

F. A. THOMAS.  
LATCH FOR ELEVATOR GATES.

Patented Mar. 18, 1890.

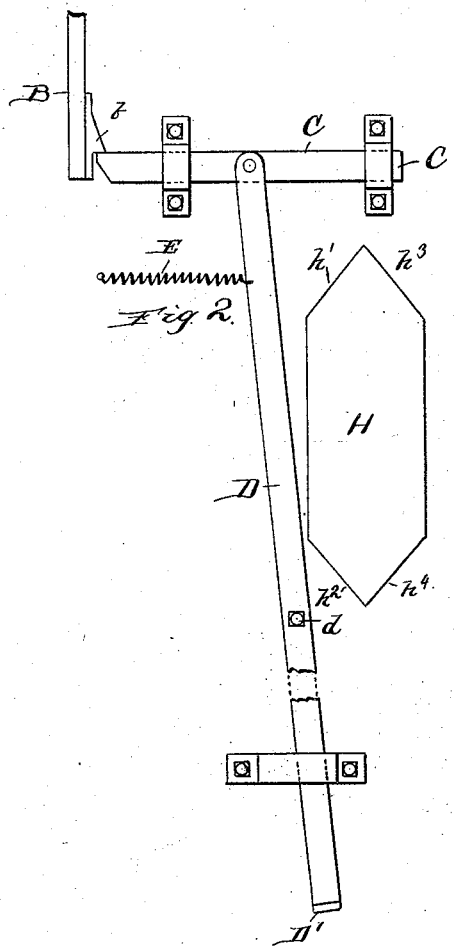
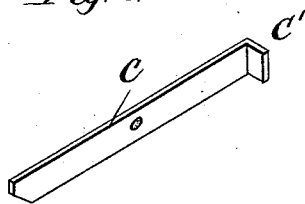


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## LATCH FOR ELEVATOR-GATES.

SPECIFICATION forming part of Letters Patent No. 423,459, dated March 18, 1890.

Application filed December 20, 1889. Serial No. 334,425. (No model.)

### *To all whom it may concern:*

Be it known that I, FREDERICK A. THOMAS, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Latches for Elevator-Gates, of which the following is a specification.

This invention relates to an improved latch for elevator-gates so contrived that the motion of the elevator carriage or platform in either direction, up or down, will cause the gate to close if the same shall have been left open.

The nature of the invention will be apparent from the following specification and the accompanying drawings, which form a part thereof.

In said drawings, Figure 1 represents a vertical central section of a portion of an elevator-shaft and its carriage, illustrating the invention. Fig. 2 is a view, upon a larger scale, of the latch, cam, door, &c. Fig. 3 represents one of the parts shown in Figs. 1 and 2.

In said drawings, A represents the well or shaft of an ordinary elevator.

B B are sliding doors placed at suitable intervals in the shaft when communicating with the several floors of the building. These doors are of the ordinary kind, opening and closing by a vertical sliding movement, and which are usually provided with counter-balances, so that they will raise easily and close of their own weight when not held. Each door, at one side thereof, is provided with a catch *b*, adapted under certain conditions to engage a latch device in the elevator-shaft, now to be described. At a proper point in the shaft is located the sliding latch C, having at its inner end the projection C'. A lever D, fulcrumed at *d* to the wall of the shaft, is connected at one end to the sliding latch C, and is provided at the other end with the angle projection C'. A spring E, connected to the lever D, exerts its force through said lever to hold the latch C in the closed position—that is to say, to thrust said latch toward the door of the elevator-shaft.

G is the elevator-carriage. Mounted upon this carriage to move therewith is a cam-

block H, having four cam-surfaces  $h'$   $h^2$   $h^3$   $h^4$ —that is to say, the block H is beveled at each end in two directions. This block is so located on the carriage that in its path up and down it will encounter the projections D' C' upon the lever or latch and cause the latch to open against the force of the spring.

The operation is as follows: We may suppose that the elevator stands at one of the floors ready to receive freight or passengers, as the case may be, and that the elevator-door B has been raised, as at Fig. 2, until the catch *b* snaps by the latch C and rests thereon. The door is now kept from closing by the latch, and the cam-block H, mounted on the elevator, is in a position to encounter the latch apparatus in whichever way the elevator may move. If the elevator descends, the cam-surface  $h^2$  of the cam-block will encounter the projection D' on the lower end of the lever D and cause the said lever to open the latch C and release the door, which will close by its own weight, and the spring E will immediately return the latch and lever to their normal or closed position. If, on the other hand, the elevator ascends instead of descends, the cam-surface  $h^3$  will encounter the projection C' on the end of the latch itself and cause the latch to open in like manner and permit the door to close by its own gravity. It will thus be seen that in whatever direction the elevator moves the latch is operated or opened every time the elevator passes a door either descending or ascending, and any door which may have been left open and supported by its latch will be disengaged from such latch and permitted to close by its own weight.

The apparatus thus described is exceedingly simple in construction and not liable to get out of order, requires no watching or attention on the part of the persons employed in running the elevator or using the same, is strictly automatic, and cannot fail to operate so long as it is kept in order; and it is of such construction that all of its parts may be visible to the eye directly at the door of the elevator. Moreover, it is of such nature that if it should get out of order that fact would be

immediately apparent by the inability to keep the door open.

I claim—

In a safety-latch for elevator-gates, the combination, with the elevator G and door B, of the spring-latch C, having a projection C', the lever D, having the projection D', the

catch on the elevator-door, and the cam H, mounted on the elevator-carriage, substantially as specified.

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Witnesses:

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