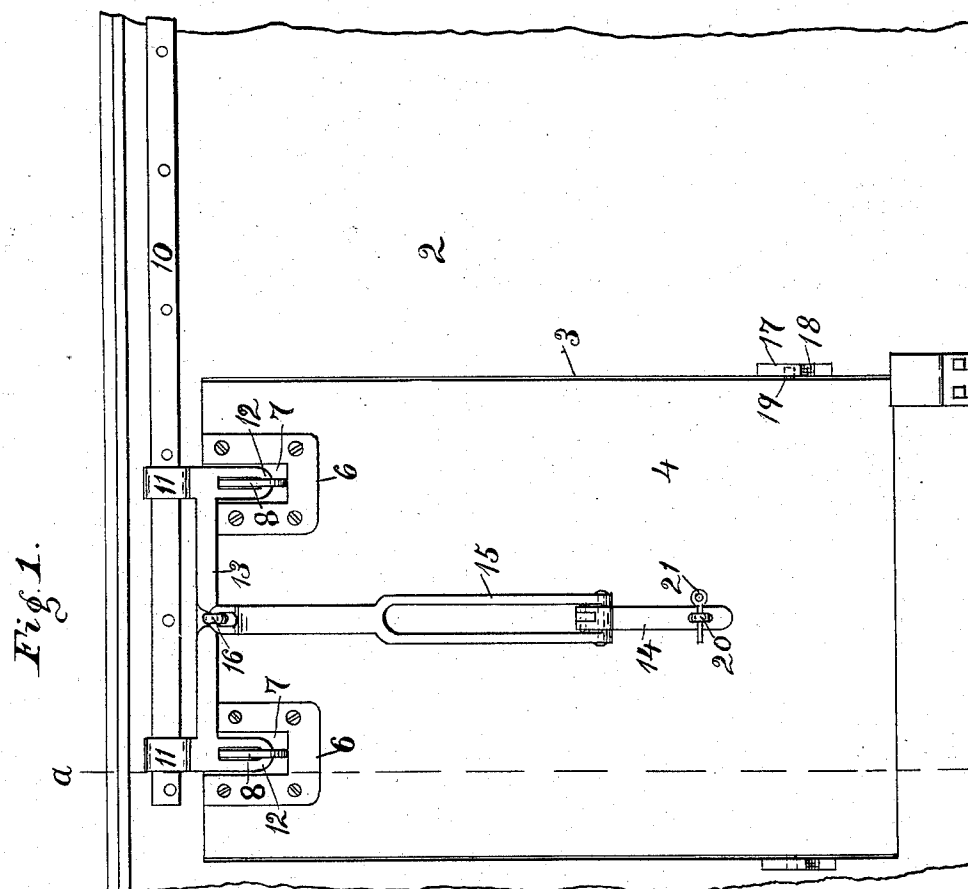
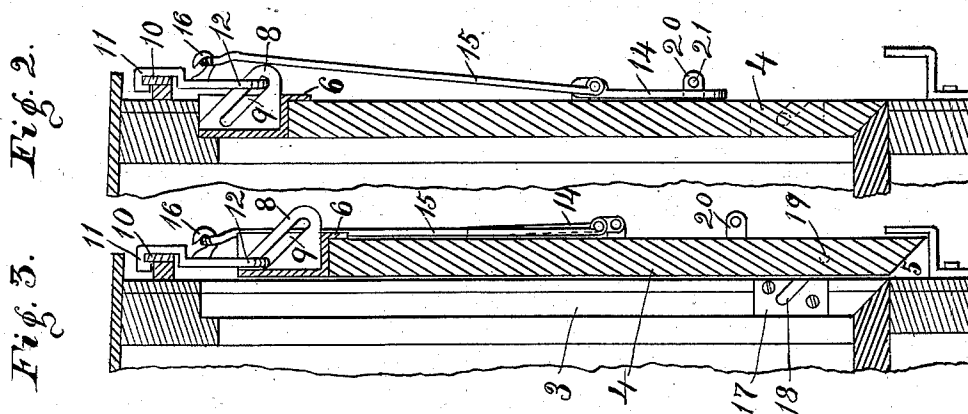


(No Model.)

B. F. GRANT.
CAR DOOR.

No. 535,369.

Patented Mar. 12, 1895.



Witnesses
C. M. Hood.
H. P. Hood.

Inventor
Benjamin F. Grant

UNITED STATES PATENT OFFICE.

BENJAMIN F. GRANT, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-
FOURTH TO JOHN H. HERIG, OF SAME PLACE.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 535,369, dated March 12, 1895.

Application filed January 7, 1895. Serial No. 534,048. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. GRANT, a citizen of the United States, residing at West Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Car-Doors, of which the following is a specification.

My invention relates to an improvement in that class of freight car doors in which the door shuts into the door-opening flush with the side of the car.

The object of my improvement is, to provide a cheap and effective mechanism for handling the door, which may be applied to freight-car doors as ordinarily constructed.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation of a portion of a car, showing the door closed. Fig. 2 represents a section at *a-a*—Fig. 1. Fig. 3 represents a similar section, showing the position of the parts when the door is open.

In the drawings, 2, indicates the side of the car, and 3, the opening therein. The door, 4, fits nicely in said opening flush with the side of the car, and is, preferably, beveled at its lower edge, as indicated at 5.

Secured to the face of the door at its upper edge is a pair of metallic plates, 6, 6, each having a recess, 7, which is open at the top. Each of the plates is provided with a centrally arranged, outwardly projecting flange, 8, in which is formed a slot 9, which is inclined to the vertical plane of the door at an angle of about forty five degrees.

The door is suspended from the guide-rail, 10, which consists of a flat bar secured to the side of the car in the ordinary manner, by means of hangers, 11, 11, which are adapted at their upper ends to embrace the guide-rail, and to slide longitudinally thereon. The lower ends of said hangers form loops, 12, 12, which engage the inclined slots in flanges 8. Hangers 11 are rigidly connected, so as to move in unison and prevent cramping on the guide-rail, by a cross-bar, 13. Pivoted to the face of the door so as to swing outward therefrom in a vertical plane, is a lever, 14. Lever 14 is connected with cross-bar 13 by means of

connecting-rod, 15, which is pivoted at one end to the lever, between the fulcrum and the free end of the lever, and is connected at the other end to a hook, 16, depending from bar 13.

Secured to each of the door jambs, near the lower edge of the door opening, is a flat plate, 17, having an inclined open slot, 18, with which a pin, 19, projecting from the edge of the door, engages when the door is closed.

A staple, 20 projecting from the face of the door, and a pin, 21, engaging the staple, serve to secure the free end of lever 14 when the door is closed.

The operation of my device is as follows: The door being open and the parts being in position shown in Fig. 3, hangers 11, carrying the door, are slid along the guide-rail until the door is opposite the opening in the car. The free end of lever 14 is now drawn outward and downward, thus raising the door and suspending it from the hangers by means of the connecting-rod 15. As the door moves upward, hangers 11 are thus, by the weight of the door, held rigidly in position, while the inclined slots in the flanges 8, being in engagement with the lower ends of the hangers, force the door inward as it moves upward, until it is seated in the opening flush with the outside of the car. The free end of lever 14 has by this movement been brought to the position shown in Figs. 1 and 2, and into engagement with the staple 20, where it is secured by the pin 21, thus locking the door in position. At the same time pins 19 have entered the slots 18 in plates 17, thus preventing the lower edge of the door from springing outward.

I claim as my invention—

1. In a car door of the class described, the combination of the door, the guide-rail secured to the side of the car above the door-opening, the pair of flanges 8 provided with inclined slots 9 and secured to the door, the pair of hangers each adapted at one end to embrace the guide-rail and engaging at the other end with the said slotted flanges, and the cross-bar connecting said hangers, all arranged to co-operate as set forth, whereby the door when raised is also forced inward.

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2. In a car door of the class described, the combination of the door, the guide-rail secured to the side of the car above the door-opening, the pair of flanges 8 provided with
5 inclined slots 9 and secured to the door, the pair of hangers each adapted at one end to embrace the guide-rail and engaging at the other end with the said slotted flanges, the cross-bar connecting said hangers, the lever

pivoted to the face of the door so as to swing in a vertical plane thereon, and the connecting-rod connecting said lever and said cross-bar, all arranged to co-operate in the manner and for the purpose set forth.

BENJAMIN F. GRANT.

Witnesses:

JOHN H. HERIG,
V. M. HOOD.