

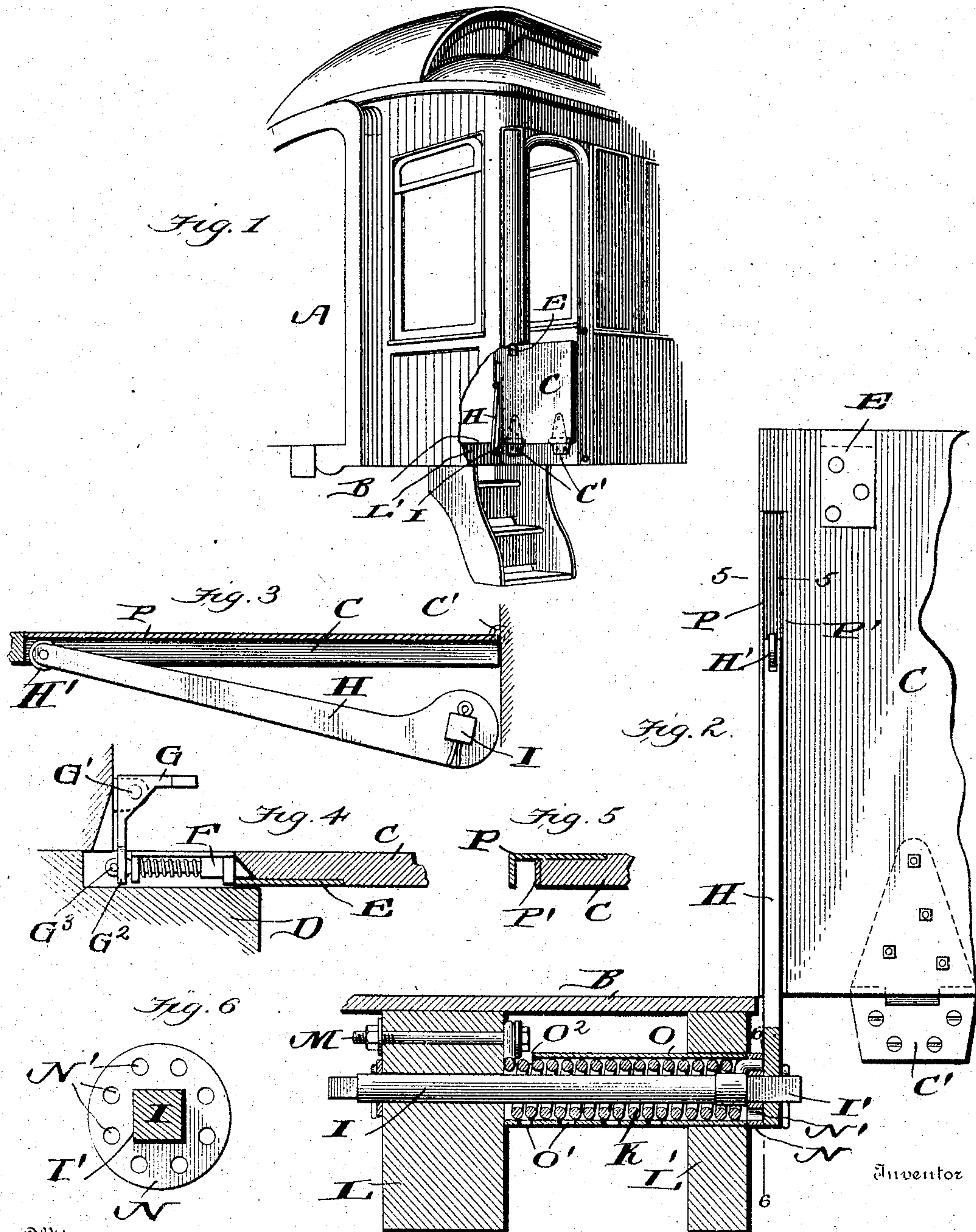
No. 773,002.

PATENTED OCT. 25, 1904.

J. J. COTTINGHAM.  
CAR PLATFORM OPERATING DEVICE.

APPLICATION FILED JULY 16, 1903.

NO MODEL.



Witnesses

Edwin L. Bradford  
M. J. Blondel

Inventor

Joshua J. Cottingham,  
By *Meacham & Brock*  
Attorneys



# UNITED STATES PATENT OFFICE.

JOSHUA J. COTTINGHAM, OF WASHINGTON, INDIANA, ASSIGNOR OF  
ONE-HALF TO CALEB G. MERRITT, OF WASHINGTON, INDIANA.

## CAR-PLATFORM-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 773,002, dated October 25, 1904.

Application filed July 16, 1903. Serial No. 165,830. (No model.)

*To all whom it may concern:*

Be it known that I, JOSHUA J. COTTINGHAM, a citizen of the United States, residing at Washington, in the county of Daviess and State of Indiana, have invented a new and useful Car-Platform-Operating Device, of which the following is a specification.

This invention relates generally to car-platforms of vestibule-cars, and more particularly to the means for raising the side portions of the said platforms, said side portions being the hinged trap-doors arranged at each side of the main platform and which are adapted to close down over the steps, making a platform the full width of the car.

The object of my invention is to provide an improved means for lifting the said doors and hold them elevated, thereby avoiding the necessity of catches or fasteners for the purpose of holding the said doors open, as is the practice at the present time.

With this object in view my invention consists, essentially, in providing a lifting-lever carried by a spring-actuated shaft, the free end of said lifting-lever bearing upon the under side of the door for the purpose of elevating the same and holding it open.

The invention consists also in the details of construction hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view showing the practical application of my invention. Fig. 2 is a sectional view, partly in elevation, showing the lever and the spring-actuated mechanism connected therewith. Fig. 3 is an end view of the lifting-lever, the hinged portion of the platform being shown in a lowered or horizontal position. Fig. 4 is a detail sectional view showing the end of the door, the means for fastening the said door being shown in elevation. Fig. 5 is a detail sectional view on the line 5 5 of Fig. 2. Fig. 6 is a detail sectional view on the line 6 6 of Fig. 2.

Referring to the drawings, A indicates the end of an ordinary vestibule-car, B the main platform, and C one of the hinged sections of the platform or trap-door, there being two such doors, one at each side of the main plat-

form B, said door being hinged, as shown at C', to the end of the car-body and adapted to be turned down to a horizontal position for the purpose of covering the steps and providing a platform the full width of the car. The free end of the trap-door C rests upon a strip or sill D and is thereby prevented from dropping lower than a horizontal position, and when in such position the keeper-plate E, arranged upon the lower face of the trap-door, is engaged by the spring-actuated locking-bolt F, thereby securely locking the trap-door or hinge-section of the platform when in a lowered position, said spring-actuated bolt being arranged in a suitable casting or housing secured to the sill of the vestibule, and for the purpose of disengaging this bolt whenever it is desired to raise the door I employ a bell-crank lever G, pivoted at G' and having a bifurcated lower end G<sup>2</sup>, which straddles the rear end of the locking-bolt and engages a transverse pin G<sup>3</sup> passing therethrough. Thus it is obvious that by pressing down upon the bell-crank lever with the foot the spring-actuated locking-bolt is withdrawn from the keeper and the trap-door or hinged section of platform is ready to be raised. In vestibule-cars as now constructed these trap-doors or hinged sections of platform are pulled up by hand, and it requires considerable strength to move them up to a vertical position, and after being so elevated they are fastened in an open position by means of suitable catches or fastening devices. I propose to remedy these defects and provide a spring-actuated lifting mechanism which will automatically lift the trap-door the moment the locking-bolt is withdrawn from the keeper, and in order to accomplish this I employ a lifting-lever H, which is mounted upon the end of a horizontal shaft I, the outer end of said shaft being polygonal in cross-section, as shown at I', and adapted to fit the polygonal-shaped opening produced in the end of the lifting-lever. The shaft I is mounted in the timbers directly beneath the main platform B, and surrounding this shaft I is a coil-spring K, the inner end of which is fastened to the car-timber L by means of a bolt M passing through said tim-



ber, and the opposite end of the spring is adapted to be passed through one of the perforations N' of the plate N, which is mounted upon the polygonal-shaped end of the shaft upon the inner face of the lever H, said plate having a plurality of openings, so that the tension upon the spring can be varied by changing the outer end of the spring from one perforation to another. For the purpose of protecting this spring from dust, dirt, and the elements I arrange the same in a metal pipe O, having perforations O' in the lower side thereof to permit the escape of any dust, dirt, or other matter which might accumulate in the said pipe. The outer end of this pipe passes through the car-timber L' and extends to the timber L, the inner end of the pipe being cut away, as shown at O<sup>2</sup>, to accommodate the inner end of the spring and the bolt for fastening the same. The inner end of the shaft is keyed to prevent any longitudinal movement of said shaft, and it will of course be understood that the lifting-lever is fixed upon the shaft at the opposite end, so that all longitudinal movement is entirely prevented.

The free end of the lifting-lever H carries an antifriction-roller H', which travels upon the under side of the trap-door when the said lever moves upwardly for the purpose of lifting the door, it being understood that the tension of the spring is sufficient to swing the lever upwardly, and inasmuch as the said lever bears upon the under side of said trap-door said trap-door will be moved upwardly in a vertical position, as shown in Fig. 1, and held there by the action of the spring. In order to provide for an easy action of the lever and roller, I prefer to attach an angle-plate P to one edge of the trap-door, the end of the lever and roller traveling in the groove produced between the flange of said angle-plate and the edge of the trap-door, and, if desired, the edge of the trap-door may be protected by means of a metal strap or plate P'. Thus it will be seen that all wear upon the door proper is prevented and a smooth guideway is provided for the free end of the lever to travel in, thereby greatly facilitating the operation.

Figs. 1 and 2 show the positions of the various parts when the trap-door is open, and 3 and 4 show the positions of the various parts when the trap-door is closed, and it is obvious that in order to close the door it is only necessary to press downwardly upon the free end thereof, and the keeper engaging the beveled end of the spring-actuated bolt will force said bolt backwardly, and the moment the keeper

has passed below the bolt its spring will force it outwardly, thereby locking the platform in a closed position. When the bell-crank lever is pressed upon, the locking-bolt is withdrawn from the keeper and the spring-actuated lifting-lever will automatically raise or open the trap-door and hold the same in an open position.

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

1. In a car, a hinged platform-section, and a spring-actuated lever, arranged beneath said hinged platform-section, the free end of said lever being adapted to engage and raise the said hinged section.

2. In a car, a hinged platform-section, and a spring-actuated lifting-lever the free end of which is adapted to engage the said platform-section, substantially as described.

3. In a car, a hinged platform-section, a spring-actuated lever the free end of which is adapted to engage and lift said platform-section, and a spring-actuated bolt adapted to lock the said platform-section in a closed position.

4. In a car, a hinged platform-section, a lever the free end of which is adapted to engage and lift said platform-section, and a spring-actuated shaft upon which the lifting-lever is mounted, substantially as described.

5. In a car, the combination with a hinged platform-section, of a spring-actuated shaft, a lifting-lever connected to said shaft, the free end of said lever being adapted to engage the said platform-section and means for regulating the tension of the spring-actuated shaft, substantially as described.

6. In a car, the combination with the hinged platform-section, of a horizontal shaft, a spring surrounding said shaft, one end of said spring being rigidly secured to the car, a plate mounted upon the shaft and having a series of perforations produced therein, the other end of the spring being adapted to engage one of said perforations, a lifting-lever mounted upon the outer end of the shaft, the free end of said lever carrying an antifriction-roller and adapted to engage the under side of the hinged platform-section, the angle-plate connected to one edge of the platform-section, the keeper-plate and the spring-actuated locking-bolt and disengaging-lever, all arranged and adapted to operate substantially as described.

JOSHUA J. COTTINGHAM.

Witnesses:

ADRIAN HAMERSLY,  
WALTER S. WILLIAMS.