H. C. WALDECKER.

LOCK.

APPLICATION FILED OCT. 29, 1908.

930,000.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.

2

Fig. 1.

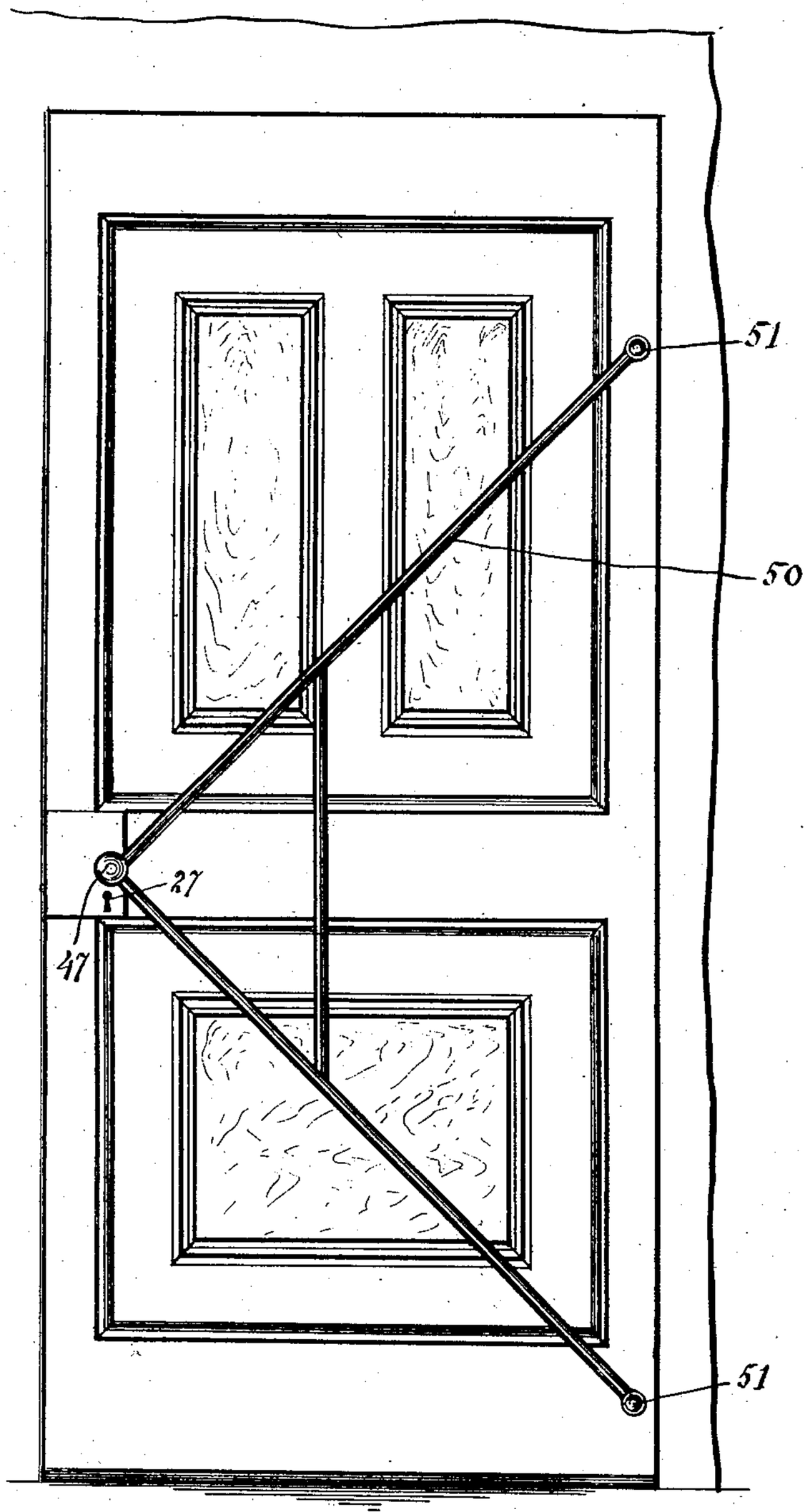
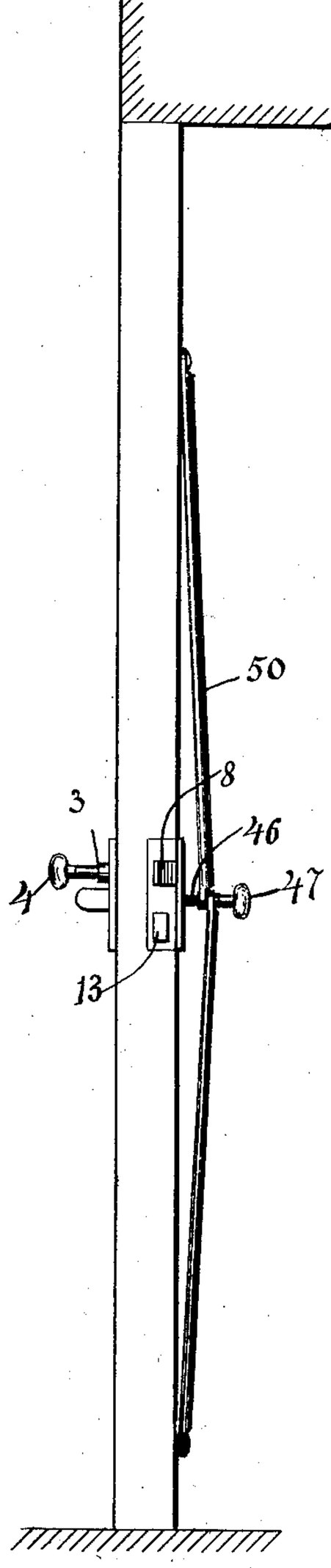


Fig. 2.



2 WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

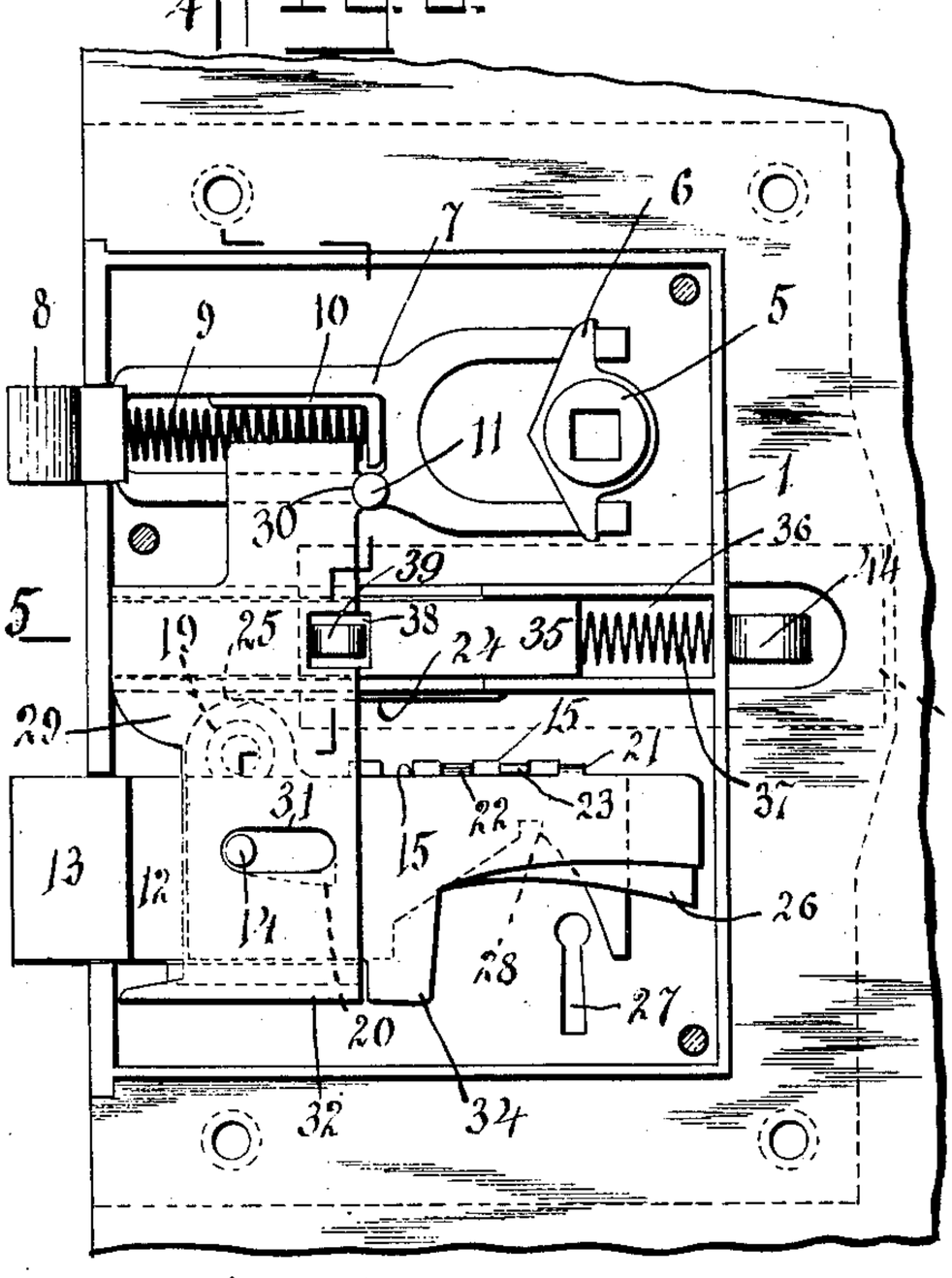
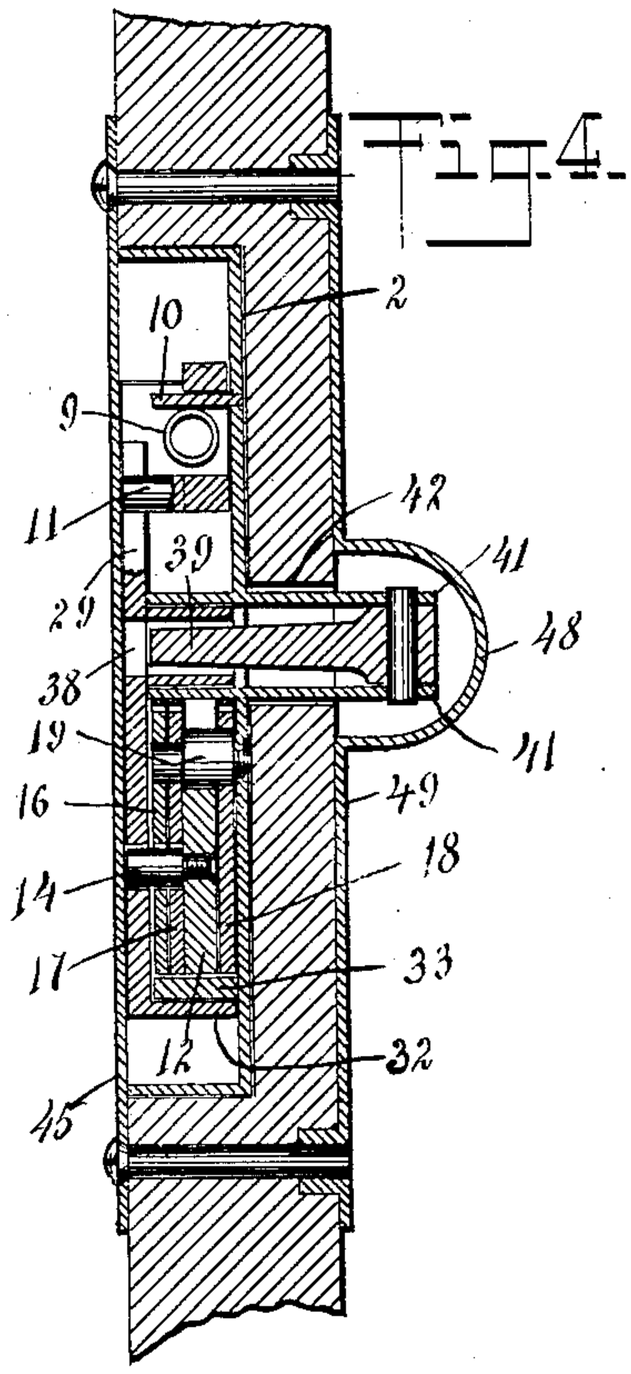


Fig. 4.



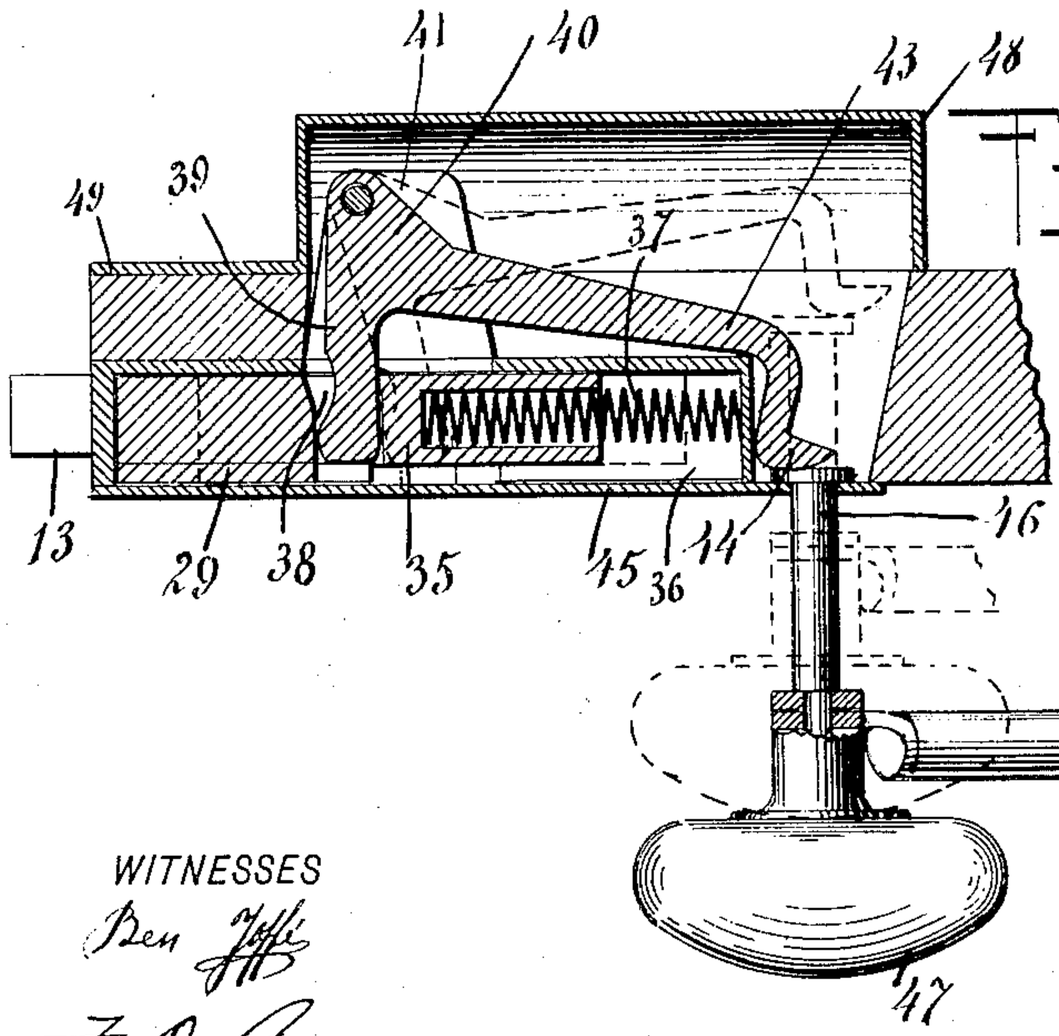
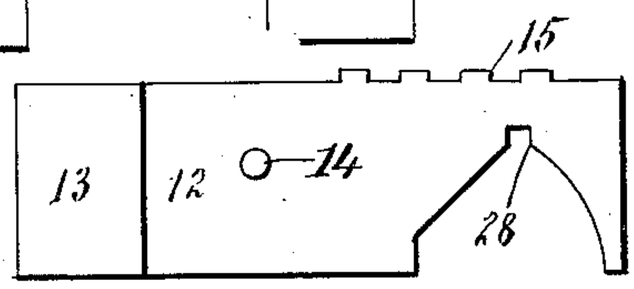


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY C. WALDECKER, OF AUSTIN, MINNESOTA, ASSIGNOR OF ONE-HALF TO JOSEPH KEENAN, OF AUSTIN, MINNESOTA.

LOCK.

No. 930,000. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed October 29, 1908. Serial No. 459,974.

To all whom it may concern:

Be it known that I, HENRY C. WALDECKER, a citizen of the United States, and a resident of Austin, in the county of Mower and State of Minnesota, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

This invention relates to locks such as used on doors. It concerns itself especially with locks which employ a latch bolt for latching the door, and a bolt for locking the door. The latch bolt is withdrawn by turning the knob, while the locking bolt is operated by a key.

The object of this invention is to provide a construction whereby a latch bolt and lock bolt may be withdrawn simultaneously without rotating the knob or without the use of a key.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of a door provided with my lock and showing the inner side of the door; Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1 and showing the edge of the door; Fig. 3 is a side elevation of the lock, the cover plate thereof being removed, said view also showing a portion of the door to which the lock is attached; Fig. 4 is a vertical section on the line 4—4 of Fig. 3; Fig. 5 is a cross section on the line 5—5 of Fig. 3; and Fig. 6 is a side elevation of the lock bolt.

Referring more particularly to the parts, and especially to Fig. 3, 1 represents the case of the lock which is of box form, as shown, and adapted to be recessed into a pocket 2 in the inner side of the door, as shown in Fig. 4. In the upper part of this case a spindle 3 is rotatably mounted, which is provided with a knob 4 on the outer side of the door, as indicated in Fig. 2. This spindle is of the usual square form and is provided with a collar 5 on the interior of the case, which collar is provided with dogs 6 which engage the rear ends of the latch bolt 7, as indicated in Fig. 3. The latch bolt 7 is formed with a latch head 8 which is adapted to project normally from the case at the edge of the door, being constrained toward this position by a helical spring 9, which thrusts against an angular guide lug 10 which projects into the interior of the case on the side wall thereof, as shown in Fig. 3. This latch bolt is provided with a laterally projecting stud 11, as shown. In the lower part of the lock case, a lock bolt 12 is provided, the head 13 of which is adapted to project over the edge of the door through the case, as indicated in Fig. 3. The body of this bolt is of plate form, as shown, and provided with a laterally projecting pin 14, as indicated. The upper edge of the body of the bolt 12 is provided with notches 15.

Just above the upper edge of the bolt 12, tumblers 16, 17, and 18 are pivoted on a stud or post 19. The outer portion of this post is reduced to receive the two tumblers 16 and 17 so that a shoulder or seat is formed for them, as indicated in Fig. 4. The tumblers 16 and 17 are disposed on the outer face of the bolt, while the tumbler 18 is disposed adjacent to the inner face. The tumblers 16 and 17 are provided with tapered slots 20 through which the pin 14 passes, as indicated in Fig. 3. The tumbler 16 is provided with a finger 21 which is adapted to engage with one of the notches 15 aforesaid, in the bolt 12. A similar finger 22 is provided on the tumbler 17, which engages one of the notches, and between these fingers, a finger 23 is provided on the tumbler 18 which engages the intermediate notch. These tumblers are normally held down in engagement with the notches by means of small leaf springs 24 which are attached to the tumblers at the point 25, as indicated in Fig. 3. The tumblers are provided with tails 26 which are adapted to be struck by the wards of a key inserted at the keyhole 27 so as to raise them. When the tumblers are raised in this manner the fingers 21, 22, and 23 become disengaged from the notches of the bolt 12 so as to permit the bolt to be thrown by the bit of the key which extends up into the operating recess 28 in the under side of the bolt.

Extending across the forward part of the case and on the interior thereof, there is provided a slide or slide plate 29. This slide plate has a notch 30 in the rear edge thereof which receives the pin 11, and it is provided with a slot 31 in the lower part thereof

through which the pin 14 projects outwardly. The lower part of this slide is formed into a shoe 32 which extends under the bolt 12 and under the tumblers. At this point a guide wing 33 is formed under which the shoe projects, as indicated in Fig. 4. On the upper face of this wing 33 the forward parts of the bolt and tumblers rest. Just at the rear of the shoe 32 the tumblers are provided with downwardly projecting fins 34, and these fins are in the path of the shoe 32 when it moves rearwardly. On the inner face of the slide 29, a guide bar 35 is provided, and this guide bar slides longitudinally in a guide-way 36 formed in the middle part of the case, as shown. In this guideway 36 a spring 37 is provided which tends to hold the guide bar in the slide in a forwardly disposed position, as indicated in Fig. 3. The guide bar is provided near its middle point with an opening or socket 38, and this socket receives the short arm 39 of a bell crank lever 40. This bell crank lever is pivoted between ratchet plates 41 which project through an opening or slot 42 formed in the door, as indicated in Fig. 4. This bell crank lever 40 has a long arm 43 which has an offset extremity terminating in a toe 44 lying beyond the inner edge of the case and disposed adjacent to the cover plate 45 of the case, as indicated in Fig. 5. This toe normally rests against the inner extremity or head of a stem 46 carrying a knob 47, said stem sliding through the cover plate or cover 45, as indicated. On the outer side of the door, a barrel 48 is formed upon the escutcheon 49, and this barrel extends longitudinally of the bell crank lever 40 and forms a space to receive it when it is moved inwardly by the knob 47 to the position in which it is indicated in the dotted lines in Fig. 5. The knob 47 is not rotatable, but is simply attached to an A frame 50, the legs of which are attached at 51 to the door near the hinged edge thereof, as indicated in Fig. 1. The spring 37 normally holds the bell crank lever in the position in which it is shown in Fig. 5, that is, so that the stem 46 and the knob 47 are in an outwardly disposed position.

From the construction described it will be evident that either the latch bolt 7 or the lock bolt 12 may be operated without moving the slide. The latch bolt will be withdrawn simply by rotating the knob 4 which is on the outer side of the door. The slot 31 permits the movement of the lock bolt 12 without moving the slide. When it is desired to unlock the door and unlatch it simultaneously from the inner side, it is only necessary to push in the knob 47; this rotates the bell crank lever 40 and moves the slide 29 toward the rear. In the rearward movement of the slide 29 the notch 30 engages the pin 11 of the latch bolt and throws the bolt back, as will be readily understood. As soon as the rearward movement of the slide 29 begins, the rear edge of the shoe 32 strikes the forward edges of the fins 34 of the tumblers and rotates the tails of the tumblers upwardly. In this way the fingers of the tumblers will become disengaged from the notches of the bolt 12, and a continued movement of the slide will operate through the medium of the pin 14 to move the bolt back to its withdrawn position. As soon as the spring 37 returns the slide to its normal position, the tumblers all come back into position and engage the notches 15 in the withdrawn position of the bolt. In this way, in a very simple manner both the latch bolt and the lock bolt may be withdrawn simultaneously to enable the door to be opened.

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

1. In a lock, in combination, a latch bolt, means for withdrawing the same, a lock bolt adapted to be actuated by a key, a slide engaging with said latch bolt and with said lock bolt and adapted to withdraw the same simultaneously, and a depressible knob mounted on the inside of the door adapted to actuate said slide.

2. In a lock, in combination, a latch bolt, means for withdrawing the same, a lock bolt, a plurality of tumblers for operating said lock bolt to lock the same against sliding, a slide adapted to withdraw said latch bolt and said lock bolt, said slide affording means for moving said tumblers to disengage said lock bolt therefrom, and means for actuating said slide.

3. In a lock, in combination, a case, a latch bolt sliding in said case, means for withdrawing said latch bolt, a lock bolt sliding in said case, a slide adapted to withdraw said bolts simultaneously, a bell crank lever engaging said slide, and a push knob adapted to actuate said bell crank lever.

4. In a lock, in combination, a case, a latch bolt sliding in said case, means for withdrawing said latch bolt, a lock bolt sliding in said case, a slide adapted to withdraw said bolts simultaneously, a bell crank lever engaging said slide, a push knob adapted to actuate said bell crank lever, and a spring normally holding said slide in a forwardly disposed position.

5. In a lock, in combination, a case, a latch bolt, a knob for withdrawing said latch bolt, a slide, a lock bolt, pins carried by said bolts and adapted to be engaged by said slide in advancing, a plurality of tumblers coöperating with said lock bolt and adapted to be operated by a key, means for actuating said tumblers by said slide, and means for actuating said slide.

6. In a lock, in combination, a case, a

latch bolt mounted therein, means for withdrawing said latch bolt, a lock bolt slidably mounted in said case, pivotally mounted tumblers normally engaging said lock bolt to lock the same against sliding, a slide adapted to withdraw simultaneously said latch and said lock bolt, and having a shoe engaging said tumblers when said slide moves, said shoe affording means for disengaging said lock bolt from said tumblers, and means for actuating said slide.

7. In a lock, in combination, a case, a latch bolt sliding therein, means for withdrawing said latch bolt, a lock bolt sliding within said case and adapted to be actuated by a key, a slide, means for guiding the same longitudinally of said bolts, said slide engaging with parts of said bolts for withdrawing the same, a spring normally holding said slide in a forwardly disposed position, a bell crank lever engaging said slide adapted to actuate the same, a stem guided through said case and engaging said bell crank lever to actuate the same, and means for guiding said stem on the exterior of said case.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY C. WALDECKER.

Witnesses:
S. D. CATHERWOOD,
M. J. HARDY.