

D. MOORE.
Self-Closing Hatchway.

No. 163,509.

Patented May 18, 1875.

FIG. I.

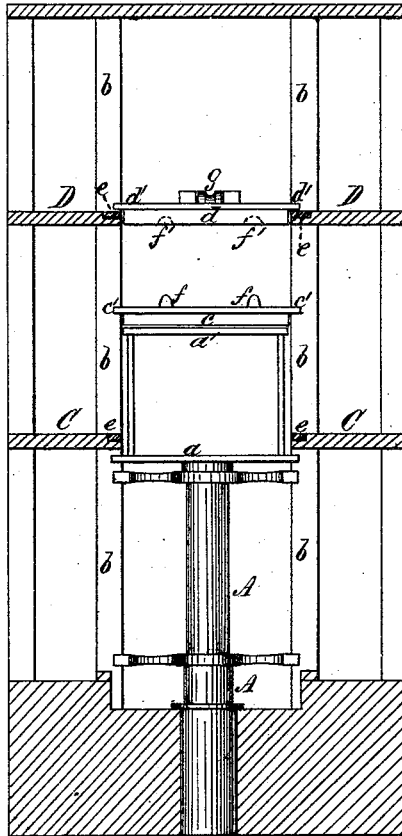


FIG. II.

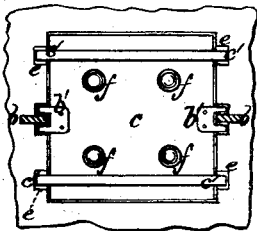
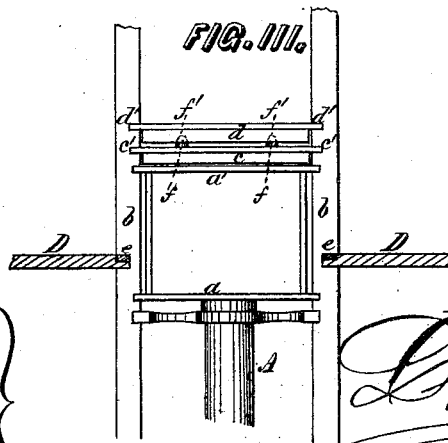


FIG. III.



Witnesses:

Edw. Payson

Geo. W. Matt

Inventor:

D. Moore

UNITED STATES PATENT OFFICE.

DANIEL MOORE, OF BROOKLYN, NEW YORK, ASSIGNOR TO SAMUEL I. THURSBY, OF SAME PLACE.

IMPROVEMENT IN SELF-CLOSING HATCHWAYS.

Specification forming part of Letters Patent No. 163,509, dated May 18, 1875; application filed May 1, 1875.

To all whom it may concern :

Be it known that I, DANIEL MOORE, of Brooklyn, Kings county, in the State of New York, have invented certain Improvements in Elevator-Hatchways, of which the following is a specification:

My invention consists, primarily, in the use of perfectly tight hatch-covers, in combination with an elevator-carriage, which is operated by means of mechanism situated beneath it. An example of such mechanism is exhibited in what is known as the hydraulic telescopic elevator, which consists of a platform supported upon a central piston, and a system of telescopic tubes projected by the introduction of fluid into the tubes, and retracted by gravity when the fluid is let out of the tubes.

My invention includes the arrangement of elastic bearings or cushions, to prevent any shock or noise when the hatches are lifted from, or deposited upon, their seats, and also devices for centralizing and guiding the hatches, for the purpose of insuring their deposit upon their respective seats.

Owing to the absence of any apertures for the passage of the hoisting-ropes through my hatches, they operate as valves to completely close the floor-openings, and thus prevent any draft or communication of sparks from one floor to another.

The accompanying drawings exhibit my invention applied in connection with a hydraulic elevator, and are as follows, viz:

Figure 1 is a vertical section of a hatchway, showing two floors, and a hydraulic elevator partly ascended, and having lifted the hatch-cover from the second floor; Fig. 2, a top view of my hatch-cover; Fig. 3, a vertical section, showing elevator carrying two hatch-covers, and exhibiting operation of centralizing nipples and cavities.

A A represent the extension-tubes of a hydraulic elevator; *a*, the platform or floor of a passenger-carriage, and *a'* the roof of the same. *b b* are parallel vertical ways for guiding the carriage, &c. The first floor C is provided with my trap-door or hatch-cover *c*, the latter having projecting tongues *c' c'*, to engage the floor. The second floor D, with its hatch-cover *d*, is provided with similar tongues *d' d'*, in a different position. Vertical grooves *d²* are formed in the edges of the second floor-opening, to allow the tongues *c'*

c' of the lower hatch *c* to pass freely, and corresponding projections *d³* of the hatch *d* fill the grooves *d² d²*.

I have not deemed it essential to exhibit my invention in connection with more than one floor, it being obvious that it may be applied to any required number of floors. Of course each additional floor must have either wider grooves or an increased number of grooves, to allow the tongues of the lower hatches to pass through; or, preferably, the floor-openings and their hatches may be varied in size, the first floor-hatch being smallest, the second floor-hatch a little larger, and so on, so that each hatch will pass through, as required, any floor-opening except the one where it belongs, which it will completely fill, and upon which it will be lodged and sustained as the carriage descends.

Rubber cushions *e e* are inserted in the floors, so as to present elastic bearings for the tongues *c' c'* and *d' d'*.

Rubber nipples *f f* are situated upon the upper sides of the hatches, (excepting the uppermost hatch,) to prevent shock from the upward thrust of the elevator, and they also answer the purpose of a centralizing device, by engaging the corresponding cavities *f f* on the under side of the next above succeeding device.

Similar rubber cushions are to be used on the roof of the elevator, to take against the under side of the lower hatch, although it is not deemed necessary to show them in the drawing.

I do not claim the arrangement of hatches and floor-openings correspondingly varying in size or shape; but

I do claim—

1. The tight hatches, in combination with an elevator operated from below, substantially as described, and for the purpose specified.
2. The cushions *e e*, in combination with the hatches and elevator, substantially as described.
3. The centralizing nipples *f f*, and corresponding cavities *f' f'*, in combination with the elevator, substantially as described.

DANL. MOORE.

Witnesses:

EDWD. PAYSON,
GEO. W. MIATT.