

No. 610,562.

Patented Sept. 13, 1898.

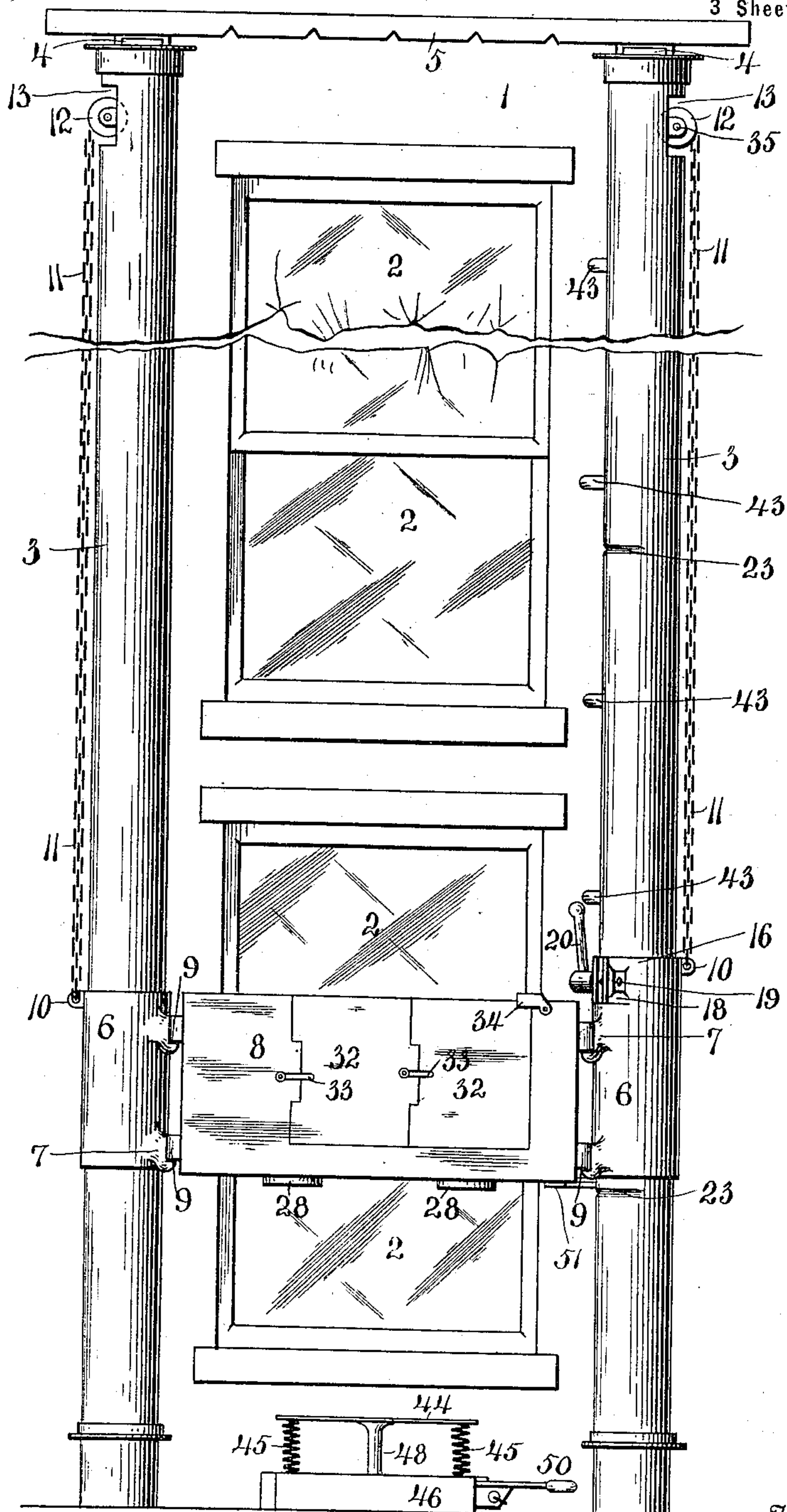
C. S. RAMOS.  
FIRE ESCAPE.

(Application filed July 22, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses  
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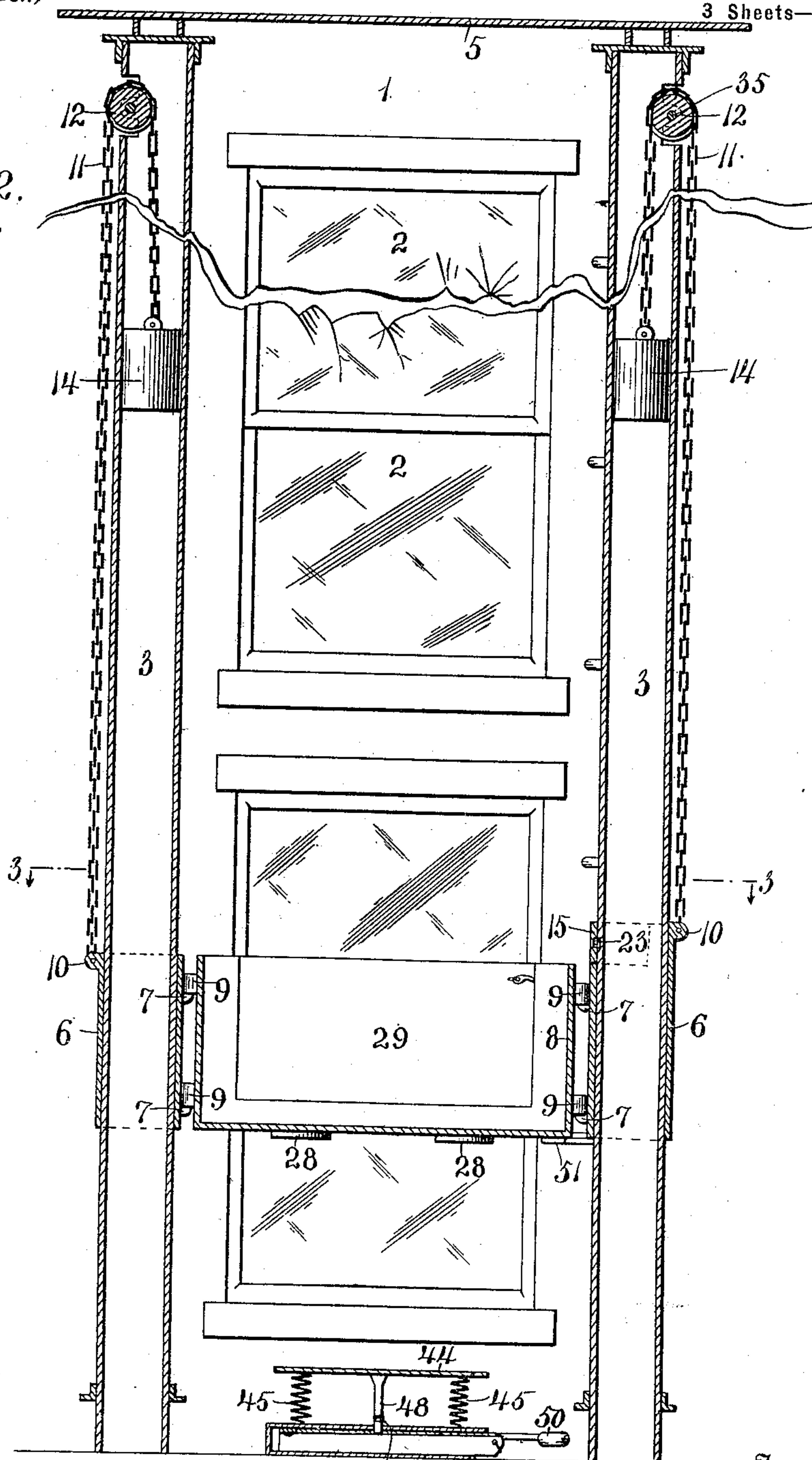
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Fig. 2.



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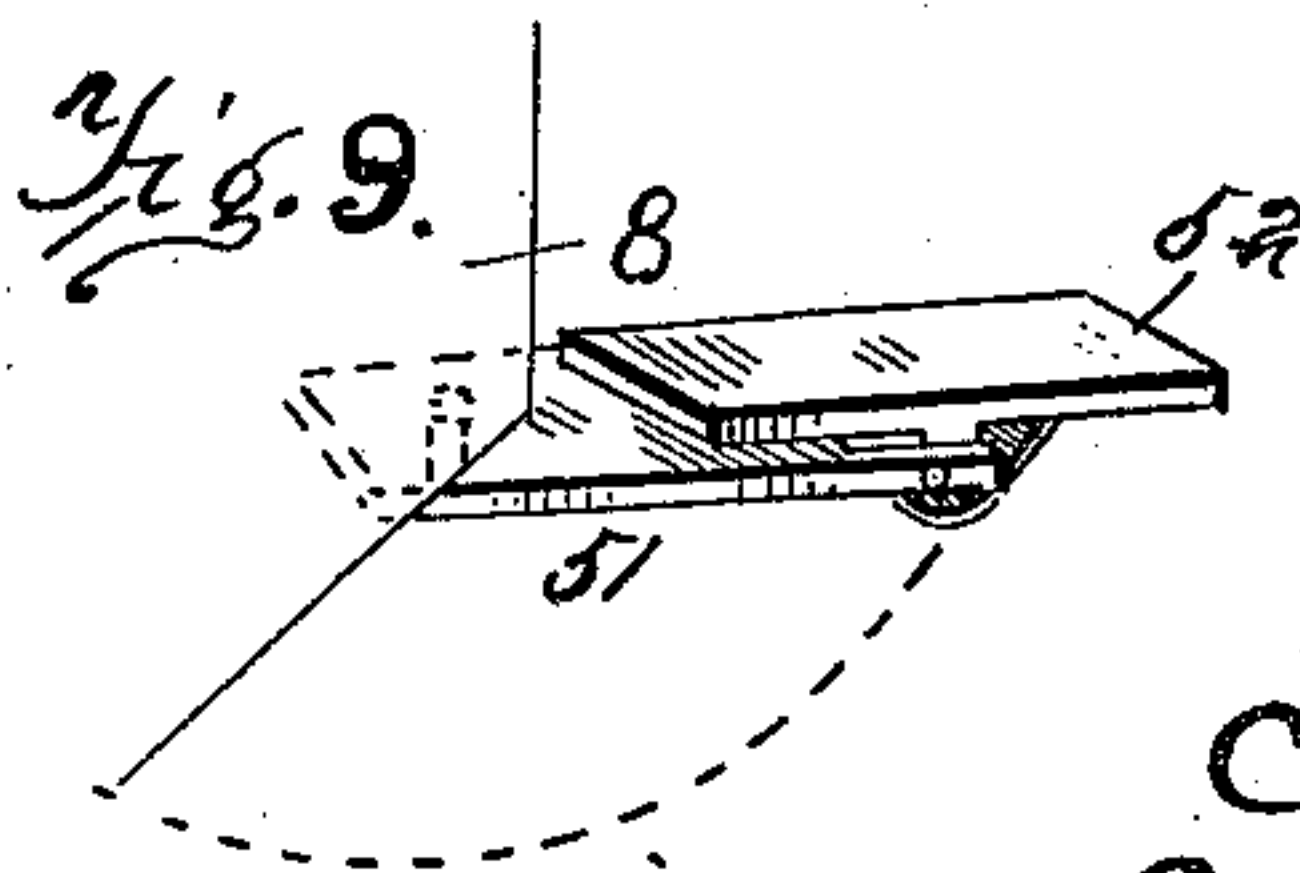
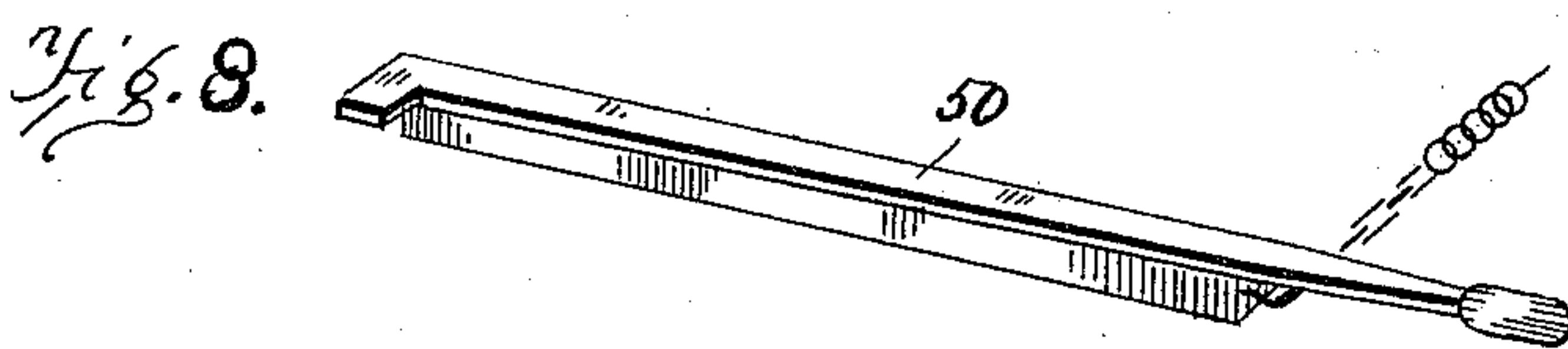
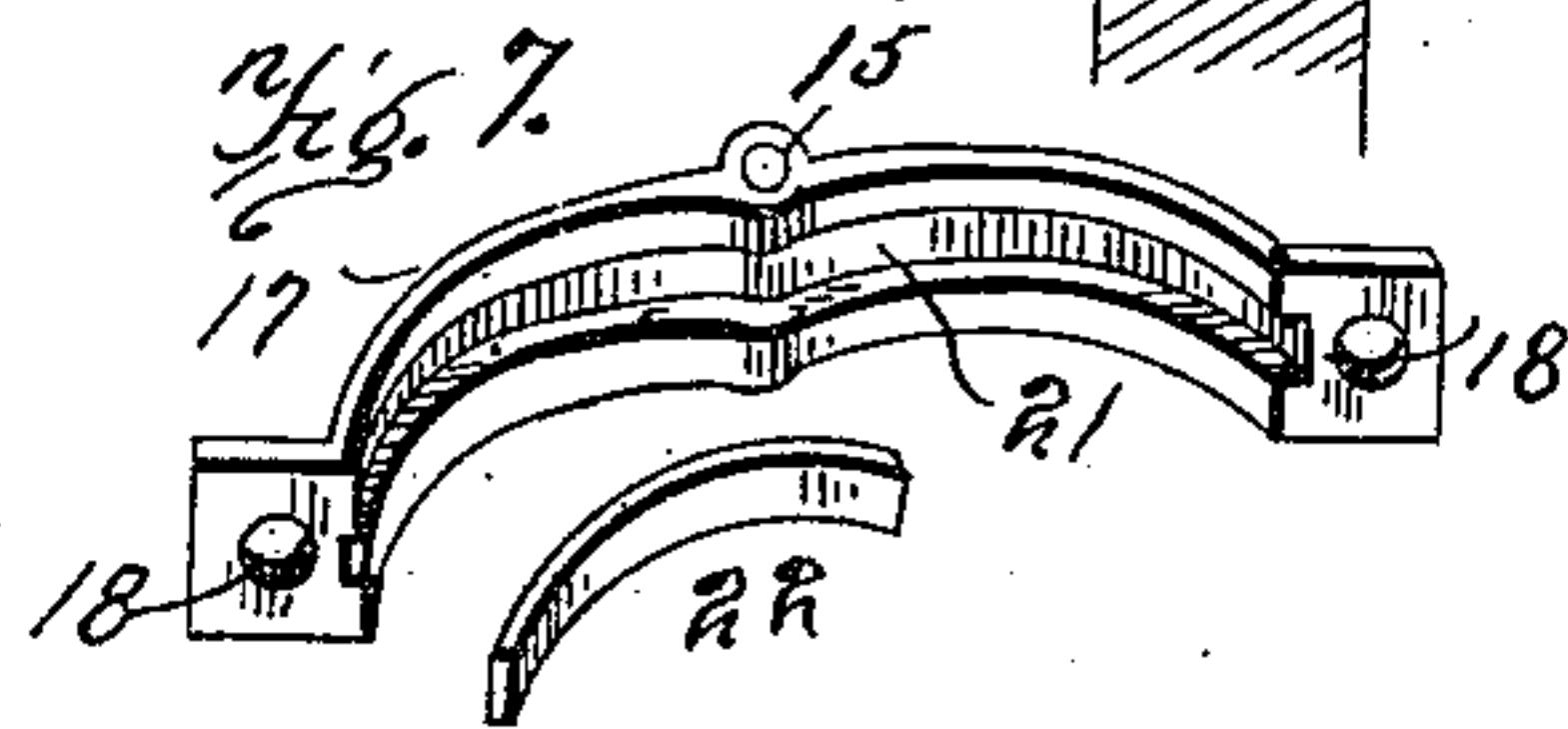
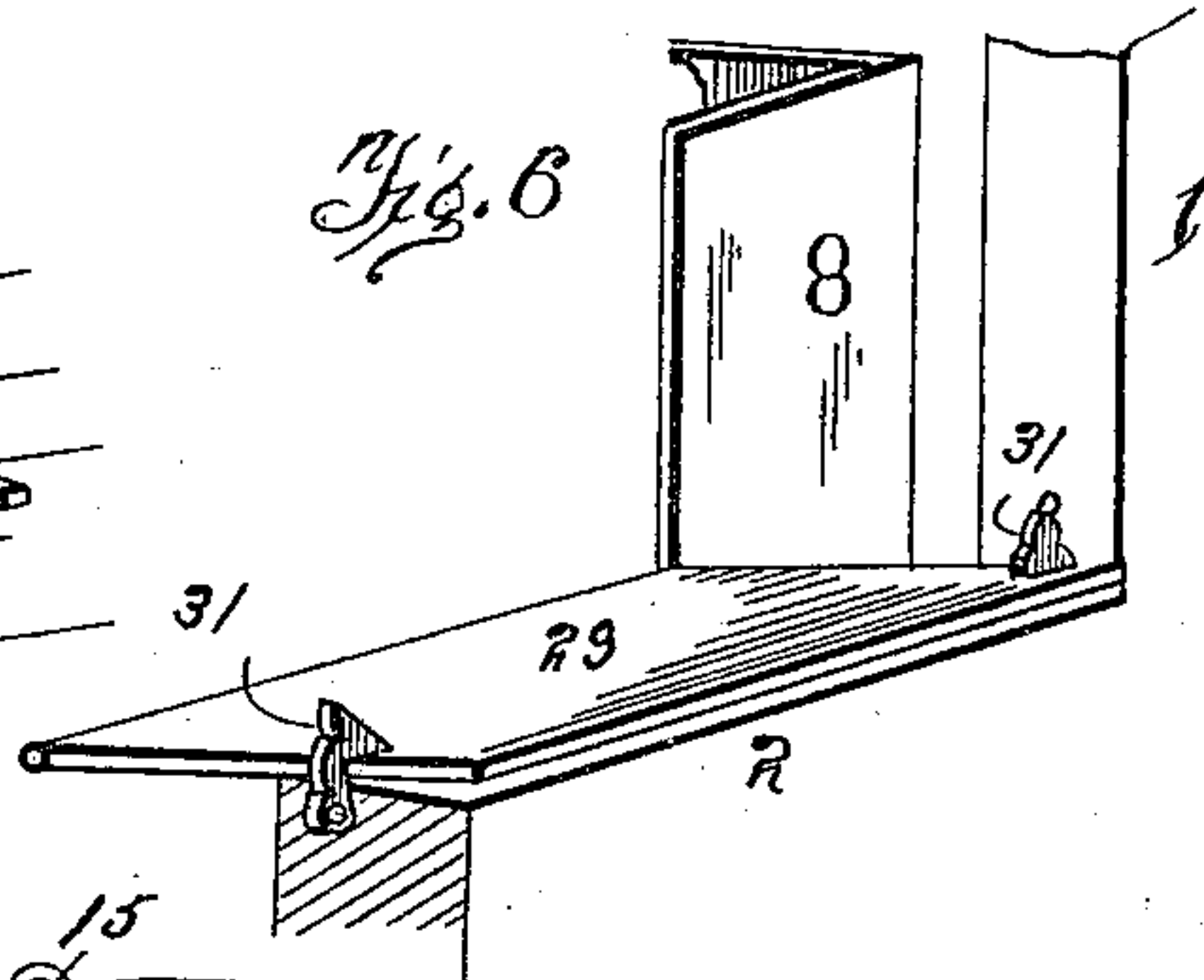
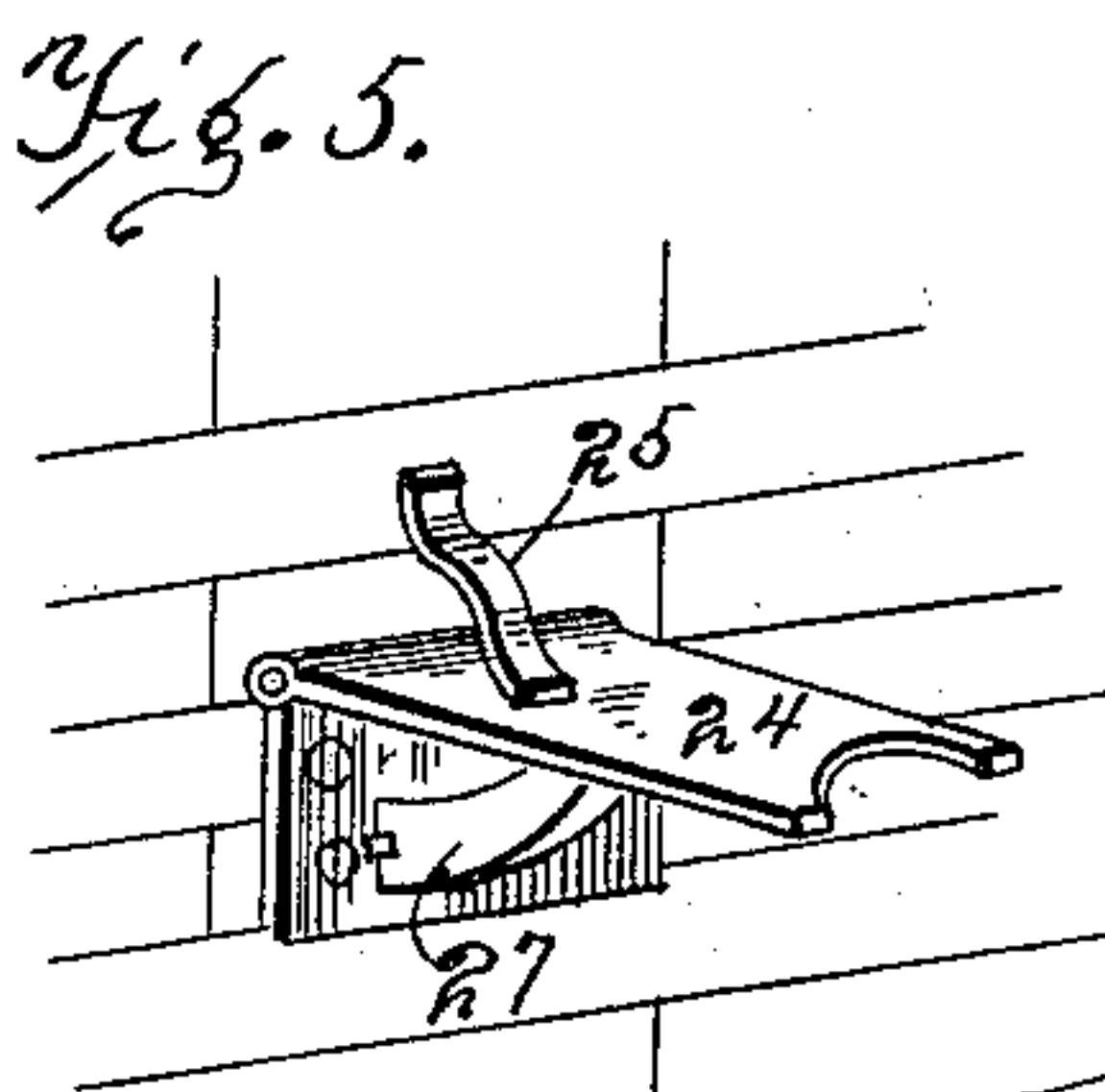
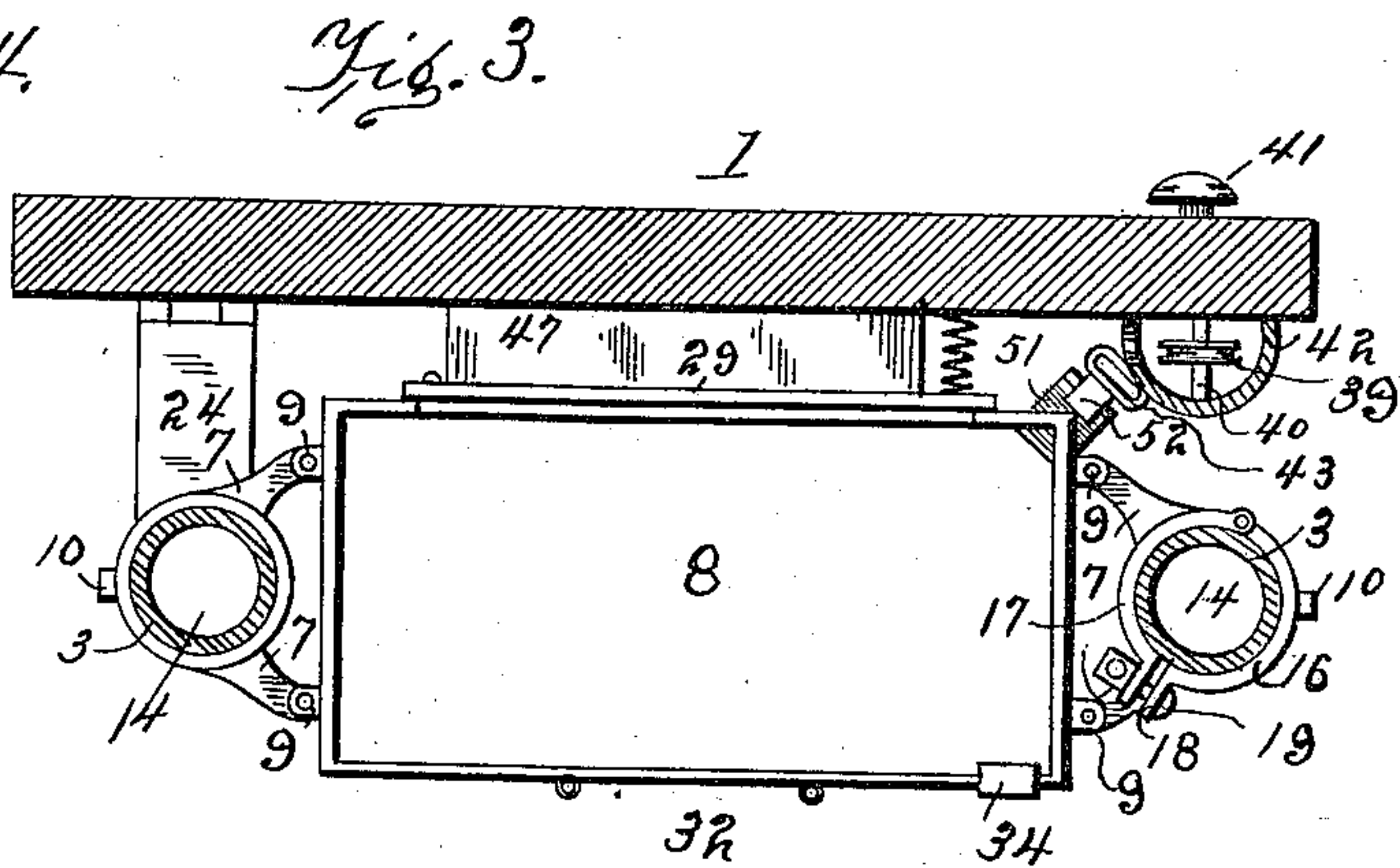
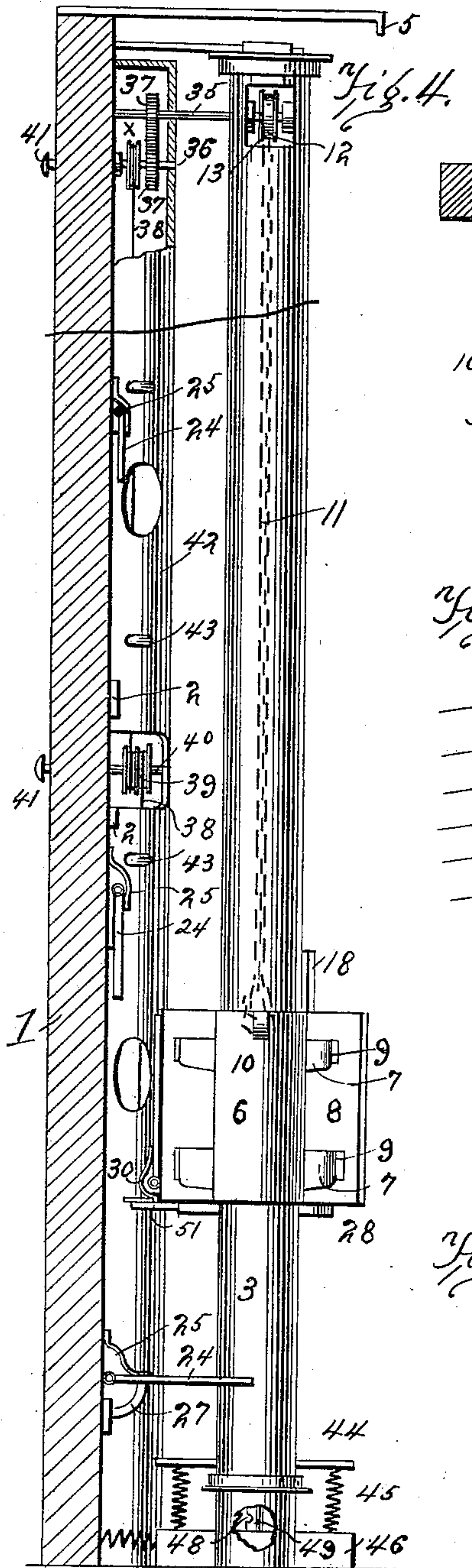
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3 Sheets—Sheet 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

CAYETANO S. RAMOS, OF NEW YORK, N. Y.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 610,562, dated September 13, 1898.

Application filed July 22, 1897. Serial No. 645,564. (No model.)

*To all whom it may concern:*

Be it known that I, CAYETANO S. RAMOS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to a novel construction in fire-escapes, and has for its object to provide in a device of this character means by which a car can be moved vertically in front of the windows of a building, also means for controlling the movement of said car whereby it can be stopped in front of any particular window for the purpose of receiving passengers, and also a mechanism for operating the device and for providing for the general efficiency thereof.

To these and other useful ends the invention consists in the features of construction hereinafter fully described and specifically claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of a portion of a building to which this improved fire-escape is attached, and in this view certain parts are broken away for convenience of illustration. Fig. 2 is a vertical section taken through the tubes or hollow posts and in a plane parallel with the plane of the front of the building. Fig. 3 is a horizontal section taken on the line 3 3 of Fig. 2. Fig. 4 is a side elevation. Figs. 5, 6, and 7 are detail views that will be understood in connection with the following description. Fig. 8 is a perspective view of the latch-lever. Fig. 9 is a perspective view of the catch-arm.

Referring now to the said drawings, 1 indicates the front wall of a building, and 2 the windows. Situated a little distance in front of the building and on opposite sides of the line of windows 2 are a pair of upright hollow posts or tubes 3. These posts extend from the upper window to the ground and are firmly fastened to the wall by braces 4 or can be held in position by any other approved means. Extending from the front wall of the

building and over the posts 3 is a roof or hood 5 of any approved construction. This roof or hood serves to protect the occupants of the car and also the apparatus.

Mounted upon the posts or tubes 3 are sleeves 6, that are free to slide thereon and which are provided on their inner sides with hooks 7, by means of which the car 8 is carried. The said car 8 is preferably rectangular and fits between the posts, and its ends are provided with the eyes 9 to receive the hooks 7 in the manner shown. On the outer sides of the posts the said sleeves are provided with loops 10 or other convenient means by which the cables 11 are fastened thereto. These cables 11 extend upwardly and over pulleys 12, that are mounted in bearings at the upper ends of the posts and are situated within openings 13 on the outside of the posts. Within the hollow posts are counterbalance-weights that are connected with the other ends of the cables 11 and which serve to counterbalance the weight of the car 8. The relation between the counterbalancing-weights 14 and the car is such that said weights are sufficient to elevate the car itself, but are not sufficient to elevate said car with the weight of one person therein.

For controlling the movement of the car one of the sleeves 6 is provided with a brake 15, which consists of a rigid member 16 and a movable member 17. These two members are hinged together at one end and are semi-circular in cross-section to extend around the posts. At the other ends are the ears 18, one of which is provided with a screw-threaded opening therein, while the other has a plain opening, so that the screw-threaded shaft 19 can be turned by the hand-wheel 20 to move the brake members toward and away from each other, so as to be closed upon or released from the upright posts. In the inner face of the movable member 17 is a horizontal groove 21, in which is situated the curved spring 22. This groove 21 may be in both members of the brake-clamp; but the spring 22 need only be placed in the groove in the movable member. The post is also provided opposite each window with annular grooves 23 to receive the spring 22. In this way it is seen that the brake members can be regulated to control the descent of the car when the same is car-



rying passengers, and also that by tightening the brake members sufficiently the spring will engage the groove opposite any particular window to cause the car to come to a standstill. Opposite the other post and fastened to the wall are also additional means for arresting the descent of the car, which consist of pivoted arms 24, pivoted to the wall 1 opposite each window and are normally held down and flat against the wall by a spring 25. Below each of the pivoted arms 24 is a bracket 27, that swings in a horizontal plane and is so constructed that when the arm 24 is raised to a horizontal position against the action of the spring 25 this bracket can be moved outwardly to support the arm 24 in this position. The outer end of the arm 24 is curved to conform to the curvature of the post, so as to fit closely against the same. In operation a person leaning from a window can move the arm 24 to a horizontal position, and then the bracket 27 can be moved outwardly to support the same, so that when the car in descending comes in contact therewith its movement is arrested.

The car 8 is preferably rectangular in shape, and the lower face of the floor of the car is provided with the buffers 28, upon which the car rests when it is at the lower limit of its movement, and thus serve to prevent undue shocks to the car and to the apparatus. The rear side of the car is provided with a door 29, that is hinged at its lower edge to the lower edge of the opening in the side of the car and swings outwardly. The width of the door is less than the width of the windows in the building, so that when the door is swung outwardly it rests upon the window-sill and provides a platform across which the passengers can walk when entering the car.

The spring 30 serves to normally close the door 29, and upon the window-sill are the spring-catches 31, that engage the edges of the door when the latter is thrown to the horizontal position, as shown in Fig. 6, and which can be readily released to permit the door to close. The outer side of the car is provided with a gate 32, that swings outwardly and which conveniently comprises two hinged sections. Springs 33 are arranged upon said gate to fold one hinged section upon the other, while said hinged sections can be held in the closed position, as shown in Fig. 1, by means of the latch 34.

As before stated, the car descends under the weight of one person and will ascend by reason of its counterbalancing-weight when empty. I have provided, however, means for causing the car to descend when it is empty and also means whereby the person within the car can cause it to ascend. The shaft 35 upon which the pulley 12 runs on one of the posts is extended and is mounted in bearings upon the wall of the building. The inner end of this shaft 35 is geared to a shaft 36, mounted also in bearings upon the wall of the building, said gearing consisting, preferably,

of intermeshing gear-wheels 37 upon said shafts. A cable 38 is trained around the pulley X on the shaft 36 and extends downwardly adjacent the sides of the window and around pulleys 39. Said cable 38 is in the form of a belt and is supported at its ends upon the upper and lower pulleys, one indicated at X and the other at 39. Pulley 39, as shown, may be double, and a second cord 38 may extend in similar manner to a lower pulley of similar character. Pulley 39 is fast on shaft 40, which extends through the wall and is connected to an alarm 41 within the building. The cable 38 may be protected by a light casing 42, but provided with openings near the windows to permit access to the cable for operating the same.

It will be seen from the foregoing description that the occupant of any of the rooms can reach from the window and operate the cable 38 to cause the car to descend through the intermediacy of the gear between the shafts 35 and 36, as is obvious, and, further, that when the parts are so operated and caused to descend an alarm is sounded in each room, so that the occupants are awakened and notified of the conflagration. The pulleys 39 and the other parts that are secured to the wall of the building are protected and concealed by a shield 42, attached to the wall of the building in rear of the post, and on the side of this shield are the handholds or handles 43, by means of which a person standing within the car can raise his weight, so as to relieve the car thereof and permit the counterbalancing-weights to elevate the car.

I have also provided a cushion upon which the car rests when at the lower limit of its movement, said cushion being employed to obviate the danger of an unusual shock or jar that may be caused if the car descends too fast, either by reason of the ignorance of the occupants of the car of the manner in which the speed is controlled and regulated or by reason of some accident to the operative parts. This cushion consists of a plate 44, that is mounted upon a plurality of springs 45, resting upon a base 46, said base being conveniently supported from the wall of the building by a brace 47 or in any other convenient manner. The plate 44 is provided at about its center with a depending pin 48, that extends through an opening in the base and is provided with a notch 49 to be engaged by a latch-lever 50 when the plate is depressed. The said latch-lever 50 is normally held against the pin by the spring, and in its normal position the notch in the pin is above the latch-lever. This arrangement is made so that if the car descends and strikes the cushion with great force the rebound of the cushion will not throw the car upwardly, but said plate will be held depressed by the spring latch-lever 50, so that the cushion acts only to break the fall of the car without subjecting the car to the rebound. By disengaging the latch-lever from the notch 49 the plate of



the cushion regains its former position. The said car 8 is also provided with a catch-arm 51, that comprises a plate pivoted to the lower side of the car at the corner adjacent the handle 43 and which is provided at its outer end with a spring-finger adapted to come in contact with said handle. The plate 51, however, is pivoted, as shown, so that it can be swung inwardly beneath the car. The outer end of the plate is provided with a pivoted finger 52, whose outer end can be moved downwardly from a horizontal position, but not upwardly. It is seen, therefore, that when the car is rising and the occupant is lifting himself by means of the handles this spring-finger 52 will pass by each of the handles and allow the car to ascend, but will effectually prevent the descent thereof, as is obvious, so that should the person within the car desire to stop at any particular point the said catch-arm 51 will support the car in the meantime.

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

1. In a fire-escape, the combination with a building, of two upright hollow posts, sliding sleeves mounted upon said posts, hooks upon said sleeves, a car provided with eyes to receive said hooks, devices for elevating said sleeves upon the posts and devices for controlling the descent thereof, substantially as described.

2. In a fire-escape, the combination with a building, of two upright hollow posts, sleeves mounted to slide upon said posts, a car carried by said sleeves, devices for elevating said sleeves, a brake carried by one of said sleeves and comprising a rigid member and a movable member, and devices for moving said members relatively, said movable member being provided on its inner face with a groove in which is situated a curved spring that is adapted to engage exterior grooves in said hollow posts, all the specified elements combined substantially as described.

3. In a fire-escape, the combination with a building, of two upright hollow posts, a car guided and movable upon said posts, counterbalance-weights for elevating said car, and handles upon said building situated adjacent said car, whereby an occupant of the car can raise his weight therefrom, substantially as described.

4. In a fire-escape, the combination with a building having window-openings, of a car supported in front of said windows and adapted to move vertically, means for elevating the car and causing the same to descend, a hinged door upon the side of said car adapted to swing outwardly and to rest upon the window, a

spring for holding said door normally closed, and a catch for holding said door open against the action of the spring, substantially as described.

5. In a fire-escape, the combination with a building provided with a plurality of stops or handles, of an upright movable car provided with a plurality of spring-catches adapted to come in contact with the said stops or handles, substantially as described.

6. In a fire-escape, the combination with a building provided with a plurality of stops or handles, of an upright movable car provided with a plurality of spring-catches adapted to come in contact with the said stops or handles, and a catch-arm pivoted to the under side of the car whereby it can be swung inwardly, substantially as described.

7. In a fire-escape, a building provided with a plurality of projecting handles, and a car adapted to move vertically and adjacent to said handles, and provided with a catch-arm having at its outer end a spring-finger that is adapted to engage the said handles, substantially as described.

8. In a fire-escape, the building, two upright hollow posts connected thereto, a car guided and movable upon said posts, counterbalance-weights within said posts, a chain connected to the car and weights over suitable pulleys, and a separate cable running over a pulley having geared connection to one of said weight-supporting pulleys and extending near the path of movement of the car, whereby the car may be supported by the counterbalance, or raised by manual power from within the car, operating on the pulley supporting the counterbalance-chain, all the specified elements combined, substantially as described.

9. In a fire-escape, the building having two hollow upright posts connected thereto, a car guided on said posts and connected by chains passing over suitable pulleys to counterbalance-weights within the posts, separate operating means connected to one of said pulleys and extending to the proximity of the car, whereby the car may be lifted by its occupants, and a brake connected to the car and engaging one of the posts, and in position to be applied by the occupant of the car, all the specified elements combined substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CAYETANO S. RAMOS.

Witnesses:

LOUIS W. RHODRICK,  
CHAS. O. HALL.