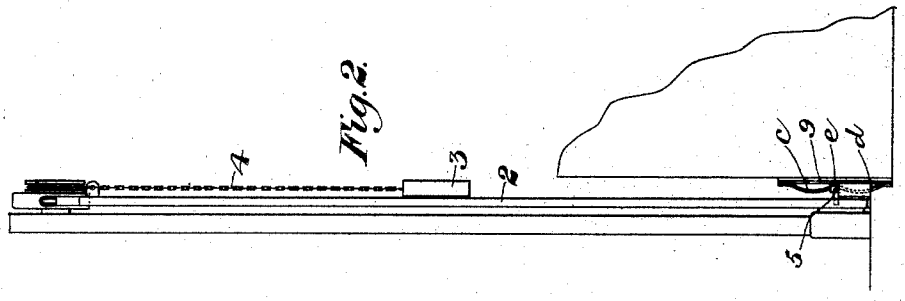
(No Model.)

L. FREAS.

MEANS FOR OPERATING ELEVATOR DOORS.

No. 503,345. Patented Aug. 15, 1893.

Fig. 2.



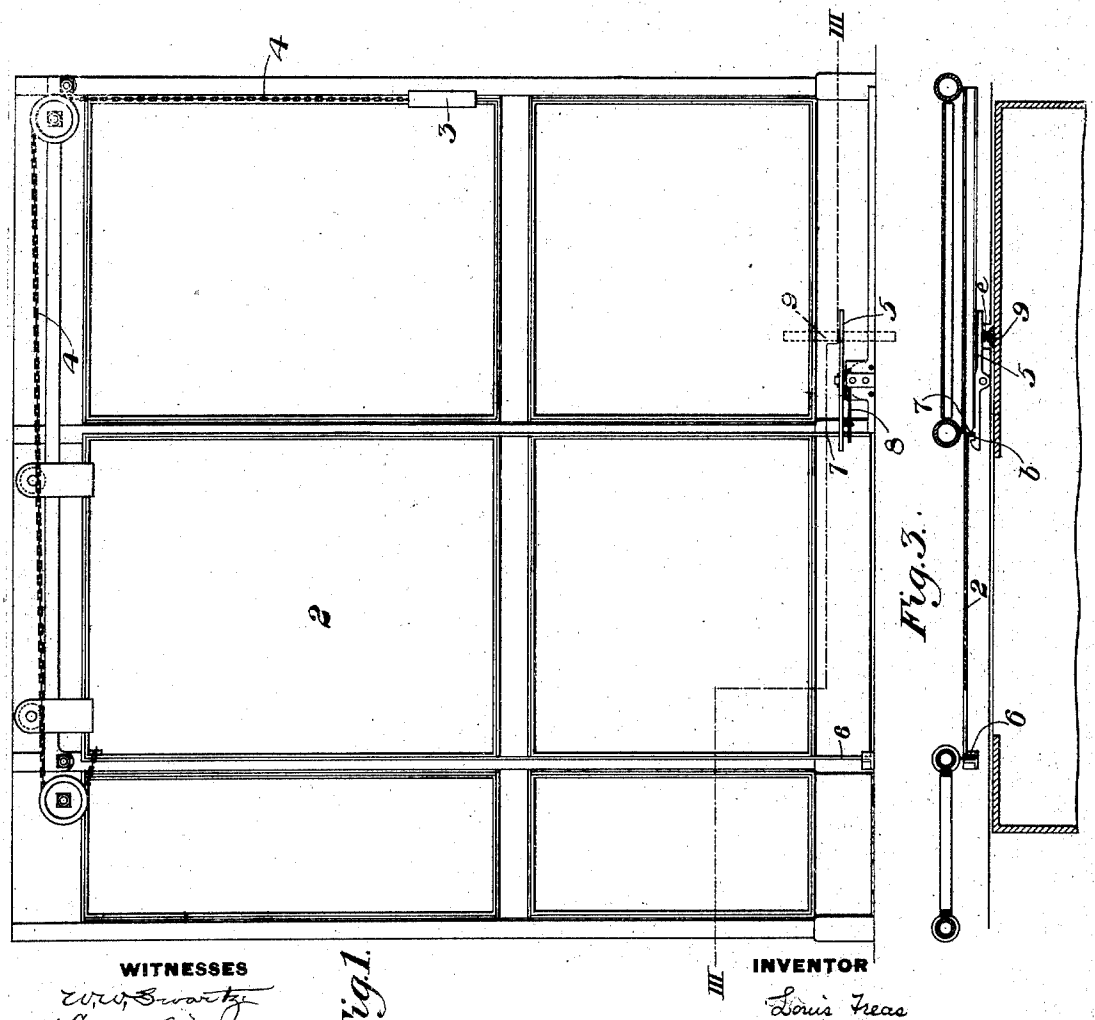


Fig. 1.

Fig. 3.

WITNESSES

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LOUIS FREAS, OF PITTSBURG, PENNSYLVANIA.

MEANS FOR OPERATING ELEVATOR-DOORS.

SPECIFICATION forming part of Letters Patent No. 503,345, dated August 15, 1893.

Application filed April 11, 1893. Serial No. 469,899. (No model.)

To all whom it may concern:

Be it known that I, LOUIS FREAS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Elevator-Doors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of an elevator-hatch door, constructed in accordance with my invention. Fig. 2 is a side elevation thereof, showing the elevator in the act of releasing the catch by which the door is held open. Fig. 3 is a horizontal section on the line III—III of Fig. 1.

Like symbols of reference indicate like parts in each

The object of my invention is to provide simple and effective means for operating elevator doors, adapting them to close automatically as the elevator-car leaves the floor at which the door is located.

In the drawings, 2 represents the door, which slides back and forth in front of the hatch, in the usual manner.

3 is a weight connected with the door by a flexible connection 4, and adapted to draw the door to a closed position as shown in Fig. 1. A spring may be substituted for the weight.

5 is a pivoted latch or trigger-lever having a notch *b* adapted to engage a projection 6 at one edge of the door to hold it open, or a corresponding projection 7 at the other edge of the door to hold it shut. The shoulder which forms the inner end of the notch is made somewhat less prominent than the outer shoulder, for a purpose hereinafter explained.

8 is a spring which tends to force the latch into locking position.

9 is a cam surface on the elevator car, arranged in such position that when the car reaches the floor it will engage the latch and retract it. This cam has two prominent portions *c* and *d* and an intermediate less prominent portion *e*.

The operation is as follows:—When the bottom of the car comes nearly to the level of the floor, the cam engages the latch, and when the car is at the floor-level the portion *e* of the cam is in contact with the latch, and holds the same in such position that the less prominent shoulder of the notch *b* is released from the projection 7, thus leaving the door free to be moved back on its slide into open position. When the door has been opened, the more prominent of the shoulders of the notch *b* engages the projection 6 and holds the door open, for the part *e* of the cam does not retract the latch sufficiently to render this shoulder inoperative. When the elevator leaves the floor, either in ascending or descending, the more prominent portion *c* or *d* of the cam engages the latch, and retracts it sufficiently to disengage it from the projection 6, whereupon the weight 3 immediately draws the door shut, and when it has been moved thereby into the position shown in Fig. 1, the latch, being freed from the cam, springs into engagement with the projection 7, and holds it locked.

By means of my improvement the safety of operating the elevator is very much enhanced; the device is simple, effective, and is not apt to get out of order.

Various modifications in the form and relative arrangement of the parts of the device may be made without departure from my invention as defined in the claim.

I claim—

The combination with an elevator door, of a latch adapted to engage the door at the front and rear edges thereof, and a cam on the elevator car having two outer projections and an intermediate projection of different degree of prominence, said cam being adapted to engage the latch and to operate it when the elevator reaches the floor or landing; said latch having holding-portions of different degrees of prominence adapted to be brought successively into action by operation of the cam; substantially as described.

In testimony whereof I have hereunto set my hand.

LOUIS FREAS.

Witnesses:

THOMAS W. BAKEWELL,

W. B. CORWIN.