

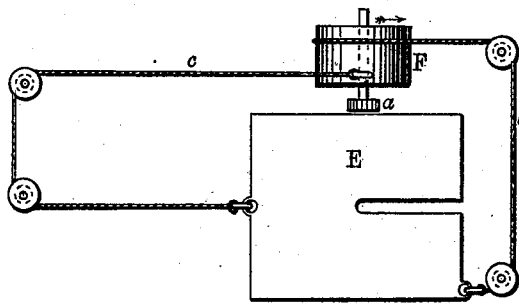
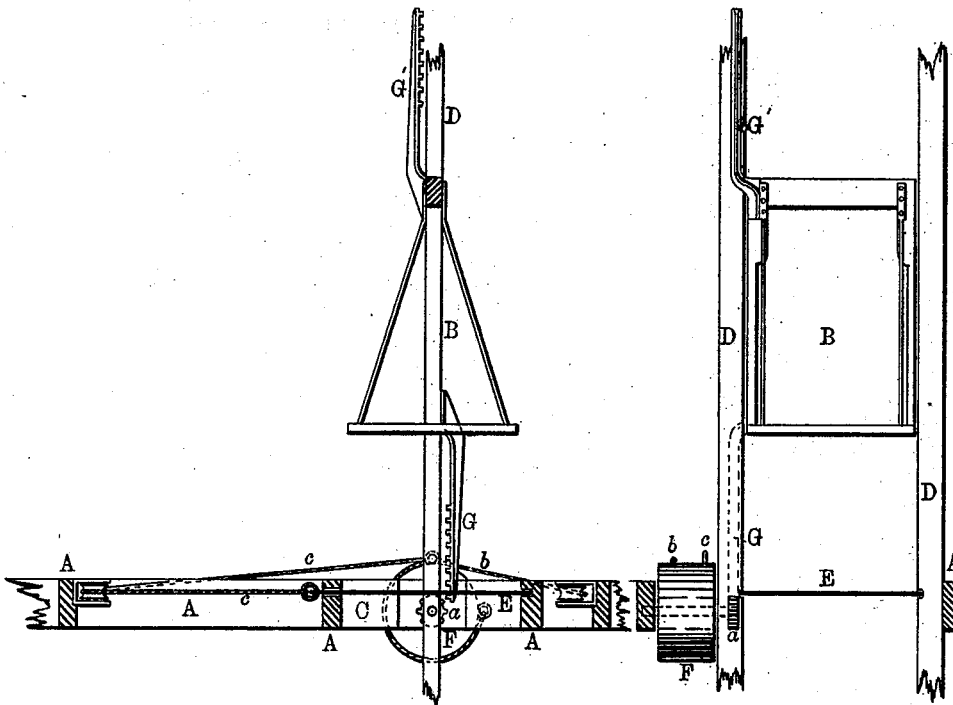
J. A. MARKER.  
Elevator-Hatchway.

No. 204,062.

Patented May 21, 1878.

— FIG. I —

— FIG. II —



— FIG. III —

— WITNESSES —

*B. Buckingham*  
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— INVENTOR —

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# UNITED STATES PATENT OFFICE.

JAMES A. MARKER, OF BALTIMORE, MARYLAND.

## IMPROVEMENT IN ELEVATOR-HATCHWAYS.

Specification forming part of Letters Patent No. 201,062, dated May 21, 1878; application filed February 1, 1878.

*To all whom it may concern:*

Be it known that I, JAMES A. MARKER, of the city of Baltimore and State of Maryland, have invented certain Improvements in Elevators, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to certain improvements in mechanism for opening and closing elevator-hatches, or the openings in the floors of buildings through which the elevator-platform passes, as will hereinafter fully appear.

In the description of the said invention which follows, reference is made to the drawing forming a part of this specification, and in which—

Figures 1 and 2 are partially-sectional elevations of a portion of a floor of a building, showing the hatch therein and the mechanism for moving the hatch-cover, constructed in accordance with the present invention. Fig. 3 is a plan of the hatch-cover and the mechanism for moving the same, the joists and flooring being removed.

Similar letters of reference indicate similar parts of the invention in all the views.

A A are the joists of one of the floors of a building, and B is the platform of the elevator, fitted to pass through the hatch C. The platform B is guided in its vertical movement by means of the uprights D in the ordinary manner, which uprights extend from the lower floor or the cellar of the building to the upper stories of the same. E is the metallic hatch-cover, confined within grooves in the joists, and adapted to be slid over, and thereby close the hatch C.

The mechanism for actuating the cover E in its sliding movement consists as follows: A drum, F, secured to a revoluble shaft, is confined between two of the joists, or between suitable supports connected thereto, and the said shaft provided with a gear or toothed wheel, *a*, situated preferably in a slot in one of the uprights D, as shown. To the drum are secured the cords or chains *b c*, which extend from the drum in opposite directions, and

pass over shears to opposite ends of the hatch-cover E.

By means of this arrangement the revolution of the drum in one direction effects the opening of the hatch, and in the other direction the closing of the same, as will be readily understood by reference to Fig. 3 of the drawing. G G' are racks or toothed bars extending from opposite sides of the platform, and respectively from the upper and lower ends of the same, and they bear such relation to the gear-wheel *a* as to effect its revolution as the platform approaches the hatch from either side thereof. The hatch being closed, and the platform approaching the hatch from the upper side thereof, as shown in the drawing, the rack G comes in contact with the gear-wheel *a*, and causes the drum to revolve in the direction pointed out by the arrow.

In the rotation of the drum, as described, the cord or chain *c* is wound around the same, and the hatch-cover is thereby slid from over the hatch, allowing the platform to descend to below the floor. After the platform has passed entirely through the hatch the gear-wheel *a* and drum F are revolved in an opposite direction by means of the rack G', and the cover is drawn by the cord or chain *b* to its original position and the hatch closed.

It will be seen that the distance to be moved by the hatch-cover in the opening and closing operations may be regulated by the number of teeth on the racks, without reference to the size of the drum or the number of teeth in the gear-wheel.

It is designed to provide each floor through which the platform passes with a sliding cover and mechanism to operate it, as above described, the power in all cases being applied to the mechanism from the platform through the medium of the racks.

In some cases it may be desirable to construct the hatch-cover in two parts adapted to meet, in closing, about centrally of the hatch; and to effect this arrangement certain modifications in the manner of applying the cords or chains will be necessary; but the character of the changes will not in any manner affect the nature of the invention.

The advantages of automatically closing

hatch-covers, as means for preventing accidents and isolating the different stories of buildings in case of fire, are too well known to require any description herein.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

An elevator-platform having an upper and a lower rack fitted thereto, a winding-drum on a shaft, carrying a pinion adapted to engage with said racks, a sliding hatch-cover, and cords running over sheaves, connecting

the said drum and cover, combined substantially as specified, whereby the hatch-cover is slid from and over the hatchway by the movement of the elevator-platform, for the purposes described.

In testimony whereof I have hereunto subscribed my name this 24th day of December, in the year of our Lord 1877.

JAMES A. MARKER.

Witnesses:

WASHINGTON F. SMITH,  
JOSEPH MCINTYRE.