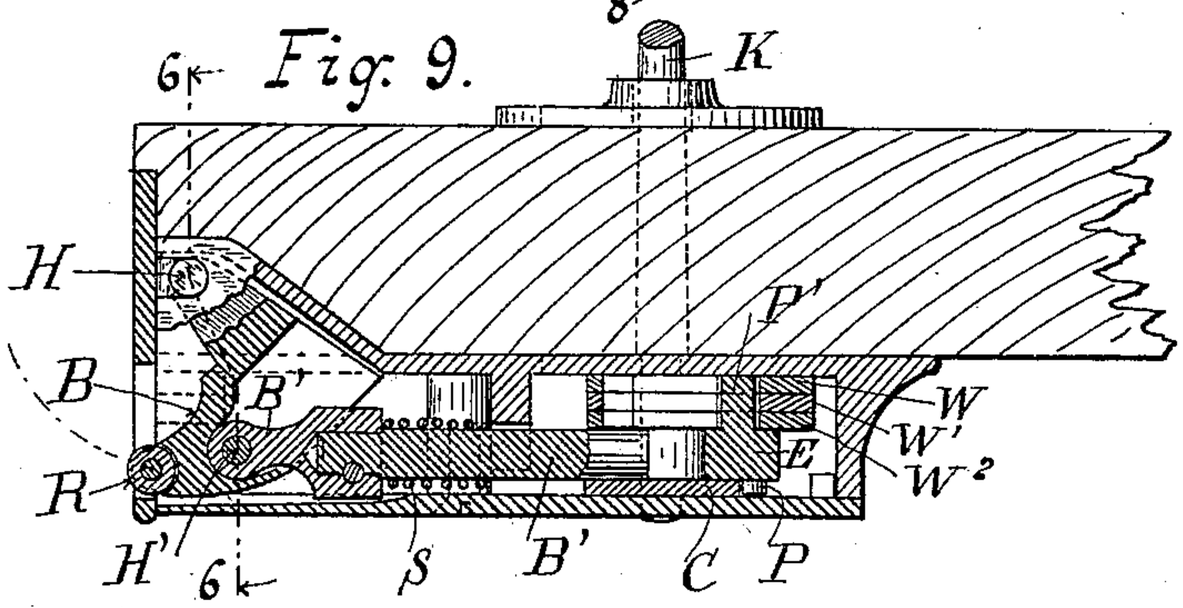
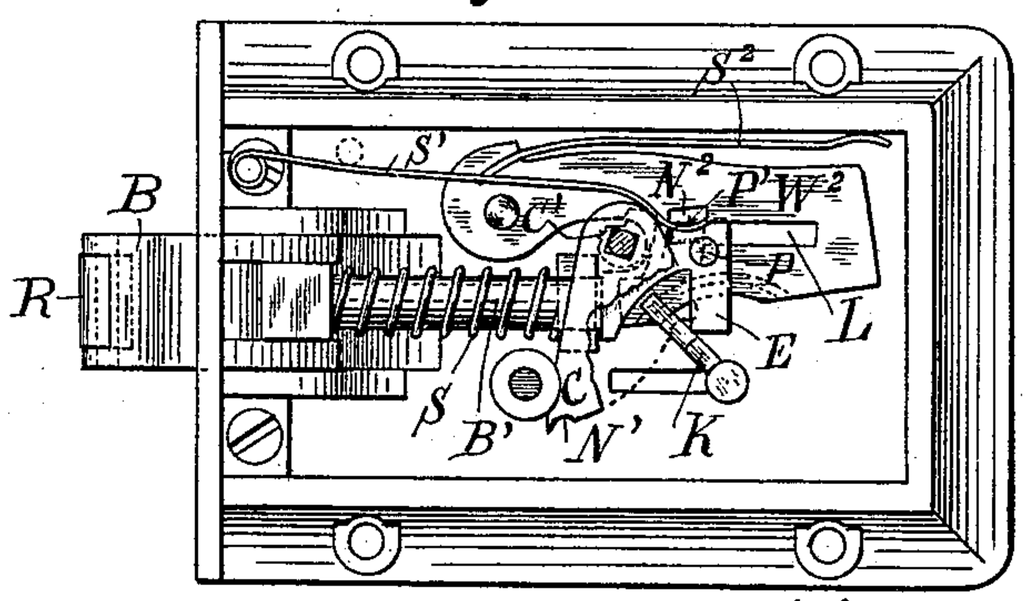


Fig. 10.



Witnesses
Chas. Hanimann
Edward S. Berrall.

Charles Ervin Candee
Inventor.

UNITED STATES PATENT OFFICE.

CHARLES ERWIN CANDEE, OF NEW YORK, N. Y.

LOCK.

SPECIFICATION forming part of Letters Patent No. 478,917, dated July 12, 1892.

Application filed July 13, 1891. Serial No. 399,395. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ERWIN CANDEE, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Locks, (for which I have obtained no foreign Letters Patent whatever,) of which the following is a specification.

My invention relates to a lock in which the catch-bolt is also a lock-bolt and that part of the bolt which engages with the jamb-escutcheon is pivoted or hinged and may be operated by a knob or thumb-piece, spindle, and spindle-socket, or collar.

The objects of this improvement are, first, to provide a hinged bolt moving on an arc in engaging and disengaging and provided with an anti-friction roller, through which the contact with the jamb-escutcheon is effected; second, to provide means for operating the bolt by means of a knob or thumb-piece, spindle and spindle-socket, or collar and cam for unlocking and retreating such a bolt from one side of the lock, and also, third, for doing the same thing by means of a key only from the other side or outside of the lock. I attain these objects by the mechanism illustrated in the accompanying two sheets of drawings, in which—

Figure 1 represents the lock with the lock-plate of the inner side removed, the bolt advanced to its most forward position and positively locked. Fig. 2 represents a vertical section of the same cut on the line 2 2, Fig. 1. Fig. 3 is a detail view of the tumblers in relation to the cam, its slot and engaging shoulder in relation to the locking-pin on the bolt, and also its spring. Fig. 4 is a horizontal sectional view cut on the line 4 4, Fig. 1, with a sectional view of the jamb-escutcheon and door-jamb added. Fig. 5 is a view of the lock with the bolt unlocked and retreated to the position in which it is held intermediately for tripping by a touch on the front end of the bolt or by contact with the jamb-escutcheon in closing. Fig. 6 is a vertical sectional view on the line 6 6, Fig. 9. Fig. 7 is a similar view to Figs. 1 and 5, but with the bolt retreated to its extreme limit either by the key or by the cam and there held by the point of the cam. Fig. 8 is a vertical sectional view cut on the line 8 8, Fig. 7. Fig. 9 is a horizontal sectional view cut on the line 9 9, Fig. 7. Fig. 10 is a view similar to Figs. 1, 5, and 7, but with the key commencing to engage the tumblers and lifting them into position for freeing the bolt, so that it may be retreated by the key.

Similar letters represent similar parts throughout the figures.

B is the pivoted or hinged bolt pivoted or hinged at H in the frame.

B′ is the stem or false bolt, to which the hinged bolt B is also pivoted or hinged at H′.

C is the cam by which the bolt B and the false bolt B′ are retreated, and is provided with two recesses or notches N N′ to receive the pin P on the stem or false bolt B′, the former to hold it in its intermediate position and the latter to hold it in the position of extreme or ultimate retreat. This cam is secured upon a stem or shaft F, which is cut away on one side at the point where it is in contact with the shoulder O on the tumblers W W′ W^2, (one or more,) so as in turning to have a cam-like action thereon for the purpose of lifting the same into the position shown in dotted lines in Fig. 3. It is operated by its knob or thumb-piece D on one side of the lock. These parts are so related that the tumblers (one or more) will be lifted and the bolt will be thereby released from the engagement effected therewith, through the square pin P′, taking in the notch N^2 of the tumbler or tumblers. The pin P′ is placed on the opposite side of the head E of the stem B′ from that on which the pin P is located, and is shouldered so as to hold in the notch N^2. The spring S, operating the bolt B, being superior in strength to the spring S′, operating the cam C, the pin P will remain in the notch N, notwithstanding the pressure of the spring S′, until the spring S is slightly overcome by some pressure on the front end of the bolt, whereupon the spring S′ will take charge of the cam C, causing the same to drop into the position shown in Fig. 1, whereupon the bolt being released, will automatically take the position shown in Figs. 1 and 4. A similar statement is true in regard to the relation and action of the parts when in the position shown in Fig. 7.

The key K and the bearing contours of the tumblers W W′ W^2 (one or more) are made to

conform, so as to lift the tumbers into such position that the slots L in each conform to each other, and thereby permit the pin P′ to traverse the same in the retreating motion of the bolt. The false bolt or stem B′ is retreated by the contact of the key K with the head E, retreating with it the pivoted bolt B. The spring S, when not controlled by the key K, the knob D, or the cam C, presses the bolt B and stem B′ into their most forward and locking positions. The roller R strikes the outer inclined part of the jamb-escutcheon M in closing the door, and when the bolt is in the intermediate or half-back position shown in Fig. 5 will roll on the same, pressing the bolt B into the lock-case sufficiently to allow it to pass and then drop into its seat or engagement with the jamb-escutcheon. The tumblers W, W′, and W^2 are each provided with a spring S^2. The notch N^2 in each one of the tumblers has in relation to the slot L two shoulders—to wit, an upper and a lower shoulder. The object of the lower shoulder is to prevent the retreating of the bolt except by means of a key of exactly accurate proportions. A key a little longer than such accurately-fitted key in relation to either one of the tumblers will raise that tumbler, and thereby cause the pin P′ to engage the lower shoulder of the notch N^2, and thus prevent the retreating of the bolt.

I claim as my invention—

1. A lock-bolt provided with an anti-friction roller for contact with the jamb or striking plate, hinged in the lock-frame, normally projecting from the lock-frame in the path of the jamb or striking plate, and also hinged to a reciprocating stem or false bolt, the false bolt having an outward-thrusting spring in charge of both bolts, in combination with a retreating, holding, and tripping cam acting directly on the reciprocating false bolt for those purposes.

2. A lock-bolt provided with an anti-friction roller for contact with the jamb or striking plate, hinged in the lock-frame, normally projecting from the lock-frame in the path of the jamb or striking plate, and also hinged to a reciprocating stem or false bolt, the false bolt having an outward-thrusting spring in charge of both bolts, in combination with a retreating, holding, and tripping cam acting directly on the reciprocating false bolt for those purposes, and also with a disengaging-cam and an engaging tumbler, (one or more,) which may be disengaged thereby, so as to permit the retreat of both bolts by one and the same movement.

3. A lock-bolt provided with an anti-friction roller for contact with the jamb or striking plate, hinged in the lock-frame, normally projecting from the lock-frame in the path of the jamb or striking plate, and also hinged to a reciprocating stem or false bolt, the false bolt having an outward-thrusting spring in charge of both bolts, in combination with a retreating, holding, and tripping cam acting directly on the reciprocating false bolt for those purposes, and with a jamb-escutcheon or strike-plate provided with an incline for retreating the hinged bolt within its frame, and an engaging-seat behind the incline to receive the released hinged bolt and secure the door in position.

4. A lock-bolt provided with an anti-friction roller for contact with the jamb or striking plate, hinged in the lock-frame, normally projecting from the lock-frame in the path of the jamb or striking plate, and also hinged to a reciprocating stem or false bolt, the false bolt having an outward-thrusting spring in charge of both bolts, in combination with a retreating, holding, and tripping cam acting directly on the reciprocating false bolt for those purposes, with a removable key, which may disengage the tumbler (one or more) and retreat the bolt independently of the cam or cams, and with a jamb-escutcheon or strike-plate provided with an incline for retreating the hinged bolt within its frame, and an engaging seat behind the incline to receive the released hinged bolt and secure the door in position.

5. The false bolt or stem B′, provided with the pins P P′ and the head E and the cams C C′, in combination with the key K and tumbler W, (one or more,) provided with the slot L and notch N^2.

6. The false bolt or stem B′, provided with the pins P P′ and the head E and the cams C C′, in combination with the tumbler W, (one or more,) provided with the slot L and notch N^2.

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