

L. P. EDES.
LOCK FOR ELEVATOR DOORS.
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1,035,174.

Patented Aug. 13, 1912.

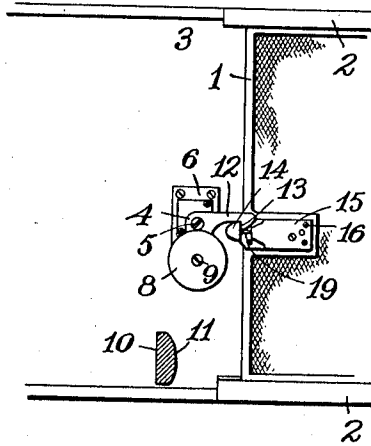


Fig. 1.

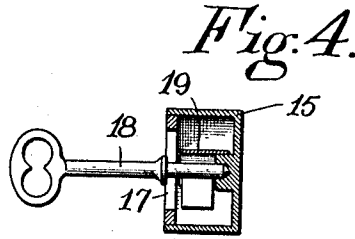


Fig. 4.

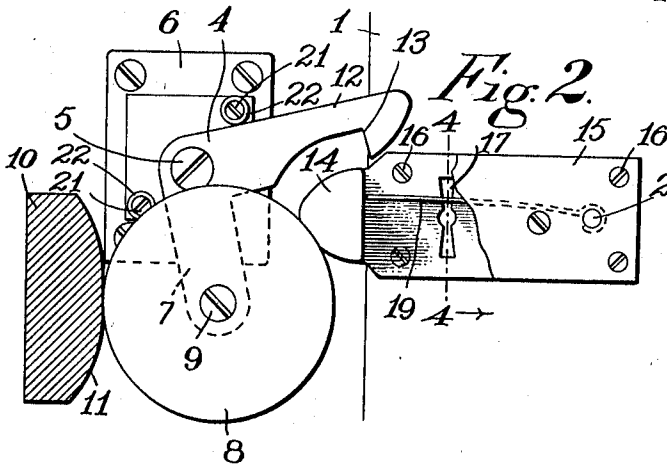


Fig. 2.

Fig. 5.

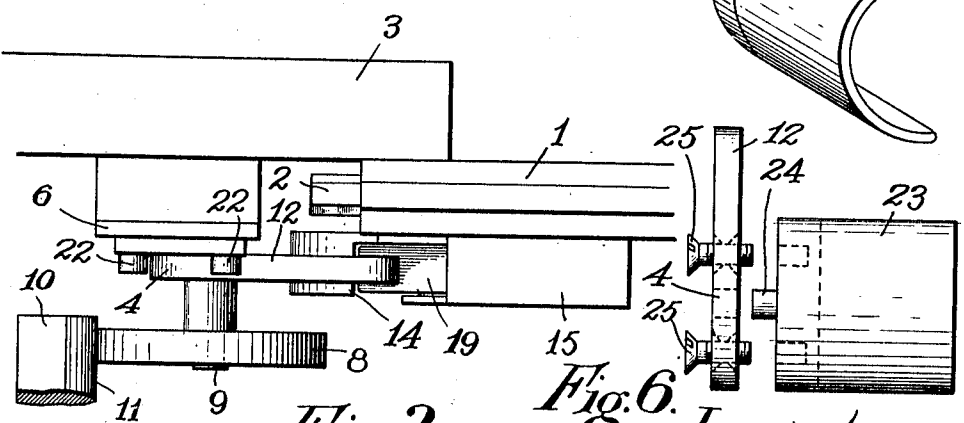
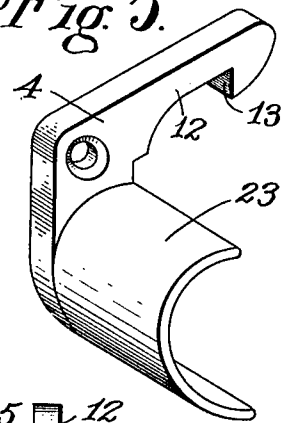


Fig. 3.

Fig. 6.

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LOCK FOR ELEVATOR-DOORS.

1,035,174.

Specification of Letters Patent.

Patented Aug. 13, 1912.

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To all whom it may concern:

Be it known that I, LOUIS P. EDES, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Locks for Elevator-Doors, of which the following is a specification.

My invention relates to improvements in locks for elevator doors in which the elevator door is locked except when the elevator car is at the particular landing, and the objects of my invention are to provide a lock which remains fastened except when the elevator car is at a particular level; one which is noiseless in operation and which is opened automatically by the arrival of the elevator car, and which, at other times can be opened only by the use of a key. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of a portion of the elevator door and casing looking outward from the elevator shaft, and showing the position of the lock when closed. Fig. 2 is a detail view of the lock in an open position, on a larger scale than Fig. 1. Fig. 3 is a top view on the scale of Fig. 2. Fig. 4 is a section on the line 4—4, Fig. 2, showing a key inserted to open the lock, and Figs. 5 and 6 are perspective and end views respectively of a modification of the separate latch.

Similar reference characters refer to similar parts in the different figures.

The door 1 slides on ways 2 supported by the casing 3 of the elevator shaft, and the lock for the door 1 comprises a bell crank lever or latch 4, pivoted by a screw 5 in a plate 6 attached to the casing 3. The lower arm 7 of the bell crank 4 is provided with a wheel 8 pivoted thereto by a screw 9 and arranged to be engaged by an arm 10 projecting from the elevator car, and shown in section in Figs. 1 and 2. The arm 10 is provided with a cam face 11 arranged to engage the wheel 8 and rock the bell crank 4, thereby lifting the other arm 12 of the bell crank. Upon the end of this arm 12 is provided a hook 13 arranged to engage, when the bell crank 4 is in its normal position, a projecting arm 14 fastened on the elevator door 1, thereby holding the door from opening. The arm 14 extends outwardly from a hollow receptacle 15 shown in section in Fig. 4, which is fastened to the door 1 by screws 16 and is provided

upon the front side of the door 1 with a key hole 17, as shown in Fig. 2, for the insertion of a key 18, as shown in Fig. 4. Immediately above the key hole 17 is a blade spring 19 fastened to the front side of the receptacle 15 at 20 and arranged to be below the hook 13 on the arm 12 when the hook is in engagement with the arm 14. This provides for the lifting of the arm 12 and disengagement of the hook 13 by the use of the key and the unlocking of the door irrespective of the position of the elevator car in the shaft.

Screws 21 are inserted in the plate 6 and are inclosed in rubber cylinders 22, thereby forming bumpers arranged to check the excessive movement of the bell crank lever 4 in either direction, and providing for the action of the elevator lock without the noise of metal striking upon metal.

The arm 10 of limited extent on the elevator car prevents the opening of the lock except when the elevator car is at a particular level, and the position of the arm 10 and bell crank lever 4 may be so adjusted as to prevent the opening of the door until the elevator car is at the proper level, so that when the door is open the elevator car is in the correct position with relation to the landing, obviating all danger of tripping in entering or leaving the elevator car.

The impossibility of opening the lock without a key, except automatically by the elevator car, makes my improved construction an actual lock for an elevator door, and prevents all careless and unnecessary opening of the door at inopportune times. The action of the elevator car is sufficient to unfasten entirely the door and not merely to release the lock, so that when the elevator car is in correct position nothing is necessary to enter or leave the elevator car but to slide back the door, no further unlocking is required.

The construction shown in Figs. 5 and 6 shows the bell crank 4 provided with a contact plate 23 instead of the wheel 8, to receive the arm 10 on the elevator car. As shown in Fig. 6 this contact plate is provided with a central pin 24 arranged to be inserted in an opening in the bell crank 4 and is attached to the bell crank 4 by screws 25. The screws 25 are arranged to be inserted in the bell crank in either direction, thereby providing for the attachment of the contact plate 23 to the bell crank on either

side and its use for both right and left hand elevator doors.

I claim,

1. The combination with an elevator door 5
and an elevator car, of a lock for said door, comprising a hollow arm attached to said door, a hook operated by the elevator car and arranged to engage said arm, a blade held inside of said arm arranged to be 10
moved to disengage said hook from said arm, and an opening in said arm for the insertion of a key to operate said blade.

2. The combination with an elevator car, 15
a door and a casing for said door, of a lock on said door, a bell crank lever pivoted on said casing, with one arm of said bell crank lever arranged to engage said lock, means in said lock arranged to be moved to lift said 20
arm and disengage said lever, and means carried by said elevator car for engaging the other arm of said bell crank lever, thereby also operating said lever by the movement of said elevator car.

3. The combination with an elevator car, 25
a door and a casing for said door, of a lock on said door, a pivoted lever on said casing,

with one arm of said lever arranged to engage said lock, means carried by said elevator car arranged to swing said pivoted lever when the floor of said elevator car is on 30
the same horizontal plane as the lower side of said door and thereby disengage said lever from said lock, and means in said lock arranged to be moved in order to lift said arm and also disengage said lever from said 35
lock.

4. The combination with an elevator car, a door and a casing for said door, of a bell crank lever pivoted on said casing, a catch held on said door arranged to be engaged 40
by one arm of said bell crank lever, an arm on said elevator car arranged to engage the other arm of said bell crank lever, swing said lever and disengage it from said catch, and means in said catch for moving said en- 45
gaging arm of said lever, thereby also disengaging said lever from said catch.

Dated this tenth day of January 1911.

LOUIS P. EDES.

Witnesses:

PENELOPE COMBERBACH,
NELLIE WHALEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."