J. P. SJOBERG.

DOOR.

APPLICATION FILED DEC. 31, 1908.

929,888.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.

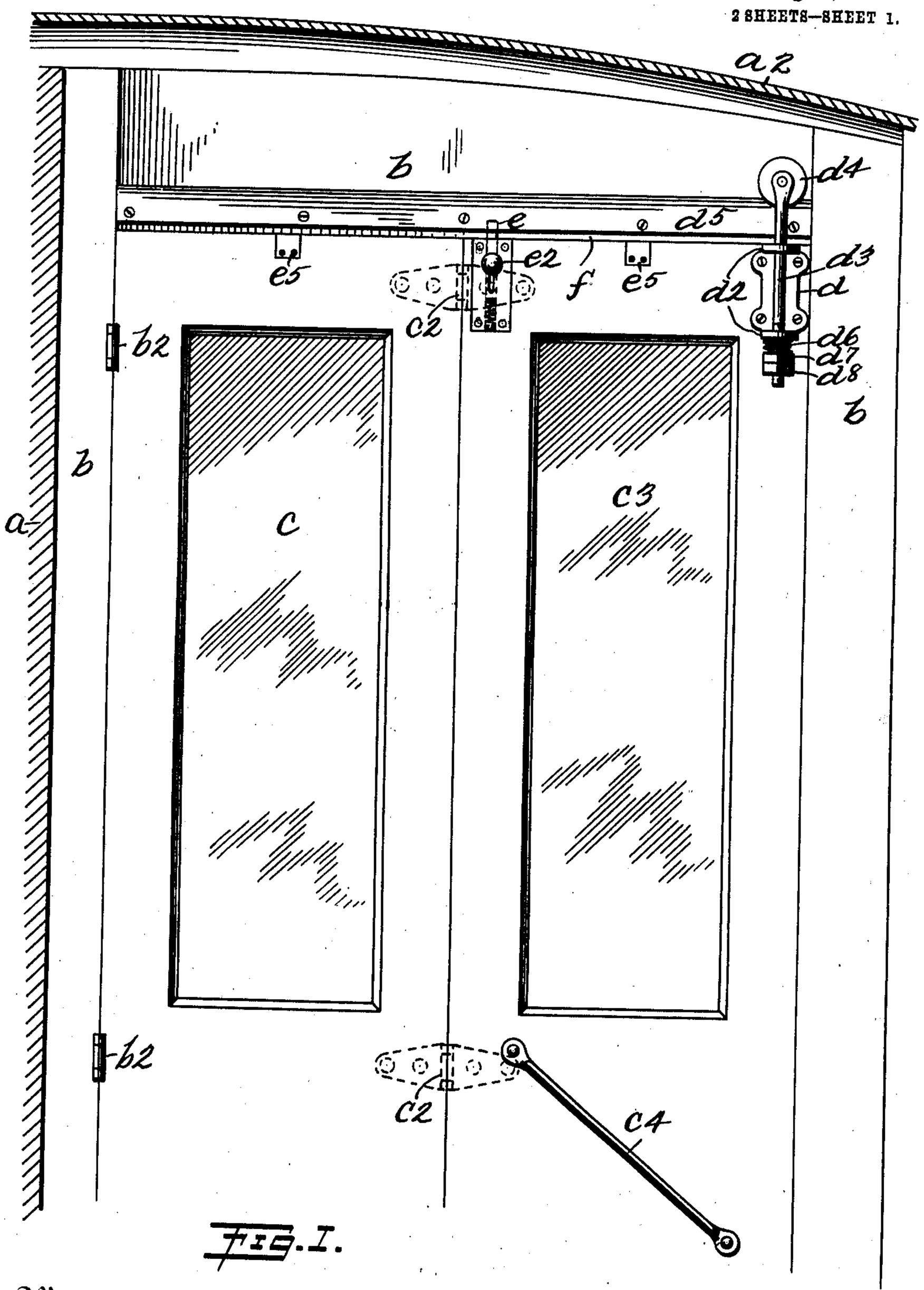

FIG. I.

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2 SHEETS—SHEET 2.

FIG. 2.

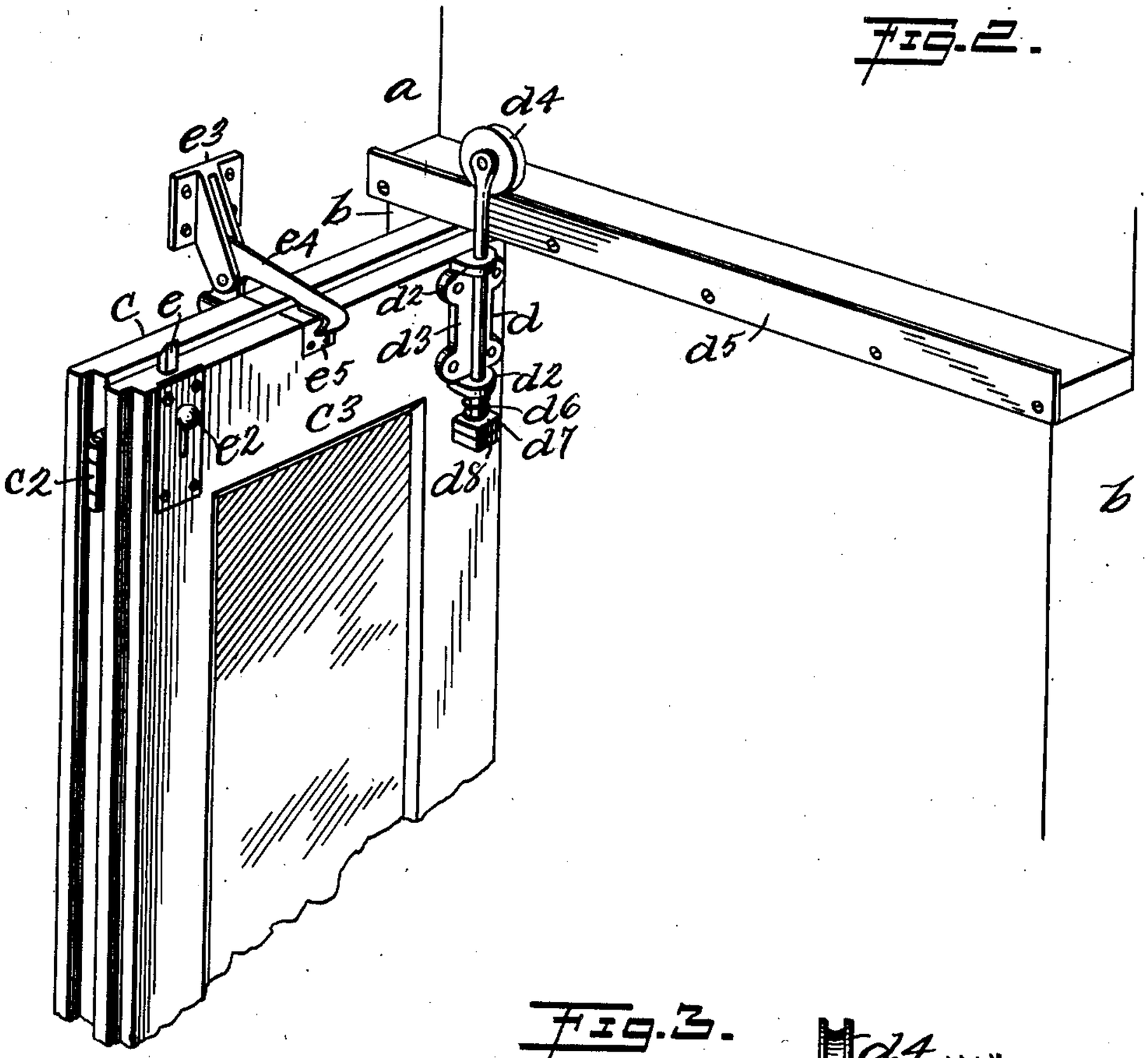


FIG. 3.

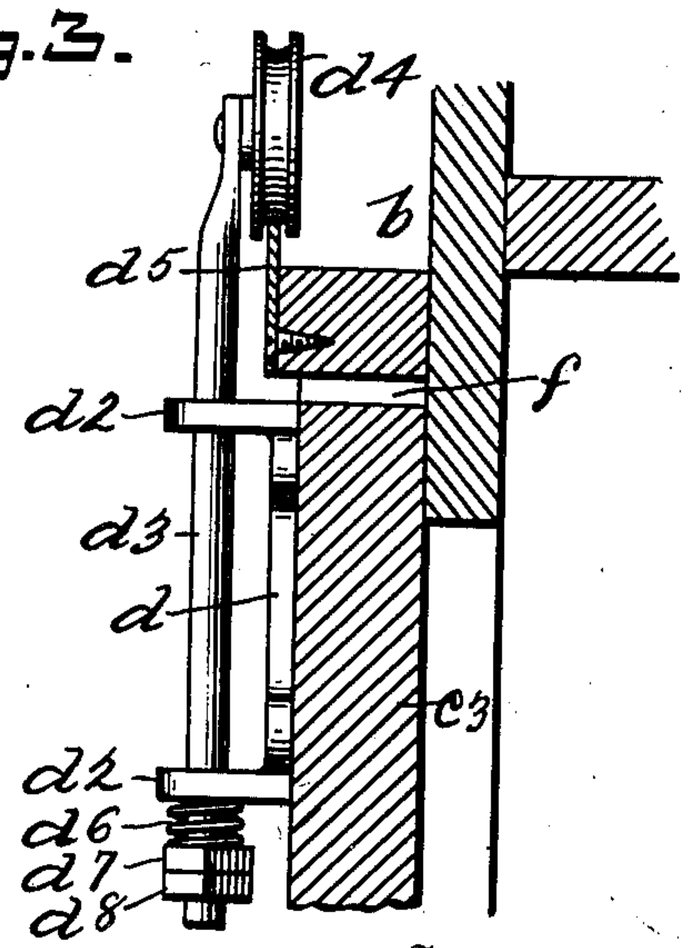
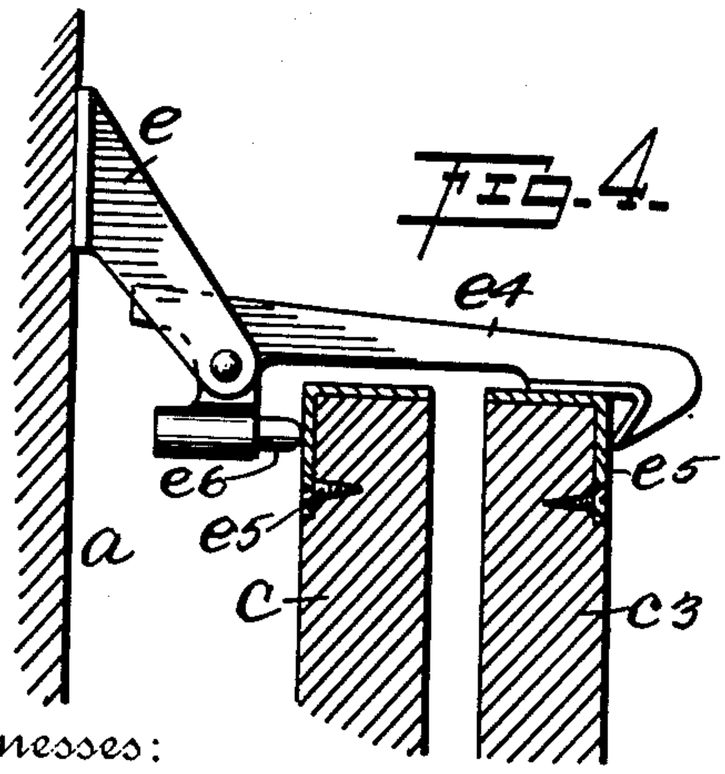


FIG. 4.



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UNITED STATES PATENT OFFICE.

JOHN P. SJOBERG, OF ELMHURST, NEW YORK.

DOOR.

No. 929,888. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed December 31, 1908. Serial No. 470,255.

To all whom it may concern:

Be it known that I, JOHN P. SJOBERG, a citizen of the United States of America, and residing at Elmhurst, in the county of Queens and State of New York, have invented certain new and useful Improvements in Doors, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to railway car construction, particularly to street railway cars provided with vestibules or storm fronts, and the object thereof is to provide side doors for the protection of people upon the platforms inclosed by the said vestibules.

A further object is to provide a combination folding and sliding door which, when open, does not extend over the entrance to the car itself and which takes but little room.

A further object is to hinge the doors to the car and to provide means whereby the weight of said doors will be taken from the said hinges, when the doors are shut.

A further object is to provide such hinge relieving devices which automatically adjust themselves to inequalities in the car construction and which are capable of being adjusted to any sag which may occur in the car platforms, due to overload or to long use, such sagging frequently occurring.

A further object is to provide means whereby the said doors may be locked in either an open or a closed position and a still further object being to provide doors for the purposes stated which are simple in construction, positive in operation, well adapted for the said purposes, and which do not require changes in the cars themselves.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which the separate parts are designated by the same reference characters in each of the views, and in which:—

Figure 1 is a partial elevation of car doors constructed according to my invention, in a closed position; Fig. 2 is a partial perspective view thereof in an open position; Fig. 3 is an enlarged sectional view, showing the method of supporting the outer end of the door; and Fig. 4 is a similar view showing one method of locking the door in an open position.

In the drawings forming a part of this application, I have shown a portion of a car a, having an extension roof or hood a^2 arranged over the front or rear platform and connected therewith in the usual manner, said platforms not being shown as they form no part of this invention, and, in practice, I provide a door frame b in order that the door openings and doors may be uniform and to compensate for the irregular car body, roof, and storm front construction or formation.

Hinged, as shown at b^2, to the frame b adjacent to the car body a, is a door c which extends approximately half-way across the door opening in the said frame, and to which is also hinged, as shown at c^2, a door c^3, said doors, jointly, closing the said opening, the hinges b^2 permitting the door c to open inwardly against the car body and the hinges c^2 permitting the door c^3 to fold outwardly upon the door c, as clearly shown in Fig. 2, and at c^4 is shown a rail which serves the double purpose of manipulating the doors and assisting passengers on and off the car provided with this invention.

Secured to the outer side of the door c^3 is a plate d provided with lugs d^2, through which passes a vertical rod d^3 loosely and which is provided with a sheave or roller d^4 at its upper end, moving upon a track d^5 arranged over the door opening and with a coil spring d^6, nut d^7 and lock nut d^8 at its lower end, as clearly shown.

Slidably mounted in the door c^3 is a spring actuated bolt e which is adapted to engage with the frame b when the doors are shut, the end of the said bolt being inclined to permit the closure of the doors and the bolt being provided with a handle e^2 whereby it may be pulled downwardly when it is desired to open the doors, and secured to the car body is a plate or support e^3 for a pivoted catch e^4 adapted to hold the doors in an open position, said catch engaging metal guards e^5 set in the doors to prevent injury thereto and, as shown in Fig. 4, the catch e^4 is provided with a bolt e^6 which is spring actuated to permit the entrance of the doors into the said catch and to prevent rattling thereof when engaged, this detail not being illustrated as any suitable form of catch may be substituted for that shown, as well as for the bolt e, as will be readily seen, and still

accomplish the desired results, and suitable catches or locks may also be provided for the bottom of the doors, if desired.

In opening, the doors are broken at their joint by the manipulation of the rail c^4 and moved upon the hinges b^2 until the position shown in Fig. 2 is reached and in this movement the roller d^4 slides over the track d^5 and supports the weight of the outer end of the doors and, because of its rotary mounting, the said roller remains in alinement with the track in any position of the door, thus facilitating the operation thereof, and taking the strain from the hinges b^2. If the track should be unevenly set the spring d^6 will permit a certain degree of vertical movement of the roller d^4, up or down, and still sustain the weight of the door end, and if the platform, and connected roof, should sag at any time, for any reason, the nuts d^7 and d^8 may be adjusted to shorten the rod d^3 and thus compensate for the said sag and the weight of the door end is still sustained by the said roller and it will be observed that a space f is provided over the doors in order to permit the said doors to maintain their relationship with the car body in the event of such sagging of the car platform. It will therefore be seen that I provide a foldable-slidable door which is always held in true position with relation to the car body in the event of unequal or uneven setting of the frame or track and in the event of temporary sagging of the car platform due to overload, and which is also adjustable to a permanent sag of the platform due to long use or strain and, while I have shown means for accomplishing these results, it will be evident that many other methods may suggest themselves and still be within the spirit of this invention.

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

1. A frame, a door hinged thereto, a supplemental door hinged to said first named door, an overhead track, a roller operating thereon and connected with said last named door to support the weight thereof, and automatic means connected with said roller for compensating for vertical movement of said track.

2. A frame, a door hinged thereto, a supplemental door hinged to said first named door, an overhead track, a roller operating thereon and connected with said last named door to support the weight thereof, and automatic means for adjusting said roller to changes in the relationship between said door and track.

3. In combination with a door, a support for the end thereof, comprising a rod rotatively mounted on said door, a track, a roller on said rod and operating on said track, a spring on said rod for maintaining contact of said roller with said track and means for regulating the tension of said spring.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 17th day of December 1908.

JOHN P. SJOBERG.

Witnesses:
GEORGE F. BENTLEY,
J. C. LARSEN.