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PATENTED JULY 14, 1903.

C. L. COLBY.  
MECHANISM FOR OPERATING ELEVATOR GATES.

APPLICATION FILED APR. 6, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

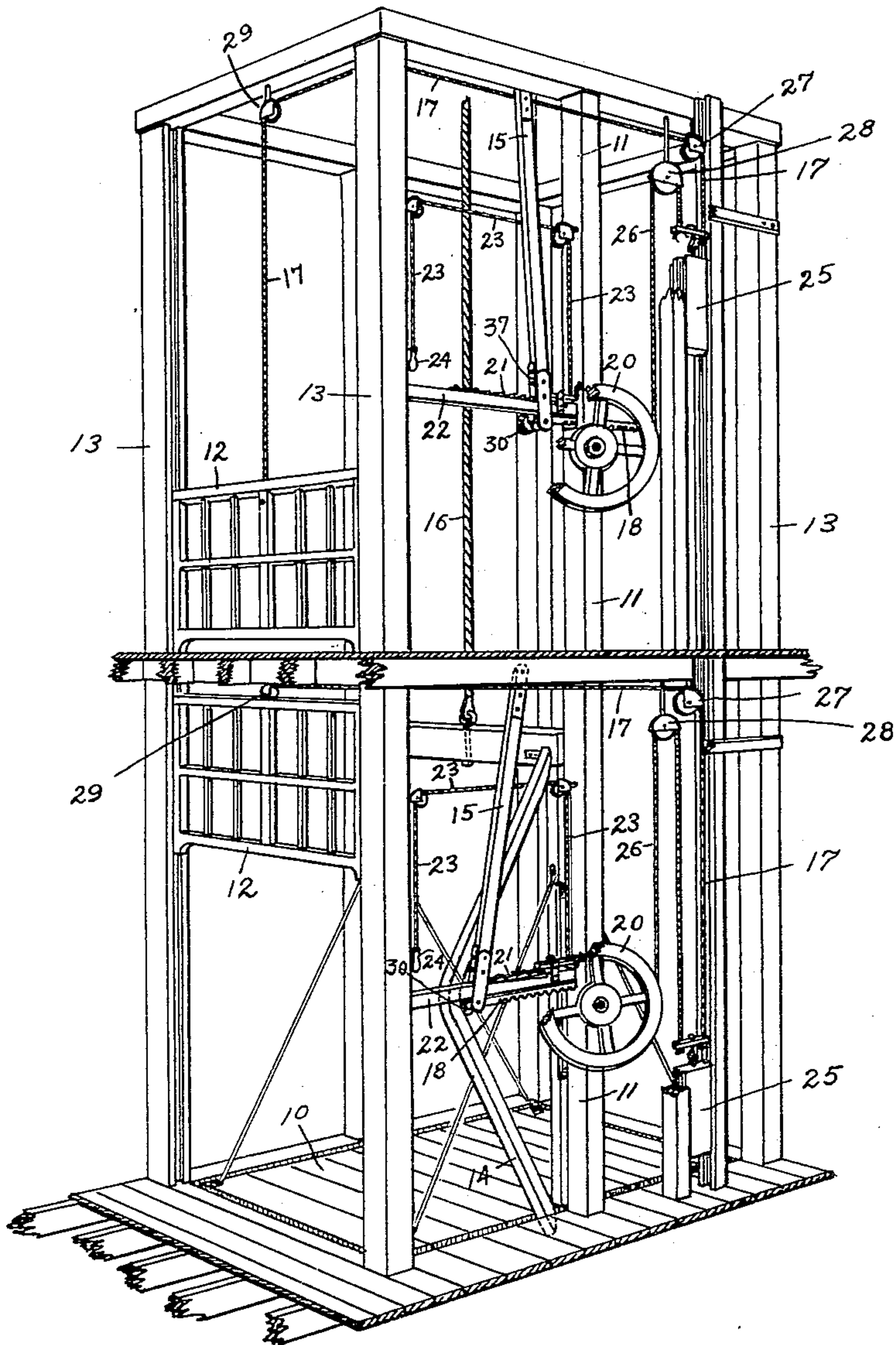


Fig. 1.

Witnesses;

H. G. Randle  
B. F. Williams

Inventor;

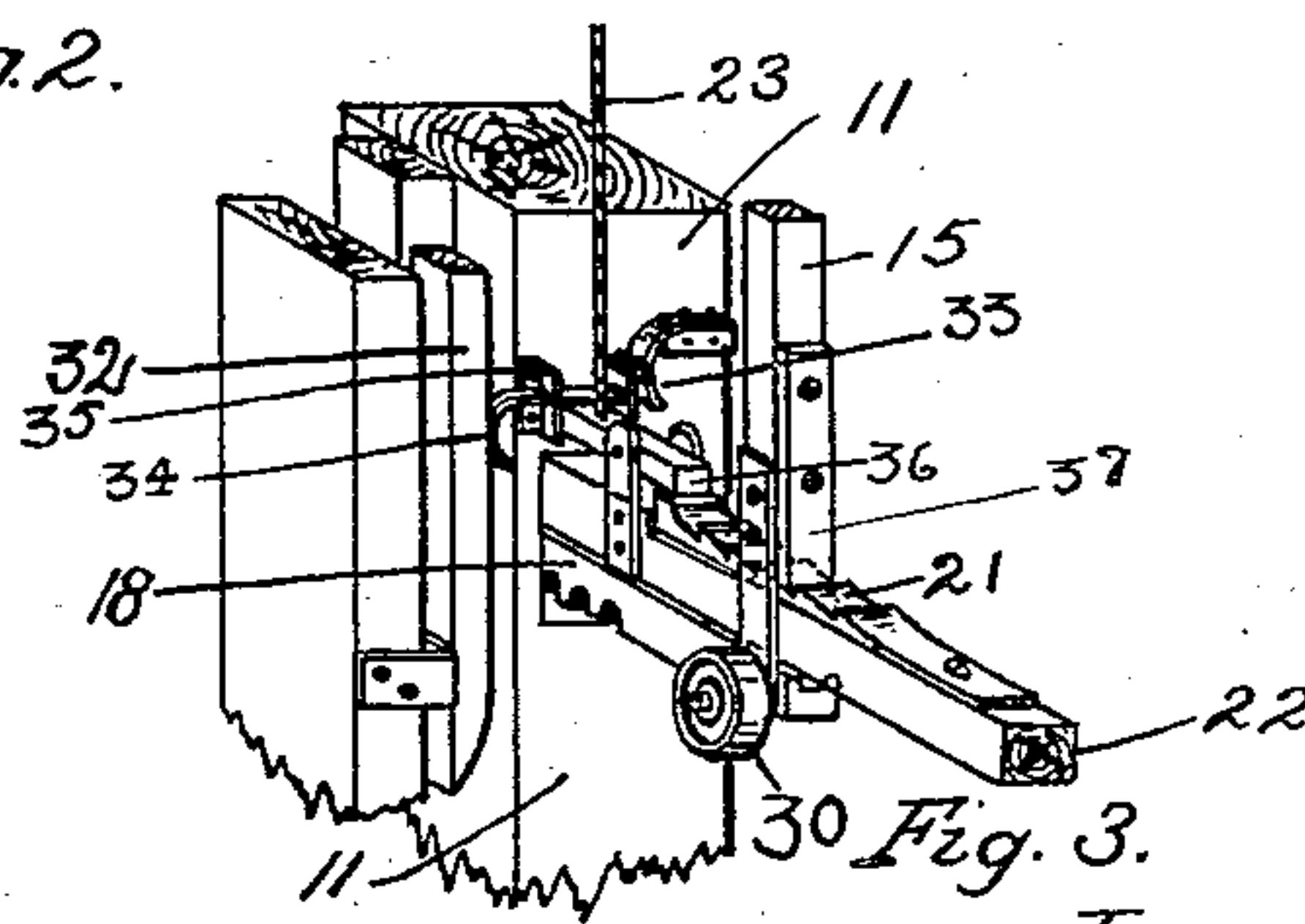
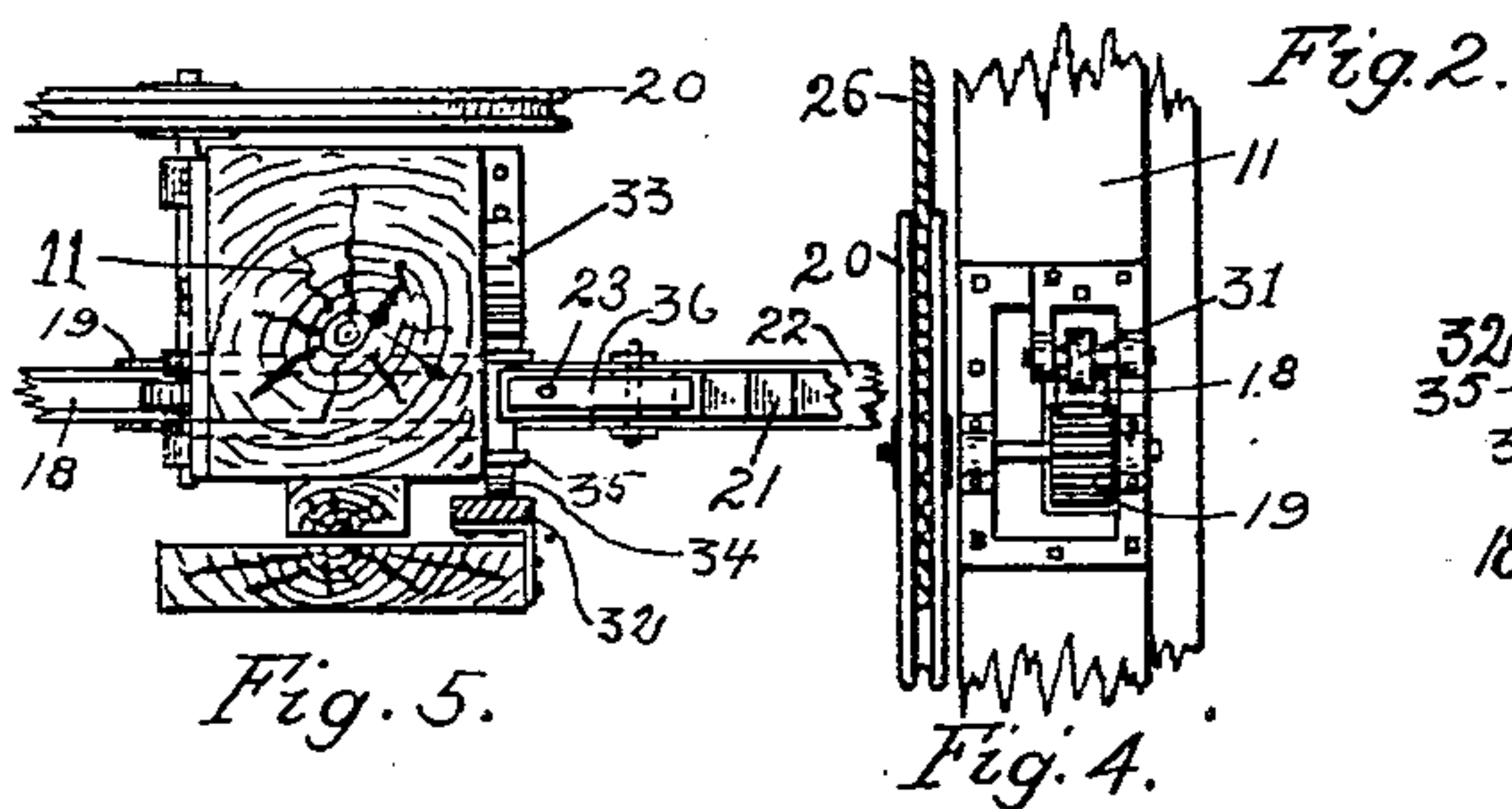
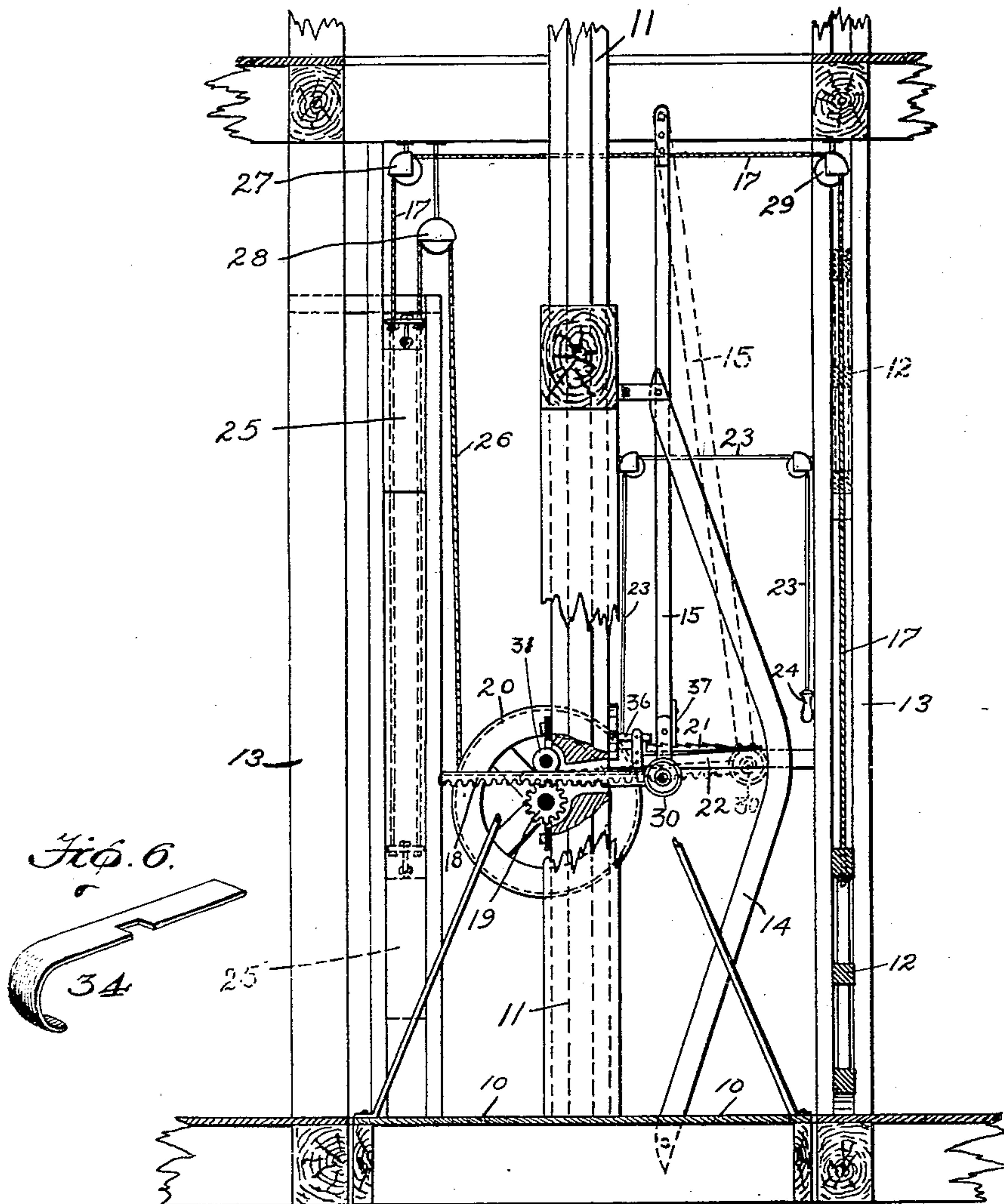
CLARENCE L. COLBY,  
by his attorney,  
Robert W. Randall

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2 SHEETS—SHEET 2.



Witnesses;  
M. E. Randle  
B. F. Williams

Inventor;  
CLARENCE L. COLBY,  
by his attorney  
Robert W. Randle



# UNITED STATES PATENT OFFICE.

CLARENCE L. COLBY, OF NEW PARIS, OHIO, ASSIGNOR OF ONE-HALF TO  
RICHMOND SAFETY GATE COMPANY, OF RICHMOND, INDIANA.

## MECHANISM FOR OPERATING ELEVATOR-GATES.

SPECIFICATION forming part of Letters Patent No. 733,459, dated July 14, 1903.

Application filed April 6, 1901. Serial No. 54,695. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE L. COLBY, a citizen of the United States, and a resident of New Paris, in the county of Preble and State of Ohio, have invented certain new and useful Improvements in Mechanism for Operating Elevator-Gates, of which the following is a specification.

My invention relates to elevator-gates, and more especially to that class known as "vertically-sliding" gates, and is an improvement on the patent granted to J. G. Zeller, No. 424,917, of April 1, 1890.

The object of this invention is to provide mechanism for operating elevator-gates which will permit the elevator-car to travel the entire length of the shaft without opening any gate on any floor except at the floor desired, the opening of the gates being under control of the operator at all times.

In the drawings, Figure 1 is a perspective view of an elevator equipped with my improvements. Fig. 2 is a side elevation of the car and adjacent parts, partly in section. Fig. 3 is an enlarged perspective detail of the horizontal bar, spring-rack, and appurtenant parts. Fig. 4 is a front view of same. Fig. 5 is a plan view of Fig. 3, and Fig. 6 is an enlarged perspective view of the catch 34.

Referring more especially to the drawings, 10 represents the floor of the elevator-car, which runs or slides up and down on guides or stanchions 11. Sliding in guideways in the corner-posts 13 of the elevator-shaft are gates 12, operating to close the entrance to the shaft at each floor. To the top of each gate 12 is fastened a rope 17, running over pulleys 27 and 29. The other end of said rope is fastened to a weight 25, which, being heavier than the gate 12, normally tends to pull the gate open. Secured to the weight is another rope 26, which runs over a pulley 28 (secured to the rafter of the floor above) and thence downward to a drum 20, which is secured to the stanchion 11 and which carries the pinion 19. Meshing with this pinion 19 is a rack-bar 18, carrying on one end a friction-roller 30, which engages a V-shaped guide-piece 14, rigidly secured to the elevator-car. Pivoted to the upper part of the elevator-car frame is a pendulous rod 15, which is connected to the rack-bar 18, adjacent the

friction-roller 30, and serves to support that end. The other end of the rack-bar is supported on the pinion 19 and held in engagement therewith by roller 31.

Rigidly secured to the stanchion 11 and to the corner-post 13 is a horizontal bar 22, situated just above the rack-bar and serving as a guide therefor. Adjacent the stanchion 60 end of this horizontal bar 22 is secured a spring-rack 21, the free end of which is adapted to rest in a notch cut in the top of bar 22, its normal position being just above the level of the bar. In engagement with this spring-rack 21 is a metal piece 37, secured to the lower end of the pendulous rod 15, which serves to hold the rod 15 and rack-bar 18 in their normal position, and thus keeps the drum from rotating and allowing the weight 25 to drop, which would raise the gate.

Pivoted to the horizontal bar 22 is a short lever 36, one end of which is in engagement with the free end of the spring-rack and is adapted to force the free end into the notch cut in the horizontal bar 22.

Slidably mounted in guides 35, secured to the stanchion 11, is a J-shaped catch, notched on its straight portion to permit the lever 36 to freely move therethrough. Secured to the elevator guide-post is a strip 32, upon which the catch 34 bears and which extends from a point about eighteen inches above the floor to a point about eighteen inches below the next floor. After the catch 34 has passed the strip 32, going up or down, a spring 33, which bears on the inner end thereof and which normally tends to throw the catch outward, throws the catch outward to the limit of its movement, when the lever 36 may pass through the notch spoken of.

Connected to the lever 36 is a rope 23, which runs over pulleys secured to the stanchion 11 and the corner-post 13 and which carries the handle 24, by which the operator can release the pendulous bar 15 from the spring-rack 21, allowing the drum 20 to rotate and the weight to fall, which opens the gate through rope 17, connected thereto. As the elevator-car runs up or down the friction-wheel 30 engages the inclined piece 14 and forces the rack-bar 18 to rotate the drum 20, winding up the weights and allowing the gate to descend.



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

1. The combination with an elevator-gate, of a weight for raising said gate, means on the car operating to lower said gate, means for holding said raising means in locked position, comprising a pendulous rod and a spring-rack engageable therewith, and means under control of the operator for releasing said locking means.

2. The combination with an elevator-gate, of a weight for raising said gate, a rope connected to the gate and the weight, a winding-drum, a rope connected thereto and to the weight, means for winding the drum, comprising a pendulous rod, a friction-wheel, and a toothed rack, and means engaging said friction-wheel, whereby said drum operates to raise said weight and allow the gate to descend.

3. The combination with an elevator-gate, and a weight for raising said gate, of means for lowering said gate, comprising a winding-drum, a pinion connected thereto, a pendulous rod pivoted to the elevator-car frame, a rack-bar connected thereto and adapted to mesh with said pinion, a rope connected to said weight and adapted to wind on said drum, means engaging the pendulous rod and holding it in locked position, and means under control of the operator for releasing said locking means.

4. The combination with an elevator-gate, of means for lowering said gate comprising a winding-drum, a pinion connected to said drum, a toothed rack-bar meshing with said pinion and carrying a friction-wheel, a pivoted rod connected to said toothed rack-bar and supporting one end of same, a spring-rack normally engaged by and locking said rod; a lever under control of the operator for throwing said rack out of engagement with said rod to release same, and means on the elevator-car which engages the friction-wheel to wind the drum and lower the gate.

5. The combination with an elevator-gate, a weight for raising said gate, and means for lowering said gate, of means for maintaining the raising means inoperative, comprising a strip secured to the elevator guide-post, a catch secured to the stanchion and working over said strips, said catch having a notch, said strips forming means for throwing said catch so that the notch is in register with the means which permits the gate to lower, and a spring for throwing the catch out of register with said lowering means.

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

CLARENCE L. COLBY.

Witnesses:

ROBERT W. RANDLE,  
R. E. RANDLE.