(No Model.) 3 Sheets—Sheet 1.

J. KREHBIEL.

PLATFORM GATE FOR CARS.

No. 519,066. Patented May 1, 1894.

Fig. 1

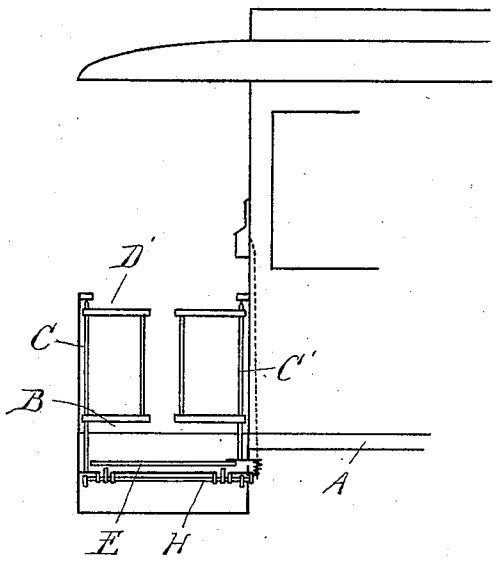
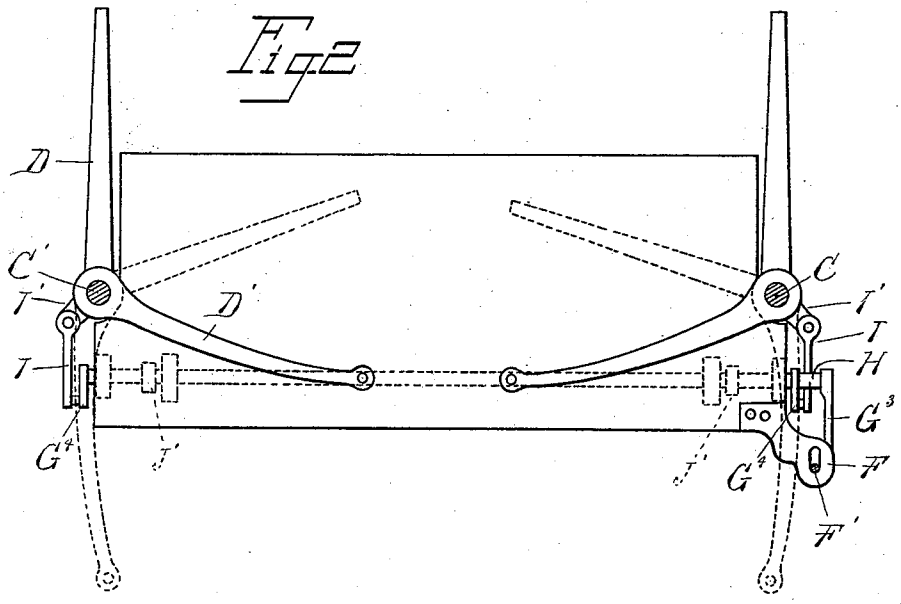


Fig. 2



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John Krehbiel,

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WASHINGTON, D. C.

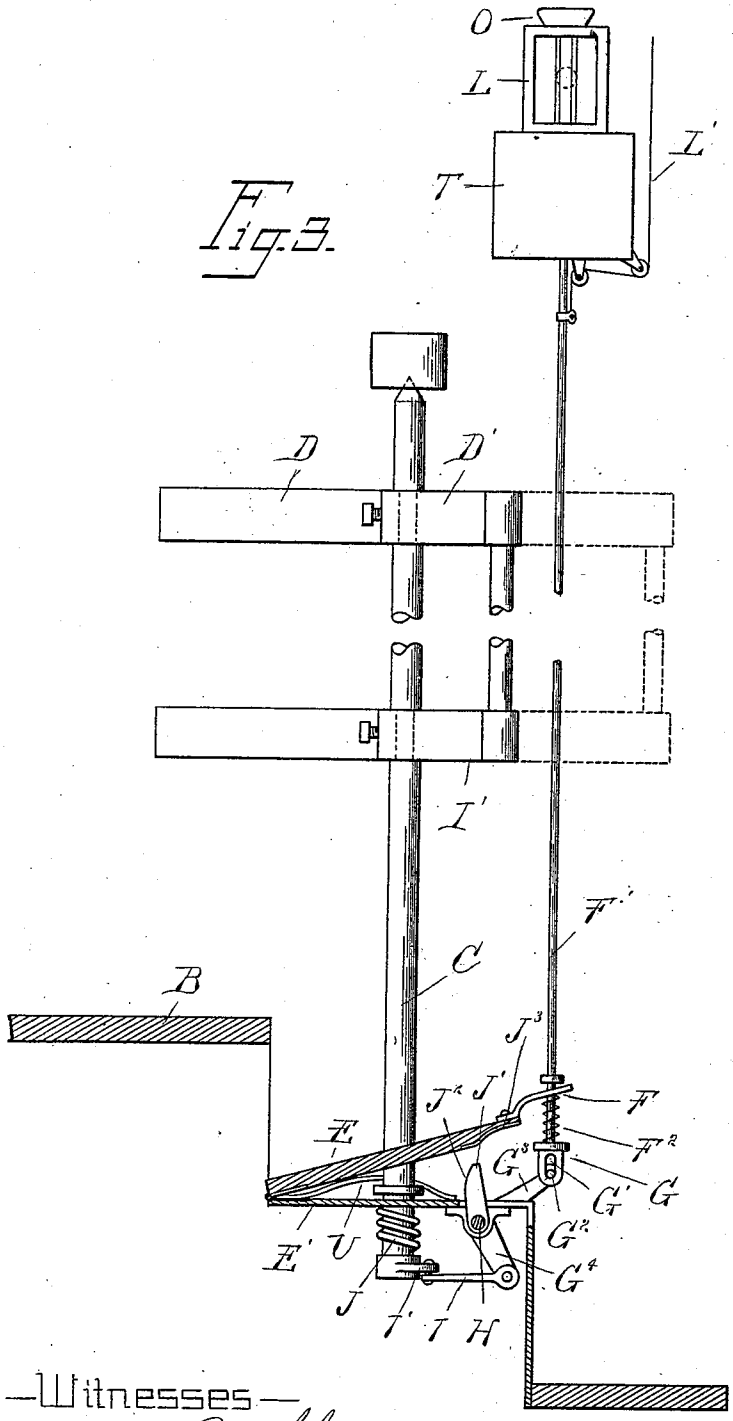
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Fig. 3.



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J. KREHBIEL.

PLATFORM GATE FOR CARS.

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Fig. 4.

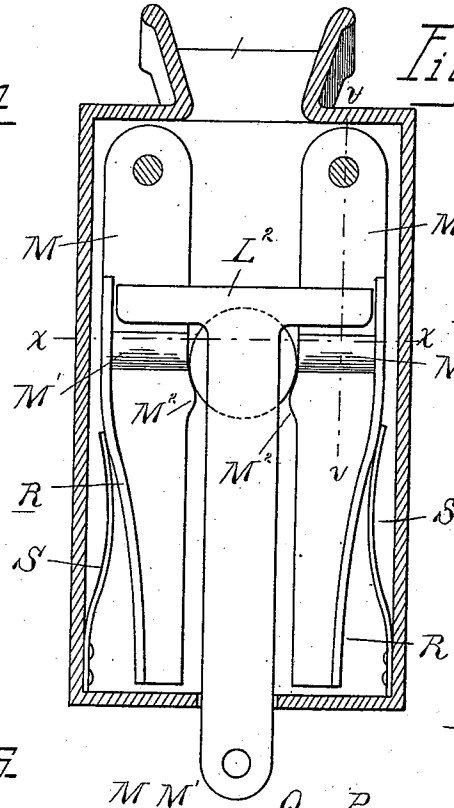


Fig. 5.

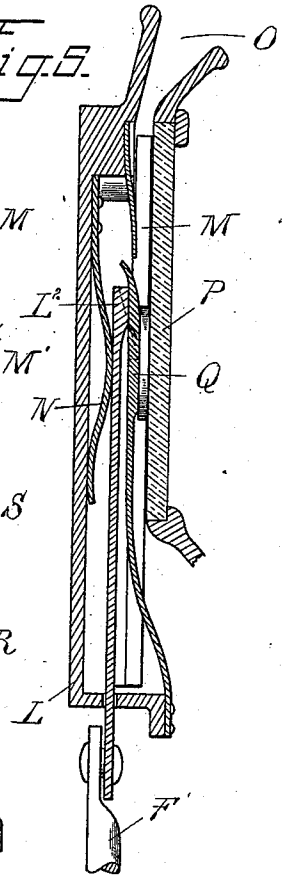


Fig. 6.

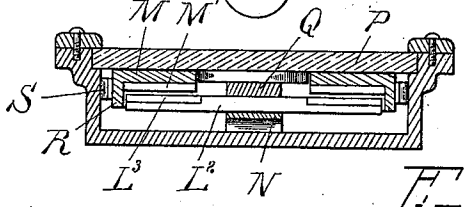


Fig. 7.

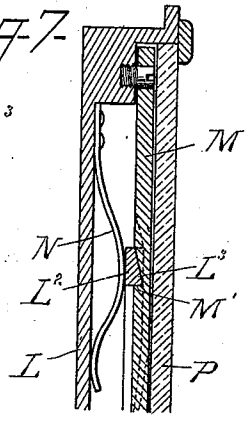
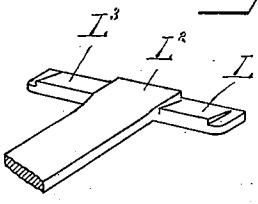


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN KREHBIEL, OF CLEVELAND, OHIO.

PLATFORM-GATE FOR CARS.

SPECIFICATION forming part of Letters Patent No. 519,066, dated May 1, 1894.

Application filed May 3, 1893. Serial No. 472,859. (No model.)

To all whom it may concern:

Be it known that I, JOHN KREHBIEL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Platform-Gates for Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a new and useful improvement in street car gates and consists in the construction and arrangement of parts hereinafter described and definitely pointed out in the claims.

In the drawings, Figure 1 is a diagram side elevation of the end of the car showing my invention applied thereto. Fig. 2 is a plan view of the steps showing the turn-stile in full and dotted lines in its different positions. Fig. 3 is a vertical, central section through the steps showing the controlling device in elevation. Fig. 4 is a rear elevation of the coin controlling device with the back of the casing broken away. Fig. 5 is a vertical, central, longitudinal section through the coin controlling mechanism. Fig. 6 is a cross section on line $x\ x$ in Fig. 4, and with one of the parts in a different position. Fig. 7 is a section on line V V of Fig. 4. Fig. 8 is a perspective view of one of the parts of the coin mechanism specifically referred to.

My device may be used to register the passengers as they leave the car.

I have shown in the drawings, the device applied in connection with a coin controlled mechanism so that a person in order to leave the car must first put a coin of the proper denomination, say a nickel, into the coin controlling mechanism before the turn-stile will be unlocked to allow him to leave the car. Any suitable means may be employed to make it necessary for the passengers who enter the car to leave it through a single door to which my device is applied. Such a mechanism may be employed without the coin controlling mechanism for the entering door and with the coin controlling device for the exit door and vice versa.

A is the car body; B the platform thereof upon which I arrange a suitable turn-stile preferably of the construction shown, which consists of two vertical shafts C C′ at each side of the platform, having the arms D D′ extending from said shafts substantially at right angles to each other, so arranged that one pair of arms will normally extend across the platform, while the other extends inward therefrom, and when a single person passes through the turn-stile, he will move one pair of arms outward, while the others will close behind him, preventing the exit of another person until the arms have returned to their initial position. This turn-stile is actuated by the weight of a person stepping upon one of the steps of the platform of the car.

E is the movable step hinged at the rear of the stationary step E′ and which is preferably the first step below the platform.

In Fig. 3 I have shown the parts to operate in connection with a coin-controlled lock: in such construction it is desirable that I should employ a stop to support the weight of the hinged step E and take the weight off from the coin-controlled lock in case no coin is inserted to unlock the device, and Fig 3 illustrates mechanism especially designed for such operation. In case the coin-actuated lock is not employed I may make any suitable connection between the movable step and the rock shafts C C′, so that the depression of the step will turn the turn-stile.

The connection which I have shown between the step and the rock shafts C C′ consists of the following parts: F is a finger on the step bifurcated to embrace the rod F′, but bearing upon the spring F^2 sleeved upon that rod, the lower end of the spring resting upon a head G. This head is provided with a slot G′ in which a pin G^2 engages at the end of one of the crank levers G^3 which is secured upon a rock shaft H journaled transversely below the step E. G^4 are rock arms secured to the rock shaft H which are connected with the shafts C C′, by means of the connecting links I and the crank arms I′. J are springs sleeved about the lower ends of the shafts C C′ and acting with their tension to hold the turn-stile in the initial position, shown in Fig. 2 in full lines. J′ are two stops secured upon the crank shafts H and arranged beneath the hinged step E. J^2 is a curved or cam shaped bearing on the rear upper edge of the stops J′, and J^3 are corresponding curved bearings on the under face of the hinged step E. The

rod F′ extends upwardly into the casing L which holds the coin-controlled lock. L′ is a suitable connection from the rod F′ to a register (not shown) for registering the downward actuations of the rod. The coin controlled mechanism consists of a cross head L^2 at the upper end of the rod F′ or an extension thereof. L^3 are lugs rearwardly extending from the cross-head L^2 and which act as hooks to lock the rod F′ against actuation except upon the insertion of a coin of proper size. M are two levers pivoted at their upper ends within the casing L with sufficient space between them for the passage of the coin. M′ are notches in the rear faces of the levers M a short distance below the normal position of the cross head L′. N is a spring pressing the cross head L against the levers M. Now in case any one should step upon the hinged step E it is evident that as that step lowered it would transmit motion to the connecting rod F′ through the spring F^2 and cause that rod to descend until the hooks L^3 engage the notches M′ in the levers M (by the pressure of the spring N on the cross head) which would prevent further movement of the rod F′. This movement of the rod would not impart motion to the crank arm G^3 because of the slot G′, and as the step lowered it would rest upon the stops J′, the turn-stile remaining locked so that the person resting on the step could not pass out of the car.

To unlock the step and turnstile, a coin of the proper size must be dropped into the coin chute O, which will fall between the levers M until arrested by the shoulders M^2 on said levers at a point opposite the notches M′, where it will be held between the glass front P and a spring plate or arm Q. Now if any one stands upon the step E the latter will be free to descend, as the coin will prevent the cross-head from being pressed over by the spring N and thus the lugs L^3 cannot engage with the notches M′. As the step descends it will turn the rock shaft H through the medium of the finger F, spring E^2 and crank arm G^3, thereby turning the stops J′ until their cam faces J^2 engage with the cams J^3, when farther movement of the step will then operate the turnstile through the rock arms G connecting links I and crank arms I′. After the cross head is drawn beyond the notch M′ it will bear against the inclined flanges R and spread the levers M apart against the tension of the side springs S allowing the coin to drop into the receptacle L below. When the step is released the parts will be returned to their normal position through the action of the springs J, F^2 and U.

As the registering mechanism which is actuated through the cord L′ may be of any suitable construction I do not deem it necessary herein to illustrate the same.

What I claim as my invention is—

1. In a car the combination with a platform and gate, of a movable step, a spring for normally closing the gate, and means actuated by the step to forcibly open the gate against the tension of the spring, substantially as described.

2. In a car the combination with a platform, of a swinging gate therefor, a register actuating rod, a movable step engaging the rod, a swinging support for the step, moved by the movement of the rod, a spring for normally holding the gate closed, and means actuated by the step for forcibly opening the gate against the tension of the spring, substantially as described.

3. In a car the combination with a platform, of a swinging gate therefor, a spring for normally closing the gate, a movable step, levers actuated by the step for forcibly opening the gate against the tension of the spring, a register actuating rod, a lock therefor, and a stop for the step actuated by the movement of the rod, substantially as described.

4. In a car the combination with a platform, of a swinging gate therefor, a spring for normally closing the gate, a movable step, a bell crank having one arm in the path of the step, an arm on the gate, and a link connection between the gate arm and bell crank, substantially as described.

5. In a car the combination with a platform, of a swinging gate therefor, a spring for normally holding the gate closed, a movable step, a locking rod with which the step has a limited sliding engagement, a stop actuated by the rod, and arranged to support the step upon a partial actuation thereof, and to release the same upon the full movement of the locking rod, and a bell crank actuated by the continued movement of the step for forcibly opening the gate, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN KREHBIEL.

Witnesses:
M. B. O'DOGHERTY,
N. L. LINDOP.