

(No Model.)

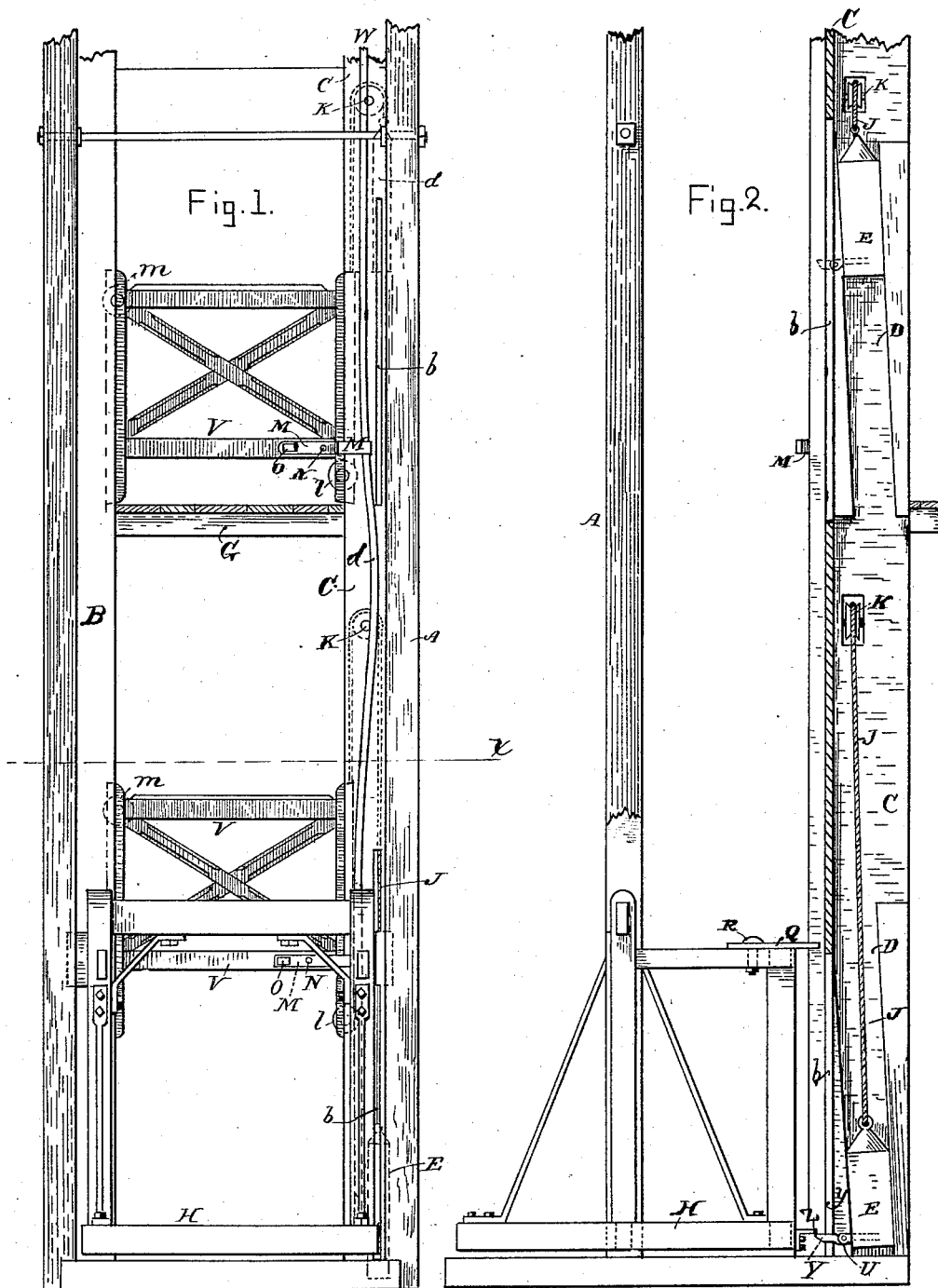
2 Sheets—Sheet 1.

T. W. TAYLOR.

ELEVATOR.

No. 307,239.

Patented Oct. 28, 1884.



Witnesses.  
H. E. Rennie  
L. J. White.

Inventor.  
Thomas W. Taylor,  
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Att'y.

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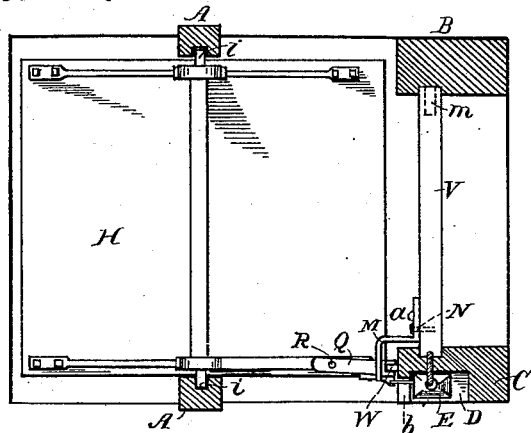


Fig. 3.

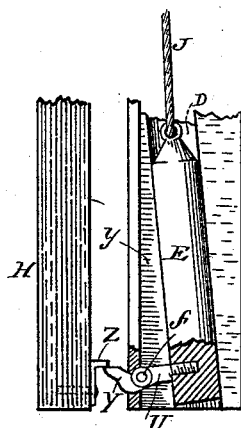


Fig. 4.

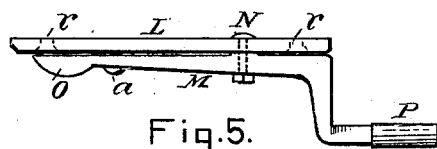


Fig. 5.

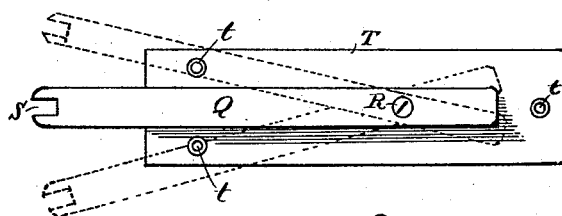


Fig. 6.

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# UNITED STATES PATENT OFFICE.

THOMAS WM. TAYLOR, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO  
HIMSELF AND BERNARD LYNCH, OF SAME PLACE.

## ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 307,239, dated October 28, 1884.

Application filed June 16, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS WM. TAYLOR, of Worcester, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Hatchway-Guards, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a rear elevation or view looking from the carriage or well-room to the front; Fig. 2, a side elevation, certain portions of the well-room walls being represented as removed to show the working parts of the elevator; Fig. 3, a transverse section taken on line *x x*, Fig. 1; Fig. 4, a sectional view showing one of the counter-balances or weights engaged with the carriage; Fig. 5, a top plan view of the gate-lever detached, and Fig. 6 a top plan view of the lifting arm or bar of the carriage detached.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of passenger and freight elevators which are provided with automatic or self opening and closing gates; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a more desirable and effective device of this character is produced than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, *A A* represent the center or side posts of the well-room, *B C* the front posts or stiles, and *H* the carriage. The carriage is provided on either side with laterally-projecting studs *i*, which work in ways or vertical grooves cut in the inner faces of the posts *A*, and is adapted to be raised and lowered in the usual manner by any suitable appliances for that purpose, it not being deemed essential

to show the hoisting apparatus in order to fully understand my improvement. A gate, *V*, is provided for each doorway or opening to the well-room, the gates being fitted to work vertically in proper ways in the stiles or posts *B C*, and respectively provided with a cord, *J*, and counter-balance *E*, the cord passing over a sheave, *K*, disposed in the stile *C* near the top of the doorway or opening. As the gates are respectively furnished with but one cord and one counter-balance or weight, a friction-wheel, *l*, is inserted in the lower end of the gate-post to which the cord is attached, a corresponding wheel, *m*, being inserted in the upper end of the opposite post to prevent the gate from cramping in its ways and cause it to run freely.

Attached to the inner face of the stile *C* there is a serpentine flange or cam-bar, *W*, extending from the top to the bottom of the well-room. This bar is nearly straight opposite the lower portion of each door-opening, as seen at *b*, and curved outwardly near the upper portion of the door, as seen at *d*. A plate, *T*, is attached to the top of the carriage by screws or bolts (not shown) passing through the holes *t*, and pivoted at *R*. To this plate *T* there is an arm, *Q*, provided at its outer end with the slot *S*, in which the cam-bar *W* works. A plate, *L*, is secured to the lower rail of the gate *V* by screws or bolts (not shown) passing through the holes *r*, and pivoted at *N*. To this plate *L* there is a lever, *M*, provided at its inner end with the weight or counter-balance *O*, and at its outer end with the arm *P*, adapted to engage the slotted end of the bar *Q* as the carriage rises, a stud, *a*, projecting laterally from the plate *L* and acting as a stop to prevent the inner end of the lever from falling below a horizontal position when the outer end is lifted by the bar *Q*. Each of the weights *E* is provided with a fixed stud, *U*, which projects laterally through an elongated slot, *y*, cut in the side of the stile *C* adjoining the carriage *H*. This stud is provided at its outer end with a lever, *Y*, jointed thereto at *f* by a common rule-joint, the lever being adapted to engage an arm, *Z*, projecting from the lower portion of the carriage *H*, as best seen in Fig.

4. A box or run, D, is formed in the stile C for each of the weights E, these runs being inclined outwardly near their lower ends, as best seen in Figs. 2 and 4, so that when the weights are at their lowest position the levers Y will be withdrawn from the path of the carriage, and disengaged from the arms Z.

In the use of my improvement, the carriage being at the bottom of the well-room and the gates V of all the doors closed, if, now, the carriage is caused to ascend, it will pass the lower gate, its arm Z raising the lever Y, which lever will fall back into a horizontal position again as soon as said arm is above it. The carriage continuing to ascend, its upper portion passes the floor G, and the bar Q is caused to engage the arm P of the lever M on the gate V, which opens onto said floor. As the carriage continues to pass upwardly, carrying the gate suspended on the arm Q, said arm is gradually moved outwardly or laterally by the bend *d* of the bar W, and disengaged from the lever M, thereby permitting the gate to drop. When the lever M is disengaged from the bar Q and the gate is dropped, the lever Y is brought into engagement with the arm Z on the carriage H, and as the carriage continues its course upwardly the gate is gradually lowered into its normal position, or shut. After the carriage has passed upwardly as far as desired, and it descends again until opposite the gate-opening out onto the floor G, the arm Z will be brought into contact with the lever Y, forcing the weight E downwardly in its run D, and raising or opening the gate V. As the gate rises and the carriage continues to descend, the arm Q will strike the upper side of the arm P on the lever M, causing said lever to tilt on its pivot N, and thereby enable said bar to pass it without becoming engaged therewith. At this time the floor of the carriage will be about on a plane with the floor G, and the weight E at nearly its lowest position in the run D. The carriage then stops at floor G to discharge and take on its passengers or freight, as the case may be, and as it continues its descent the weight E, passing down its inclined run D, withdraws the lever Y from engagement with the arm Z, thereby permitting the gate to fall, and bringing the arm P onto the bar Q, the gate being then gradually lowered, as the carriage descends, until it rests on the floor G, or is again shut. As, when the carriage reaches the next gate below the floor G, it will be opened and closed in substantially the same manner as hereinbefore described for the gate above said floor, it is not deemed essential to explain the process of accomplishing the same. The gate is slightly heavier than its counter-balance, so

that when it is open and its counter-balance becomes disengaged with the carriage the gate will fall or shut. The counter-balance O of the lever M is also heavier than the opposite end of the lever, thereby causing the lever to assume a horizontal position when disengaged from the bar Q.

It will be obvious that when the gates are open, or partially open, the carriage, or some portion of it, is always opposite the door, thereby effectually preventing accidents which might otherwise occur by falling into the well.

Having thus explained my invention, what I claim is—

1. In an elevator, the carriage H, provided with the pivoted arm Q and arm Z, the V, provided with the pivoted gravitating lever M, the counter-balance E, provided with the stud U and rule-jointed lever Y, the cam-bar W, inclined run D, and cord J, combined and arranged to operate substantially as described.

2. In an elevator, the counter-balance E, provided with a jointed lever adapted to engage the carriage H, or an arm thereon, as said carriage descends, and to permit said carriage to pass said counter-balance without becoming engaged therewith as the carriage ascends, substantially as set forth.

3. The combination, substantially as described, of an elevator-well provided with a cam-bar, a carriage, an arm pivoted to said carriage provided with a recess at its outer end, whereby it is adapted to grasp said cam-bar, a vertically-sliding gate, an arm pivoted to said gate and projecting therefrom, whereby it is adapted to be engaged by said carriage-arm on the ascent of the carriage, and a stop for holding said gate-arm in horizontal position during the ascent of the carriage.

4. In an elevator-hatchway-guard mechanism, a gate, V, provided with the pivoted lever M, having a counter-weight, O, at its inner end, and an arm adapted to engage the carriage on its ascent at its outer end, in combination with the stop *a*, substantially as described.

5. The combination, with an elevator-well, of a vertically-sliding gate, a cord attached to said gate, a pulley or sheave on which said cord runs, a counter-weight attached to said cord and adapted to engage the carriage, and a way for said weight, inclined at its lower end, whereby said weight will be disengaged from said carriage at the proper time, substantially as described.

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Witnesses:

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