J. C. FOSTER.

Hatchway-Guard.

No. 162,466. Patented April 27, 1875.

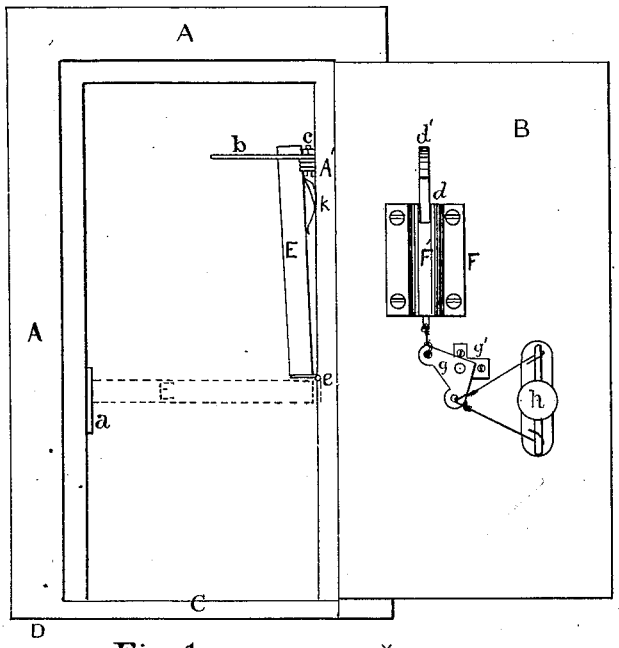

Fig. 1.

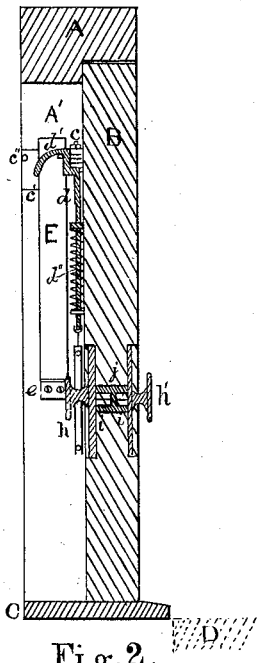

Fig. 2.

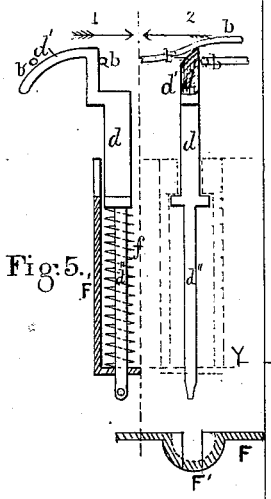

Fig. 5.

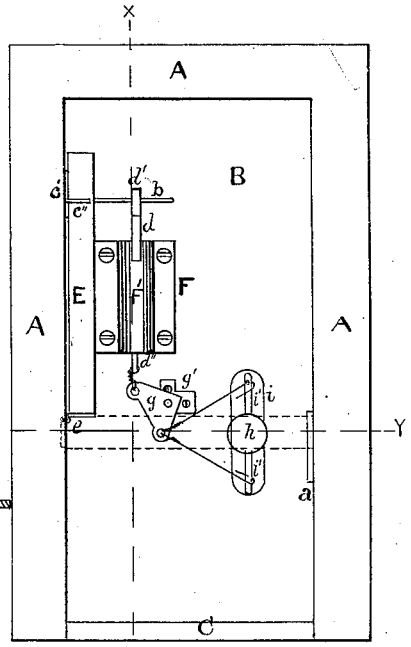

Fig. 3.

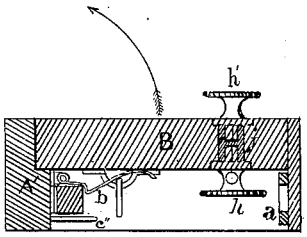

Fig. 4.

Attest

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JOHN C. FOSTER, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN HATCHWAY-GUARDS.

Specification forming part of Letters Patent No. **162,466**, dated April 27, 1875; application filed March 9, 1875.

To all whom it may concern:

Be it known that I, JOHN C. FOSTER, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Elevator-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification:

Figure 1 is a side view with the door open. Fig. 2 is a cross-section on *x x* of Fig. 3. Fig. 3 is a side view with door closed. Fig. 4 is a horizontal section on *y y* of Fig. 3, and Fig. 5 details of the operative mechanism.

This invention relates to improvements in the method of operating the doors of elevators; and consists in the use of a bar which, by suitable mechanism, will automatically fall across the doorway whenever the latch of the door is turned from the outside, so as to prevent any one from entering the elevator, and yet the bar will not fall when the door is opened from within the elevator, as will be more fully hereinafter set forth and described.

A is the frame, to which the leaf B is to be hinged, as ordinarily done. C is the carpet-strip; D, the floor of the story where the door may be. E is a bar hinged to one side of the jamb A at *e*. F is a plate of metal to be fastened to the inside of the door-leaf by screws. It has a hollow space, F′, in which are located the spring *f* to keep *d* in position, and the shank *d″* of the latch *d*, which has a curved upper end, *d′*. Attached to the lower end of the shank *d* is a wire, which connects it with a bell-crank plate, *g*, which is bolted to a plate, *g′*, on the door. From the other angle of the bell-crank *g* are two wires, connecting with the two ends of a rod, *i′*, which is screwed into the axis of the door-knob *h*, so that whichever way the knob is turned the bell-crank will be operated. On the outside of the door-leaf is another knob, *h′*. In the door is the usual latch-lock, which has the tumbler with square hole, as seen in Figs. 2 and 4. The knobs *h* and *h′* have corresponding square shanks to fit the tumbler, so that it will be operated from either side, and independently of each other. On the inside jamb A′ of the frame A is a small plate, *c*, on which is a rod holding a spiral spring wire with an extended end, *b*, which is formed into a latch at *b′*, the end being curved, as seen in Fig. 4. Attached to this plate is also a spring, *k*, which operates against the inner side of bar E, and forces it downward until its own weight will cause it to fall to the horizontal line shown in dotted lines. On the outer edge of plate *c* is a wire to guide the bar E to its proper position when thrown up by hand.

The operation of this device is as follows: When the bar is thrown up, as shown in the drawing, the latch of wire spring *b* holds it in the vertical position. The handle of *d*, which is attached to the door-leaf, rests against wire *b*, and when the door is pulled open *d* will unlatch *b* from bar E. Spring K will force E out of its vertical line, and its own weight will cause it to fall to prevent ingress by the doorway. To prevent the fall of the bar when the door is to be opened from the elevator, the knob *h* has the wire attachments from the rod *i i* to the bell-crank *g*, which, being connected with the rod or slide *d*, whenever the knob *h* is turned the catch *d′* is pulled down below the wire *b*, and the door being opened the latch *d* does not release the catch *b′* from bar E, and exit is permitted from the elevator unobstructed. The knob *h′*, not having any connection with the bell-crank, as seen in Figs. 2 and 4, turns the latch which holds the door, allows it to be opened, but in doing so the bar *d′* forces the spring-catch *b* out of engagement with bar E, and it falls, as before described. The curved upper end of *d* is beveled on one side, and so arranged relatively to spring *b* that, whenever the door B is closed, *d′* enters and slides under *b* until the door is nearly latched, when *b* drops behind it, as seen in details, Fig. 5. Arrow No. 1 shows the door being opened, when *d′* will force *b* in the same direction. Arrow No. 2 shows the door being closed; *d′*, with beveled surface, slides under *b* until the door is closed, when *b* will drop behind it.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is—

1. The combination of a bar with a swinging door, and intervening mechanism, sub-

stantially as described, whereby the bar is dropped when the door is opened from the outside, as specified.

2. The combination of a bar, E, latch *b*, catch *d'*, bell-crank *g*, and knob *h*, all connected and operating substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

JOHN C. FOSTER.

Witnesses:

T. B. NEWHALL,

CHAS. MERRITT.