

No. 793,663.

PATENTED JULY 4, 1905.

C. O. JOHNSON.  
CAR DOOR LOCK.

APPLICATION FILED MAR. 22, 1905.

FIG. 1.

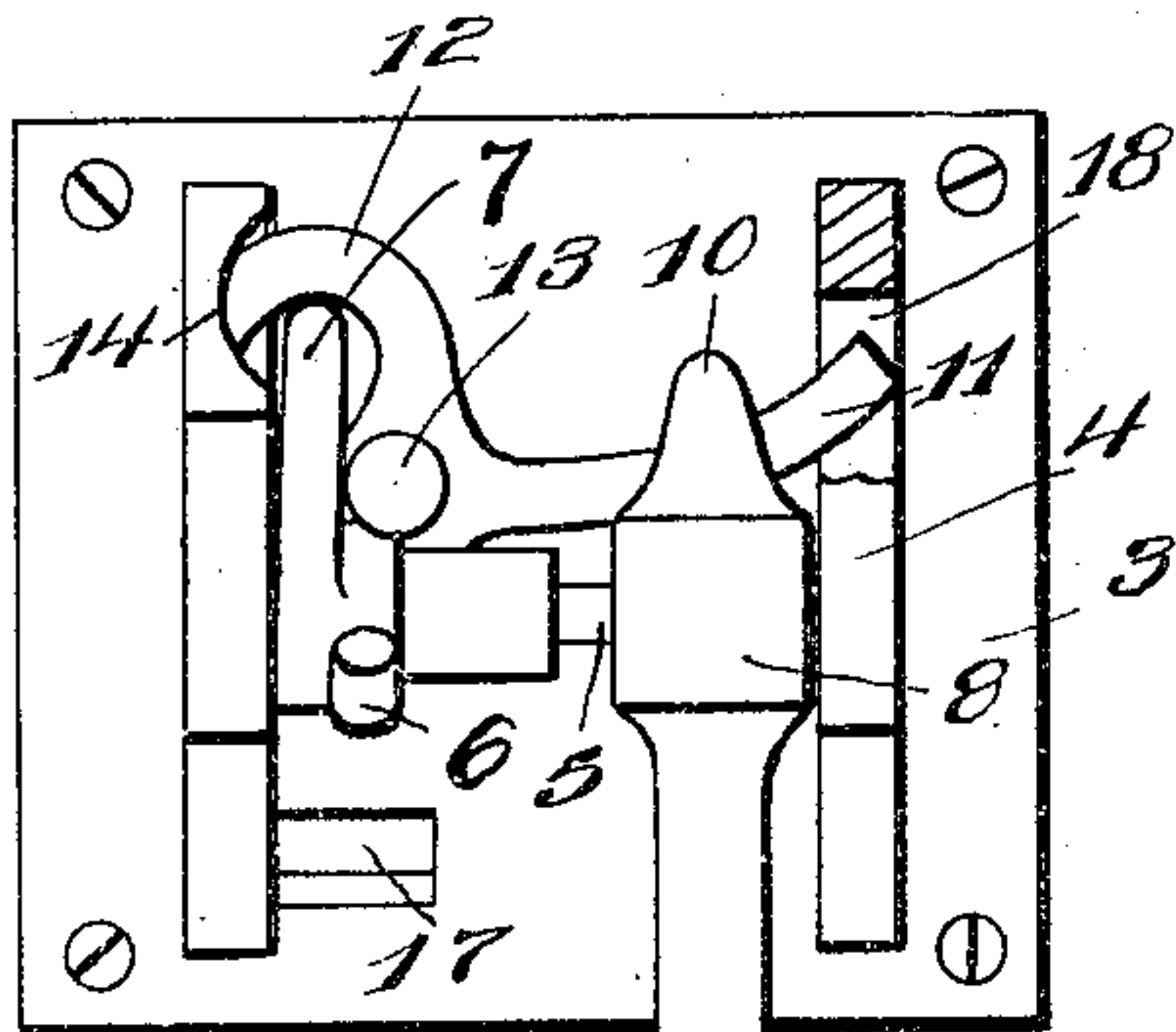
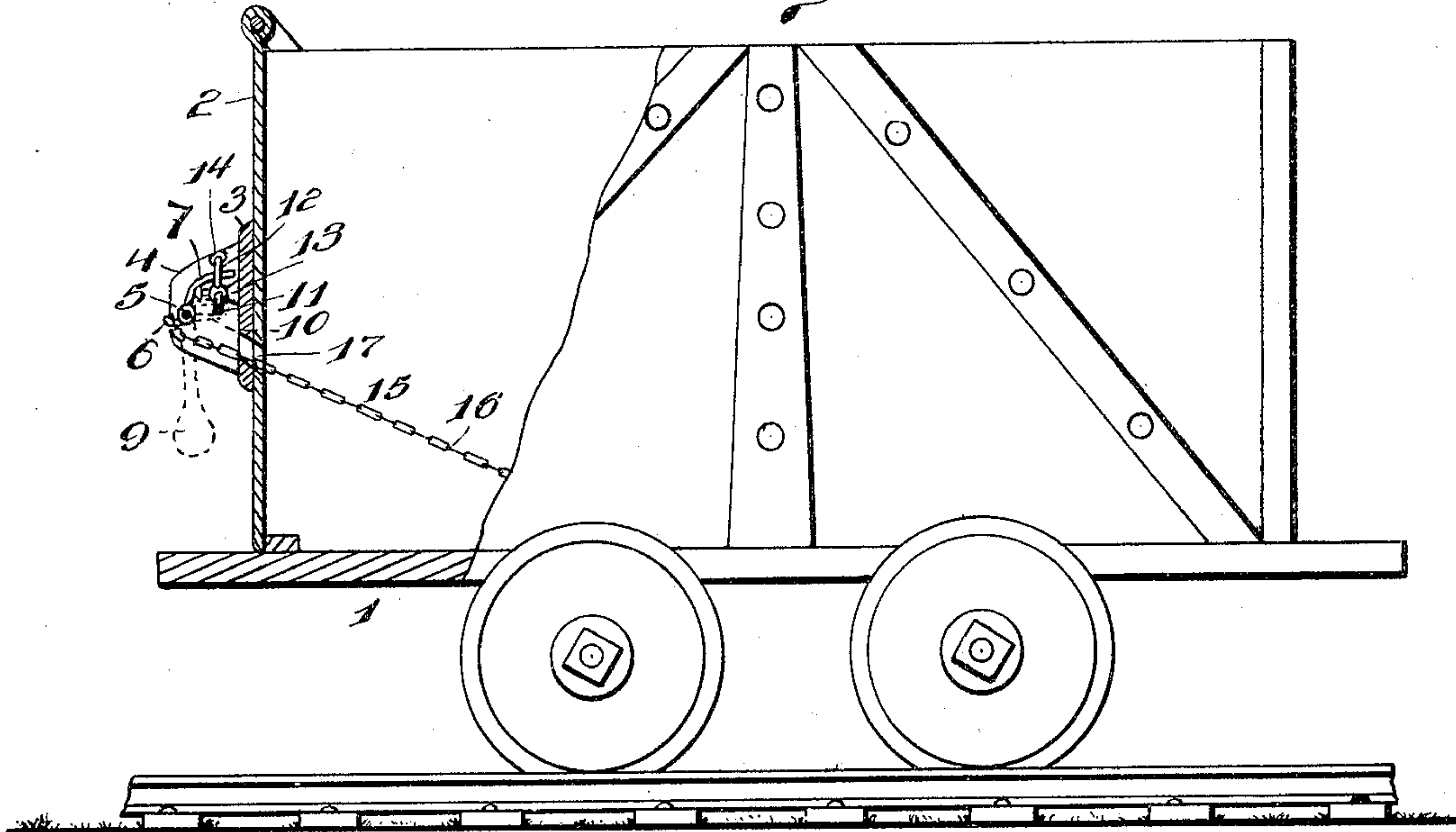


FIG. 2.

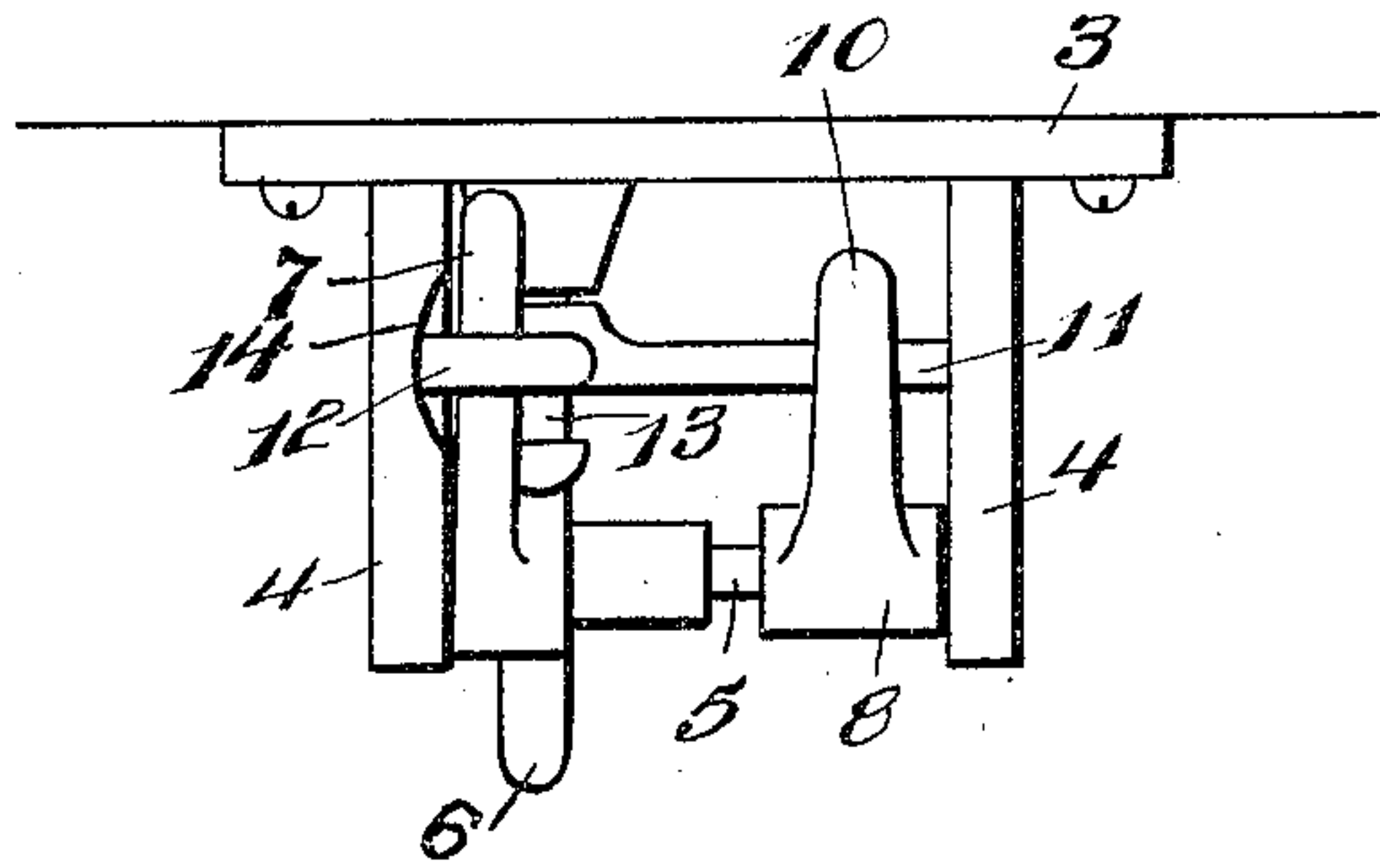


FIG. 3.

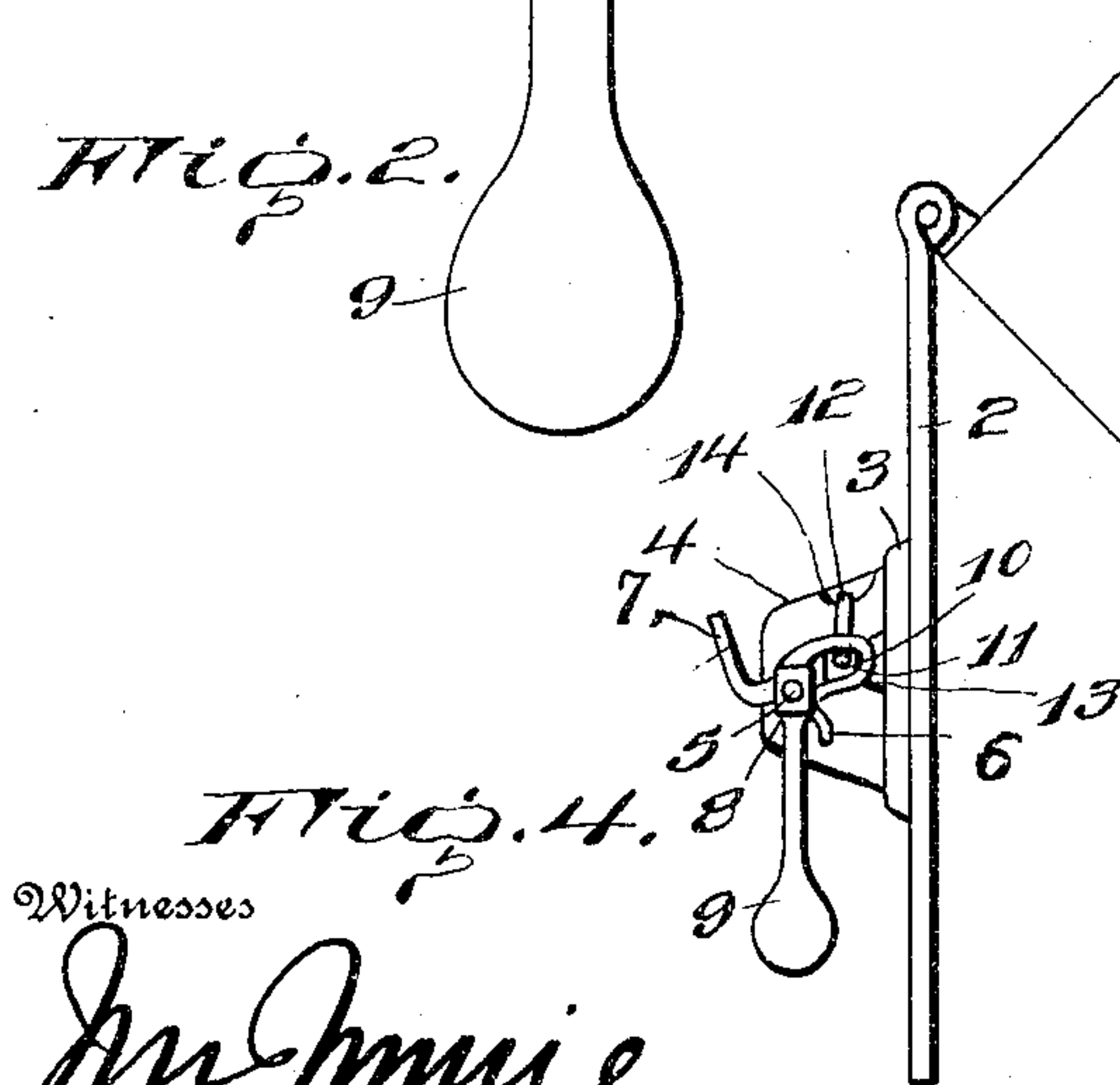


FIG. 4.

Witnesses

*Wm. H. H. H. H.*  
*W. H. H. H.*

By

*W. H. H. H.* Attorney

Inventor

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# UNITED STATES PATENT OFFICE.

CARL O. JOHNSON, OF LANSE, PENNSYLVANIA.

## CAR-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 793,663, dated July 4, 1905.

Application filed March 22, 1905. Serial No. 251,472.

*To all whom it may concern:*

Be it known that I, CARL O. JOHNSON, a subject of the King of Sweden and Norway, residing at Lanse, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Car-Door Locks, of which the following is a specification.

This invention comprises a novel form of lock particularly designed for application to doors of mine-cars of that type adapted to tilt in order to discharge the load.

The object of the invention is to provide a lock means for holding the door closed and admitting of automatic opening of the door at a predetermined point in its tilting movement to discharge, and the detail structure of the device will be pointed out more clearly hereinafter.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which—

Figure 1 is a broken vertical sectional view showing a mine-car having the invention applied thereto. Fig. 2 is a front elevation of the door-lock alone. Fig. 3 is a top plan view of the door-lock. Fig. 4 is a side elevation showing the positions of the parts after the car-door has opened, one of the side lugs removed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the invention is shown applied to the body of a mine-car 1 of a common type, said car having a pivotally-mounted door 2 at one end thereof. The door is pivoted at its upper portion and is adapted to open outwardly in discharging

the load of a car when the body of the latter has been tilted a predetermined distance. The lock mechanism which comprises the invention is secured to the outer side of the car-door 2 and comprises, essentially, a suitable supporting-plate 3, which is secured to the door by substantial fastenings. Spaced vertical lugs 4 project outwardly from the plate 3, and a pintle-bar 5 is mounted in the lugs 4, being arranged horizontally thereof. Mounted upon the pintle-bar 5 is a catch 6, pivoted thereto, said catch being provided with a rearwardly-projecting extension 7. A gravity operating member 8 is also pivoted to the pintle-bar 5, said member comprising a bar provided at its lower extremity with a weight 9, the upper extremity of the bar having an opening to receive the pintle member 5. Extending rearwardly from the upper portion of the bar 8 is a loop 10, which receives a tail 11 of a hook 12, pivoted to a pin or stud 13, projecting outwardly from the plate 3 at a point between the lugs 4, above described. The hook 12 is adapted to engage over the extension 7 of the catch 6, and this hook when in engagement with said catch has the bill thereof received in a recess 14 upon the inner side of one of the lugs 4. The hook 12 is adapted for pivotal movement with its axis about at a right angle to the line of axis of the catch 6.

When in operative position, the catch 6 is adapted to engage a connection 15, consisting, preferably, of a chain permanently secured at one end to the bottom of the car-body 1 within the same, as indicated at 16, said chain passing through an opening 17 in the door 2 and plate 3, so as to be engaged by the catch 6 aforesaid. When the car-body is in an approximately horizontal position, the chain is connected with the catch 6 and the latter held from movement by engagement with the hook 12. The door 2 is held closed by the connection between the same and the body of the car. When the car is tilted, however, in unloading the same, it will be noted that the gravity member 8 will move outwardly, causing the loop 10 to move downwardly and actuating the tail 11 in a corresponding direction. The movement of the



tail 11 will force the hook 12 out of engagement with the extension 7 of the catch, releasing the latter automatically and disengaging the chain 15 therefrom. The chain 15, being disengaged from the catch 6, will release the door, and the latter will open in a manner which will be readily apparent.

A loop or like member may be provided at one end of the chain 15 to engage over the catch 6. One of the lugs 4 is provided with a vertical slot 18, in which the end portion of the tail 11 of the hook 12 moves, said slot 18 affording a guide for the hook in its movement.

The lock device above described is very simple in its operation, and after the car has been unloaded it is only necessary for the operator to again connect the chain 15 with the catch 6 after the extension 7 of the latter has been engaged with the hook 12.

Having thus described the invention, what is claimed as new is—

1. In a lock device of the class described, the combination of a movable catch, a movable hook arranged to hold the catch in a predetermined position, and a gravity operating member for actuating the hook.

2. In a lock device of the class described, the combination of a pivoted catch, a hook arranged to hold the catch in a predetermined position, and a pivoted gravity operating member for actuating the hook.

3. In a lock device of the class described, the combination of a pivoted catch, an extension projected therefrom, a hook arranged to engage the extension aforesaid, and a movable gravity operating member engaging the hook for actuating the same.

4. In a lock device of the class described, the combination of a pivoted catch, an extension projected therefrom, a hook arranged to engage the extension aforesaid, and a movable gravity operating member having a loop for engagement with the hook.

5. In a lock device of the class described,

the combination of a pivoted catch, an extension projected therefrom, a pivoted hook adapted to engage the extension aforesaid, a tail for said hook, and a gravity operating member coöperating with the tail of the hook.

6. In a lock device of the class described, the combination of a pivoted catch, an extension projected therefrom, a pivoted hook adapted to engage the extension aforesaid, a tail for said hook, and a pivoted gravity operating member provided with a loop receiving the tail of the hook.

7. In a lock device of the class described, the combination of a support, a catch pivoted thereto, a hook arranged to hold the catch in a predetermined position, a tail extending from the hook, means for actuating the hook, and guide means coöperating with the hook.

8. In a device of the class described, the combination of a movable car-body, a door for said body, lock means for the door comprising a catch pivoted thereto, a hook arranged to engage the catch, a gravity operating member for actuating the hook, and a connection between the catch and the car-body.

9. In a device of the class described, the combination of a movable car-body, a door therefor, lock means for the door comprising a catch pivoted thereto, an extension projected from the catch, a pivoted hook engaging said extension, a tail extending from the hook, a pivoted gravity-bar provided with a loop receiving the tail aforesaid, a weight at one end of said bar, and a connection secured at one end to the car-body and passed through the door and connected with the catch aforesaid.

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

CARL O. JOHNSON. [L. s.]

Witnesses:

P. A. BERQVIST,  
JOHN SKAG.