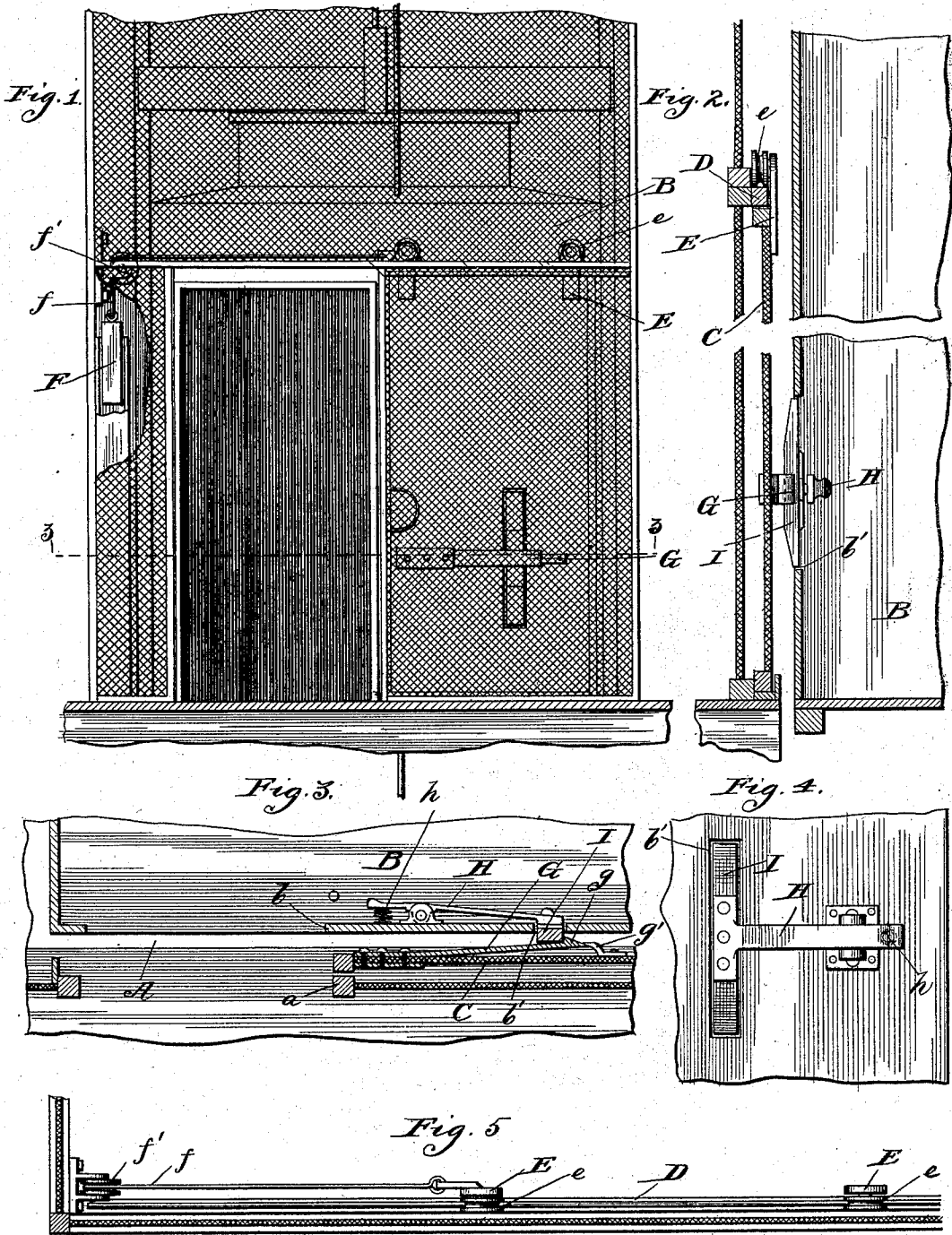


(No Model.)

R. T. CRANE.
ELEVATOR DOOR.

No. 504,864.

Patented Sept. 12, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

RICHARD T. CRANE, OF CHICAGO, ILLINOIS.

ELEVATOR-DOOR.

SPECIFICATION forming part of Letters Patent No. 504,864, dated September 12, 1893.

Application filed January 9, 1891. Serial No. 377,228. (No model.)

To all whom it may concern:

Be it known that I, RICHARD T. CRANE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Elevator-Doors, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a front elevation of a portion of an elevator well, a guard door and the car at the door; Fig. 2, a section of the same, taken on the line 2, 2, of Fig. 1; Fig. 3, a detail plan section, taken on the line 3, 3, of Fig. 1; Fig. 4, a detail inside elevation of the front of the car, showing the spring cleat; and Fig. 5, a detail plan section, taken on the line 5, 5, of Fig. 1.

My invention relates to guard-doors of elevator wells, the object being to provide for the certain closing of this door as soon as the car passes. Accidents frequently occur by persons stepping through the open door and falling down the elevator well when the car is not at the door; these accidents, of course, are occasioned by the carelessness of the attendant in leaving the guard-door open. It is obvious that if the guard-doors at the several floors were always closed behind the car whenever it passes up or down, these accidents would be entirely prevented.

My present improvement is intended to effect this result and to insure the closing of the guard-door on each floor with absolute certainty, as soon as the car has passed.

The improvement consists in certain devices whereby the guard door is held open by the car, while in position before it; but will be released as the car passes up or down from this position and is then closed by the action of a weight or spring.

I will proceed to describe in detail the construction and operation of mechanism, whereby I have embodied my invention in one practical way and will then point out more definitely in claims the improvements which I believe to be new and wish to secure by Letters Patent.

In the drawings, A represents the elevator well, and B the car arranged to pass up and down within the well, as usual. At each floor there is, of course, a door-way, *a*, in the front

wall of the well, whereby entrance to and exit from the car may be made through the similar door-way, *b*, in the latter. A sliding door, *C*, is arranged to close the door-way *a*. As shown in the drawings this door, which is the guard-door, is hung upon a way, *D*, the door being provided with ordinary hangers, *E*, the rollers, *e*, run upon this way. A weight, *F*, is connected by a cord, *f*, to the upper front edge of the door running over a pulley, *f'*, the weight being sufficient to surely close the door when all resistance to this movement is removed. On the inside of the guard-door is a spring catch, *G*, being shown in the drawings as a simple flat spring, fastened at one end to the door near its inner edge and extending rearward therefrom and provided with a hook or notch, *g*, at its free extremity. A keeper, *g'*, may be provided, if desired, at the free end of the spring for the purpose of limiting its outward movement, as indicated in Fig. 3. A horizontal lever, *H*, is pivoted to the inside of the car near the door-way in the latter and extends inward along the side of the car a little distance and carries upon its inner end a bar or cleat, *I*, arranged at right angles to the lever and rigidly fastened thereto. This cleat extends some little distance above and below the lever, as seen in Figs. 1 and 4, and is arranged to project through a slot, *b'*, cut in the side of the car for this purpose. At the outer end of the lever there is a spring, *h*, arranged to normally throw this end of the lever inward or away from the side of the car, which action will, of course, cause the bar or cleat *I* to project through the slot and beyond the car on the outside thereof, as seen in Fig. 3. The spring catch on the guard-door is arranged, so that when the car is stopped in proper position at any floor, the cleat will stand in the path of the catch as the guard-door is pushed back to open the door-way and so the spring catch *G* will engage with the cleat when the door is fully opened, as seen in Figs. 1 and 3. Evidently the door will be held open by these devices as long as the car stands still; but as the car moves again, either up or down, the cleat will soon be carried away from engagement with the spring catch, the door will, therefore, be free to move, and will at once be closed by the operation of the weight. Obviously, therefore, the guard-door will cer-

tainly be closed whenever the car moves away from the entrance, thereby preventing accidents, resulting so frequently from guard-doors being carelessly left open by the attendant of the car. It will be seen that the closing of the guard-doors is not dependent in the least upon the elevator attendant. The cleat lever is, however, placed under the control of the attendant inside of the car, so that he may release the catch at any time desired before the car moves, thereby permitting the door to close without any movement of the car. This, of course, is desirable for some purposes; though so far as catching the door when opened and releasing it by the movement of the car are concerned, the result may be obtained by a fixed cleat secured in any suitable way to the outside of the car.

It will be understood, of course, that some other devices may be substituted for the

weight to close the door when released; and changes may be made in the special construction and arrangement of devices herein shown and described without departing from the principle of my invention.

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

The elevator car B, provided with vertical slot *b'*, in combination with the spring lever H, cleat I, arranged on the free end of said lever and to project through the slot in the car, the sliding guard-door C, the spring catch G arranged on the inside of said door and the actuating weight F, substantially as and for the purposes specified.

RICHARD T. CRANE,

Witnesses:

CARRIE FEIGEL,

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