

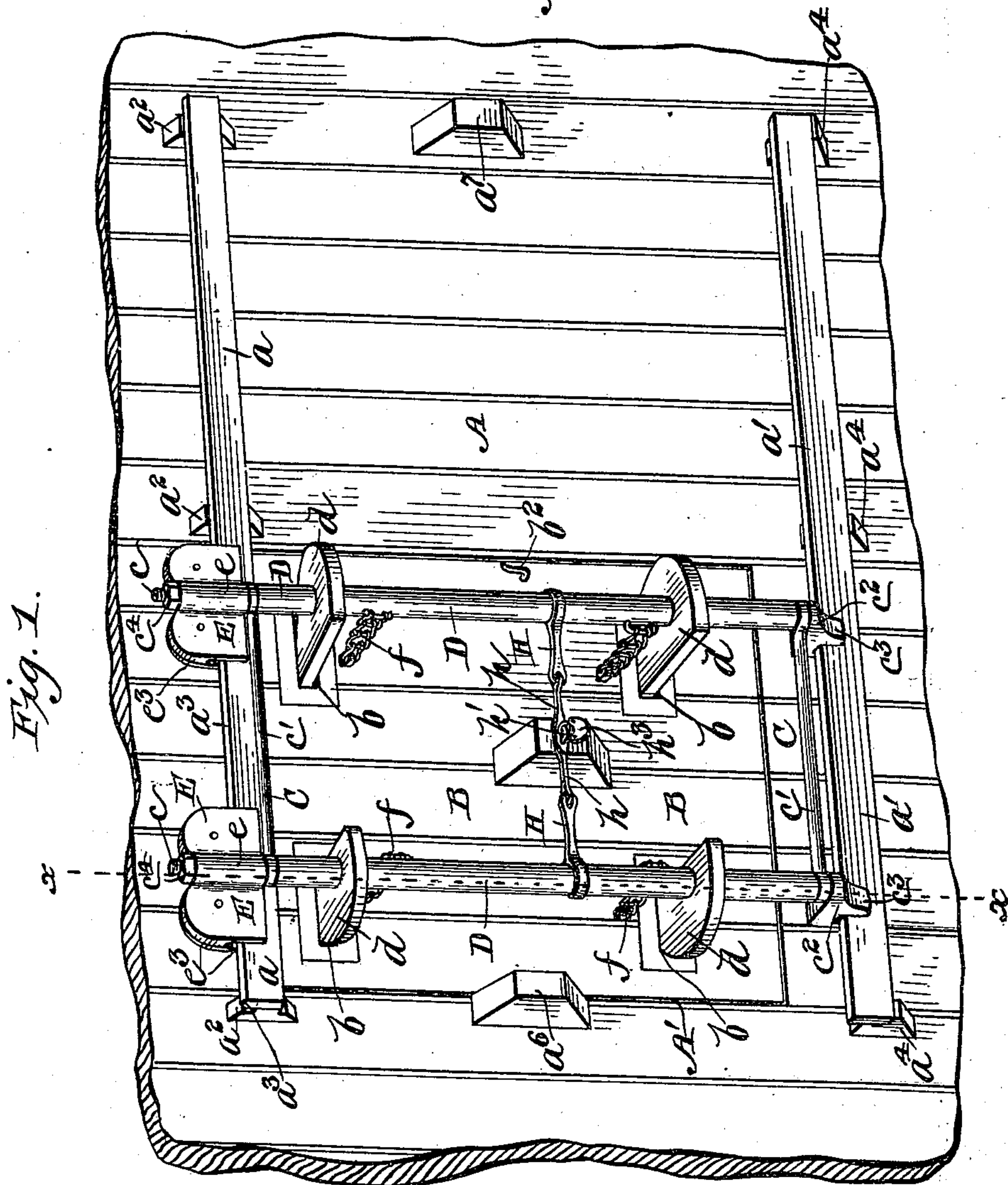
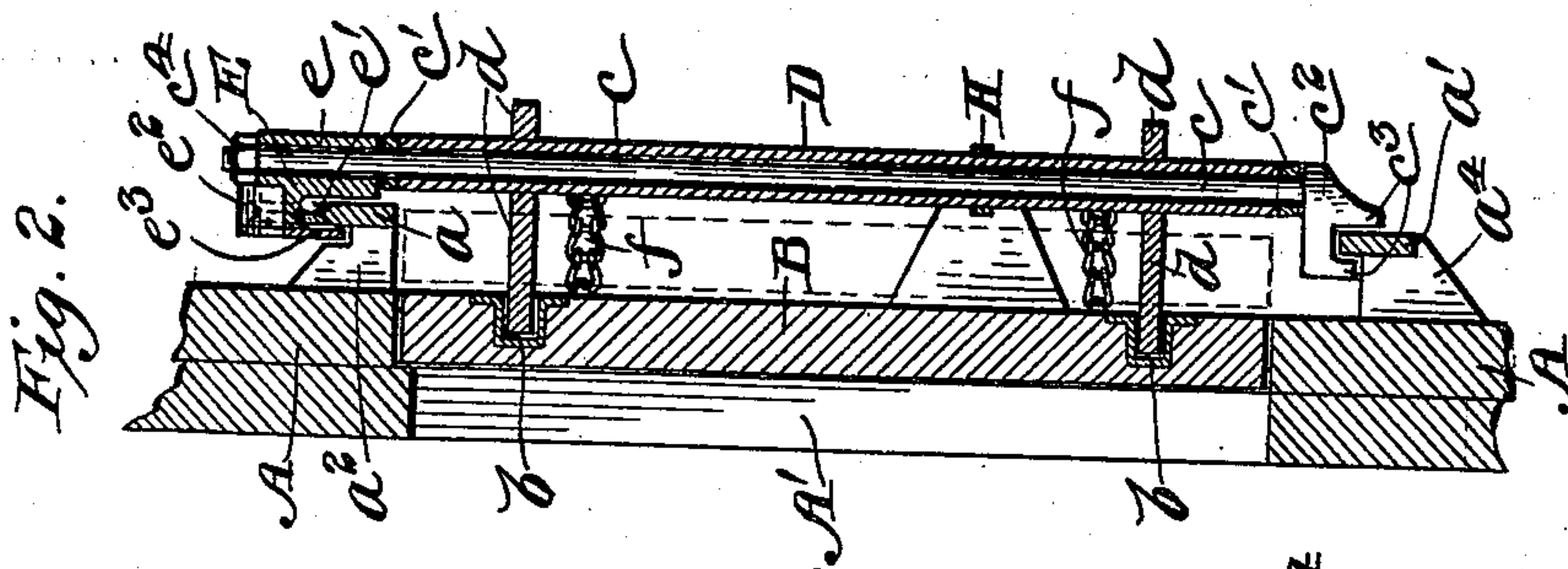
(No Model.)

J. H. FLEET.  
CAR DOOR.

2 Sheets—Sheet 1.

No. 548,975.

Patented Oct. 29, 1895.



WITNESSES

*Geverance.*  
*W. Harry Muzzy.*

INVENTOR

*James H. Fleet*  
*by his Atty.*  
*Maxim Fenwick Lawrence.*

(No Model.)

2 Sheets—Sheet 2.

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*Fig. 3.*

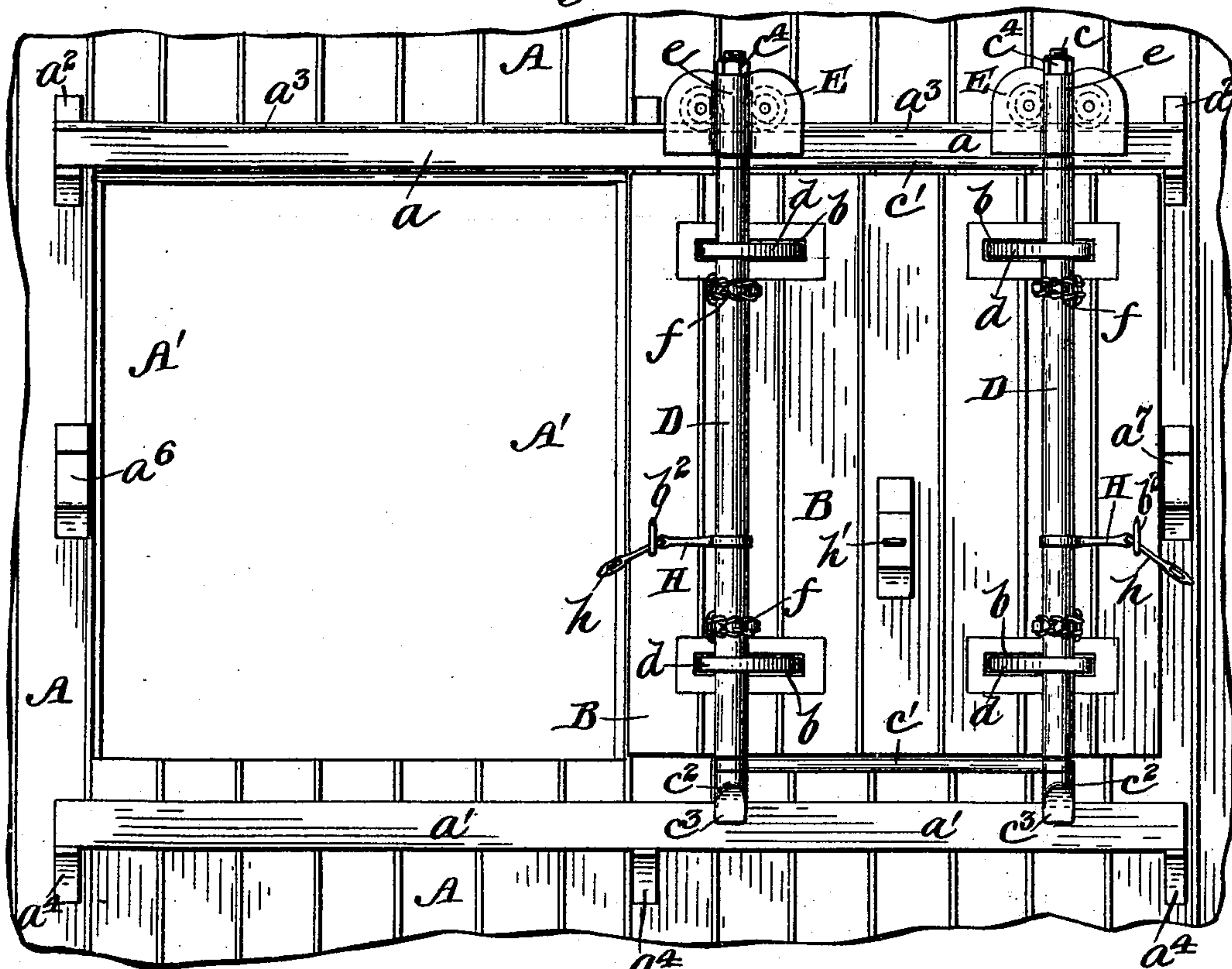
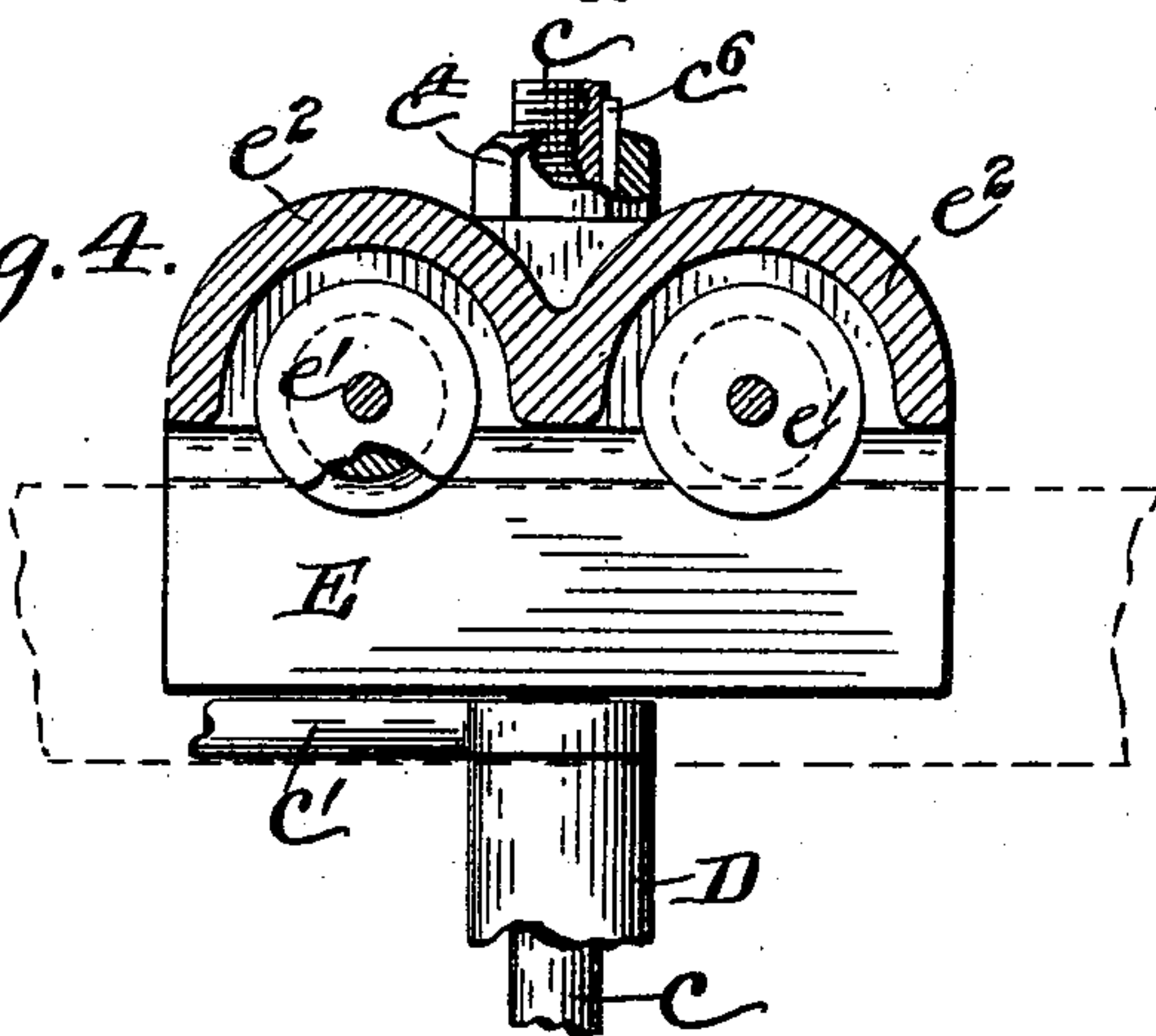


Fig. 4.



**WITNESSES**

Leverance  
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# UNITED STATES PATENT OFFICE.

JAMES H. FLEET, OF RICHMOND, VIRGINIA, ASSIGNOR OF TWO-THIRDS TO  
WILLIAM B. WALDRON AND WILLIAM H. ANTHONY, OF SAME PLACE.

## CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 548,975, dated October 29, 1895.

Application filed March 15, 1895. Serial No. 541,870. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. FLEET, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Car-Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in car-doors, and has particular relation to freight, baggage, or express car doors which are adapted to be sealed after being closed.

The invention consists of the combination in a car-door of suitable guiding and supporting rails, a frame movably mounted on said rails, rotatable shafts mounted on said frame, a door, chains connecting the door and said shafts to draw said door outward, and cams mounted on said shafts and engaging said door to both support and force it inward.

It also consists of the combination in a car-door of suitable guiding and supporting rails, a frame having traction-wheels resting on the upper of said rails and guides engaging the lower of said rails, rotatable shafts mounted on said frame, a door, chains connecting the door and said shaft to draw said door outward, and cams mounted on said shafts and engaging said door to support and force it inward.

It also consists of certain other novel construction, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of a portion of the side of a car with my door applied thereto, the same being in its closed position. Fig. 2 represents a vertical section on the line  $xx$  of Fig. 1. Fig. 3 represents a detail side elevation of the side of a car with my door applied thereto, the same being open and slid back on its supporting and guiding rails; and Fig. 4 represents a detail rear elevation of one of the housings for the traction-wheels, the rear plate of the same being removed.

A in the drawings represents the car; B, the door; C, the door-supporting frame, and D the rotatable shafts.

The side of the car A is provided with a

doorway A' and supporting and guiding rails  $a$   $a'$ , respectively. The supporting-rail  $a$  is mounted upon the car, so as to set away from the side of the same, by brackets  $a^2$  and has its upper edge beveled, as at  $a^3$ . This rail is a little longer than twice the width of the door B and extends horizontally above the doorway and to the right of the same. The guiding-rail  $a'$  is similar to rail  $a$  with the exception that it has not the beveled edge  $a^3$  and is supported horizontally below the doorway and to the right of the same by brackets  $a^4$ . The supporting-frame for the door consists of vertical rods  $c$  and horizontal rods  $c'$  connecting the same at top and bottom. The lower ends of the rods  $c$  are provided, respectively, with heads  $c^2$ , having spaced pendent lugs  $c^3$ , adapted to fit upon the opposite sides of the guiding-rail  $a'$  and thus guide said frame C as it moves along the side of the car when the door is being slid from in front of the doorway.

The upper ends of the rods  $c$  pass loosely through vertical bearing-boxes  $e$ , formed on the front faces of the housings E for the traction-wheels  $e'$ . Each of these housings is composed of a plate having the before-mentioned bearing-boxes on its front face and semi-circular flanges  $e^2$  on the upper half of its rear surface, said flanges being capped by a plate  $e^3$ , which performs the double office of forming one of the journal-supports for the traction-wheels  $e^4$  and a guide for preventing the wheels from jumping the track. The traction-wheels are journaled between said plate  $e^3$  and the main plate of the housings and have peripheral V-grooves adapted to fit over the beveled edge of the rail  $a$ . The upper ends of the rods  $c$  are screw-threaded to receive adjusting-nuts  $c^4$ , by means of which said rods may be adjusted up or down, keys  $c^6$  being employed to lock said nuts securely in position. The rods  $c$  are each surrounded by a hollow shaft D, which is adapted to turn loosely on said rod, but will be raised or lowered with it when the nuts  $c^4$  are loosened or tightened. Each of the shafts D is provided with two similar cams  $d$ , rigidly fixed thereto, with their eccentric portions in coinciding positions. Each of these cams is adapted to take into shallow metal-lined segmental grooves  $b$  in the door B. The office of these cams is to support the door vertically by always resting



in the grooves *b* and also to force it home into the casing surrounding the doorway *A'* when the shafts *D* are rotated.

Chains *f* connect the door and the respective shafts at points approximate to the cams *d*, and when said shafts are rotated said chains wind up upon the same and draw the door out of the casing, so that it can be slid longitudinally along the side of the car, the cams being rotated to decrease the distance between the peripheries of the same and the shafts as the chains wind up upon the latter.

Suitable operating-levers *H* are attached to each of the shafts, so that the latter may be readily rotated in either direction to force the door into its casing or to draw it from the same. Each of these levers is provided with a suitable hinged latching means or hasp *h*, adapted to fit over a staple *h'* on the door *B*. When said hasps are over said staple and a lock *h*<sup>3</sup> is applied to the latter, the shafts *D* are locked against rotation and the door consequently cannot be opened. The levers are secured in the opposite position in which the door is open by hooks *b*<sup>2</sup>. Suitable stops *a*<sup>6</sup> *a*<sup>7</sup> are applied on the side of the car to limit the movement of the door either in one direction or the other. If the door begins to sag, because of wear or the like, and does not exactly register with the doorway, the nuts *c*<sup>4</sup> are tightened, which raises the shaft *D* and thus the door, sufficient room being left between the top horizontal bar *c'* and the under side of the housings *E* to permit this adjustment.

It will be seen from the foregoing that when it is desired to enter the car the door is drawn straight out of the doorway and then slid longitudinally along the side of the car out of the way. The door is also forced into the casing straight by wedging devices which exert sufficient pressure to form an approximately water tight joint between said door and casing.

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

1. In a car door, the combination of suitable supporting and guiding rails, a frame movably mounted on said rails, rotatable shafts mounted on said frame, cams on said shafts, a door resting on said cams and against the cam surfaces thereof whereby it is supported and may be forced inward at will, and chains connecting said shafts and said door to draw the latter outward, substantially as described.

2. In a car door, the combination of suitable supporting and guiding rails, a frame having traction wheels resting upon the upper of said rails and guides engaging the lower of said rails, rotatable shafts mounted on said frame, cams on said shafts, a door resting on said cams and against the cam surfaces thereof, whereby it is supported and may be forced inward at will, and chains connecting said shafts and said door to draw the latter outward, substantially as described.

3. In a car door, the combination of suitably

supporting and guiding rails, a frame movably mounted on said rails, rotatable shafts mounted on said frame, cams on said shafts, a door resting on said cams and against the cam surfaces thereof, whereby it is supported and may be forced inward at will, chains connecting said shafts and said door to draw the latter outward, and means for vertically adjusting the frame independently of its supporting rail, substantially as described.

4. In a car door, the combination of suitable supporting and guiding rails, a frame having vertically adjustable rods, traction wheels and guides on said frame for engaging the supporting and guiding rails respectively, rotatable shafts mounted on said adjustable rods, cams mounted on said shafts, a door resting on said cams and against the cam surfaces thereof, whereby it is supported and may be forced inward at will, and means connecting the shaft with the door for drawing the latter out, substantially as described.

5. In a car door, the combination of suitable guiding and supporting rails, a frame having vertically adjustable rods, mounted on the same, rotatable shafts mounted on said adjustable rods, a door, and means connecting the rotatable shaft with the door whereby the latter is drawn out or pushed in as the shafts are rotated, substantially as described.

6. In a car door, the combination of suitable supporting and guiding rails, a frame movably mounted on said rails, rotatable shafts mounted on said frames, levers for revolving said shafts, means for locking said levers in the desired position, cams mounted on said shafts, a door resting on said cams and also against the cam surfaces thereof, whereby it is supported and may be forced inward at will, and chains connecting the door and the shaft for drawing said door outward, substantially as described.

7. In a car door, the combination of suitable supporting and guiding rails, a frame movably mounted on said rails, hollow rotatable shafts inclosing the vertical rods of the frame, a door, cams mounted on said hollow shafts and engaging said door, and chains connecting the door and the hollow shafts whereby the door can be drawn out horizontally from the doorway and slid to one side, substantially as described.

8. In a car door, the combination of suitable supporting and guiding rails, a frame movably mounted on said rails, means for vertically adjusting the frame independently of its supporting rail, a door, and means connecting said door and said frame, whereby the former can be withdrawn and forced into its casing, substantially as described.

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

JAMES H. FLEET.

Witnesses:

RICHARD W. JONES,  
L. B. WALLER.