

J. C. FOSTER.
Hatchway-Guard.

No. 166,692.

Patented Aug. 17, 1875.

Fig. 1.

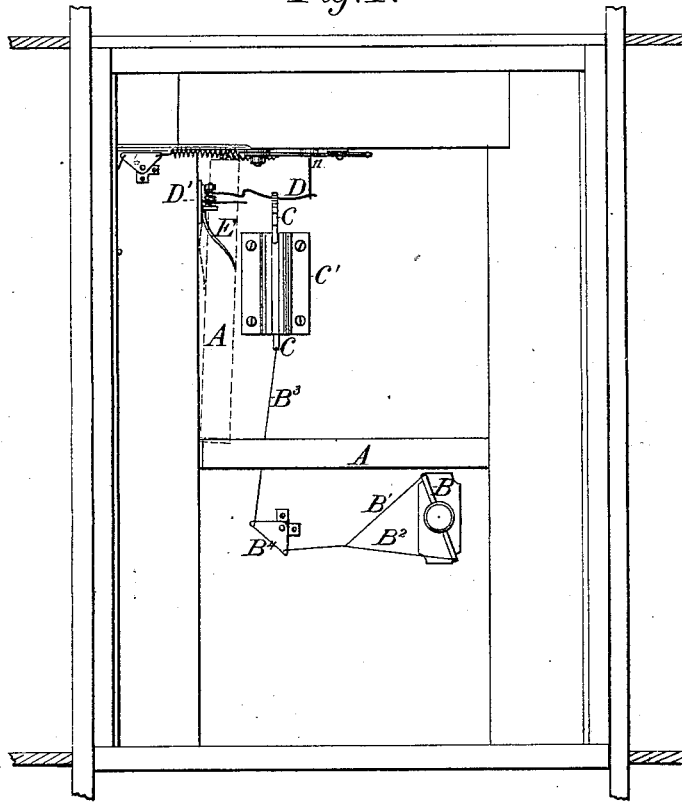


Fig. 2.

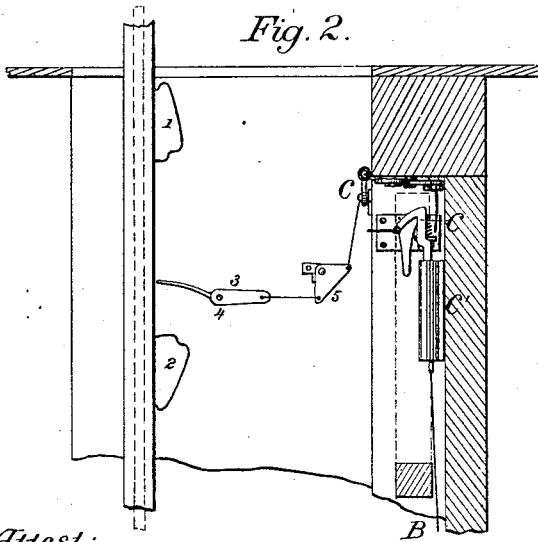
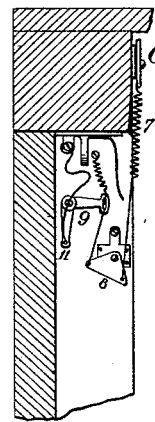


Fig. 3.



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JOHN C. FOSTER, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN HATCHWAY-GUARDS.

Specification forming part of Letters Patent No. **166,692**, dated August 17, 1875; application filed April 28, 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 Hatchway-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 being an elevation, showing the inside of a hatchway-door with my improvements attached thereto, showing also a portion of an elevator, and the means of causing it to operate mechanism which holds the bar in place and releases the same. Fig. 2 is an interior view of the passage through which the elevator moves, showing the projections thereon for operating the mechanism which controls the movements of a bar for preventing persons from passing into the passage when the door is left open; and Fig. 3 is a sectional elevation, showing portions of the mechanism and the arrangement of the same.

Corresponding letters denote corresponding parts in the several figures.

This invention relates to hatchway-doors, having for its object the furnishing of adequate protection against persons falling or walking into the passage through which the elevator moves when, by accident or otherwise, the doors are left open; and it consists in the combination and arrangement of the parts of which it is composed, as will be more fully explained hereinafter.

In constructing devices of this character there is hinged to the casing of the door, or to the side of the passage through which the elevator moves, a bar, A, which is so arranged that it may be turned up to the position shown in dotted lines in Fig. 1, when it is desirable to allow persons to pass to or from the elevator, or it may be turned down into the position shown in full lines in the same figure, when from any cause the door is left open. The arrangement of this bar and the mechanism which holds it in its elevated position is such that upon approaching the door from the outside and opening the same, the bar will be re-

leased from the control of the mechanism, and its own gravity will cause it to fall into the position shown in full lines in the figure last referred to, and thus the person so opening the door will be prevented from walking or falling into the passage whatever may be the position of the elevator at the time; but when opened from the inside, the catch which holds it in position will not be released from its control of said bar, and hence it will not fall, and will not be in the way of persons who are stepping from the elevator. This result is accomplished by the use of a jointed shank, which passes from the knob upon the outside of the door to the one upon the inside, which allows the outer knob to be turned for the purpose of withdrawing the latch without turning the inner knob, or the portion of the shank to which it is attached, and in like manner to unlatch the door from the inside without turning the knob on the outside. In order that the bar A may not be released from the catch which holds it in position when the door is opened from the inside, a rod or lever is attached to the inside knob or to its shank, the arms of which extend therefrom such a distance as to cause them to impart sufficient movement to a bell-cranked lever, B¹, to which they are connected by rods B¹ and B², so that by turning the knob in either direction, said crank will be moved in such a manner as to cause a rod, B³, which is attached to its opposite end, to retract a sliding bolt or catch, C, which passes through a bracket, C', which is fastened to the door, the upper end of said bolt being provided with a hook, which, when in its most elevated position, passes inside of the bent arm D of a spring, D', which is attached to the casing of the door, and which has formed upon it a projection, which holds the bar in its elevated position.

When the door is opened from the outside the upper portion of the sliding bolt C comes in contact with the arm of spring D', and draws it away from its hold upon bar A, to insure the instantaneous falling of which a spring, E, may be placed in the rear thereof, as shown in Fig. 1, where the dotted lines show it in its compressed form as it appears when the bar is raised.

When the door is to be opened from the in-

side the operation of the parts just described is as follows: The knob upon the door is turned far enough to cause the lever B to move the crank B⁴ to such an extent as to so far retract the sliding bolt C as to allow its upper end to pass under the arm of the spring, and thus allow the door to be opened without releasing the bar A from its position.

The parts thus far described in this specification form the subject-matter of a former application, upon which a patent has been allowed, and hence are only described here for the purpose of showing their connection with the following improvements, which constitute my present invention.

It has been found that in operating elevators in stores and hotels the attendant sometimes omits to shut the door as he leaves it in passing either up or down, and that such omission creates liability to accident. It is to prevent the possibility of accidents from such omissions as these that my improvement is intended; and to this end it consists in combining, with an elevator and with a door leading to the same, certain devices, as hereinafter described, by which a bar will be allowed to fall across the doorway by the movements of the elevator, either upward or downward, in the event of the door being left open.

To accomplish this I attach to the frame of the elevator, at the proper points, brackets 1 and 2, so that as the elevator passes up or down from any floor, the said brackets shall come in contact with a lever, 3, which is pivoted at 4 to the side of the passage in which the elevator moves, its opposite end being connected with a bell-crank lever, 5, the opposite end of which is connected with another similar lever, 6, the opposite end of which is connected to a spring, 7, which extends therefrom to still another lever, 8, the opposite end of which is connected to right-angled lever, 9,

which is pivoted to the casing of the door, and has a spring, 10, connected to it for returning it to its proper position. The opposite end of this lever 9 has a rod or arm, 11, extending from it, which passes through a socket in the end of arm D of spring D', as shown in Fig. 1.

The arrangement of the last-described parts and their combination with the parts designated by letters are such that as the elevator passes either up or down from any floor of the building, the projections 1 2 will come in contact with the end of lever 3, and cause such a movement thereof and of the parts described as connected therewith as to cause the projections on the arm D of spring D' to be withdrawn from its control of bar A, when the spring E, or its own gravity, will cause it to fall into the position shown in full lines in Fig. 1, and thus prevent persons from passing into the passage, even though the door leading thereto should be left open by the operator.

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

In combination with brackets attached to the frame of an elevator, a series of levers, substantially such as are herein described, a spring for returning said levers to their original positions after they have been operated upon by the brackets, a spring, D', for holding an automatically-falling bar in position, and the bar A, the parts being connected and arranged to operate 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 :

ROLLIN E. HARMON,
PETER SILVER.