S. P. MASSEY.

CAR DOOR.

APPLICATION FILED JAN. 28, 1908.

905,445.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

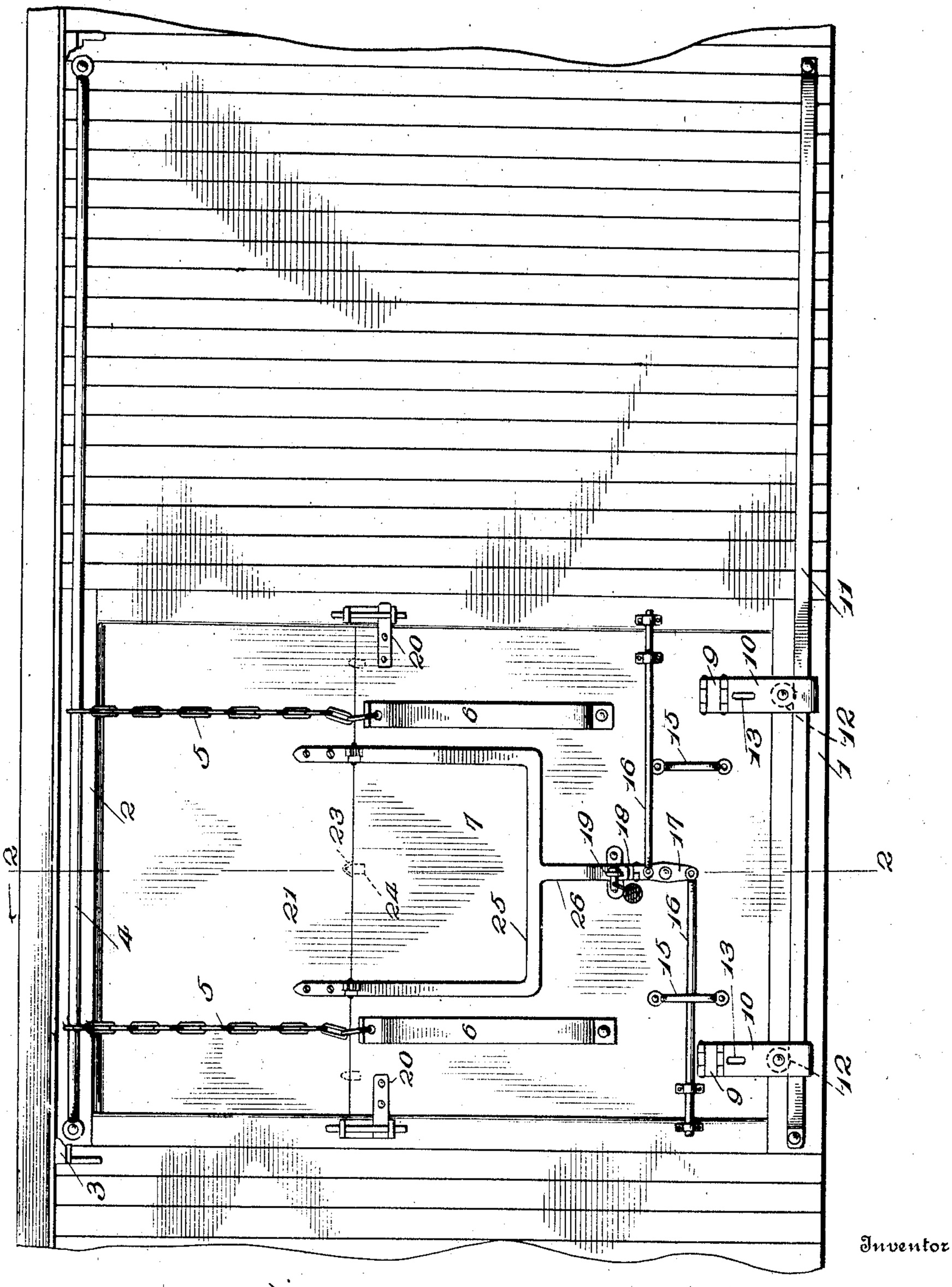


Fig. 1.

Witnesses

W. P. Woodson

Inventor

Solon P. Massey

By Robt A Macey.

Attorneys

S. P. MASSEY.

CAR DOOR.

APPLICATION FILED JAN. 28, 1908.

905,445. Patented Dec. 1, 1908.

2 SHEETS—SHEET 2.

Fig. 2.

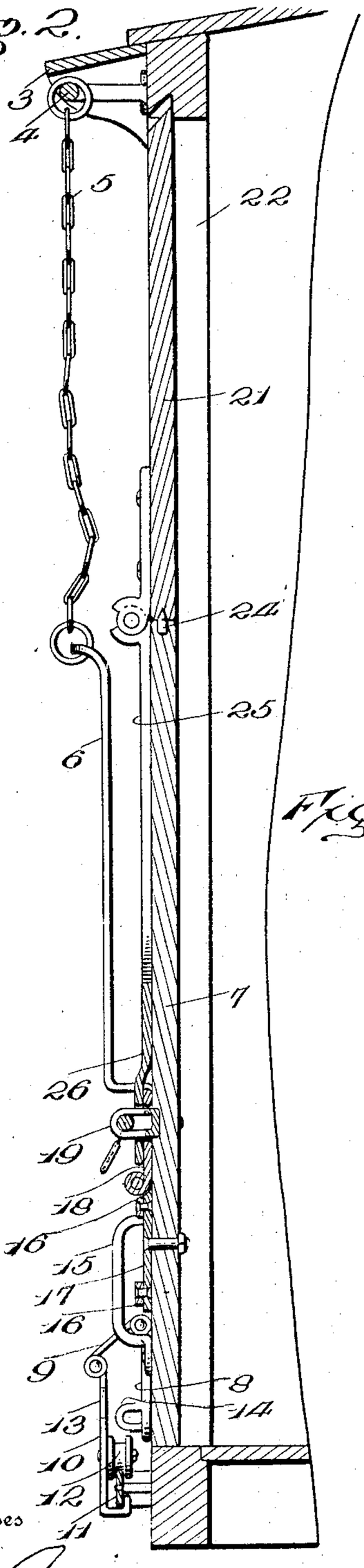


Fig. 3.

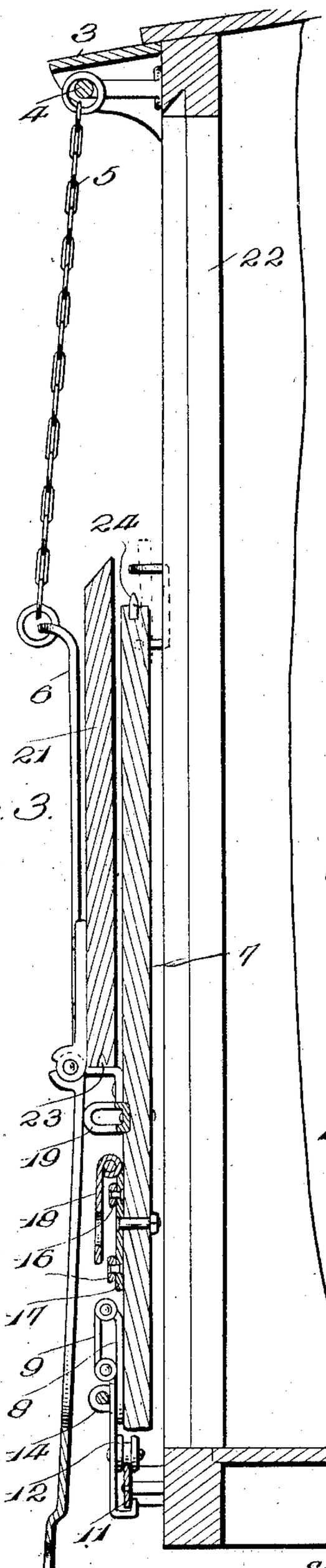


Fig. 4.

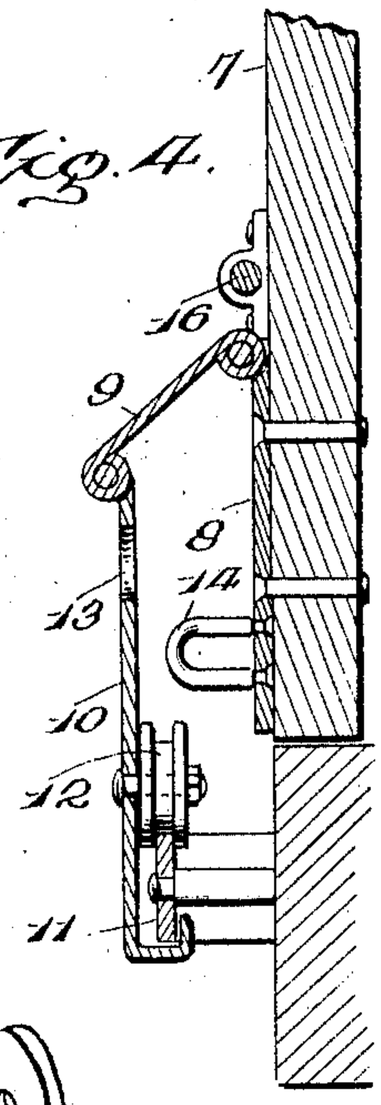
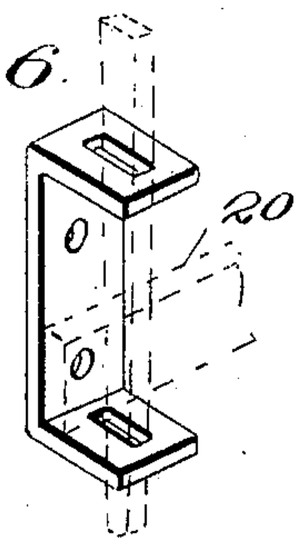


Fig. 5

Fig. 6.



Witnesses

Inventor

Solon P. Massey

By Chas. Massey. Attorneys

UNITED STATES PATENT OFFICE.

SOLON P. MASSEY, OF LAKE MILLS, IOWA.

CAR-DOOR.

No. 905,445. Specification of Letters Patent. Patented Dec. 1, 1908.

Application filed January 28, 1908. Serial No. 413,048.

To all whom it may concern:

Be it known that I, SOLON P. MASSEY, citizen of the United States, residing at Lake Mills, in the county of Winnebago and State of Iowa, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification.

This invention comprehends certain new and useful improvements in car doors, and the invention has for its object an improved construction of sectional car door that will do away with the necessity of an extra or grain door that is now commonly employed in freight cars, the invention providing improved means whereby the upper section of the door may be moved to an inoperative position and held supported on the main or lower section of the door when it is desired to maintain the upper portion of the door-way open.

The invention consists in certain constructions, arrangements, and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a face view of a car door constructed in accordance with the principles of my invention; Fig. 2 is a transverse sectional view thereof, with the removable upper door section in closed position; Fig. 3 is a similar view, with the upper sections of the door supported in lower position on the lower section of the door; Fig. 4 is a detail sectional view of the lower end of the main door section; and Fig. 5 is a detail perspective view, illustrating the hinged connection between the upper door section and its handle. Fig. 6 is a detail perspective view illustrating a locking means for the upper part of the lower door section.

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 numeral 1 designates the lower sill or timber of a freight car in which my invention is embodied, 2 the upper door sill or timber and 3 a hood of any desired construction and design, adapted to project out from the door-way in the customary manner to protect the door from the action of the elements and to form a water shed.

4 designates an upper supporting rail which extends along the outside of the car above the door-way, and 5 designates suspension members which in the present instance are in the form of chains mounted to slide along the upper supporting rail 4 and suspended therefrom. The lower ends of these suspension members or chains 5 are connected to the metallic straps 6, said straps in turn being attached at their lower ends to the main or lower door 7, and projecting outwardly slightly from the outer face of the door, as clearly illustrated in the drawings, the upper ends of the straps 6 being preferably flared outwardly and connected directly to the lower ends of the chains 5.

The main or lower door 7 is provided at its lower edge with any desired number of hinges that are constructed in three leaves or sections 8, 9 and 10. The sections 8 are secured in any desired way to the lower edge of the door 7, while the sections 10 are formed with transversely extending openings by which they are mounted upon a lower supporting rail 11 secured to the lower door sill or timber 1 and projecting outwardly therefrom. Preferably, the sections or leaves 10 of the hinges are provided with rollers 12 designed to bear upon the lower supporting rail 11 to reduce friction when the door is slid sidewise on the rail. Each section 10 of the hinges is formed with a slot 13 designed to receive an apertured lug 14 on the corresponding section 8. In the normally closed position of the door 7, between the jambs of the door-way, the sections 9 of the two hinges assume an inclined position, as shown, with the sections 10 out of direct engagement with the sections 8. In order to open the door, it is only necessary to grasp the handles 15 secured thereto near the lower end thereof and pull the door outwardly and slightly upwardly, so that the sections 8 will be brought towards the sections 10 of the hinges and the apertured lugs 14 inserted through the slots 13, whereupon wedges or any other fastening means may be inserted through the lugs 14 so as to maintain the door held in an outward position upon the sections 10 of the hinges and away

from the door-way, so that the entire door may be slid to one side; it being, of course, understood that the chains or other flexible suspension members 5 are sufficiently slack to permit this operation.

When the door 7 is swung inwardly into the door-way and against the jambs, it may be held locked in this position by means of the wedge-shaped bolts 16 that are secured at their inner ends to the pivoted plates 17, a handle 18 being secured to said plate to manipulate the two bolts, the handle being designed for engagement with the sealing staple 19 attached to the outer face of the door. The lower or main door may also be held securely in place by additional latches 20, of any desired construction, engaging keepers on the sides of the door casing.

The upper section 21 of the door is adapted to fit within beveled or inclined jambs 22 and it is formed in its lower edge with openings 23 adapted to fit over dowels or lugs 24 projecting up from the upper edge of the lower door 7, so as to hold the upper door securely in the door-way supported on the upper edge of the lower door. The upper door section 21 has a preferably hinged connection at its lower edge with a forked handle 25, the cross bar of said handle being formed with a handle extension 26 arranged to fit over the sealing staple 19, so that the handle may be sealed at one and the same operation with the handle 18 of the latches 16. By the provision of the handle 25 it is obvious that the upper section 21 of the door may be actuated to secure it in closed position or remove it therefrom at a point below the car floor, as for instance, a station platform, or even the ground. In open position, the upper section 21 of the door is designed to be slipped downwardly into the brackets 6 and thus supported on the outer side of the main or lower door 7.

In the preferred construction, the keepers to receive the latches 20 are formed with jaws designed to receive a wedge shaped or other pin, the jaws being farther apart than the width of the latch bar on the door, because in opening the door, when the handles 15 are pulled upwardly, the hinges raise the door, and allowance must be made in the fastenings 20 for this upward movement, otherwise the door would stick.

It is to be understood that there is room enough at the extreme top of the upper door to permit the same being raised off of the lugs 24 before it can be dropped into the holder 26. Preferably, the hinged connection between the handle and the upper door is of the butt variety, as illustrated in Fig. 5, so as to permit the upper door to swing outwardly to only a limited extent, thus rendering easy the operation of moving or applying the upper door. In closing the door, the last step is to slip the hole in the handle 18 over the staple 19, and then slip the handle 26 over the staple 19, and finally inserting a pin and sealing the same.

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

1. In a car door, the combination of a door, suspension members for said door, a support for said members and upon which they are mounted for lateral movement, a door secured to said members, a lower supporting rail, and a hinged sliding connection between the door and lower supporting rail, said hinged connection embodying hinges comprising a leaf mounted to travel on the supporting rail, another leaf secured to the door and an intermediate leaf secured to the other two leaves for movement in a vertical plane, and means for securing the first named two leaves rigidly together with the intermediate leaf in a substantially vertical position.

2. In a car door, the combination of a door, suspension members for said door, a support upon which said suspension members are mounted to slide sidewise, a lower supporting rail, and a hinged sliding connection between said supporting rail and the door, said connection embodying hinges each of which is constructed of an intermediate section and two other sections secured thereto, one of said other sections being attached to the door and the other mounted to travel on the rail, and means for rigidly connecting said two other sections together.

3. In a car door, the combination of upper and lower supporting rails, a door section, suspension members connected to said door section and having a movable support upon the upper rail, and hinges connecting the lower edge of said door section with the lower rail, each of said hinges embodying a leaf secured to the door section and formed with an apertured lug, another leaf mounted to travel on the lower supporting rail and formed with a slot designed to receive said lug, and an intermediate section pivotally connected to the other two sections.

4. In a car door, the combination of a door, suspension members connected thereto, a support upon which said suspension members are mounted to move in a sidewise direction, a supporting rail, and a hinged connection between the door and the supporting rail, said connection embodying hinges each of which comprises a leaf mounted to travel on the rail, another leaf attached to the door and an intermediate leaf secured to the other two leaves for movement in a vertical plane, the leaf that is attached to the door being

formed with an apertured lug and the first named leaf being formed with a slot to receive said lug.

5. In a car door, the combination of a lower main door section, means for supporting the same, an upper removable door section adapted to rest on the upper edge of the door section, and a forked handle having a hinged connection with the upper door section and adapted to extend downwardly therefrom on the outer side of the lower door section.

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

SOLON P. MASSEY. [L. S.]

Witnesses:

OSCAR HORNIE,

A. W. WINDEN.