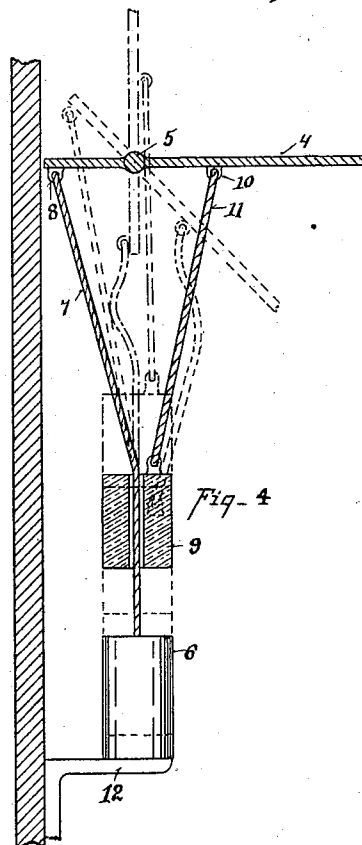
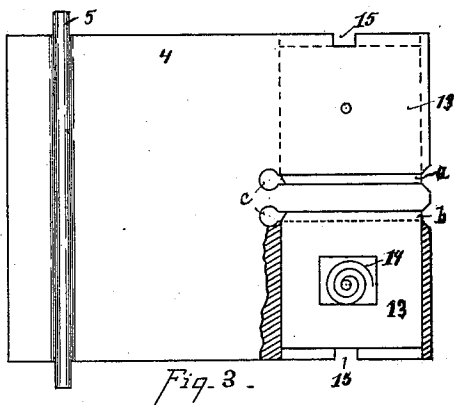
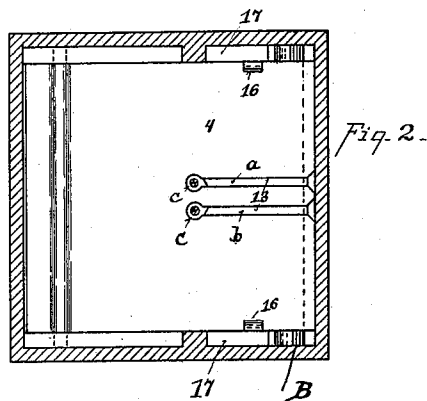
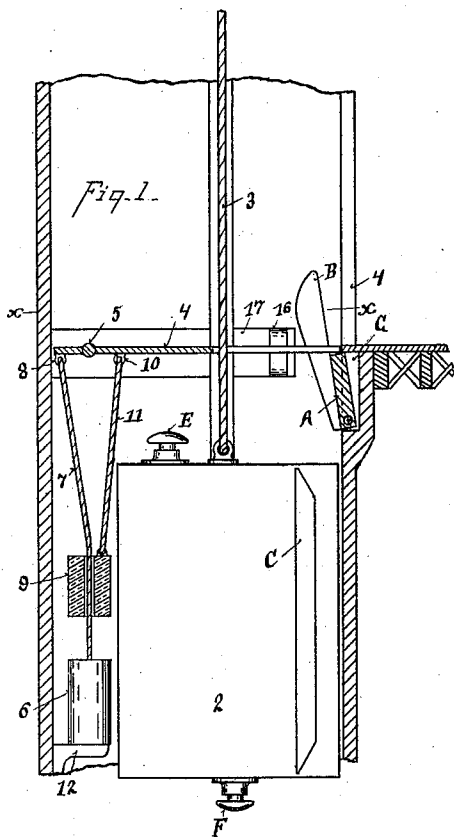


(No Model.)

S. G. TUFTS.
DEVICE FOR OPERATING HATCHWAY DOORS.

No. 478,297.

Patented July 5, 1892.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

SETH G. TUFTS, OF MAINVILLE, OHIO.

DEVICE FOR OPERATING HATCHWAY-DOORS.

SPECIFICATION forming part of Letters Patent No. 478,297, dated July 5, 1892.

Application filed August 20, 1891. Serial No. 403,221. (No model.)

To all whom it may concern:

Be it known that I, SETH G. TUFTS, a citizen of the United States, and a resident of Mainville, in the county of Warren and State of Ohio, have invented certain new and useful Improvements in Self-Closing Hatchways, of which the following is a specification.

This invention has for its object to provide a novel self-closing hatchway for elevator shafts; and it consists in the features of construction and the combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

15 Figure 1 is a central vertical elevation of my improvement, showing the hatchway closed. Fig. 2 is a section on line *xx*, Fig. 1. Fig. 3 is a broken plan view of the door. Fig. 4 is a sectional elevation of the weights and door, showing the upper, lowered, and normal positions of the door.

1 represents the sides of the hatchway, 2 the cab, 3 the cables for hoisting the same.

4 represents the door spanning the hatchway. It is desired to place one of these doors adjacent to each floor of the building, so as to serve as a platform or extension of the floor when the elevator is not passing.

5 represents the shaft on which the door is journaled.

In Fig. 1 I have shown the door as operated automatically by weights.

6 represents a weight for raising the door, which is connected by cord 7 to the eye 8 on the rear end of the door.

9 represents a weight for pulling the door down to the horizontal position. It is connected to the eye 10 by a cord 11. Weight 9 is pierced with a hole, through which passes the cord 7.

12 represents a stop, on which weight 6 rests when the door has been brought to the horizontal position, so as to relieve the same from the strain of weight 6.

13 represents a weighted pawl or stop, on which the end of the door rests. It is provided with an inclined guide B, which engages with the incline C on the cab for moving said stop-pawl A out of the path of the door, allowing said door to rise and fall as the elevator ascends or descends.

E represents a bumper on the top of the

cab, and F a similar bumper on the bottom of the cab.

The operation is as follows: As the cab 2 is raised the bumper E strikes the door and carries the same up, the incline B being moved by the incline C, throwing the stop-pawl A out of the way into the recess G. The door is raised by the cab against the strain of the weight 9. As soon as it has passed the door weight 9 descends and closes the same, the weighted stop-pawl A falling back into position to catch the door and hold it in horizontal plane. When the elevator descends, the incline C strikes the incline B and moves the stop-pawl A into the recess G out of the way of the descent of the elevator. The bumper F strikes the door and depresses it. The weight 6 is raised and comes in contact with weight 9, both weights conjoining to raise the door into the horizontal plane when the elevator passes the same. When the combined weights have raised the door, the weight 6, coming to rest, relieves the door from the strain thereof.

The door 4 is provided with slots *a b* to pass over the cables as the door is raised or lowered. *c* represents eyes, through which the cable passes when the door is closed. It is desirable to close these slots *a b* in order to close the hatchway and prevent it acting as a flue in case of fire. For this purpose I have provided the following instrumentalities.

13 represents slides placed in guideways in the door and held normally outward by the spring 14. Means are provided to force these slides inward when the door is in a horizontal position, so as to close the slots *a b*.

15 represents notches cut in the base of the door, which are closed by the guides 13 when in the outward position.

16 represents inclines on either side of the hatchway supported on timber 17. When the door is brought down into horizontal position, these inclines 16 are brought within the notches 15 and press the sides of the valves 13 inward, closing the slots *a b*. As the door is moved to or from the incline the slides move outward, so as to allow the rope or cable to pass out said slots when the door is raised or lowered.

In Fig. 4 one series of dotted lines shows the position of the weights, door, and cord when

the door is raised to allow the cab to pass up and the other shows it in the inclined position in the act of going downward in front of the cab.

5 Having described my invention, what I claim is—

10 1. In combination with the door 4, hinged to the shaft 5 within the hatchway of an elevator-shaft, the weights 6 and 9, connected by cords 11 and 7 to the door on each side of its shaft, the cord on one weight passing through the other, and the rest 12 to sustain the weight when the door is in the horizontal position, substantially as described.

15 2. The combination, with an elevator-shaft and a cab, of a swinging door hinged by a

shaft or rod in the elevator-shaft and having the slots *a b* and side notch 15, the slides 13 for covering the slots when the door is horizontal, the springs 14 for pressing the slides 20 outwardly, and the inclines 16, secured in the elevator-shaft and adapted to enter the side notches of the door for moving the slides to close the slots when the door is horizontal, substantially as described.

25 In testimony whereof I have hereunto set my hand.

SETH G. TUFTS.

Witnesses:

T. SIMMONS,
C. W. MILES.