(No Model.)

J. WALLENSTEIN.

DEVICE FOR OPERATING ELEVATOR DOORS.

No. 456,349. Patented July 21, 1891.

FIG. 1.

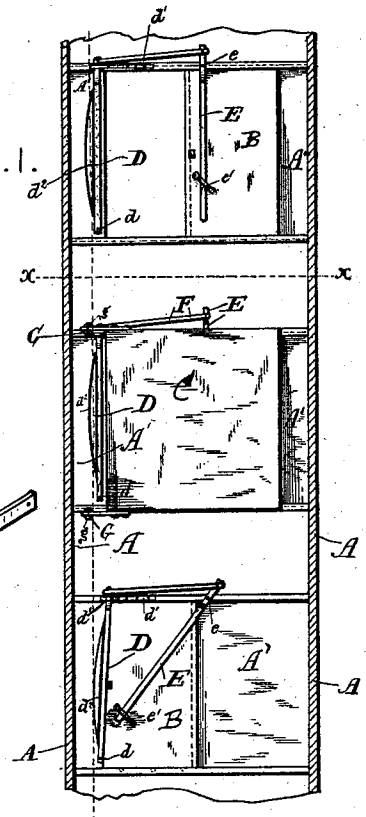


FIG. 3.

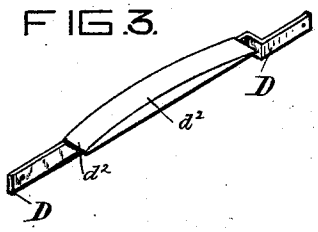


FIG. 4.

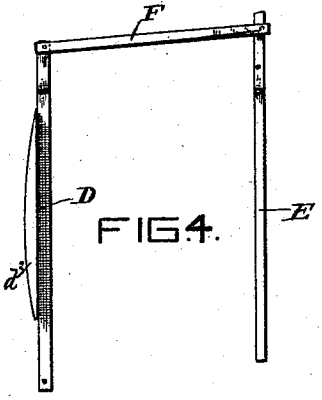


FIG. 2.

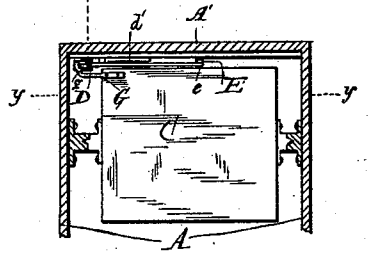
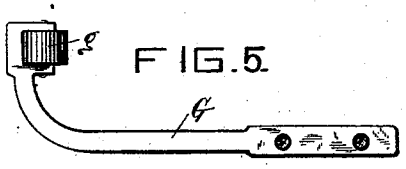


FIG. 5.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR OPERATING ELEVATOR-DOORS.

SPECIFICATION forming part of Letters Patent No. 456,349, dated July 21, 1891.

Application filed April 9, 1891. Serial No. 388,222. (No model.)

To all whom it may concern:

Be it known that I, JACOB WALLENSTEIN, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Devices for Operating Elevator-Doors, of which the following is a specification.

The object of my invention is to provide means to automatically close the doors of elevator-shafts by the movement of the cab, (should the operator neglect to do so.) This object I attain by the means illustrated in the accompanying drawings, in connection with which the invention will be first fully described, and particularly pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is a vertical section of an elevator-shaft provided with my improvements, taken through line *y y* of Fig. 2, looking in direction of the door. Fig. 2 is a transverse section taken through line *x x* of Fig. 1. Fig. 3 is a detail view in perspective of the cam-lever upon an enlarged scale. Fig. 4 is an inside view of the cam-lever, the door-actuating lever, and link connecting the two. Fig. 5 is a plan view, upon an enlarged scale, of the arm and friction-roller that is attached to the elevator-cab for operating the door-closing levers.

Referring to the parts, A represents the side walls of an elevator-shaft; A′, the front of the same; B, the sliding doors; C, the elevator-cab. To the front walls A′, adjacent to the door-opening, is pivoted the cam-lever D by a pivot-pin *d*. The upper end of this lever is confined by a guide-strap *d′*.

E is a lever fulcrumed at *e* to the sliding guide for the door. The long arm of the lever extends down inside the door and passes through a yoke-strap *e′*. The upper ends of the levers D and E are connected by link F.

Under the front edges, at top and bottom of elevator-cab, are secured arms G, the angle portions of which project in the path of the cam portion d^2 of the lever D when the elevator-doors are opened. This part of the arm G is provided with a friction-roll *g*.

It will be seen by reference to the lower part of Fig. 1 that when the elevator-doors are closed the friction-roll *g* will pass the cam d^2 as the elevator-cab passes up or down; but should the operator forget or neglect to close the door when the elevator-cab leaves any floor of the building the cam-lever D will be forced inward by the friction-roll *g* coming in contact with its cam d^2 and automatically close the door whether the cab is going up or coming down.

It is obvious that my safety attachment may be applied to any of the elevators in use without in any manner reconstructing them, and it is also obvious that slight changes may be made in mechanical details of the parts without departing from the spirit or scope of my invention.

I claim—

1. The combination of the elevator-cab and the sliding door with the cam-lever pivoted to the inside wall of the elevator-shaft, a lever pivoted to the door-frame and extending down inside the door, the yoke secured to the door and through which the long arm of the door-lever passes, the link connecting the two levers, and an actuating-arm secured to the elevator-cab and extending in the path of the cam-lever, whereby the said levers are operated to close the door by the movement of the cab, substantially as shown and described.

2. The combination, substantially as hereinbefore set forth, of the cam-lever D d^2, the lever E, yoke *e′*, link F, and operating-arm G, as a safety attachment for elevators, substantially as shown and described.

JACOB WALLENSTEIN.

Witnesses:
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FRANK I. DAVIS.