Nov. 10, 1925. 1,561,018

C. W. PEELLE

LOCK FOR ELEVATOR DOORS

Filed Dec. 12, 1924

Fig. 1.

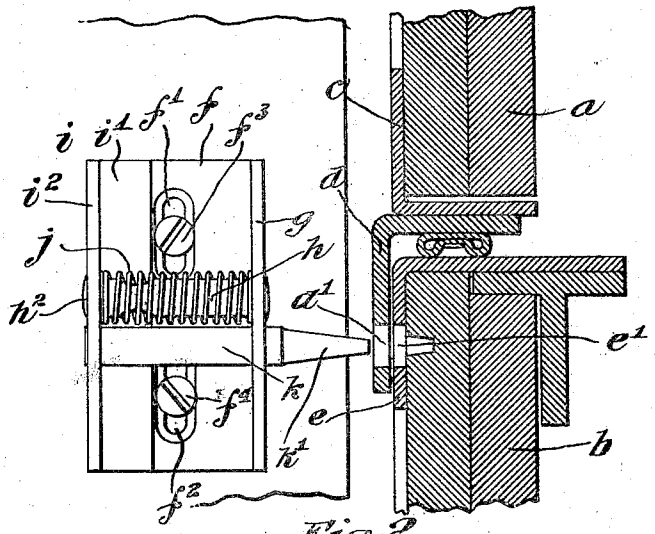



Fig. 2.

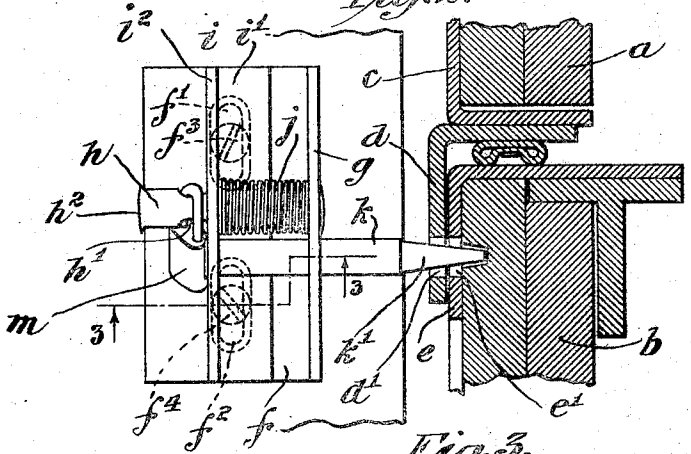
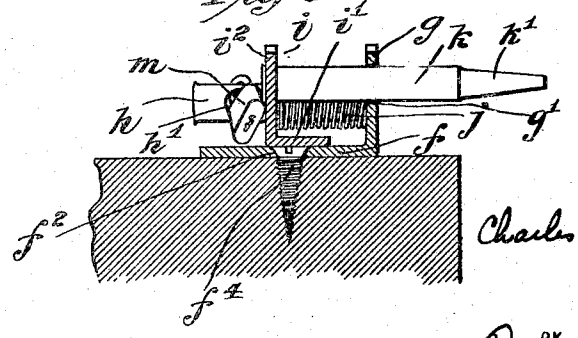



Fig. 3.




Charles W. Peelle

INVENTOR

BY Frank P. Wentworth

his ATTORNEY.

Patented Nov. 10, 1925. 1,561,018

# UNITED STATES PATENT OFFICE.

CHARLES W. PEELLE, OF NEW YORK, N. Y., ASSIGNOR TO THE PEELLE COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

## LOCK FOR ELEVATOR DOORS.

Application filed December 12, 1924. Serial No. 755,442.

*To all whom it may concern:*

Be it known that I, CHARLES W. PEELLE, a citizen of the United States, residing at Douglas Manor, in the borough of Queens, city of New York, county of Queens, and State of New York, have invented certain new and useful Improvements in Locks for Elevator Doors, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to locks for elevator doors, and more particularly to a night or dead lock which may be released and set from the loft side only of an elevator door, and cannot be disturbed by unauthorized persons even from the loft side except by the breakage of the lock.

In many loft buildings, different floors are occupied by different business concerns, all lofts being accessible by means of the same elevator. Under such conditions, it is desirable for a concern occupying each loft to make the premises occupied by them inaccessible from the elevator, except by a watchman or some authorized person possessing a key by which the lock used for this purpose may be made inoperative from the loft side. A lock embodying my invention is so constructed that the means for securing the mechanism in relation to the elevator doors is so protected that when the lock is set, it cannot be removed and replaced in its entirety without disturbing the sealing mechanism, and thus permitting access to a loft from the elevator car and concealment of the fact that such access has been made, and the subsequent replacement of a lock to conceal the fact that the doors have been opened.

The lock made the subject of my invention is particularly adapted for use with doors of the vertically moving type.

A night or dead lock embodying my invention is so constructed that it may be attached to the wall of the building in a position where it may readily co-operate with the sections of doors having a vertical sliding movement, or either of them, and yet while in its normal released position be out of the path of movement of the door sections, or either of them. The construction is such that when the bolt of the lock is set, it may be held against possible release by means of a padlock or other device, thus preventing the unauthorized retraction of the bolt and consequent release of the doors. This locking mechanism is also so constructed that when the bolt is thus engaged with either or both of the door sections, the means securing the lock upon the wall of the building are so protected that the lock in its entirety may not be removed for the purpose of releasing the doors, except as a result of the breakage of the padlock or of the lock itself. In this manner the occupant of a loft or floor may prevent access to the floor from a car within the elevator shaft, or access to a car within the shaft from the floor, by unauthorized persons, and without the use of force in releasing the doors to permit their opening or closing.

The invention consists primarily in a lock for elevator doors consisting of a base plate permanently secured to the building wall adjacent an elevator door, a plate slidably mounted upon said base plate, a bolt carried by said plate, and adapted to enter a socket formed in an elevator door, means acting to normally retract said bolt from the path of movement of the door, and means whereby said last named means may be made inoperative, said slide carrying the bolt having a flange adapted to prevent access to the means securing the lock to the building wall structure when said bolt engages a door, whereby removal of said lock is prevented except by the release of the means acting upon the retracting mechanism; and in such other novel features of construction and combination of parts as are hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings,

Fig. 1 is an elevation of a lock embodying my invention shown in its inoperative relation to the elevator doors, portions of which latter are shown in cross-section;

Fig. 2 is a similar view with a bolt projecting in the locking position; and

Fig. 3 is a section of the lock mechanism itself, on the line 3—3 of Fig. 2.

Like letters refer to like parts throughout the several views.

In the accompanying drawings, the lock is shown as applied to a so-called counterbalanced door structure, *a* indicating the upper of a pair of oppositely and vertical slid-

able door sections, and *b* the lower of such door sections. The section *a* is provided with an angle bar frame *c* of the usual construction, having secured to the lower bar of the frame the customary astragal *d* of angle metal. The lower section *b* has the usual angle bar frame *e*, the upper bar of which, when the door is closed, is lapped by the astragal *d* in the manner shown in the drawings.

The door sections *a* and *b* are mounted upon suitable rail structures secured to the wall of the elevator shaft upon opposite sides of the door opening closed by the door, the construction of such rail structures being such as to bring the doors close to the wall of the shaft at the door opening.

In operation, the door section *a* moves upwardly, and the door section *b*, downwardly. Such doors are provided with a locking mechanism exposed within the shaft to prevent opening of the doors except from the elevator car and when a car is positioned adjacent a door opening.

The foregoing construction is old and well known in this art, my invention relating more particularly to a night or dead lock by which opening of a door from within the shaft, and access to a loft or floor when the occupant thereof so desires, is prevented, in order that the theft of bulky merchandise during hours when the loft or floor is unoccupied, may not occur.

The construction of lock embodying the invention shown in the drawings, has a base plate *f* provided with an outturned flange *g* positioned towards the elevator shaft. Said plate *f* has two elongated countersunk slots $f'$ and $f^2$ therein for receiving lag screws $f^3$ and $f^4$ by means of which the base plate is secured in position upon the jamb of a door opening. Preferably said plate is located adjacent the meeting line of the two door sections, which ordinarily will be midway between the sill and lintel of the opening, so that the lock may be used not only to lock one of the door sections with relation to the wall, but to lock one section in relation to the other and thus lock both sections in relation to the wall.

Carried by the outturned flange *g* is a guide stud *h* having an opening therethrough at $h'$. Slidably mounted upon the base plate *f* is an angle metal bolt plate *i*, one flange $i'$ of which is of a length and width to expose the slots $f'$ and $f^2$, when the bolt is retracted, and to completely cover said slots and the screws $f^3$ and $f^4$ when the bolt is shot.

Acting between the outturned flange *g* of the base plate *f* and the flange $i^2$ of the bolt plate *i* extending parallel with the flange *g* and encircling the guide stud *h*, is a coiled spring *j* which serves to normally retract the bolt and hold it in a position where it will not be engaged with either door section *a* or *b*. The stud *h* passes through an opening in the flange $i^2$ of the bolt plate *i* against which the spring *j* acts, so as to permit the desired freedom of movement of said plate *i*.

Permanently secured to the flange $i^2$ of the bolt plate *i* and in parallel relation with the stud *h* is a bolt *k* projecting through an opening $g'$ in the flange *g*. Preferably the end of this bolt is slightly tapered as shown at $k'$, to compensate for any slight variance in the position of the two door sections *a* and *b* such as may occur through the stretching of the connecting chains used with such doors.

The stud *h* and the bolt *k* are parallel one with the other, and the stud *h* has an enlarged head $h^2$ for limiting the movement of the plate *i* and bolt *k* by the spring *j*.

In the form of the invention shown, the astragal *d* has a bolt opening $d'$ therethrough which is adapted to register with a bolt opening $e'$ through the flange of the upper bar of the angle metal frame *e* and extending into the panel of this door when a metal covered wood panel is used. At *m* I have shown a padlock, the hasp of which is passed through the opening $h'$ in the stud *h* when the bolt *k* has been shot, so as to prevent the retraction of the bolt by the spring *j*, or the tampering with the lock.

While I have shown a construction in which the bolt *k* passes through the astragal *d* of the upper door section *a* and engages the metallic rim of the lower door section, it will be readily understood that this is merely a desired construction for affording the maximum measure of safety, it being permissible to limit the action of the lock to either the upper or the lower door section, this being controlled by the mere positioning of the base plate *f* upon the door jamb.

When mounting the plate *f* upon the door jamb, the padlock or other securing means *m* is removed from its engaging relation with the stud *h* so that the spring *j* may impart movement to the bolt plate *i* to the full extent permitted by the flanged end $h^2$ of the guide stud *h*. The parallel relation of the bolt *k* with said stud *h* will ensure the desired rectilineal movement of said plate and said bolt.

When the parts are thus positioned, the countersunk, elongated slots $f'$—$f^2$ in the base plate *f* will be exposed, thus permitting lag screws $f^3$—$f^4$ to be used for securing said base plate in position. Elongated slots permit slight vertical adjustment of the plate when setting the bolt in relation to the door sections, to accurately position the bolt with relation to the openings $d'$—$e'$ and the socket in the door panel.

When the plate is properly set, the tapered end $k'$ of the bolt *k* must be positioned out of the plane of movement of the door sec-

tions so as not to interfere with the free opening and closing of the door under normal conditions.

When it is desired to lock the door, the bolt plate *i* is forced toward the outturned flange *g* against the tension of the spring *j*, after the elevator doors have been closed, until the bolt passes through the openings *g'* and *e'* and into the socket in the door panel, thus effectively preventing movement of either or both door sections with relation to the wall of the elevator shaft.

When the plate *i* is thus forced inwardly, the hasp of the padlock *m* is passed through the opening *h'*, thus effectively preventing a return movement of the bolt plate *i* and the bolt *k* carried thereby. When the bolt plate *i* is thus positioned, the flange *i'* thereof will completely cover the slats $f'$ and $f^2$ and the screws $f^3$ and $f^4$, thus preventing the removal of the lock in its entirety so as to permit the opening of the elevator door.

It will be noted that the bolt *k* is subjected to little or no shearing stresses, since the door sections are in stationary position when the bolt is shot, and that since the lock is upon the floor side of the elevator shaft, it will effectively prevent access to a floor from the shaft, and also effectively prevent access to the shaft from a floor except by a person having a key to the lock *m*, unless this padlock is broken or the base plate *f* or other parts of the lock are forcibly removed from their position, which would give ample evidence of an unlawful act, and also of the fact that any thefts were by persons from the floor side of the shaft.

By providing openings *d'* and *e'* in the metal angle bar forming the astragal *d* and the frame of the door sections, forcible opening of the door is resisted to the maximum extent.

It is not my intention to limit the invention to the precise details of construction shown in the drawings, it being apparent that such may be varied without departing from the spirit and scope of the invention.

Having described the invention, what I claim as new and desire to have protected by Letters Patent, is:—

1. A lock for elevator doors consisting of a base plate permanently secured to the building wall adjacent an elevator door, a plate slidably mounted upon said base plate, a bolt carried by said plate, and adapted to enter a socket formed in an elevator door, means acting to normally retract said bolt from the path of movement of the door, and means whereby said last named means may be made inoperative, said slide carrying the bolt having a flange adapted to prevent access to the means securing the lock to the building wall structure when said bolt engages a door, whereby removal of said lock is prevented except by the release of the means acting upon the retracting mechanism.

2. A lock for elevator doors consisting of a base plate having an outturned flange positioned towards the elevator shaft and having an opening therethrough, means securing said base plate to the wall adjacent the elevator shaft, a bolt plate slidably mounted upon said base plate, a bolt carried by said plate, passing through the opening in said outturned flange and adapted to enter a socket formed in an elevator door, a guide stud carried by said outturned flange and co-operating with said bolt plate, a spring acting between said outturned flange and said bolt plate, whereby said bolt is normally retracted from the path of movement of the door, and means whereby said spring may be made inoperative, said bolt plate having a flange adapted to prevent access to the means securing the lock to the wall when said bolt is engaged with a door, whereby removal of said lock is prevented except by the release of the means making said spring inoperative.

3. A lock for elevator doors consisting of a base plate having an outturned flange positioned towards the elevator shaft and having an opening therethrough and elongated countersunk openings therein whereby it may be attached to the jamb of a door opening and be adjusted in relation to a socket in the door closing said opening, an angle metal bolt plate, one flange of which is slidably mounted upon said base plate and of a width to close said countersunk openings when the bolt is engaged with the door and prevent the movement of the lock except when the bolt is retracted, a bolt carried by said plate passing through the opening in said outturned flange and adapted to enter a socket formed in an elevator door, a guide stud carried by said outturned flange and co-operating with said bolt plate, a spring acting between said outturned flange and said bolt plate, whereby said bolt is normally retracted from the path of movement of the door, and means whereby said spring may be made inoperative.

4. A lock for elevator doors consisting of a base plate having an outturned flange positioned towards the elevator shaft and having an opening therethrough and elongated countersunk openings therein whereby it may be attached to the jamb of a door opening and be adjusted in relation to a socket in the door closing said opening, an angle metal bolt plate, one flange of which is slidably mounted upon said base plate and of a width to close said countersunk openings when the bolt is engaged with the door and prevent the movement of the lock except when the bolt is retracted, a bolt carried by said plate passing through the opening in said outturned flange and adapted to enter a socket formed in an ele-

vator door, a guide stud having an enlarged head carried by said outturned flange and co-operating with said bolt plate, and a coiled spring encircling said stud and acting between said bolt plate and said outturned flange, whereby said bolt is normally retracted from the path of movement of the door, said stud having an opening therethrough for the receipt of a locking mechanism.

5. In a lock for elevator doors embodying therein the combination with two oppositely and vertically movable sections, the upper of which has an astragal having an opening therethrough, and the lower of which has an angle metal frame having an opening therethrough adapted, when the door sections are closed, to register with the opening in said astragal and form therewith a socket adapted to receive the bolt, of a base plate permanently secured to the building wall adjacent an elevator door, a plate slidably mounted upon said base plate, a bolt carried by said plate, and adapted to enter a socket formed in an elevator door, means acting to normally retract said bolt from the path of movement of the door, and means whereby said last named means may be made inoperative, said slide carrying the bolt having a flange adapted to prevent access to the means securing the lock to the building wall structure when said bolt engages a door, whereby removal of said lock is prevented except by the release of the means acting upon the retracting mechanism.

6. In a lock for elevator doors embodying therein the combination with two oppositely and vertically movable sections, the upper of which has an astragal having an opening therethrough, and the lower of which has an angle metal frame having an opening therethrough adapted, when the door sections are closed, to register with the opening in said astragal and form therewith a socket adapted to receive the bolt, of a base plate having an outturned flange positioned towards the elevator shaft and having an opening therethrough and elongated countersunk openings therein whereby it may be attached to the jamb of a door opening and be adjusted in relation to a socket in the door closing said opening, an angle metal bolt plate, one flange of which is slidably mounted upon said base plate and of a width to close said countersunk openings when the bolt is engaged with the door and prevent the movement of the lock except when the bolt is retracted, a bolt carried by said plate passing through the opening in said outturned flange and adapted to enter a socket formed in an elevator door, a guide stud having an enlarged head carried by said outturned flange and co-operating with said bolt plate, and a coiled spring encircling said stud and acting between said bolt plate and said outturned flange, whereby said bolt is normally retracted from the path of movement of the door, said stud having an opening therethrough for the receipt of a locking mechanism.

In witness whereof I have hereunto affixed my signature, this 4th day of December, 1924.

CHARLES W. PEELLE.