

No. 710,601.

Patented Oct. 7, 1902.

I. S. McNAUGHT.
AUTOMATIC ELEVATOR GATE.

(Application filed Jan. 14, 1902.)

(No Model.)

2 Sheets—Sheet 1.

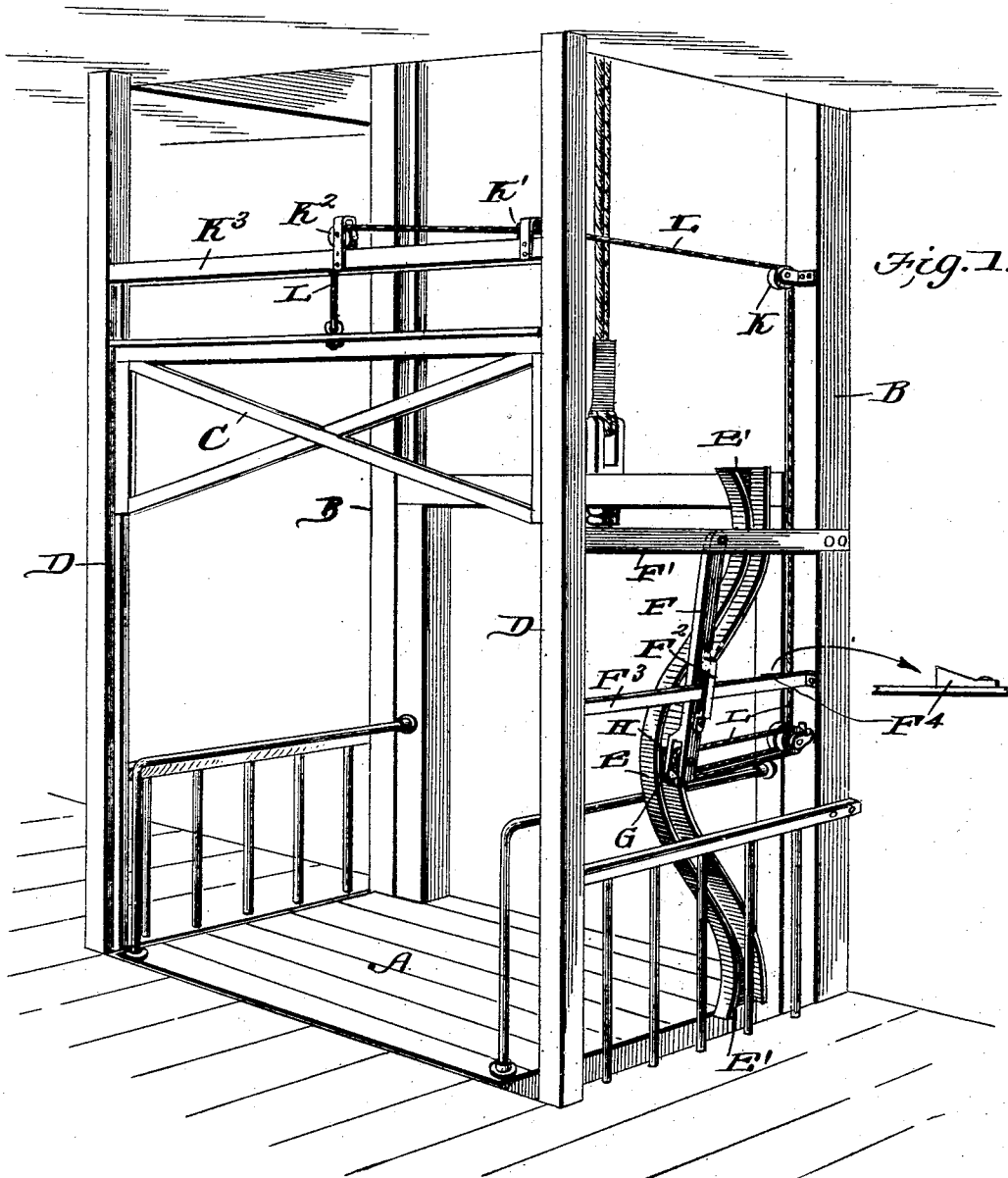


Fig. 1.

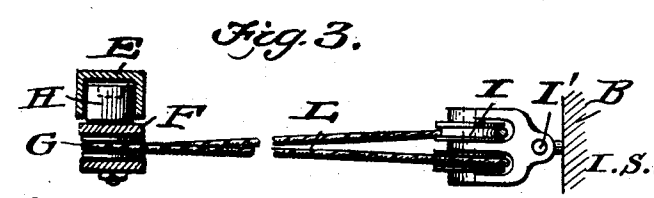


Fig. 3.

Witnesses
M. J. Blondel
Charles Shaw

Inventor
 I. S. McNaught
 by *Oliver Brock*
 Attorneys

UNITED STATES PATENT OFFICE.

IRA S. MCNAUGHT, OF FORT WORTH, TEXAS, ASSIGNOR OF ONE-HALF TO
C. M. GIBLER, OF FORT WORTH, TEXAS.

AUTOMATIC ELEVATOR-GATE.

SPECIFICATION forming part of Letters Patent No. 710,601, dated October 7, 1902.

Application filed January 14, 1902. Serial No. 89,686. (No model.)

To all whom it may concern:

Be it known that I, IRA S. MCNAUGHT, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented a new and useful Automatic Elevator-Gate, of which the following is a specification.

This invention is an automatic elevator-gate, the object of the invention being to provide a simple and efficient mechanism in connection with the gate and elevator-car whereby as the said elevator-car ascends and descends the gate will be automatically raised or lowered in such a manner that when the elevator-car is at the landing the gate will be raised, and lowered when the elevator passes above or below the said landing.

Another object of the invention is to provide a mechanism of such construction that the operation of the gate will be positive and sure irrespective of the speed at which the elevator-car is moved.

With these objects in view the invention consists in the peculiar construction of the several parts and in their novel combination or arrangement, all of which will be fully described hereinafter and pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a perspective view illustrating my invention, the elevator-car being shown level with the landing and the gate being raised. Fig. 2 is a sectional elevation, the elevator-car being below the landing or floor and the gate closed. Fig. 3 is a detail section illustrating the pulleys and rope passing thereover.

Referring to the drawings, A indicates an ordinary elevator-car moving between the upright guide-posts B, and C indicates a vertically-movable gate sliding between the upright guide-posts D. A grooved track E, serpentine in form, is rigidly attached to the elevator A, said track being in the form of a double compound curve, the upper and lower ends being in vertical alinement and the central portion reaching substantially to the center of the side of the elevator-car. The upper and lower ends of the track E are slightly flared, as shown at E'.

A lever F is pivoted to a cross-piece F' and depends therefrom, the lower end of said lever being bifurcated and carrying a pulley G within the bifurcation. Upon the inner side of the lever F and in alinement with the pulley G is an antifriction-roller H, adapted to travel in the grooved track E.

A double pulley I is swiveled upon a screw-hook I', secured in one of the guide-posts B, and a pulley K is also attached to the said guide-post adjacent to its upper end, and the pulleys K' and K² are arranged upon the top of the cross-piece K³, connecting the guide-posts D.

A rope L is connected to the upper end of the gate C and passes over the pulleys K², K', and K, down around the double pulley I and pulley G, then again around the pulley I, and is finally fastened to the lower end of the depending lever F.

A strap-loop F² is attached to the depending lever F and extends over the cross-bar F³, thereby holding the lever in its proper vertical position during this vibration, and the stop F⁴ is arranged upon the cross-piece F³ to limit the movement of the lever and prevent it being thrown too far.

From the above description, taken in connection with the accompanying drawings, it will be obvious that as the elevator-car is raised or lowered the antifriction-roller carried upon the end of the lever will enter the track and operate the lever, throwing it to a central position, as indicated in Fig. 1, and in so doing the rope L is operated upon, causing the gate to be raised. As the elevator-car moves away from the landing the lever will resume its normal position (shown in Fig. 2) and the gate will again descend. By the employment of a grooved track having flanges upon both sides the operation of the lever is positive, and a much lighter weight of gate can be employed, a gate sufficiently heavy to take up the slack in the rope, as the grooved track will positively move the lever and will also take away the strain from the elevator-car proper in its movement up and down between the guide-posts B. By having the double pulley I swiveled it will always be in direct line with the end of the lever,

and the wear upon the pulley and the rope will therefore be reduced to a minimum.

I am aware that a straight and inclined track has been employed in connection with the centrally-pivoted lever to which a pulley-rope has been attached; but a single straight track used in connection with such form of lever is objectionable, for the reason that in case the elevator-car is moving rapidly the lever will scarcely have time to shift from one side of the track to the other, and damage is therefore liable to occur. I am also aware that double-curved tracks have been employed for spreading two levers for operating pulley-ropes; but this form of device is also objectionable, for the reason that a heavy gate must also be employed to hold the levers against the track, and the said tracks would often have to be so large as to render them incapable of use in the average elevator-car.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

In an automatic elevator-gate, the combination with an elevator, of vertically-sliding gate, a grooved serpentine track attached to the elevator-car, a depending lever having the antifriction-lever at its lower end, and also a guide-pulley at said lower end, a double pulley pivotally connected to the guide-frame of the elevator, the guide-pulleys connected to the guide-frame of the elevator, a rope attached to the upper end of the gate passing over the guide-pulleys and connected at its lower end to the lower end of the lever, the loop-strap and stop, all arranged and adapted to operate, substantially as shown and described.

IRA S. McNAUGHT.

Witnesses:

E. A. CARTWRIGHT,
TUNSTALL MORRIS.