Dec. 4, 1923. 1,476,254

M. JACOBSKY

ELEVATOR DOOR LOCK

Filed Feb. 24, 1923

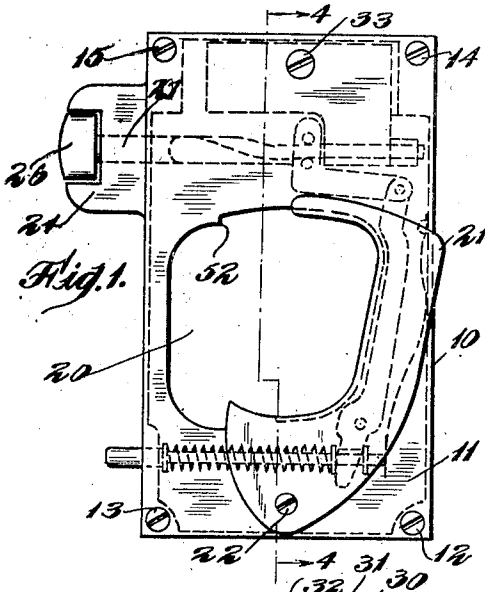


Fig. 1.

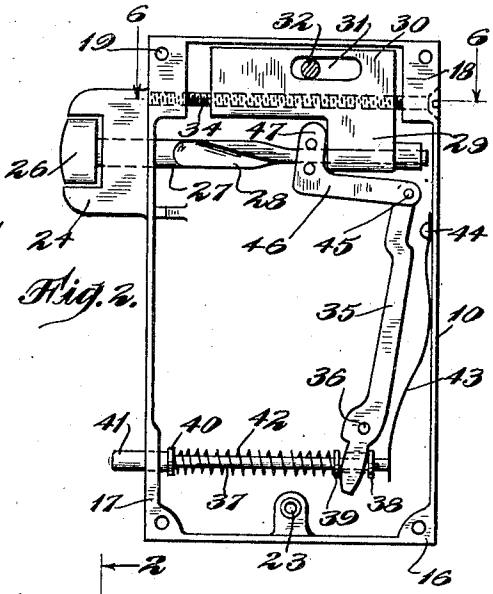


Fig. 2.

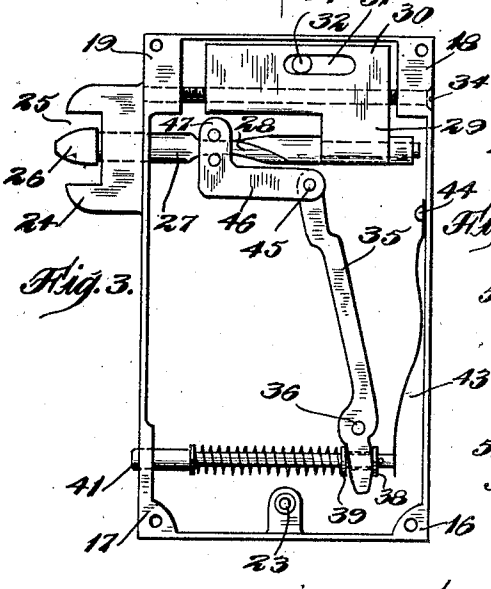


Fig. 3.

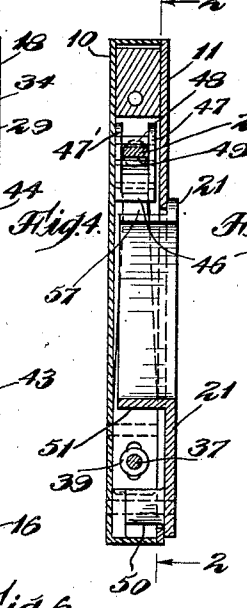


Fig. 4.

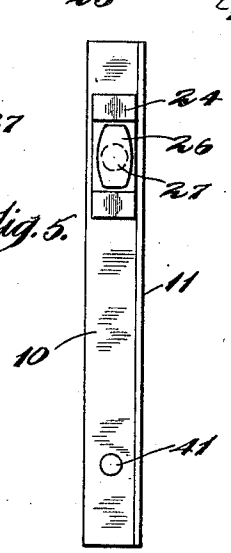


Fig. 5.

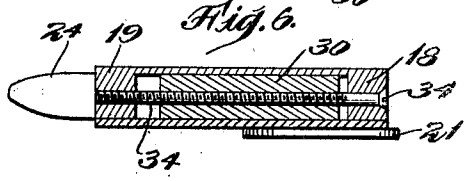


Fig. 6.

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UNITED STATES PATENT OFFICE.

MAXIM JACOBSKY, OF NEW YORK, N. Y.

ELEVATOR-DOOR LOCK.

Application filed February 24, 1923. Serial No. 620,912.

To all whom it may concern:

Be it known that I, MAXIM JACOBSKY, a citizen of Poland, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Elevator-Door Locks, of which the following is a specification.

This invention relates to improvements in locks, particularly locks intended for use with elevator doors and it is the principal object of my invention to provide a lock of this type which will automatically lock the elevator door in its closed position, thus preventing accidents.

Another object of the invention is to provide a simple elevator door lock which is inexpensive to manufacture, durable, and which can be readily attached to any elevator door now in common use.

A further object of the invention is to provide a lock which is also adapted for use with car doors, as for instance subway cars, or, with the operation by a key for house doors, or the like, in short with doors of all descriptions.

A still further object of the invention is the provision of a lock allowing an adjustment of the operating parts to suit the varying measurement of the door jambs.

It is also the object of my invention to provide a readily and conveniently operating handle for opening the locked door by an easy manipulation of the handle.

These and other objects of my invention will become more fully known as the description thereof proceeds, and will then be specifically pointed out in the appended claims.

In the accompanying drawings, forming a material part of this disclosure:

Figure 1 is a side elevation of an elevator lock constructed according to the present invention.

Figure 2 is a similar view with the cover removed, with the lock in open position looking in the direction of arrows 2—2 of Figure 4.

Figure 3 is a view similar to Figure 2 with the lock in locking position.

Figure 4 is a longitudinal section through the lock on line 4—4 of Figure 1.

Figure 5 is an end view.

Figure 6 is a cross-section on line 6—6 of Figure 2.

As illustrated in Figures 1 to 6 inclusive, the lock comprises a casing 10 adapted to be secured to an elevator door and closed at its front by means of a cover plate 11 adapted to be attached to the casing by means of screws 12, 13, 14, 15 adapted to enter suitable holes in the corner pieces 16, 17, 18, 19 in the casing.

The cover plate 11 has a central opening 20 for the reception of the hand of the operator for operating a finger grip or handle 21 pivotally secured at its lower end by means of a screw 22 entering a socket 23 in the casing.

Integrally made with the casing is a guide block 24 arranged at the upper end of one of the edges of the casing and recessed as at 25 to guide a locking latch 26 upon the outer end of a stem 27, the central part of which within casing 10 is provided with a spiral groove 28, while its rear end is revolving in a lip 29 on a block 30, provided with a longitudinal slot 31 in its body part.

This block is movable within casing 10, and the shaft 32 of a screw 33 is guided within slot 31. An adjusting screw 34 is passed through corner piece 18 and block 30 and is adapted to enter corner piece 19 and block 30 can be adjusted in the direction of its longitudinal axis within the casing by the proper manipulation of screw 34 for a purpose hereinafter more fully to be explained.

Within the casing 10, an operating lever 35 is pivotally secured near one of its ends to a pin 36 projecting from the rear wall of the casing, and through a suitable perforation in its lower end, a horizontal bar 37 is guided, which carries collars 38 and 39 to both sides of the lever 35, and a collar 40 near its front end which is formed into a head 41 projecting out of casing 10 at the lower end of the edge thereof which carries block 24 near its upper end.

A spiral spring 42 is wound around bar 37 between collars 40 and 39 tending to normally hold the head 41 in its extended position. The rear end of bar 37 beyond collar

38 is engaged by the lower end of a leaf spring 43 attached at its upper end as at 44 to the inner edge wall of the casing 10.

The upper end of lever 35 is pivotally secured as at 45 between the forked ends of a link 46, the other end of which carries angularly disposed thereto two jaws or cheeks 47, 47' connected by two pins 48, 49 engaging between themselves the spiral groove 28 of stem 27.

The handle 21 is provided with an inner socket 50 adapted to engage socket 23 and has also an inner lateral depending flange 51 adapted to engage the inner wall of opening 20 and shoulders 52 in cover plate to limit the movements of handle 21 in one and the other direction.

The device operates as follows:

When the elevator door is moved into closing position by the elevator operator, or slammed, the head 41 will engage the keeper in the jamb of the door and will be pressed inwardly by the contact therewith. This inward motion of head 41 and consequently its shaft or bar 37 will be communicated by the engagement of collar 39 with lever 35 to said lever, which in turn will move link 46 towards the left so that pins 48 and 49 gliding along the outer edges of spiral groove 28 will impart to stem 27 a rotary motion, sufficient to turn latch 26 from its normal position Figures 1 and 2 into its locking position illustrated in Figure 3, in which it will remain until handle 21 is operated by turning it to the right, so that its flange 51 will engage lever 35 pressing the same back against the action of springs 42 and 43 so that link 46 glides in the opposite direction along the helical groove 28 of bar 37, and this bar will be rotated to bring latch 26 into its unlocking position allowing an opening of the door.

An adjustment of the block 30 by means of screw 34 will permit an accommodation of the lock to various sizes of door jambs.

It will be clear that changes may be made in the general arrangement and in the construction of the minor details of my invention without departing from the scope and spirit thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States is:

1. A lock comprising a locking member, means for automatically moving said member into its locking position upon the closure of a door, hand operated means for returning said member into its original unlocking position, and means for allowing an adjustment of said locking member to suit various door jambs.

2. A lock comprising a rotatably arranged locking member, a spring controlled contact member, means for rotating said locking member into its locking position upon the operation of said contact member, a hand operated handle for operating said member, rotating means to rotate said locking member into its original unlocking position, and means to accommodate the locking member to various door jambs.

3. In a lock of the class described, a rotating locking member, having a spiral groove, an operating lever, adapted to engage the spiral groove walls for rotating said member into and out of its locking position, spring controlled contact means for operating said lever to rotate said locking member into its locking position, a handle for operating said lever to turn said locking member into its normal unlocking position, and means for allowing an adjustment of said locking member to suit various sizes of door jambs.

4. In a lock of the class described a rotatably arranged locking member having a spiral groove, an operating lever pivoted near its lower end, a link attached to said lever adapted to engage the walls of the spiral groove of said member for rotating the same upon the operation of said lever, a spring controlled rod, a contact head on said rod projecting out of the lock casing, means on said rod for engaging said lever to operate the same to turn said locking member into locking position upon the engagement of said head by a door jamb, a handle having a flange adapted to engage said lever for rotating said locking member into its normal unlocking position, a sliding block forming a bearing for the rear end of said locking member, and a screw passed through said block for allowing an adjustment of said locking member to suit various door jamb constructions.

5. A lock comprising a casing, a removable front cover for said casing having a central opening, shoulders formed in the walls limiting said opening, a rotary locking member transversely arranged in said casing and having a spiral groove within the same, a latch head on said member projecting from said casing, a perforated sliding block in which the rear end of said locking member is guided, means for guiding said block in said casing, a screw passed through said block for allowing an adjustment of the same and of the member to project said latch head to suit the varying door jamb constructions, a pair of cheeks, a pair of pins connecting said cheeks and engaging the walls of the spiral groove of said locking member, a link carrying said cheeks and having a forked rear end, an operating lever pivoted to the rear wall of said casing near its lower end, its upper end pivoted between the prongs forming the forked end of said link, a contact rod passed through the extreme lower end of said lever, collars on said rod in front and rear of said lever, a

spring wound around said rod adapted to press its head out of the casing, a leaf spring engaging the rear end of said rod, a handle rotatably secured near its lower end to said cover, a flange on said handle adapted to engage said operating lever for normally operating said locking member to return into its normal unlocking position, the end of said flange adapted to engage the shoulders formed in the cover opening for limiting the inward movements of said handle.

In testimony whereof I have affixed my signature.

MAXIM JACOBSKY.