No. 641,269. Patented Jan. 16, 1900.

A. B. CLAY.

SLIDING DOOR LOCK.

(Application filed Apr. 8, 1899.)

(No Model.)

Fig. 1.

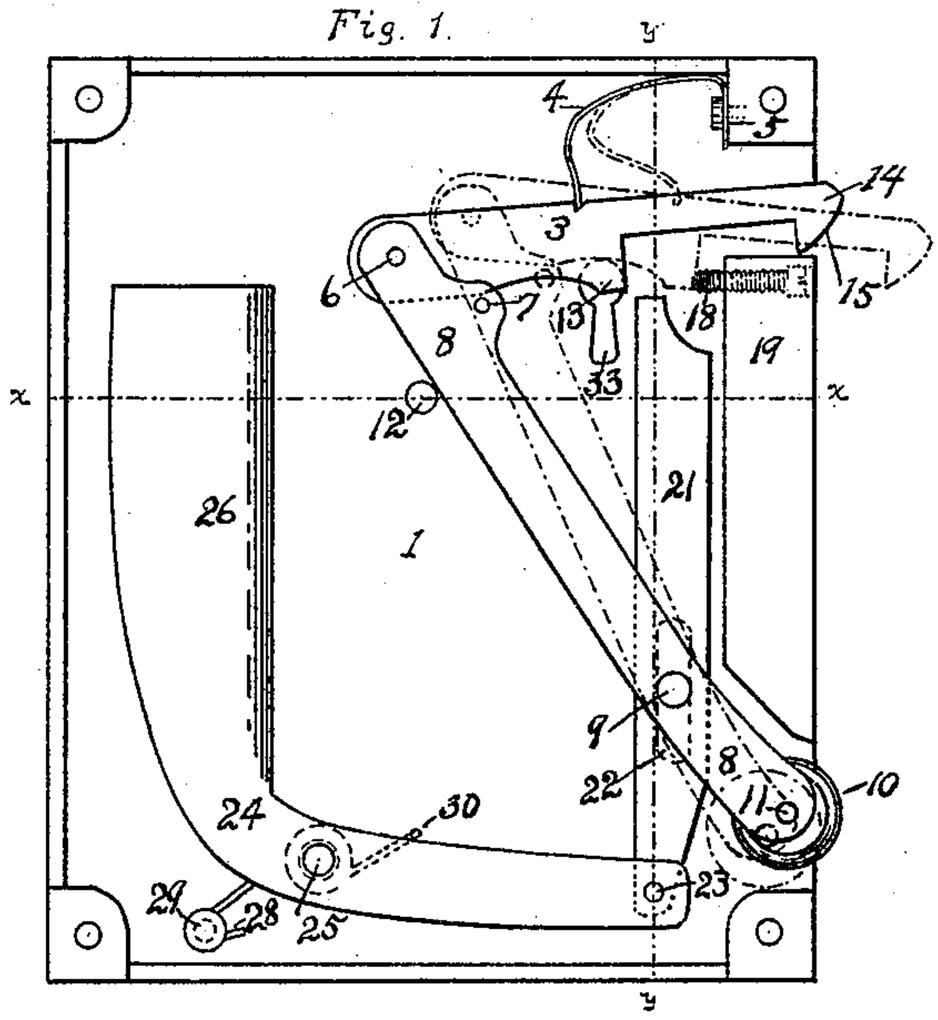


Fig. 5.

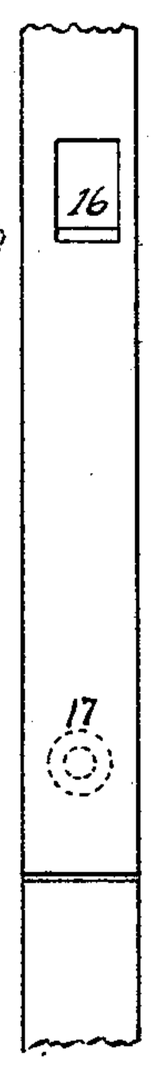


Fig. 6.

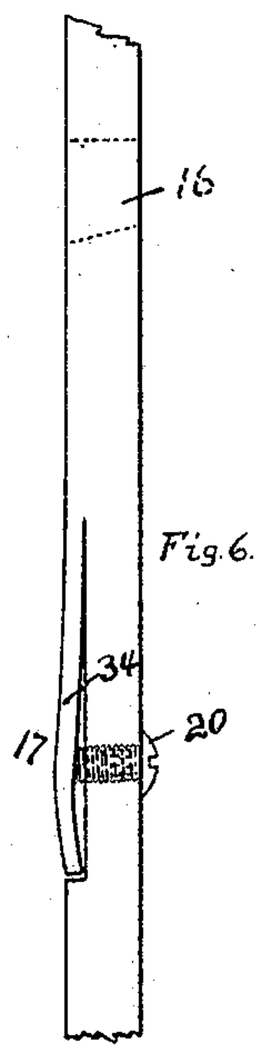


Fig. 2.

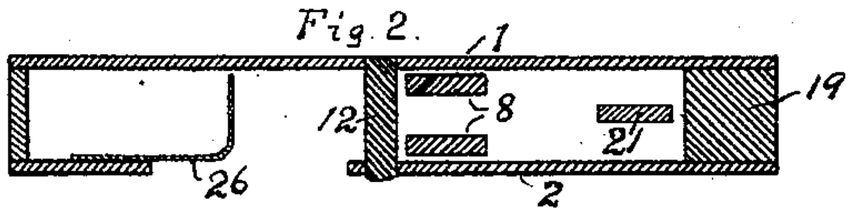


Fig. 3.

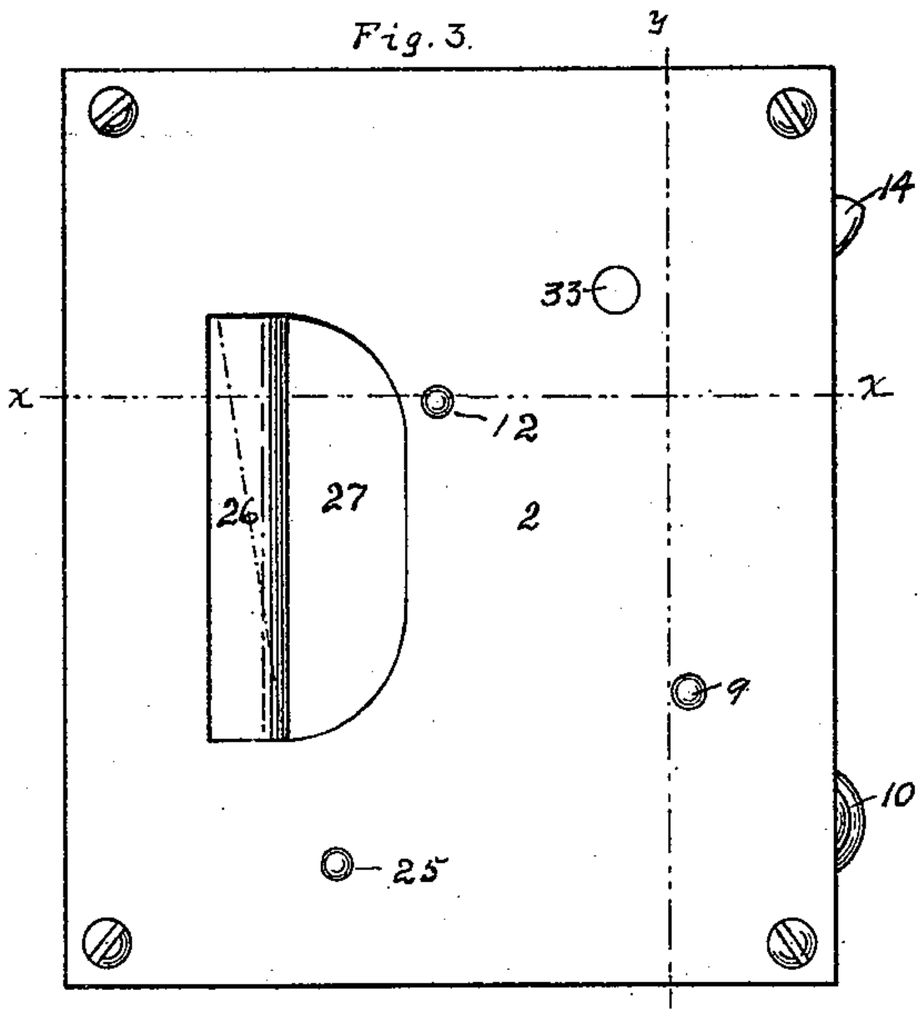


Fig. 4.

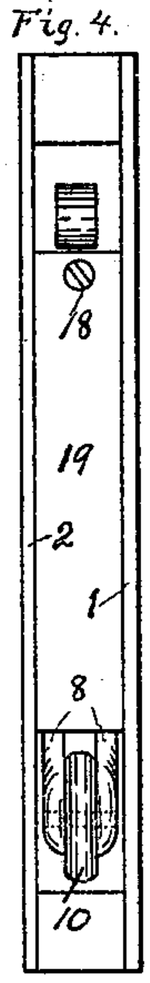
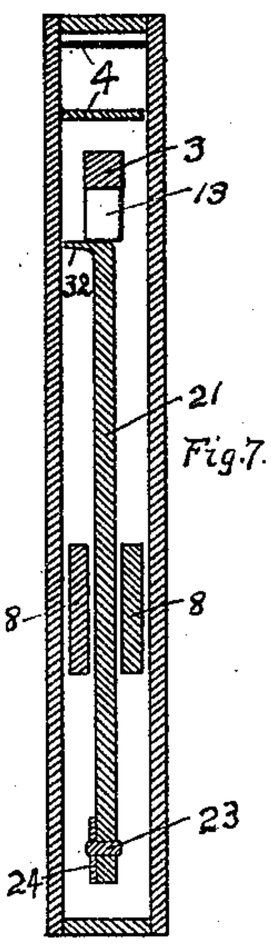


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALBERT B. CLAY, OF SCRANTON, PENNSYLVANIA.

SLIDING-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 641,269, dated January 16, 1900.

Application filed April 8, 1899. Serial No. 712,260. (No model.)

To all whom it may concern:

Be it known that I, ALBERT B. CLAY, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Locks for Sliding Doors, of which the following is a specification.

The invention relates to locks for sliding doors such as are used about elevators and elevator-shafts in modern buildings; and the objects are to provide a lock in which the latch-bolt disappears or is drawn inward when the door on which it is used is open and to improve the efficiency of such locks generally.

To this end the device consists of the construction and combination of parts set forth in the drawings accompanying this specification, in which—

Figure 1 is a general plan view of the interior of one of my locks. Fig. 2 is a cross-section taken on the line *x x* of Fig. 1 or Fig. 3. Fig. 3 is a side elevation of the lock when the top plate is added. Fig. 4 is an edge or end elevation of the same. Fig. 5 is a front view of a door frame or jamb with which the latch-bolt of the lock engages. Fig. 6 is a side view of the same part of door frame or jamb as that shown in Fig. 5. Fig. 7 is a view in cross-section taken on the line *y y* of Fig. 1 or Fig. 3.

Similar figures of reference denote corresponding parts throughout the several views.

In the drawings, 1 designates the case in which the parts of my lock are assembled and is adapted to be closed by a top plate 2, secured by screws at the corners or by any other suitable means. The latch-bolt 3 is pressed downward and inward by the flat flexible spring 4, secured to the corner of the case by a rivet or screw 5. The inner end of the said latch-bolt is pivoted at 6 to a lever 8, and the said lever 8 is also pivoted to a post 9, secured to the lock-case and serving as a fulcrum. The lower end of the lever 8 is provided with a roller 10, the said roller extending beyond the confines of the lock-case and revolving on a pin 11. The lever 8 is made from two similar pieces, being held together by the pins 11, 6, and 7, the pin 7 also serving as a stop to prevent the latch-bolt from being pressed downward too far. Extending in an upright direction between the two halves of the lever 8 is the slide 21, having a slot 22, through which the post 9 extends in order to direct the slide 21 in the proper direction. The upper end of the slide 21 is provided with a lip or nib 32, so as to insure its striking against the projection 13 of latch-bolt 3 when it is desired to disengage or open the latch. The lock is also provided with a keyhole 33, extending into the lock from the opposite side, and with the hand-hole 27, cut through the top 2 on the elevator side of the lock. The slide 21 is operated by means of an L-shaped lever 24, pivoted to the slide at 23 and fulcrumed at 25 and provided with a grasping-piece 26. The lever is constrained to remain in its normal position by means of an ordinary helical spring wound about the post 25 of its fulcrum and having one end 28 hooked to a peg 29 and the other end 30 of the spring pressing on the upper edge of the horizontal portion of the lever 24. The front edge of the lock is provided with a solid piece of metal 19, through which a set-screw 18 extends and may be adjusted from the outside, the inner end of the set-screw engaging with the projection 13 to prevent the latch-bolt from being drawn outward when it is in engagement with the socket 16. By means of this set-screw the latch-bolt is capable of adjustment to reach the proper distance, according to thickness of the jamb or depth of the socket with which it engages.

In the operation of the lock when placed on a sliding door a portion of the jamb 17 is struck by the roller 10, driving the lower end of the lever 8 inward and throwing the latch-bolt outward, as indicated by the dotted lines, the curved surface 15 serving to guide the hook 14 of the latch-bolt into the socket 16. To more certainly provide that the roller 10 will be pressed inward sufficiently, a tongue 34 may be cut into the jamb and pressed forward by means of a set-screw 20, so that the surface 17 will extend a little beyond the level of the rest of the jamb and effect the proper motion. The door being locked, when it is desired to unlock the same from the elevator side of the door the fingers are pressed against the grasping-piece 26, which lifts up on the slide 21, the nib of which presses upward on the projection

13 of the latch-bolt 3, lifting it up until it disengages with the socket 16. The action of the spring 4 then draws the latch-bolt back to the position shown in full lines and the pressure of the hand on 26 causes the door to slide open while the roller 10 is set forward ready for action again. A post 12 stops the lever 8, limiting the outward projection of the roller 10.

If instead of opening from the elevator side it is desired to open the lock from the outside, a key is used in the hole 33, the bit of the key being adapted to lift the latch-bolt 3 out of engagement in a similar manner to the slide 21.

I do not wish to be confined to the exact construction set forth, as it is evident that many of the details of my lock may be varied without departing from the general spirit of the invention.

What I do claim, and desire to secure by Letters Patent, is—

1. A lock of the kind described having a latch-bolt provided with a catch adapted to engage with the socket of a jamb, the inner end of said latch-bolt being pivoted to a lever the said lever being fulcrumed and provided with a roller extending outward of the lock and said roller adapted to strike a portion of the jamb with which the latch-bolt engages and automatically to throw the latch-bolt out into engagement, substantially as specified.

2. In a lock for sliding doors the combination of a latch-bolt pivoted to one end of a lever, the said lever being provided with an external projection at its other end adapted to strike against a jamb and provided with a fulcrum between the external projection and the latch-bolt, whereby, the latch-bolt may automatically be thrown outward into engagement with a socket in the jamb when the door is slid shut, substantially as specified.

3. In a lock for sliding doors, a lock-case, a latch-bolt pivoted to a lever, the said lever fulcrumed within the lock-case and having a projection extending beyond the confines of the lock-case and adapted to be driven inward automatically in the process of closing the door for the purpose of throwing the latch-bolt outward and means for releasing said latch-bolt, substantially as specified.

4. In a lock for sliding doors, a lever, a projecting roller on the end of said lever in combination with a hooked latch-bolt pivoted to the other end of said lever and adapted to hook into a socket, means for disengaging said latch-bolt, and a spring adapted to draw the said latch-bolt within the lock-case automatically when disengaged, substantially as specified.

5. In a lock of the kind described the combination of a hooked latch-bolt pivoted to a lever the said lever being provided with a stop determining its angle with the latch-bolt and a spring constraining the said latch-bolt to impinge on said stop, and the said spring also adapted to hold the said latch-bolt and lever to the inner limit of their course, with means for driving said latch-bolt outward into engagement as specified.

6. In a lock the combination of a spring and lever controlled latch-bolt 3 the said latch-bolt having a projection 13, adapted to act as a stop, limiting its outward motion, with a lock-case having an adjustable screw 18 secured to a portion thereof and adapted to engage with the said projection and limit the inward motion of the said latch-bolt, together with means for engaging and releasing said latch-bolt, substantially as specified.

7. In combination with a lock for sliding doors, a latch-bolt adapted to project therefrom and engage with a socket in a jamb, a jamb having a suitable socket for said purpose, a projection from said lock adapted to strike the jamb aforesaid and be driven inward, of the lock, and automatically to drive the said latch-bolt out into engagement; together with a portion of said jamb capable of adjustment at the contact-point of the aforesaid projection for the purpose specified.

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

ALBERT B. CLAY.

Witnesses:
EDITH SCHWEIRS,
D. G. MORAN.