

(No Model.)

A. H. C. TREPTE.
SLIDING DOOR LOCK.

No. 573,934.

Patented Dec. 29, 1896.

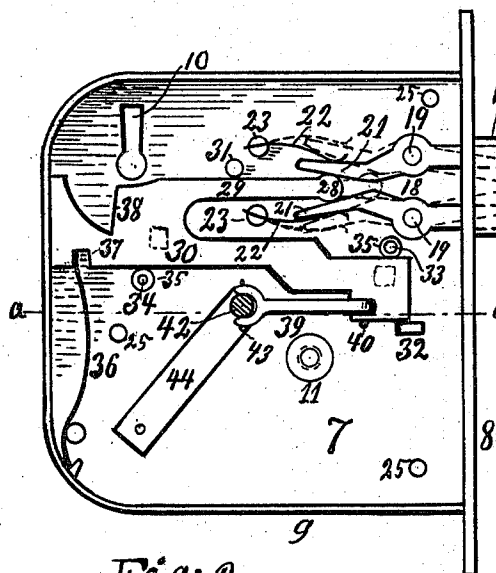


Fig:2.

Fig:5.

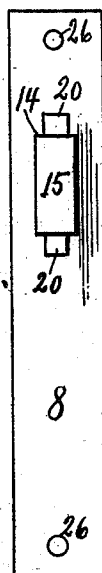


Fig:6.

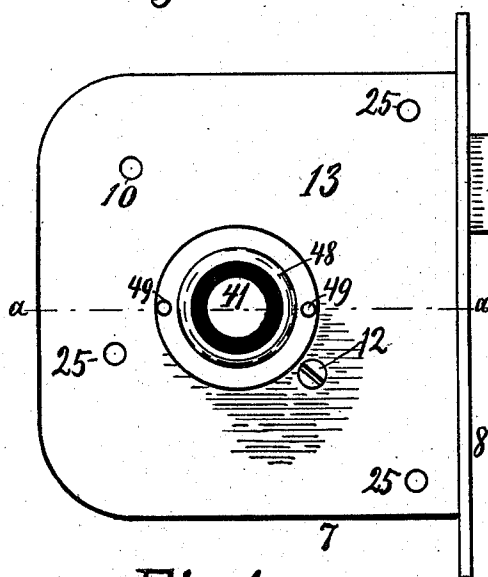


Fig:1.

Fig:4.

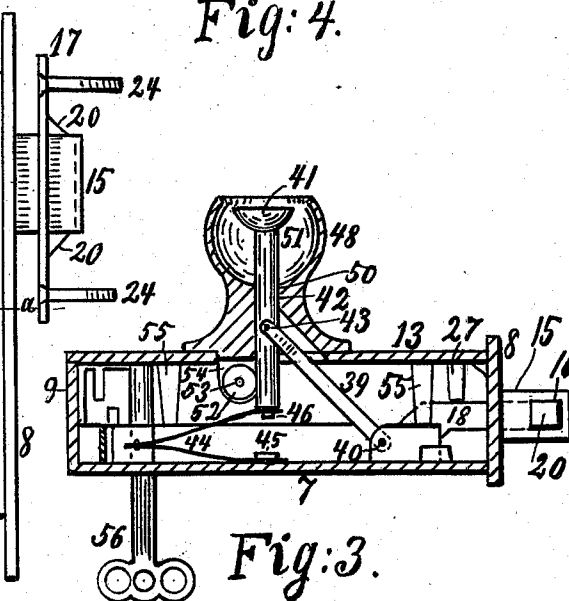


Fig:3.

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UNITED STATES PATENT OFFICE.

ALFRED H. C. TREPTE, OF ST. PAUL, MINNESOTA.

SLIDING-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 573,934, dated December 29, 1896.

Application filed December 9, 1895. Serial No. 571,522. (No model.)

To all whom it may concern:

Be it known that I, ALFRED H. C. TREPTE, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Locks for Sliding Doors; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in locks, the main features of which may be applied in locks for doors, drawers, trunks, &c., but are especially adapted for sliding doors used for elevator-shafts, bank-inclosures, &c., usually made of wirework or light iron.

It will be observed that in ordinary locks of the self-locking type the locking-bolt is spring-held forward into the locking position, and the lock may therefore be picked or opened by any instrument pressing against the front end of the bolt or by inserting a knife or chisel between the lock and the striking-plate and by the sharp edge of the instrument take hold of the surface of the bolt and push it back, or if instead of a plain bolt one or two hooks are used for taking hold of the striking-plate such hooks may likewise be disengaged from the striking-plate by pressing upon them with a suitable instrument in front of the lock, as already stated.

It will further be observed that many an accident has been caused by the doors of elevators being opened by others than the regular operator, and that the opening has been done by putting a finger or two through the wirework surrounding the lock and touching the locking device on the inner side of the door.

The object of my invention is to overcome the above-described defects and thus avoid the consequences thereof, and I attain my objects by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my complete lock as viewed from the inside of an elevator-door. Fig. 2 is a side elevation the same as

in Fig. 1, only that the cover of the lock-case and the striking-plate are removed. Fig. 3 is a sectional view as on the line *a a* in Figs. 1 and 2. Fig. 4 is a front edge view of the lock. Fig. 5 is an edge view, and Fig. 6 is a side or plan view, of the striking-plate.

Referring to the various parts by reference-numerals, 7 designates the case or frame of the lock, which has the regular face 8, rim 9, keyhole 10, and internally-screw-threaded stud 11 for receiving the screw 12, by which the cover 13 is held in place and forms one of the side walls of the lock-case.

The face 8 of the lock is provided with an elongated hole 14, around which is provided upon the outside of the face a rigid pocket 15, having two oppositely-located apertures 16 near its front end at such a distance from the face 8 as to insure their passing through the striking-plate 17 when the door is shut.

18 are two levers pivotally placed upon the studs 19 and provided with the hooks 20, projecting out of the apertures 16 at opposite sides of the pocket. The rear ends of said levers 18 are normally held toward each other by the springs 22, secured in the posts 23, so that the beveled hooks 20 are at all times ready to slip into and take hold at the back side of the striking-plate 17, and when thus locked there is no access to the hooks by any instrument inserted between the lock and the striking-plate, the pocket 20 being there solid.

In Fig. 1, 24 are the screws by which the striking-plate 17 may be secured to the door-frame, and 25 are the rivets by which the lock is secured to the door. If the latter is of a shape to admit it, the lock may be secured by screws passed through the holes 26. (Shown in Fig. 4.)

Turning again to the levers 18, it will be observed that they are kept in place on their studs 19 by a lug 27 (shown in Fig. 3) and are to be spread against the resistance of the springs 22 by the rounded end 28 of the arm 29, that extends from a sliding plate or slide 30, which slides guidingly between the guiding-lugs 31, 32, 33, and 34, of which the two latter carry antifriction-rollers 35.

36 is a flat spring of which the upper end engages the notch 37 in the slide and holds it normally in the retracted position shown in Fig. 2.

38 is the notch in the slide in which the bridge of the key takes hold and pushes the slide toward the front of the lock when the latter is to be unlocked by means of the key from the outside. The slide 30 may also be urged forward and unlock the lock from the inside of the door by means of the oblique rod 39, pivoted to the slide at 40, and the push-button 41 and its pushing-rod 42, to which the other end of the rod 39 is pivoted at 43.

44 is a V-shaped flat spring having holes in its arms, which are dropped upon the stem 45 of the lock-case and 46 of the pushing-rod.

48 is the knob or handhold by which the door is moved on its track. This knob is in the present instance secured to the lock by the rivets 49. It has a central hole 50, in which the rod 42 slides, and a cavity 51, in which the press-button 41 is housed and guarded from sight and out of reach of those outside the door, even though the latter may have little meshes, as is often the case with the class of doors referred to.

52 is an antifriction-roller guidingly touching the rear side of the pushing-rod 42. It is journaled on the pin 53, secured in two lugs 54, of which one is shown in Fig. 3, and which may preferably be made integral with the knob 48.

55 are lugs projecting from the cover of the lock and serve to keep the slide 30 in position against the opposite side of the lock.

The spring 44 assists in moving the rod 42 and button 41 back into their normal position after receiving a push.

In operation, if the lock is used, for instance, on a sliding elevator-door, with the striking-plate 17 secured on the frame thereof, the operator uses the key 56, opens the door, removes the key, enters the elevator, and uses only the knob 48 and press-button 41 from the inside. Every time he wants to open the door he takes hold of the knob 48, and with the thumb of the same hand grasping the knob he presses on the button 41, which causes the rod 39 to push the slide 30 forward, whereby the arm 29 28 is forced in between the ends 21 of the levers 18, the jaws 20 disengaged from the striking-plate, and the door is instantly unlocked. The locking of the door is simply done by a push on the knob 48, so as to shut the door, and the locking mechanism locks itself. The slanted shape of the hooks

20 makes them slip through the striking-plate by assuming the position shown in dotted lines in Fig. 2, and the springs 22 cause the hooks to spread and engage the striking-plate after passing through it.

It is obvious that in a simplified style of this lock the antifriction-rollers may be dispensed with, and so may either the key or the knob or push-button.

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

1. A lock having a striking-plate and a pair of spring-held pivoted levers projecting through the face-plate of the lock and having their front ends formed into hooks adapted to slip through and take hold of the striking-plate, a rigid pocket or socket upon the front face of the lock, surrounding and shielding the hooks between the lock and the striking-plate; a guided slide inside the lock, having an arm entering between and spreading the rear ends of the said levers so as to unlock the hooks on the front ends, a key for moving said slide in between the levers, a spring for retracting the slide when released from the key, and springs for holding the levers normally toward the slide, and their hooks projecting beyond the sides of the pocket, substantially as shown and described.

2. In a lock of the class described, the combination of the striking-plate 17, the hooks 20, for taking hold of said plate, and spring-closed pivoted levers 18, extending from the hooks, the slide 30, normally spring-held toward the rear of the lock and having the notch 38, for a key to engage, and the arm 29 with the rounded end 28, entering between the rear ends 21, of the levers 18; a spring-held push-button upon one side of the lock with a pivoted connecting-rod pushing forward on the slide when the button is pressed on, and upon the other side of the lock a removable key as 56, adapted to engage the notch 38, substantially as and for the purpose set forth.

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

ALFRED H. C. TREPTE.

Witnesses:

A. M. CARLSEN,
FRITZ MACK.