T. H. STRALEY.

MEANS FOR LOCKING ELEVATOR CAR DOORS.

APPLICATION FILED MAR. 7, 1910.

968,283. Patented Aug. 23, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

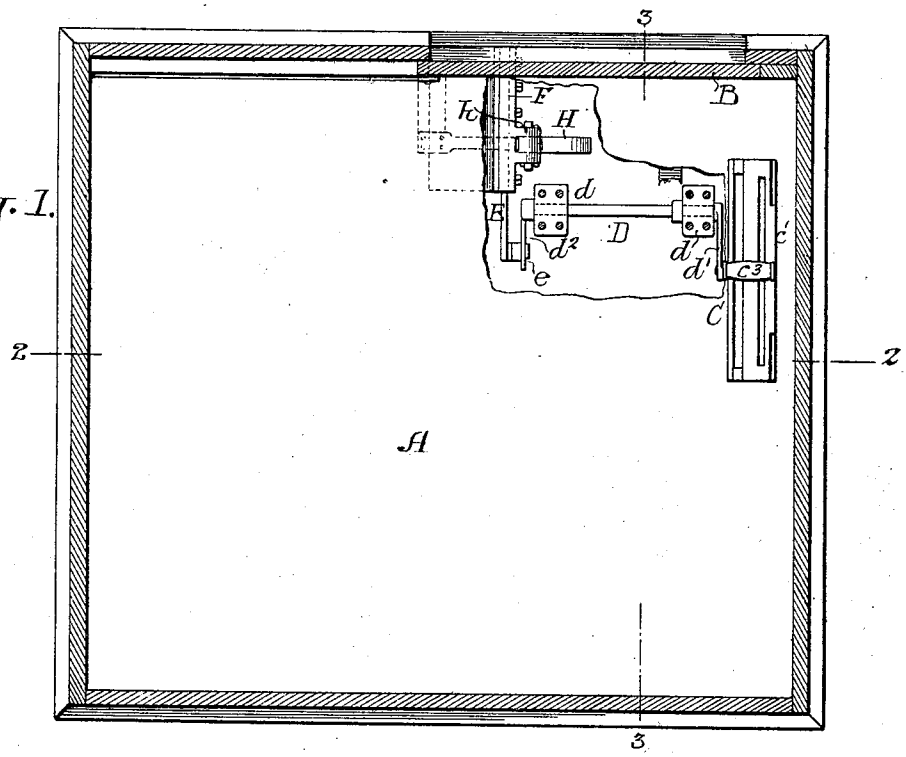
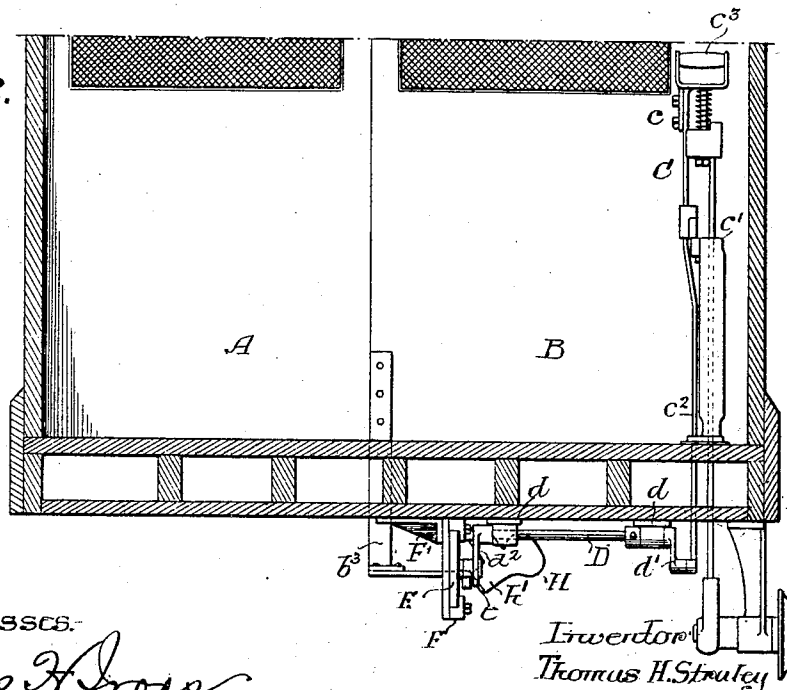


Fig. 2.



Witnesses.

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2 SHEETS—SHEET 2.

Fig. 3.

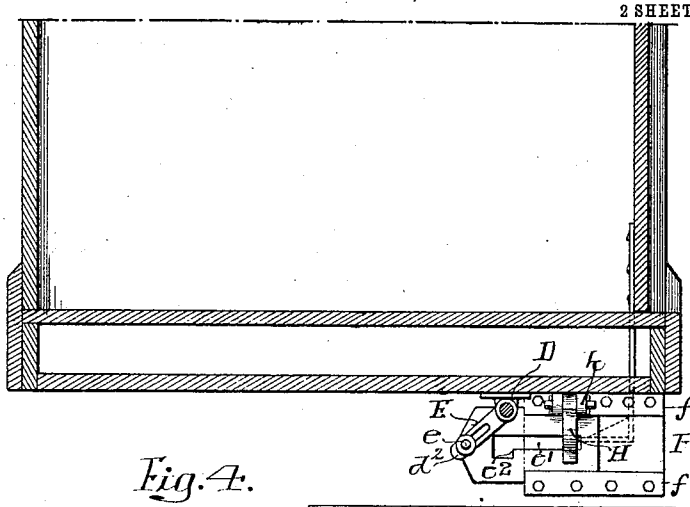


Fig. 4.

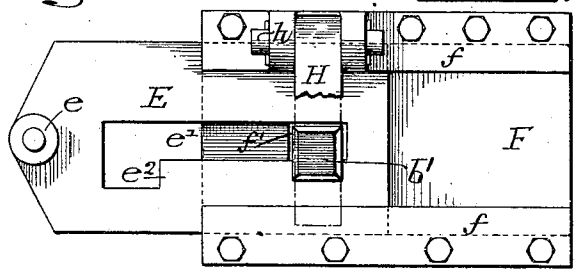


Fig. 6.

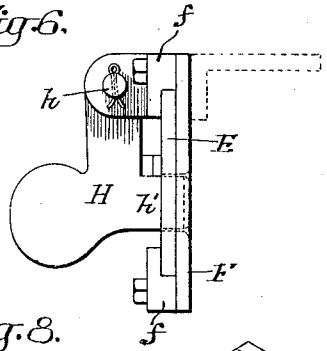


Fig. 5.

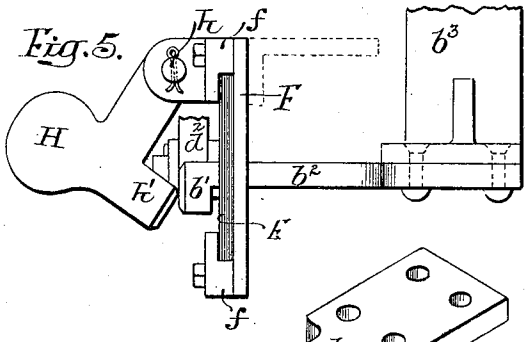


Fig. 8.

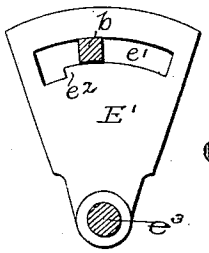
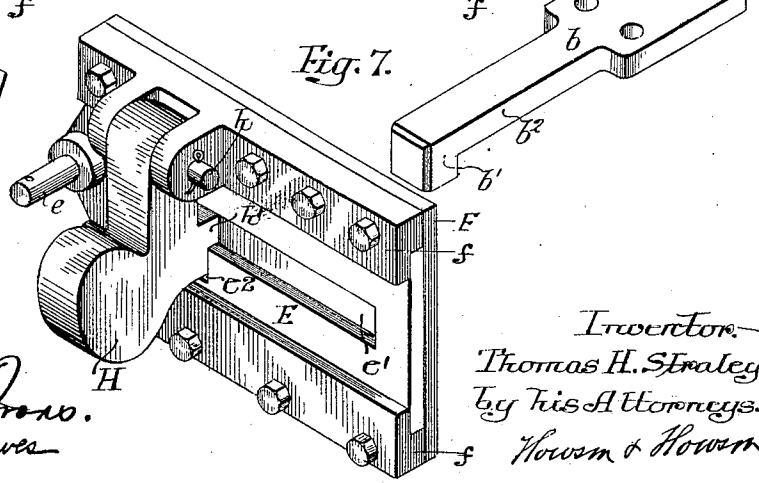


Fig. 7.



Witnesses.—
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UNITED STATES PATENT OFFICE.

THOMAS H. STRALEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO STANDARD ELEVATOR INTERLOCK COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

MEANS FOR LOCKING ELEVATOR-CAR DOORS.

968,283. Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed March 7, 1910. Serial No. 547,850.

To all whom it may concern:

Be it known that I, THOMAS H. STRALEY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Means for Locking Elevator-Car Doors, of which the following is a specification.

The object of my invention is to provide means for locking the door of an elevator car when closed, said means locking the controlling mechanism when the door is opened so as to prevent the starting of the car until the door is closed.

In the accompanying drawings,—Figure 1, is a sectional plan view, the elevator car partly broken away to illustrate my invention; Fig. 2, is a sectional view on the line 2—2 Fig. 1; Fig. 3, is a sectional view on the line 3—3 Fig. 1; Fig. 4, is a side view of my improved lock detached from the car; Fig. 5, is an end view of the lock illustrated in Fig. 4, showing the projection on the door engaged by the slide, locking the door in the closed position; Fig. 6, is an end view showing the position of the parts when the door is opened; Fig. 7, is a detached perspective view of the lock and the projection on the door; Fig. 8, is a view of a modification.

A is the elevator car, B is a sliding door adapted to ways on the car.

C is the controlling mechanism which is the ordinary type of lever control consisting of a lever c adapted to travel over a segment c', and by moving this lever to the center position the car is brought to a standstill, and by moving it over to one side the mechanism is so thrown that the car will be raised, and by throwing it over to the opposite side the car will be lowered. This control mechanism may be connected to any suitable mechanism in the elevator well for actuating the valves or other means.

D is a shaft mounted in bearings on the under side of the car. This shaft has an arm d' which is connected to a rod c^2 leading from the handle c^3 of the controlling mechanism, so that when the controlling mechanism is moved the shaft D will be rocked in its bearings. On the opposite end of the shaft D is a lever d^2 which is slotted as shown in Fig. 3, for the reception of a pin e of a locking device E in the form of a slide, this slide being adapted to guides f in a plate F secured to the under side of the car in the present instance being attached to a bracket F'. The slide E has a slot e' which is enlarged at one end to form a shoulder e^2.

H is a weighted lever pivoted at h and having a projection h' which is adapted to fit the enlarged portion of the slot e' and rest against the shoulder e^2 when in the position shown in Fig. 6, thus locking the slide in a fixed position and preventing the movement of the operating mechanism of the car.

In the plate F is an opening f' through which may be projected a bar b having a hooked end b'. The body portion b^2 of the bar b fits snugly in the narrow portion of the slot e' in the slide E and the hooked end will readily pass through the enlarged portion of the slot, so that when the bar is pushed through the plate and the slide, as in Fig. 5, and the slide moved longitudinally, the hooked end of the bar will be engaged by the plate and the bar will be held, and as this bar is attached to a depending portion b^3 of the door B it will hold the door in the closed position.

In some instances it is necessary to provide an elevator car with a door in addition to the door at the landing of the elevator well, and by the above construction I provide means for locking the elevator car door while the car is in motion, and also lock the operating mechanism when the door is open at the landing so as to prevent the starting of the car when passengers are passing through the doorway.

If the door is open and the slide is in the position illustrated in Figs. 6 and 7, the weighted lever H is in engagement with the slide and prevents the movement of the operating mechanism, but on the closing of the door the projecting bar b which is in line with the weighted lever passes through the openings in both the plate and the slide and pushes the weighted lever H out of contact with the slide, as in Fig. 5, so that the operating mechanism can be shifted to either cause the car to be raised or lowered. As soon as the slide is shifted it will pass back of the hooked end of the bar b and thus lock the bar in its closed position and it will be impossible to open the door until the controlling mechanism is brought to central position to stop the car, when the door is

free from the locking mechanism and can be opened.

In Fig. 8, I have illustrated the locking device in the form of a segment E′ pivoted at e^3 to any suitable support or mounted directly on the rock shaft D, and this segment has a slot e' and shoulder e^2.

I claim:—

1. The combination in an elevator, of a car, a sliding door on the car, a movable locking device mounted on the car, car controlling means connected to the locking device, and a bar on the door adapted to be engaged by the locking device when said device is shifted to move the car, with means engaging the locking device when the door is open so as to prevent the movement of said device until the door is closed.

2. The combination in an elevator car, of a door arranged to slide on said car, a slotted sliding locking device, car controlling means connected to the said locking device, a headed bar on the door adapted to be engaged by the locking slide when the door is closed, and means for preventing movement of the locking slide when the door is opened, said means being actuated by the bar on the door.

3. The combination in an elevator of a car, a door on the car, controlling mechanism on the car, a slotted locking device, a bar on the door arranged to be projected through the slot in the locking device, and a weighted lever in line with the bar and adapted to engage the locking device when the bar is retracted so as to prevent the movement of the operating means, the bar when projected in the slot pushing the lever out of engagement and on the movement of the locking device being retained and thus locking the door in its closed position.

4. The combination in an elevator of a car, a door on the car, a bar carried by the door having a hooked end, a slotted locking device, one end of the slot being enlarged forming a shoulder, and controlling mechanism on the car connected to the locking device so that when the bar is pushed through the slot in the locking device and the said locking device moved, it will prevent the bar from being retracted.

5. The combination in an elevator of a car, a sliding door, controlling mechanism on the car, a rock shaft connected to the controlling mechanism, a plate located on the under side of the car having slide-ways, a slide adapted to said ways actuated by the rock shaft, said slide having an elongated slot therein enlarged at one end, and a bar on the door having a hooked end adapted to enter the enlarged portion of the slot, the shank of the bar fitting the narrow portion of the slot so that when the slide is moved the bar will be prevented from being retracted, thus locking the door in the closed position.

6. The combination in an elevator car of a sliding door, a controlling mechanism on the car, a plate on the under side of the car, guide-ways therein, a slide mounted in the guide-ways and having an elongated slot enlarged at one end forming a shoulder, means connecting the controlling mechanism on the car with the said slide, a pivoted weighted lever having a projection adapted to enter the enlarged portion of the slot in the slide, and a bar on the door having a hooked end alining with the weighted lever and adapted to project through the large portion of the slot in the slide and push the said lever out of engagement with the slot, and after the slide moves, being locked by the slide so as to prevent the opening of the door.

7. The combination in an elevator of a car, a sliding door on the car, controlling mechanism on the car, a rock shaft having two arms, one arm being connected to the controlling mechanism, a plate on the under side of the car having guide ways, a slide mounted in said ways and having a projecting pin adapted to a slot in the other arm of the rock shaft, said slide having an elongated slot enlarged at one end to form a shoulder, a pivoted weighted lever having a projection adapted to enter the enlarged portion of the slot and lock the plate, thus locking the controlling mechanism, with a bar on the door having a hooked end adapted to enter the enlarged portion of the slot in the plate and push the lever out of engagement with the plate, allowing the controlling mechanism to be operated, and when said controlling mechanism is operated the plate will be shifted and will lock the door, thus preventing the door from being opened.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

THOMAS H. STRALEY.

Witnesses:
WM. E. SHUPE,
WM. A. BARR.