

No. 614,358.

Patented Nov. 15, 1898.

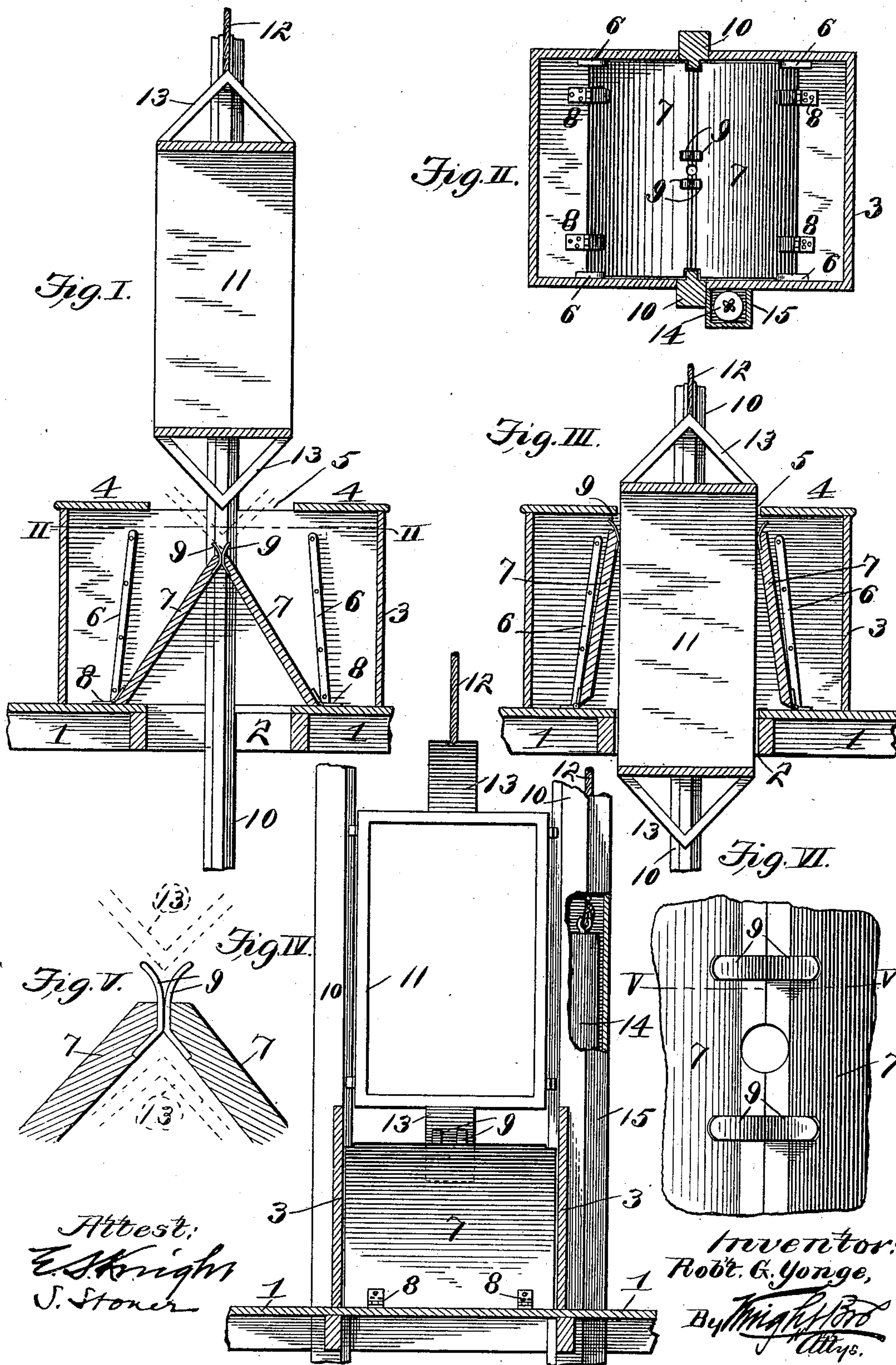
R. G. YONGE.

SAFETY HATCHWAY FOR ELEVATORS.

(Application filed Feb. 14, 1898.)

(No Model.)

2 Sheets—Sheet I.



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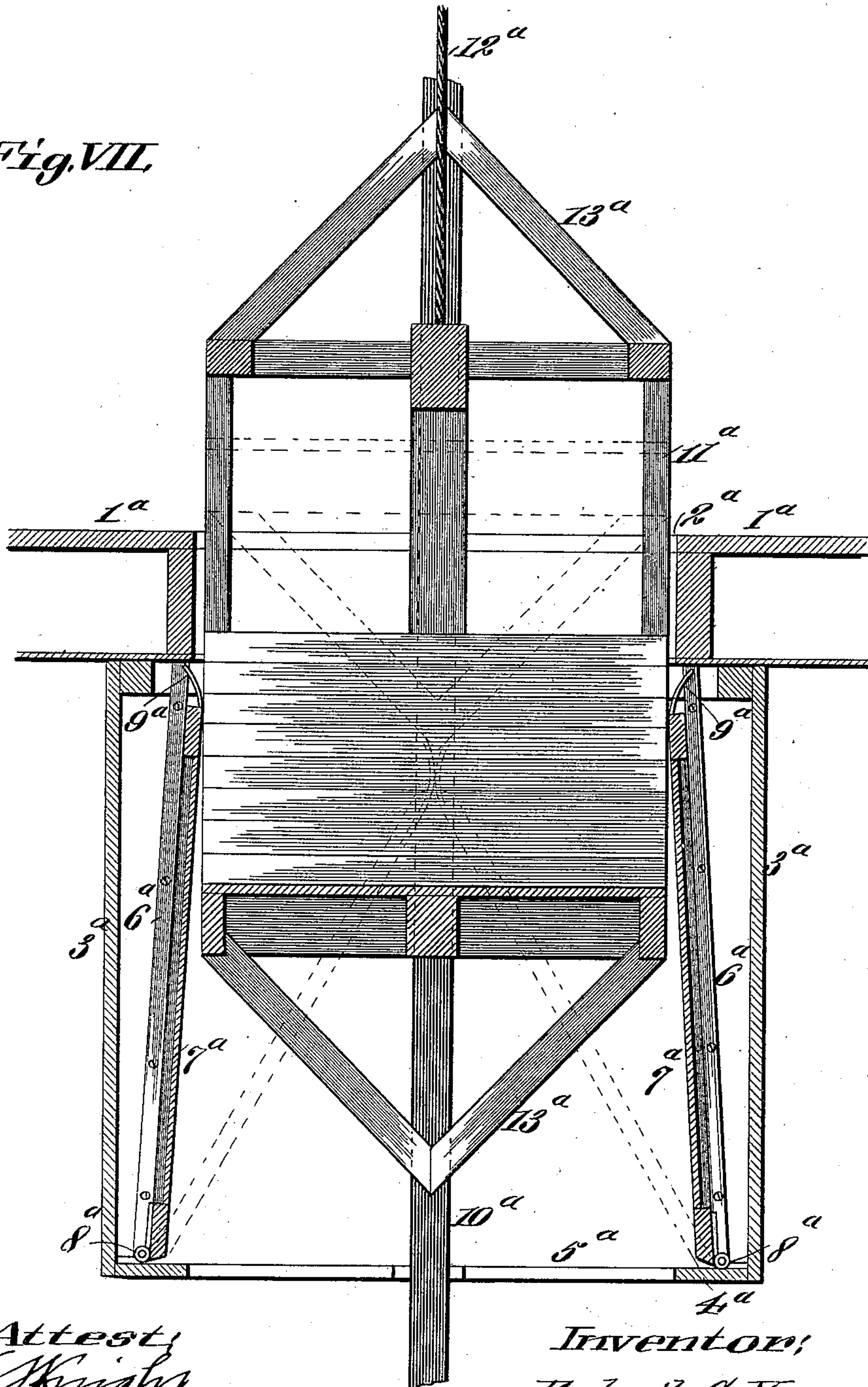
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Fig. VII.



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UNITED STATES PATENT OFFICE.

ROBERT G. YONGE, OF ST. LOUIS, MISSOURI.

SAFETY-HATCHWAY FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 614,358, dated November 15, 1898.

Application filed February 14, 1898. Serial No. 670,245. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. YONGE, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have
5 invented a certain new and useful Improvement in Safety-Hatchways for Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.
10

My invention relates to a safety-hatchway intended for use in connection with freight-elevators that convey articles from floor to floor in a building, the object of my invention
15 being to construct a simple and efficient hatchway that will completely close all communication through the elevator-aperture in a floor and prevent a draft therethrough, the device being so constructed as to require a
20 minimum of power to operate the doors in the passage of the car through the hatchway.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

25 Figure I is a vertical sectional view taken through the hatchway and the elevator-car. Fig. II is a sectional view taken on line II II, Fig. I. Fig. III is a similar view to Fig. I, showing the elevator-car within the hatch-
30 way and the hatchway-doors swung open in the position assumed when the car is passing through the hatchway. Fig. IV is a side elevation of the device, showing the car in the position assumed when descending and throw-
35 ing the hatchway-doors open for its passage through the hatchway. Fig. V is an enlarged detail sectional view taken on the line V V, Fig. VI, through the upper portions of the hatchway-doors. Fig. VI is a top view of the
40 upper central portions of the hatchway-doors. Fig. VII is a vertical sectional view showing the device located below the floor of the building instead of above the floor.

1 designates the floor of a building provided with the hatchway-aperture 2. Above the floor 1 is a housing 3, that surrounds the hatchway-aperture 2 and is provided with a top 4, containing an aperture 5 for the passage of the elevator-car. Within the hous-
50 ing 3 are strips 6, attached to the sides of the housing and inclined inwardly toward each other from the floor upward.

7 designates hatchway-doors connected by hinges 8 to the floor 1 and adapted to swing to and from each other in such manner that
55 when their upper free edges meet said doors assume a position at an angle to each other, as clearly shown in Fig. I. When said doors are swung outwardly into the position shown in Fig. III, (which is the position assumed
60 when the elevator-car is passing through the hatchway,) they are stopped by the strips 6 from moving into positions beyond a vertical line from their hinges and are therefore ca-
65 pable of returning to the closed position by gravity as soon as freed from contact with the elevator-car.

Secured to the upper ends of the doors 7 are prongs 9, whose upper ends extend outwardly in opposite directions, thereby form-
70 ing a V-shaped guide between the prongs when the doors are closed.

10 are elevator-guides between which the car travels.

11 designates the elevator-car, to which a
75 hoist-rope 12 is connected. At each end of the car 11 are V-shaped cams 13, the lower one of which is adapted to enter between the prongs 9 on the doors 7 when the car is descending, and thereby throw the doors apart
80 and allow the cams to travel on through the doors, completely opening them for the passage of the car. In the upward travel of the car the upper cam 13 strikes the doors when it reaches their upper ends and throws them
85 open. In each direction of the travel of the car after it has passed the doors again swing inwardly by gravity until their edges meet, and the hatchway is closed.

The housing 3, surrounding and inclosing
90 the hatchway doors and aperture, effectually closes all communication for draft through the hatchway from one floor to another.

14 designates a counterbalance-weight that operates in a boxing 15 and is connected to
95 the hoist-rope 12 to counterbalance the weight of the elevator-car.

The device thus far described is intended more particularly for use in connection with elevators that are operated by hand.
100

In Fig. VII, I have shown the device of a form in which it is capable of use in connection with elevators operated by mechanical power. In this instance the device is ar-

ranged beneath the floors of a building instead of above the floors, as shown and described with relation to Figs. I to VI, inclusive. 1^a designates the floor, provided with
5 a hatchway-aperture 2^a. 3^a designates a housing located beneath the floor, which is provided with a bottom 4^a, that partially incloses the lower end of the housing and has an aperture 5^a. 6^a are strips inclined in-
10 wardly in an upward direction on the interior of the housing 3^a. 7^a are the doors, connected by hinges 8^a to the bottom 4^a. The doors 7^a are provided with prongs 9^a. 10^a are guides in contact with which the elevator-car trav-
15 els, and 11^a is the elevator-car, connected to a hoist-rope 12^a and provided at each end with V-shaped cams 13^a. The operation of

this form of device is substantially the same as that of the device located above the floor.

I claim as my invention—

In a safety-hatchway for elevators, the combination of a pair of hinged doors arranged to meet each other at angles to the floor to which they are connected, the stop-strips which prevent the doors from being swung outward past
25 a vertical line from their hinges, and a housing inclosing said doors and stop-strips, substantially as described and for the purpose set forth.

ROBT. G. YONGE.

In presence of—

E. S. KNIGHT,

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