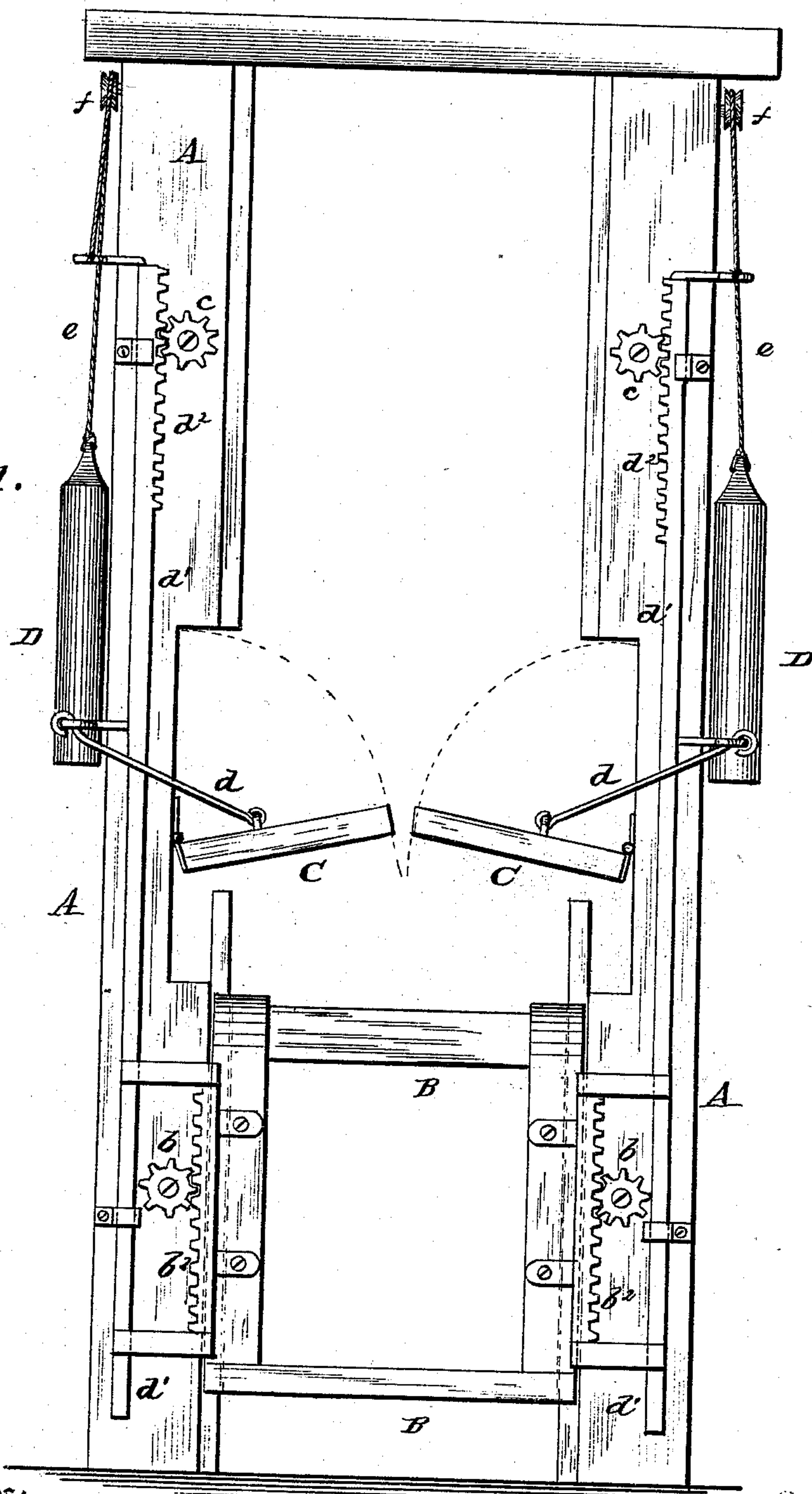


(Model.)

2 Sheets—Sheet 1.

C. H. MITCHELL.
Hatchway Door Mechanism.
No. 235,795.
Patented Dec. 21, 1880.

Fig. 1.



Witnesses:

P. C. Dietrich
Jno. H. Blockman.

Inventor

Charles H. Mitchell.

Per

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(Model.)

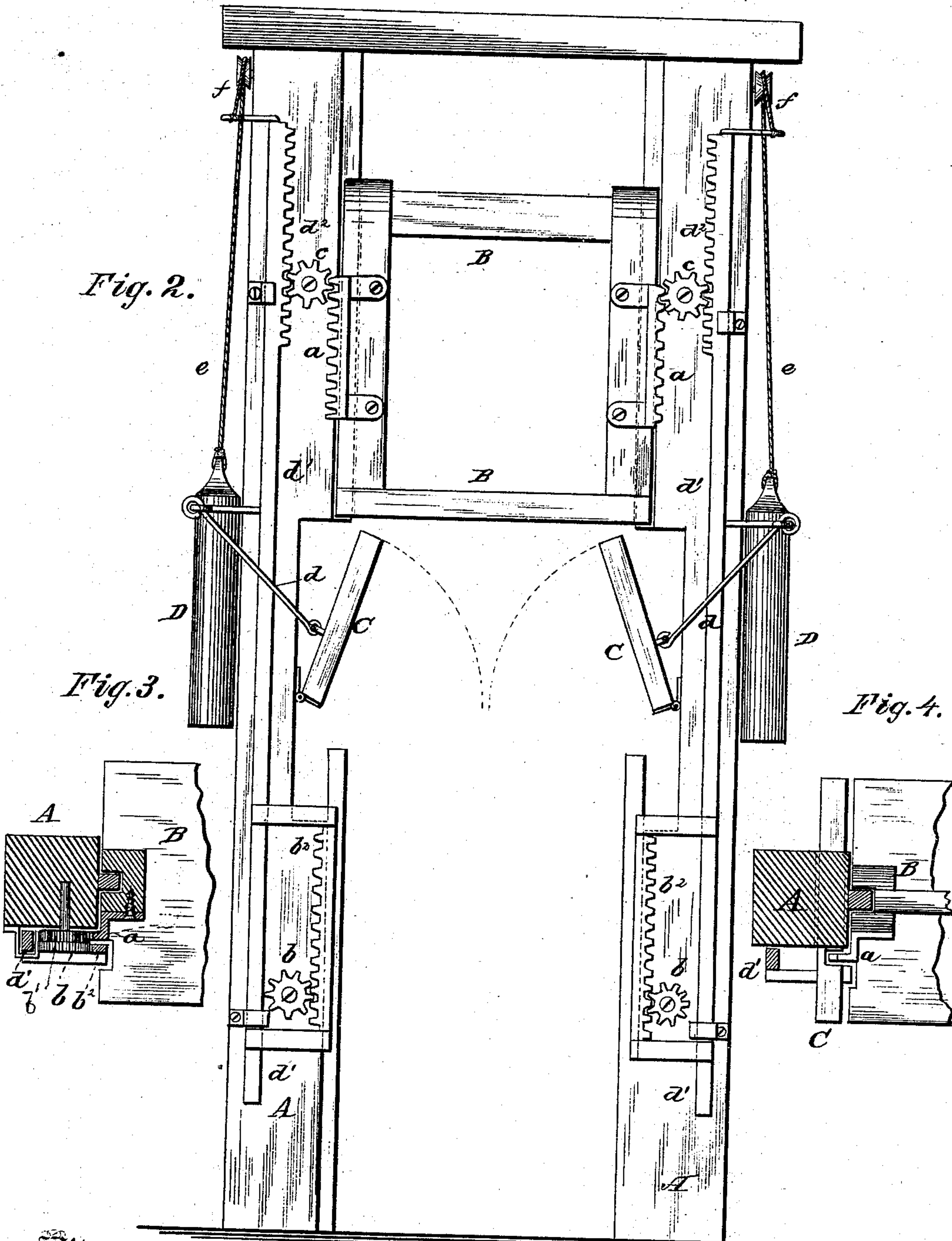
2 Sheets—Sheet 2.

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Fig. 2.

Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES H. MITCHELL, OF CHICAGO, ILLINOIS.

HATCHWAY-DOOR MECHANISM.

SPECIFICATION forming part of Letters Patent No. 235,795, dated December 21, 1880.

Application filed April 21, 1880. (Model.)

To all whom it may concern :

Be it known that I, CHARLES H. MITCHELL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Hatchways for Elevators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the
10 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 elevation of my improved
15 elevator. Fig. 2 is a similar view of the same with the hatchway or doors such as are employed in the floor of one of the stories of the house or store or warehouse, and Figs. 3 and 4 are detail views of the same.

20 This invention has relation to improvements in elevators for stores, warehouses, dwellings, and hotels, the object being to effect the opening and closing of the hatchway or passageway doors by the ascending or descending elevator; and it consists of certain mechanism
25 adapted to be operated by the action of the elevator, substantially as hereinafter more fully set forth.

In the accompanying drawings, A A mark
30 the upright ways, between which the platform or car travels, and which extend from the lower floor to the upper story of the building.

B is the platform or car, adjusted in position in the usual way between the uprights A
35 A, and of the ordinary construction. The platform or car B is provided upon each side with a rack, $a a$, which engages with the pinions b' , as shown in Fig. 3, upon the sides of the uprights or ways A, and which further en-
40 gage with the pinions $c c$ upon the sides of the ways or uprights A, as will be presently seen.

C C are the meeting hatchway or passageway doors, which are hung in recesses of the ways A, about on a level with the floor of the
45 building, it being designed to have doors for each floor to close the passage or hatch way of the elevator as it passes above or below the floor through each story. These doors C C are connected by links, rods, ropes, or chains d to

sliding bars d' , confined to the sides of the ways 50 or uprights A in any suitable manner. These sliding bars are provided with teeth $d^2 d^2$ at their ends, and connected to suspended weights D by cords e , (or their equivalents,) passing over pulleys f , suitably hung and fastened to the
55 sliding bars in any known way. The pinions b mesh with the racks b^2 , connected to the sliding bars d' , as shown in Figs. 2 and 3.

It will be observed that as the car or platform, being in its lower position, ascends, its
60 racks will rotate the pinions b' , with their pinions b , which will engage with and elevate the racks b^2 of the sliding bars d' , and they, in turn, will cause the sliding bars to ascend, by which it will be seen that they will draw up
65 and gradually elevate the doors out of the way of the approaching or ascending car or platform and allow the latter to pass without interference therewith.

It will also be noticed that as the platform 70 rises above the upper end of the door the racks on the car will engage with the pinions c , which, in turn, will mesh with and depress or lower the toothed sliding bars d' as against the upward force exerted thereon by its weights D, 75 which will allow the doors to again close with the descent of the sliding bars d' .

The foregoing combination and arrangement of parts effects the opening and closing of the doors, which close the hatchway or passage- 80 way of the elevator with the ascent and descent of the car or platform, thereby providing for the immediate closing of the doors or the filling up of the hole in the floor when the car of the elevator has passed either above or below, 85 and by the action of the elevator itself, thus keeping the hole or hatchway in the floor closed at all times other than during the ascent or descent of the elevator, and then only temporarily, without liability of the doors be- 90 ing left open.

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

1. In an elevator for buildings, the combi- 95 nation of the car or platform having the racks with the uprights or ways having pinions at or near their lower ends, with inside pinions

and slides having racks and connected to the doors, substantially as and for the purpose set forth.

5 2. In an elevator for buildings, the car or platform having the racks, in combination with the uprights or ways having pinions at their upper ends, the slides having racks at the same ends and connecting with the doors, substantially as and for the purpose specified.

10 3. In an elevator for buildings, the car or platform having racks, in combination with the uprights having pinions, as described,

slides or bars having both their upper and lower portions provided with racks and connected with the doors and weights, substantially as and for the purpose set forth. 15

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHARLES H. MITCHELL.

Witnesses:

WM. SMITH,

JOHN BALDWIN.