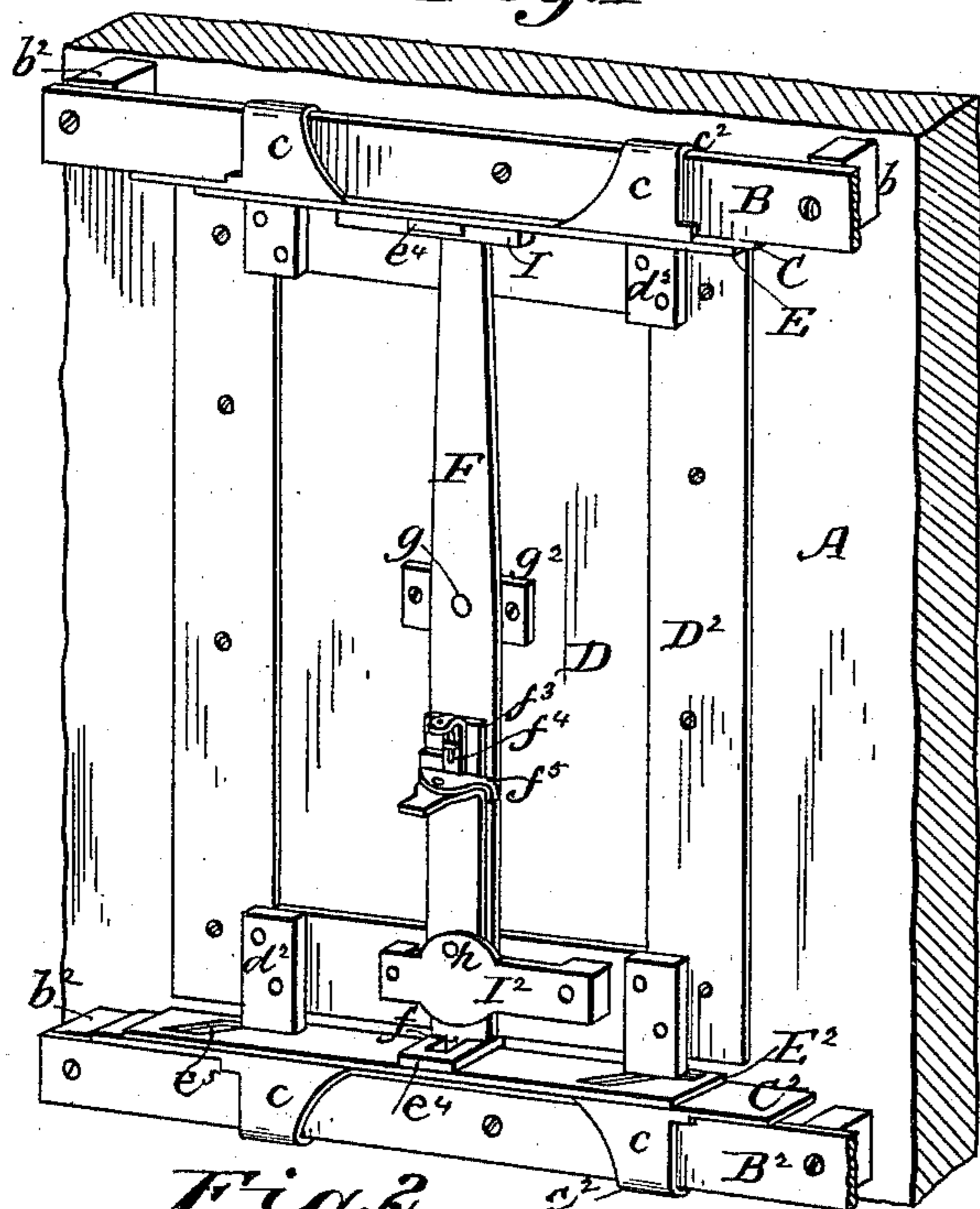


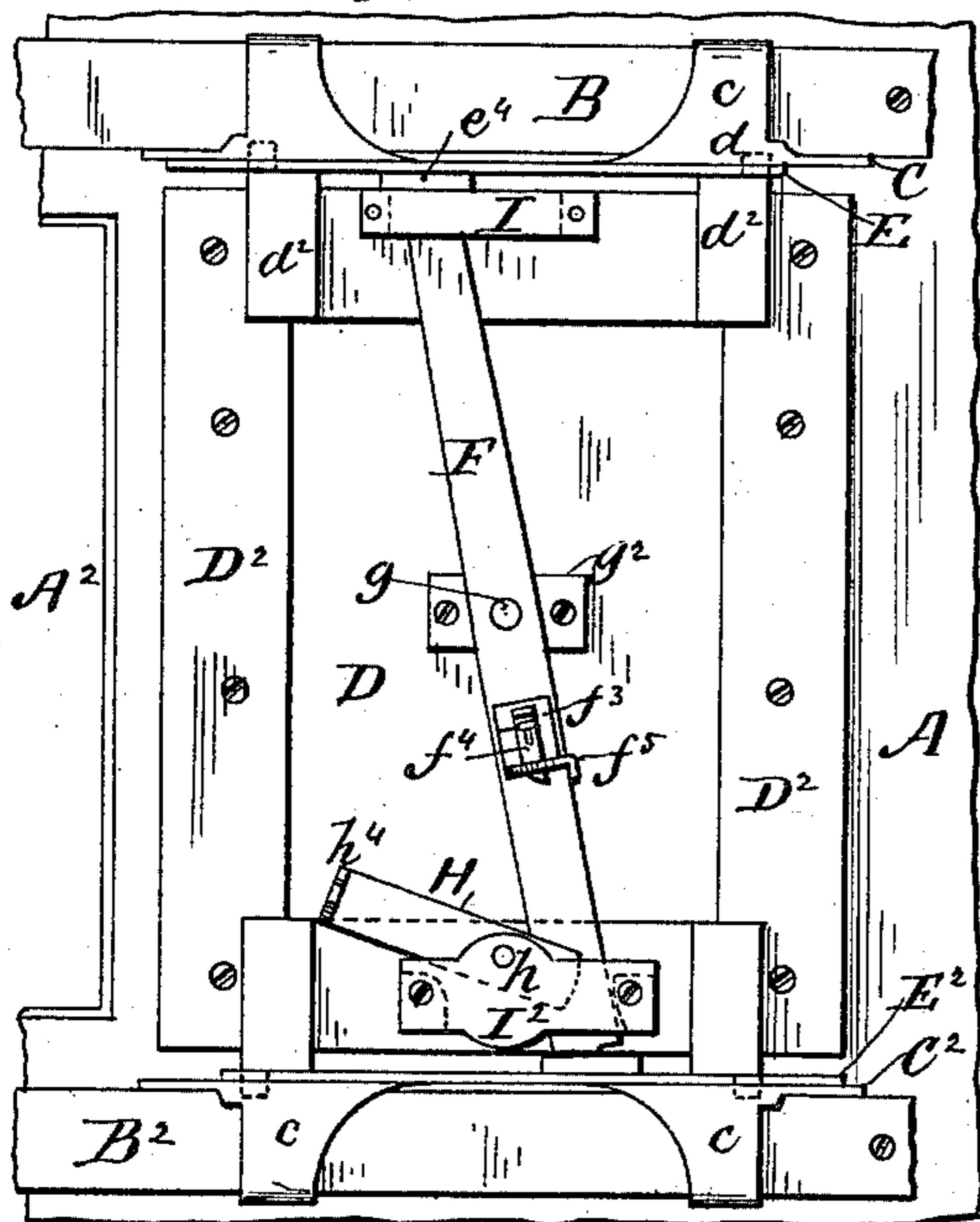
J. LAFORE.  
CAR DOOR

Patented Apr. 23, 1895.

*Fig.1*



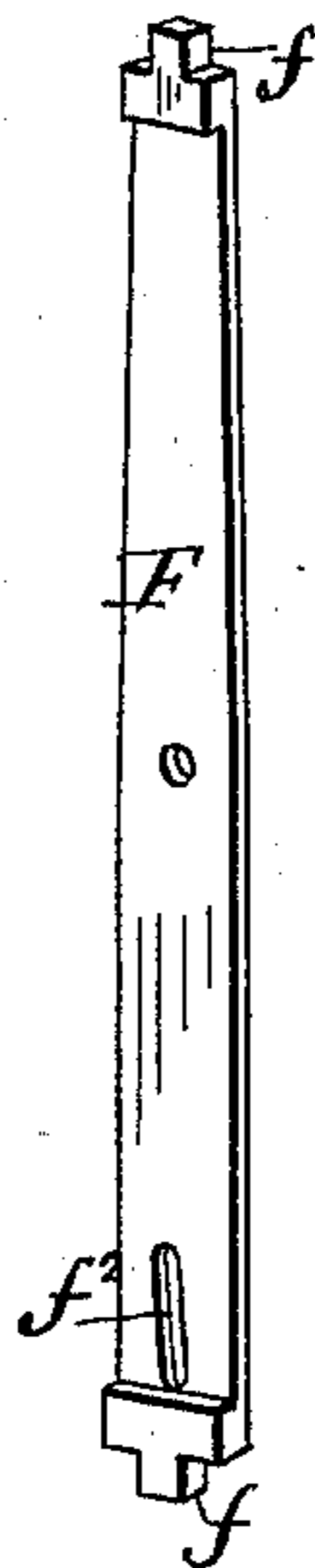
*Fig. 2*



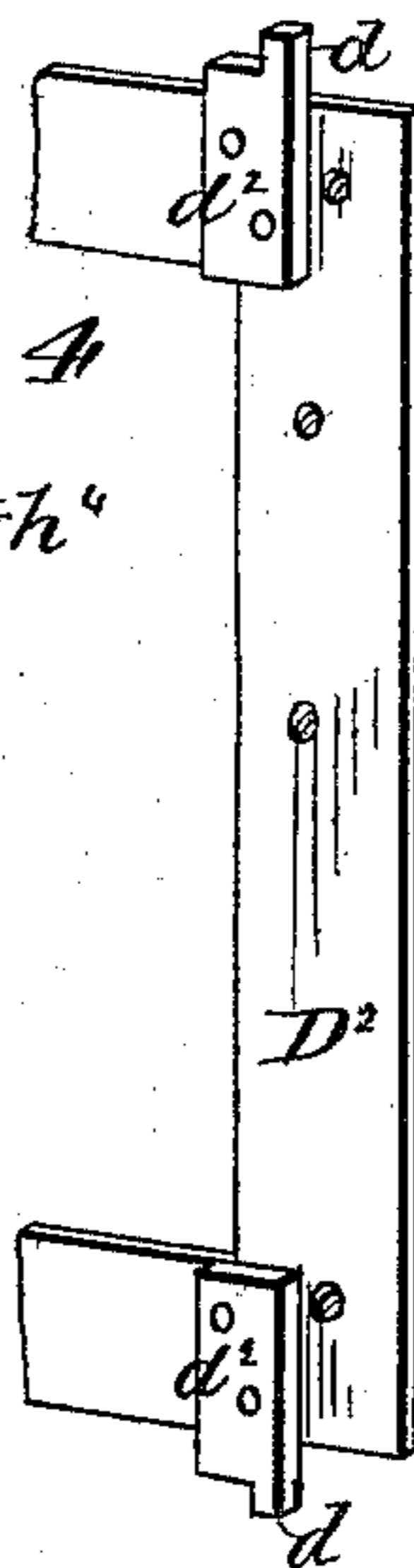
*WITNESSES*

A. B. Degges  
L. D. Heinrichs

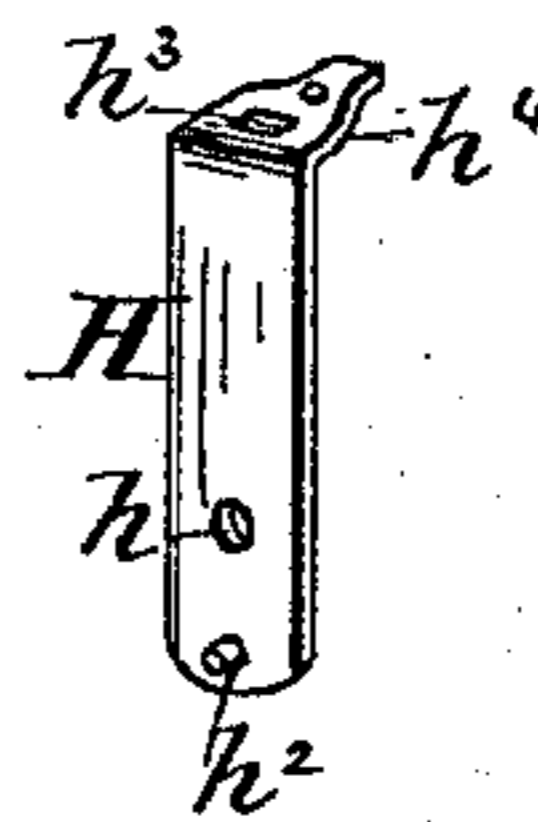
*Fig. 3.*



*Fig. 6.*



*Fig. 4*



*Fig. 7.*

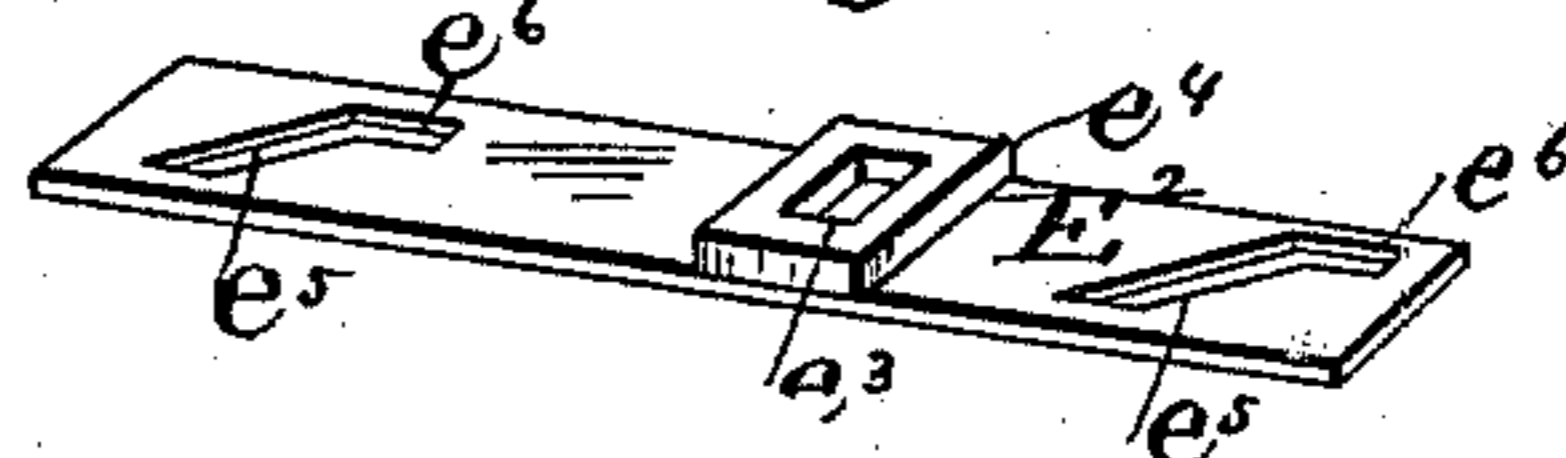
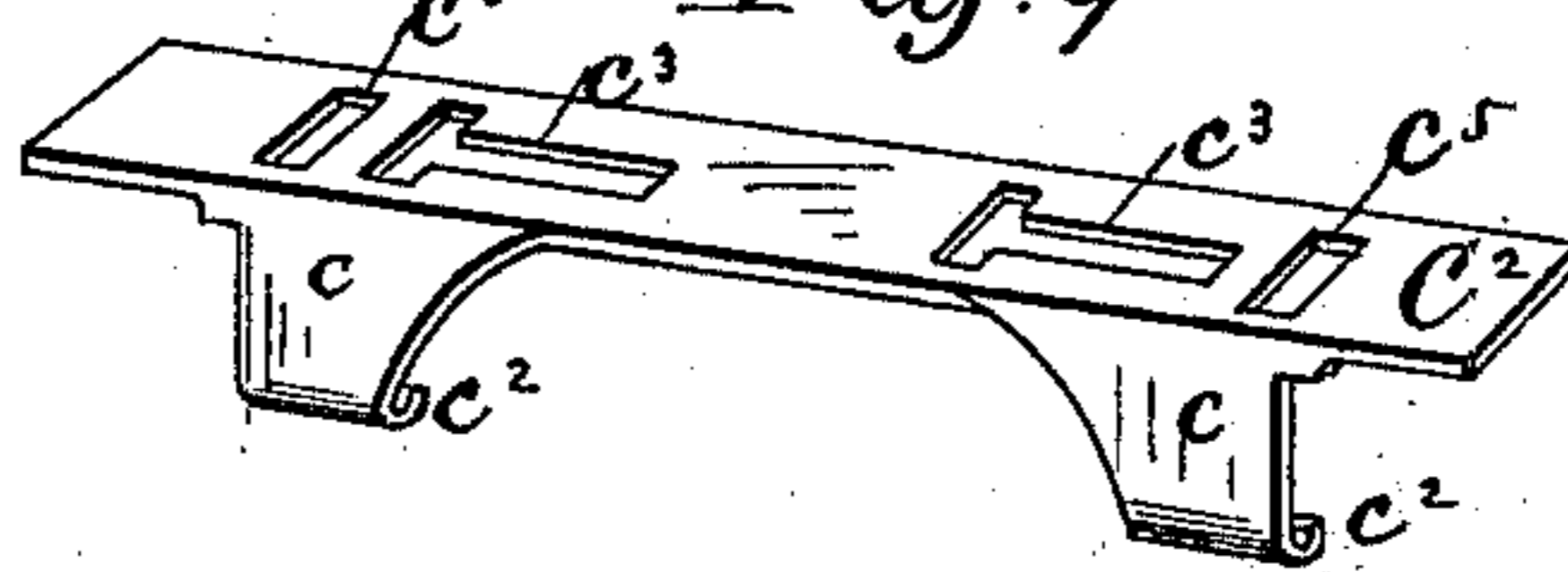


Fig. 9



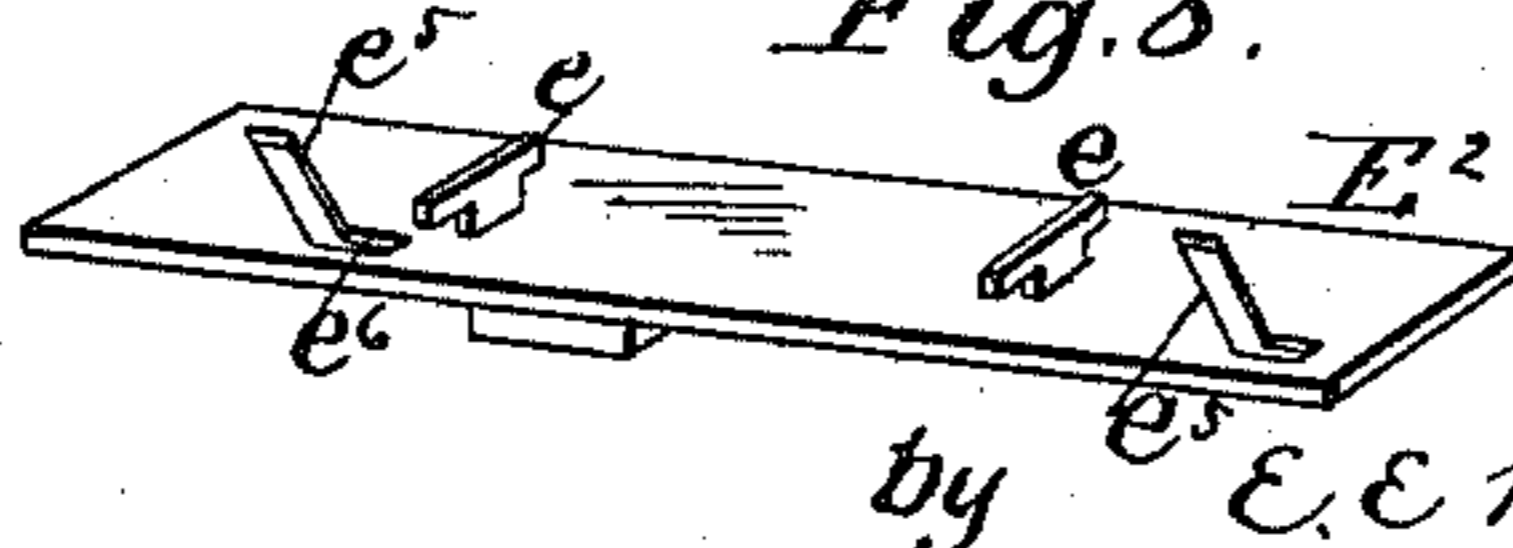
*Fig. 5*



*Fig. 10*



*Fig. 8.*



*INVENTOR*

John Lafore

by <sup>Es</sup> E. E. Masson, Attorney.

# UNITED STATES PATENT OFFICE.

JOHN LAFORE, OF ARGENTA, ARKANSAS.

## CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 537,833, dated April 23, 1895.

Application filed February 25, 1895. Serial No. 539,590. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN LAFORE, a citizen of the United States, residing at Argenta, in the county of Pulaski, State of Arkansas, have  
5 invented certain new and useful Improvements in Car-Doors, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention is designed more especially  
10 for use in connection with doors for refrigerator cars, but may be applied to ordinary freight cars, the door being adapted to rest within the opening in the car and be flush with the outer surface thereof when said opening is closed. It is also adapted to be removed  
15 laterally onto guard rails on which it can be made to slide.

The objects of my improvement are to provide simple, reliable and inexpensive means  
20 to operate the door, and also to secure it in a closed position. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion  
25 of the side of a car provided with a car door operated and retained in accordance with my invention, the door being shown closed in said figure. Fig. 2 is a front view of the same car door but shifted one side of the door opening  
30 as when the latter is open. Fig. 3 is a perspective view of the inner side of the centrally pivoted lever-bar used to move laterally the top and bottom slide-plates employed to guide the door into and out of the door opening. Fig. 4 is a perspective view of the inner  
35 side of the hand-lever used to tilt the lever-bar and also to normally latch it. Fig. 5 is a perspective view of the cap-plate carrying the pivot for the hand lever. Fig. 6 is a perspective view of a portion of the door-edge covering-frame showing one of its top and bottom  
40 guide-lugs. Fig. 7 is a perspective view of the bottom slide plate that carries the door. Fig. 8 is a perspective view of the under side of the same slide-plate. Fig. 9 is a perspective view of the bottom shoe-plate that carries and guides the bottom slide-plate. Fig. 10 is a horizontal section through a portion of the car frame and its door.

50 In said drawings, A represents a portion of the frame of one of the sides of the car. To said frame are secured horizontally the guide-

rails B and B<sup>2</sup> by means of bolts or screws passing therethrough and through cleats b secured to the side of the car. The top and bottom connections between the door D and the  
55 guide-rails B and B<sup>2</sup> being substantially alike, I will describe the bottom connections that support the door upon the rails B<sup>2</sup>. They consist of a shoe-plate C<sup>2</sup> that rests upon the top edge of the rail B<sup>2</sup>, and is provided with  
60 vertical arms c resting against the face of said rail. The bottom edges of said arms are inwardly bent to constitute hooks c<sup>2</sup> that engage loosely with the bottom edge of the rail B<sup>2</sup>.  
65

Upon the shoe plate C<sup>2</sup> is placed a slide-plate E<sup>2</sup> that is adapted to slide a short distance lengthwise of said plate C<sup>2</sup> but is connected therewith by means of T-head cleats  
70 e Fig. 8 pendent therefrom, the shank of which is received in grooves c<sup>3</sup> formed in the shoe-plate lengthwise thereof. Said grooves are T shaped to permit the introduction therein of the T-head of the cleats e.

The door D is preferably made of wood but  
75 it is provided on its outer face with a flat-bar metal frame D<sup>2</sup>, the edges of which project beyond the edges of the door, and said frame is thus adapted to fit closely and substantially air tight against the face of the car surrounding the door opening A<sup>2</sup> and against the  
80 rabbet strip α<sup>2</sup> within said opening. The door D is of such size and thickness as to fit closely within said opening A<sup>2</sup> when it is closed. To push the door D within said opening A<sup>2</sup>, to close it, or to remove it outwardly  
85 to open it, the door has pivoted to the central portion of its face a lever-bar F upon a headed pivot-pin or bolt g projecting from a small plate g<sup>2</sup> secured to said door. The ends of  
90 the bar F are of reduced width to constitute fingers f that are made to enter loosely into mortises e<sup>3</sup> formed across the lower slide-plate E<sup>2</sup>, (and also across the upper slide-plate E) and into thickening blocks e<sup>4</sup> secured to the  
95 face of said slide-plates. To tilt the lever bar F into the position shown in Fig. 2, or back again into the position shown in Fig. 1, a hand lever H is located in front of the lower portion of the lever bar F. Said lever H is  
100 pivoted at h upon a stud projecting from the inner face of a cap-plate I<sup>2</sup> secured to the lower portion of the door and covering the lower end of the lever-bar F. The hand lever

H has projecting from the lower portion of its inner face a stud  $h^2$  that is received into a slot  $f^2$  made lengthwise of the lower portion of the lever-bar F to operate the latter. To  
 5 retain the hand-lever H locked and sealed to the lever-bar F in the normal position shown in Fig. 1, said lever-bar has secured to its face a latch frame  $f^3$  that carries a vertically movable latch  $f^4$  the lower end of which passes  
 10 through the forwardly flanged lower end  $f^5$  of the latch frame and through a perforation  $h^2$  in the handle  $h^4$  of the lever H. To seal these parts, the seal wire is passed vertically through a hole in the handle of the latch  $f^4$ , through a  
 15 hole in the flanged lower end  $f^5$  of the latch frame, and through a hole in the handle  $h^4$  of the hand lever H.

To direct the door D in and out of the door opening  $A^2$  it carries two fingers  $d$  at the top  
 20 and two at the bottom. Said fingers project from the end of small plates  $d^2$  secured to the bar-frame  $D^2$  of said door, the lower edge of the bottom plates  $d^2$  serving also to support the door upon the slide-plate  $E^2$ . Said plate  
 25  $E^2$  has adjacent to its ends, slots  $e^5$  made diagonally but parallel to each other, and extended nearly across it. They are to receive the guide fingers  $d$ . The door shoe  $C^2$  under the slide plates E has also a slot  $c^5$  adjacent to each end  
 30 to receive the guide fingers  $d$  of the door, but said slots  $c^5$  are transversely across the door shoe  $C^2$ .

From the superposed arrangement of the diagonal slots  $e^5$  upon the cross slots  $c^5$ , it fol-  
 35 lows that when the lever-bar F is being tilted toward the position shown in Fig. 2, the pressure of the edge of the diagonal slots  $e^5$  upon the door fingers  $d$  causes the door to be moved outwardly from its door opening  $A^2$ , as the  
 40 shoe  $C^2$  is prevented from moving toward the left side by having its end abut against the cleat  $b^2$  at the left end of its course. The left hand edge of the door D while bearing against the side of the door frame  $A^2$  also pre-  
 45 vents it from moving toward the left hand side.

The upper part of the door frame is provided with a shoe C suspended from the guide rails B, a slide-plate E similar to the plate  $E^2$   
 50 and a cap-plate I to guide the upper end of the lever-bar F. In the slide plates E and  $E^2$  the inner ends of the diagonal slots  $e^5$  is made parallel to the side of said plates for a short distance at  $e^6$  for the reception of the guide  
 55 fingers  $d$  of the door, the edge of said slots  $e^6$  forming a support or lock for said fingers

against any pressure that may act against the inner side of the door from goods carried in the car and that may press against the door.

Having now fully described my invention, 60 I claim—

1. The combination of the side of a car having an opening  $A^2$  therein, guide rails secured to said car above and under said opening, door shoe-plates carried by said guide rails 65 and having slots  $c^5$  transversely thereof, top and bottom slide-plates having slots  $e^5$  diagonally thereof, and transverse mortises  $e^3$ , with a door having guide-fingers  $d$  and a lever-bar F centrally pivoted to said door and hav- 70 ing its ends received in the mortises  $e^3$  substantially as described.

2. The combination of the side of a car having an opening  $A^2$  therein, guide-rails secured to said car above and under said opening, 75 door shoe-plates carried by said guide-rails and having transverse slots  $c^5$  therein, slide plates having slots  $e^5$  diagonally thereof, a door having guide fingers  $d$  received in the slots  $c^5$   $e^5$  and a lever-bar F centrally pivoted 80 to said door and having its ends interlocked with the slide-plates substantially as described.

3. The combination of the side of a car having an opening  $A^2$  therein, guide rails secured 85 to said car above and under said opening, door shoe-plates carried by said guide-rails and having transverse slots  $c^5$  and longitudinal slots  $c^3$  therein, slide plates having slots  $e^5$  diagonally thereof and headed cleats  $e$ , a 90 door having guide-fingers  $d$  and a lever-bar centrally pivoted to said door and having its ends interlocked with the slide plates substantially as described.

4. The combination of the side of a car hav- 95 ing an opening  $A^2$  therein, guide rails secured to said car above and under said opening, door shoe-plates carried by said guide-rails, slide plates having slots  $e^5$  diagonally thereof, a door having guide fingers  $d$ , a lever-bar F 100 centrally pivoted to said door and having its ends interlocked with the slide plates, and a slot  $f^2$  lengthwise thereof, and a pivoted hand-lever H having a pin received into the slot  $f^2$  substantially as described. 105

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

JOHN LAFORE.

Witnesses:

JOHN T. AUDERER,  
THOS. F. GRONDKAKI.