Nov. 18 , 1924.

1,515,598

F. H. HOPKINS

RAILWAY CAR

Filed Aug. 12 1921

2 Sheets-Sheet 1

Fig-1.

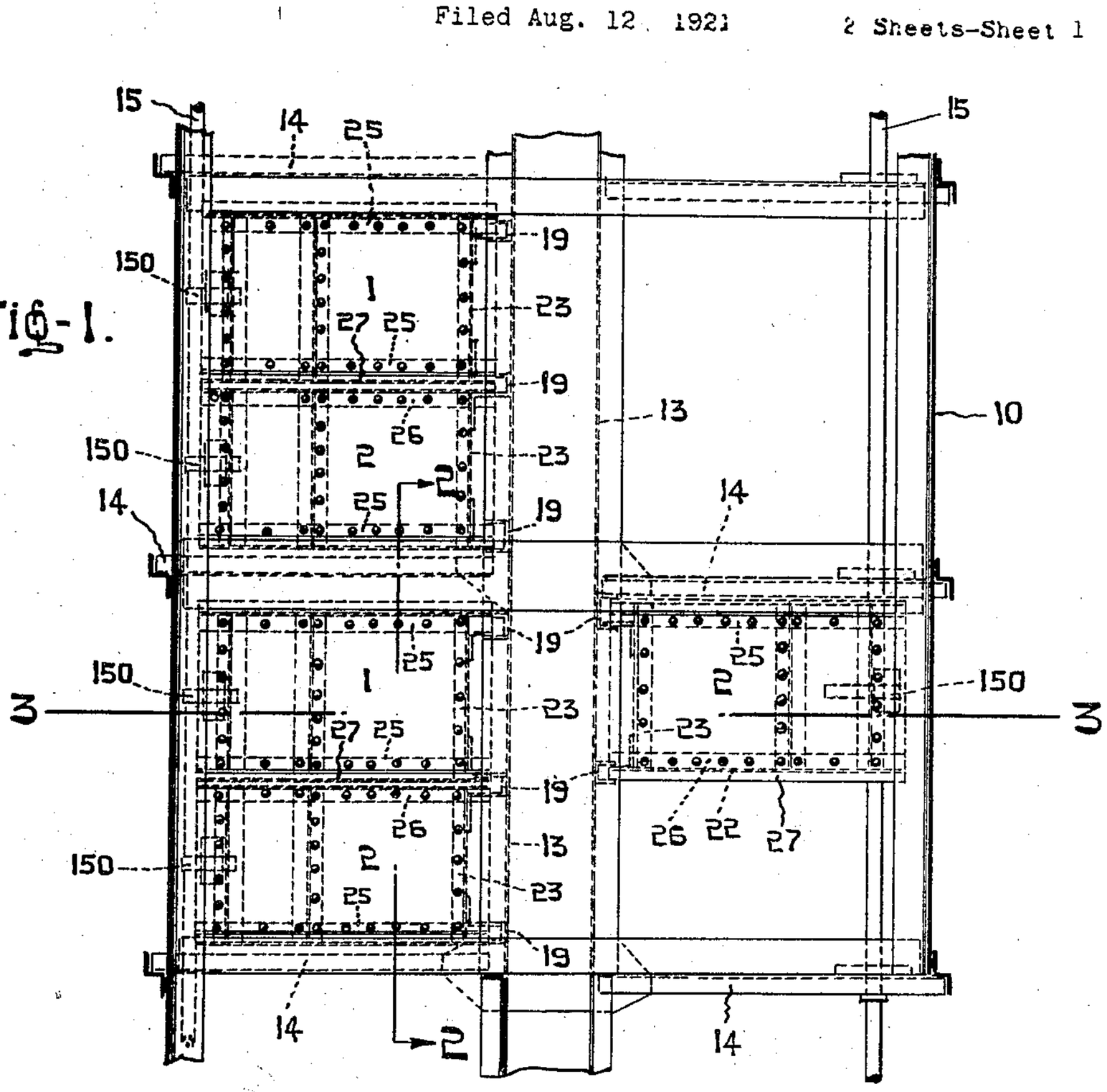
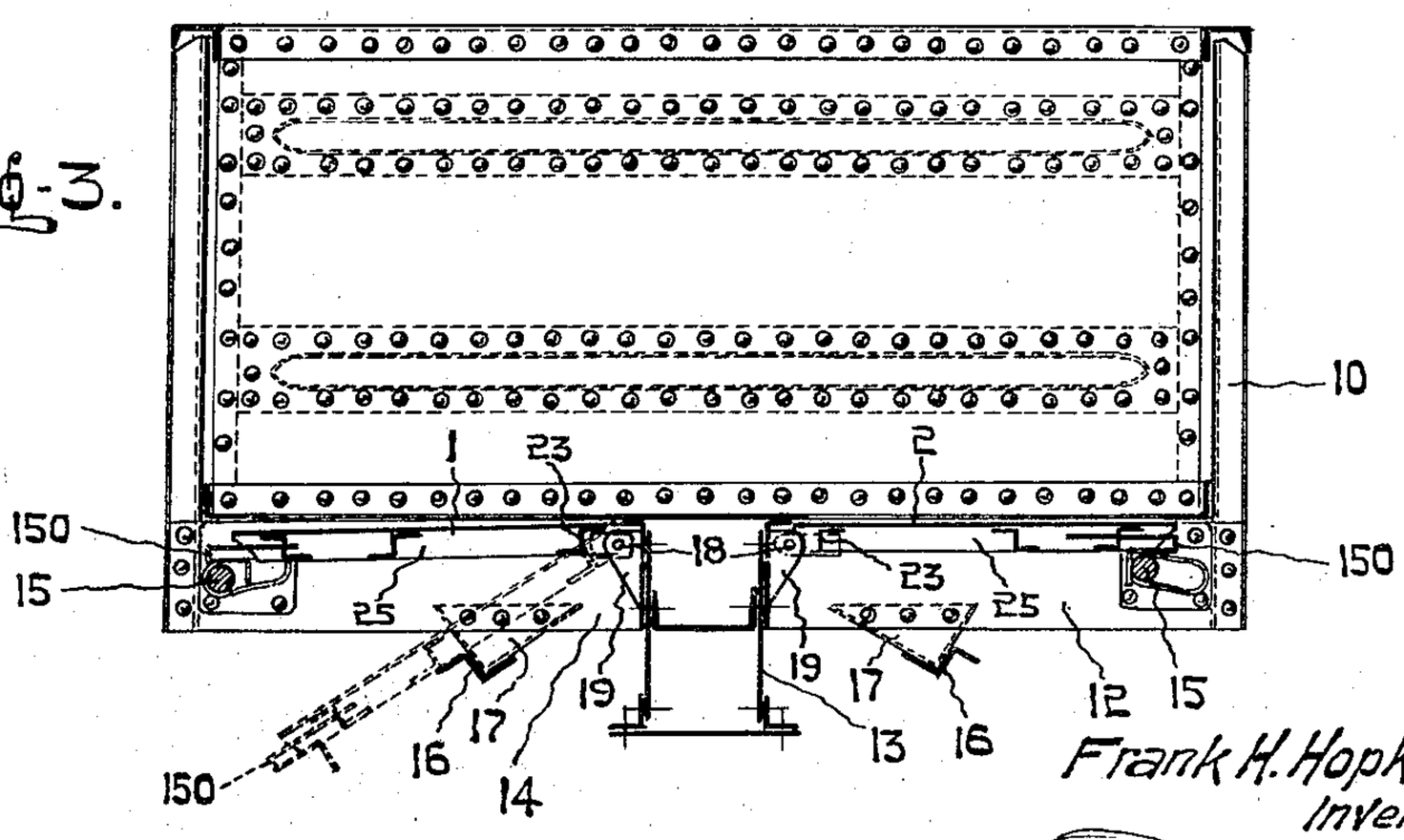


Fig-3.



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Nov. 18 , 1924.

1,515,598

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RAILWAY CAR

Filed Aug. 12 , 1921

2 Sheets-Sheet 2

Fig-2.

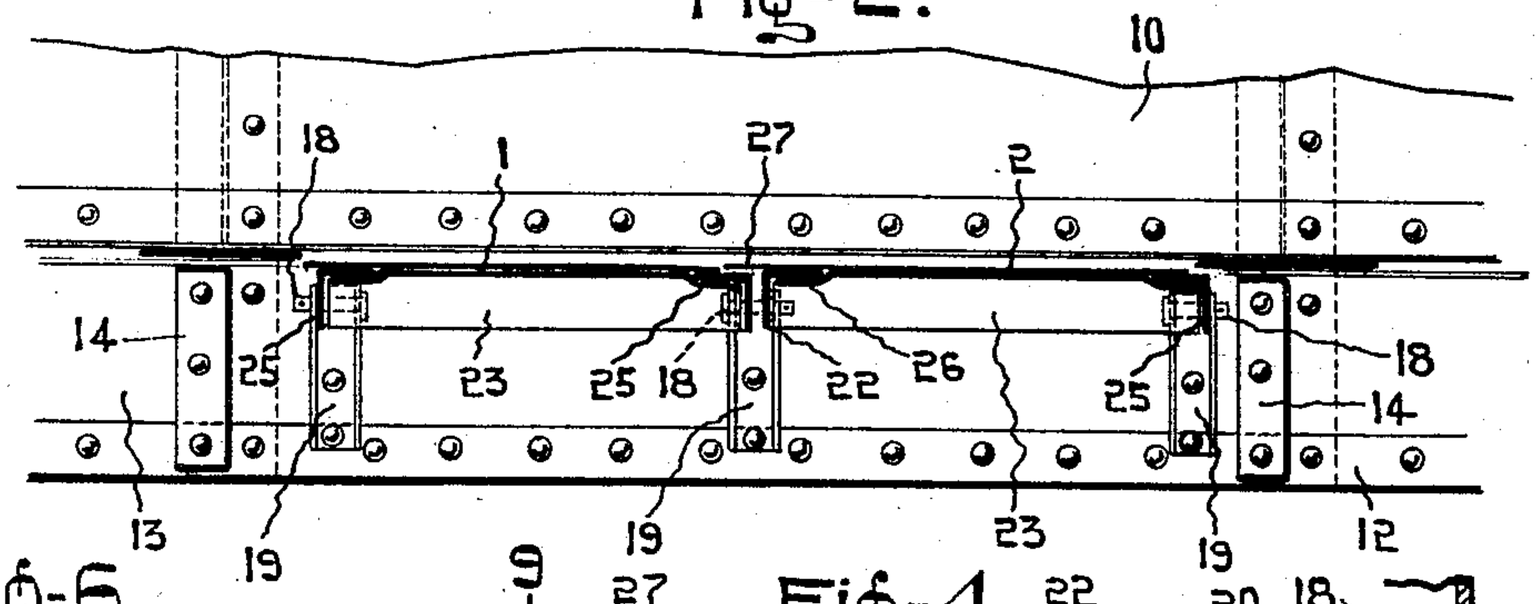


Fig-6.

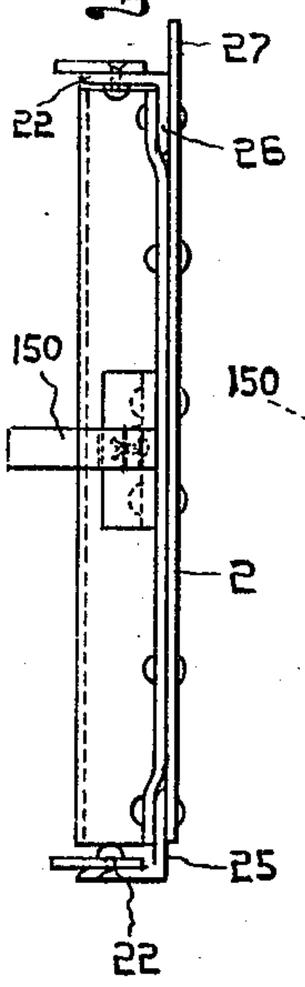


Fig-4.

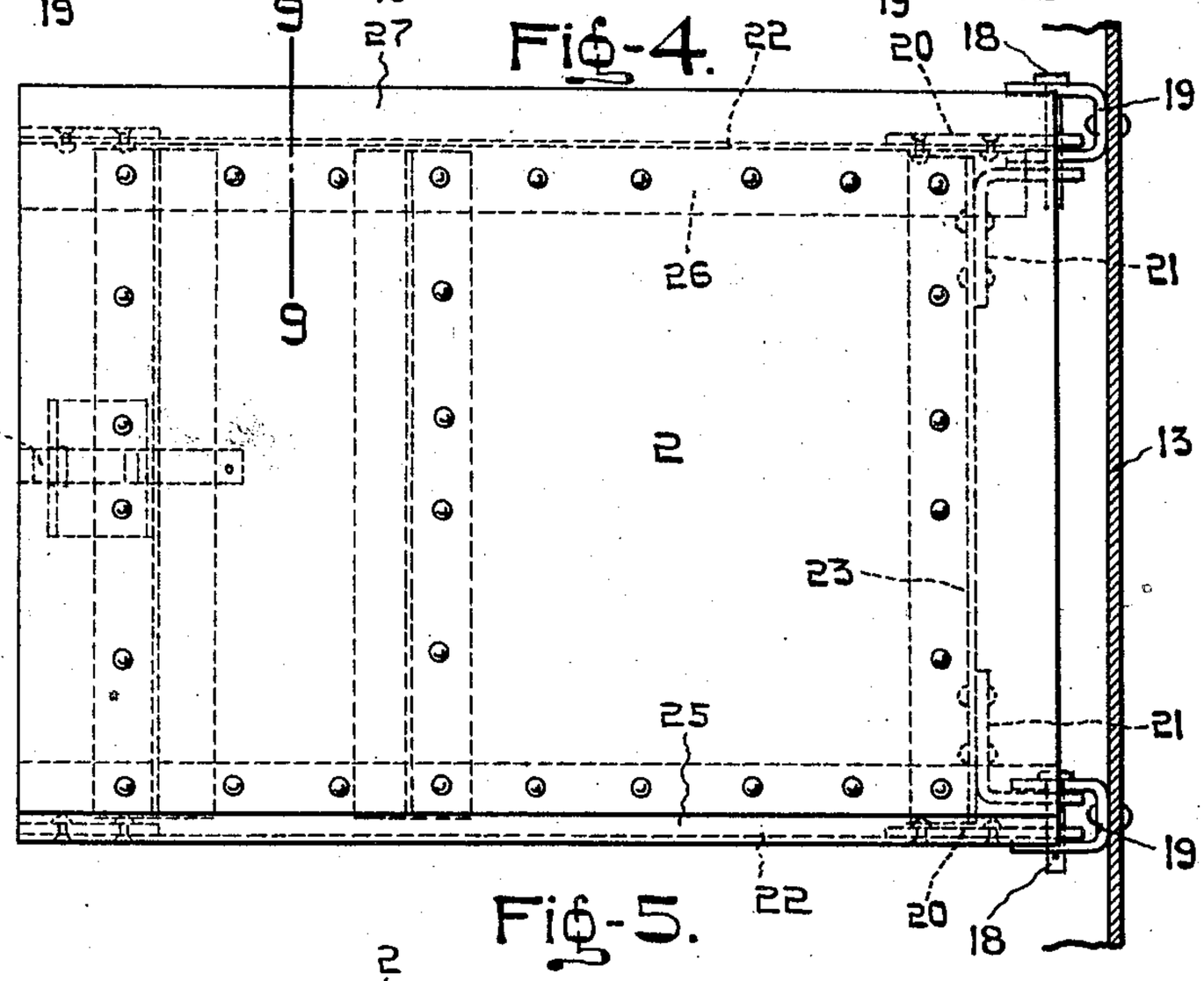


Fig-5.

Fig-7.

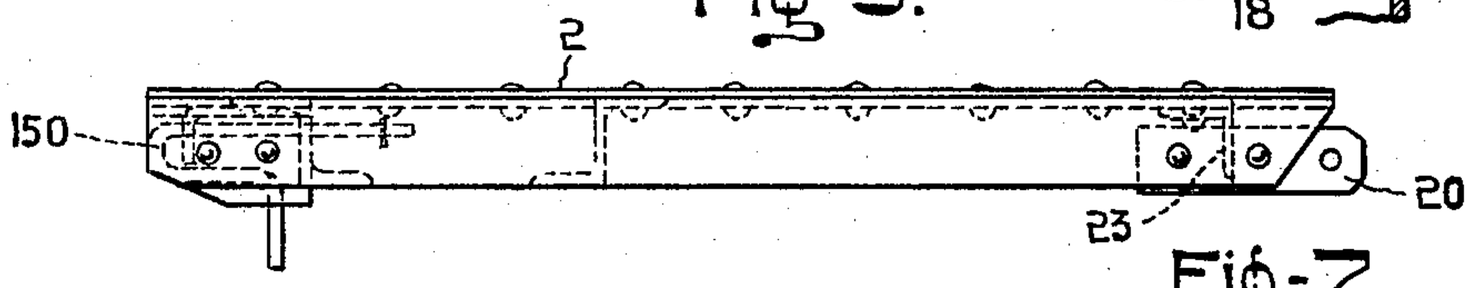


Fig-9.

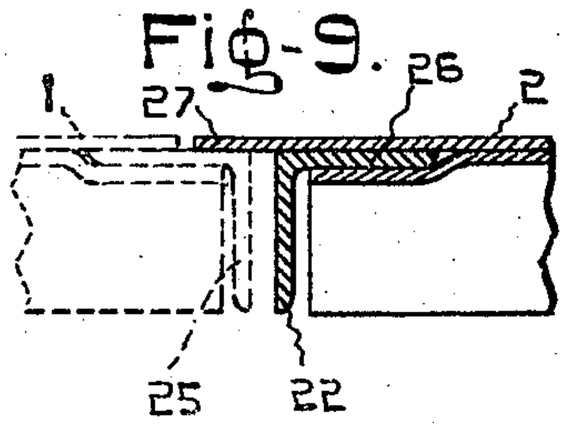
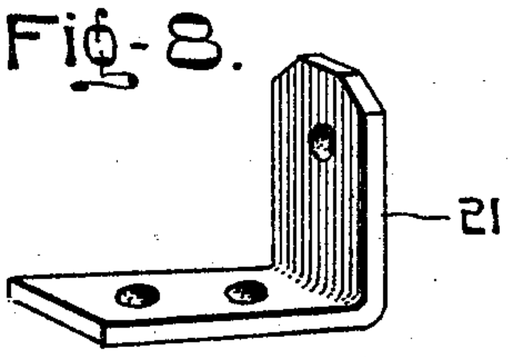
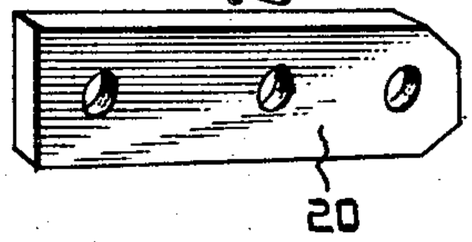


Fig-8.





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Patented Nov. 18, 1924. 1,515,598

UNITED STATES PATENT OFFICE.

FRANK H. HOPKINS, OF MONTREAL, QUEBEC, CANADA.

RAILWAY CAR.

Application filed August 12, 1921. Serial No. 491,733.

To all whom it may concern:

Be it known that I, FRANK H. HOPKINS, of the city of Montreal, Province of Quebec, Dominion of Canada, a subject of the King of Great Britain, have invented certain new and useful Improvements in Railway Cars; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention is described in relation to general service cars and has for its object to provide means for closing a relatively large discharge opening, such means being adapted for manipulation to close the opening by direct manual effort, that is to say by a trainman simply employing his own strength without extraneous means to lift the door to its closed position. To this end I provide a relatively large door opening and a plurality of relatively small door sections adapted to be lifted by the trainman to closed position without the necessity of the usual complicated and costly mechanisms heretofore required to develop sufficient power to close the door.

For full comprehension, however, of my invention reference must be had to the accompanying drawings in which similar reference characters indicate the same part and wherein:

Figure 1 is a fragmentary plan view of a floor of a general service car provided with my invention;

Figure 2 being a sectional view taken on line 2—2 Figure 1;

Figure 3 is a sectional view taken on line 3—3 Figure 1, and illustrating one door member dropped to discharge position and a companion door member in raised position before being locked;

Figure 4 illustrates one of the doors in plan view on a larger scale;

Figures 5 and 6 are similar views illustrating a side and end;

Figures 7 and 8 are detail perspective views of the hinge; and

Figure 9 is a detail transverse sectional view of the overlapping edges of doors the section being taken on line 9—9 Figure 4.

The body 10 of the car and its sub-structure 12 are in the main of usual construction, the doors being hinged to the center sill 13 and supported in raised and dropped position by the transverse girders 14 upon which suitable devices for the purpose are carried, a chain operated bar 15 and movable clips 150 supporting the doors in raised position; and a Z-bar 16 carried by a bracket 17 on one of the cross-girders receiving the shock of the door when dropped and supporting it in position to discharge the lading.

According to my invention the door opening of this general service car is closed by a plurality of door sections instead of as heretofore by a single door. I have illustrated an embodiment in which a pair of door members are used for each opening, one of which I have marked "Door 1" and the other "Door 2". These door sections are hinged at the same ends to the center still by hinge-pins 18 supported in brackets 19 riveted to the center sill, the doors being hinged upon these pins which are disposed in axial alignment. The hinge I prefer to use is built up of hinged plates 20 and angles 21 riveted respectively to the vertical flanges 22 of longitudinal door reinforcing angle bars and transverse reinforcing angle bars 23. The longitudinal reinforcing angle bars 25 at the left and right hand sides of the door 1 and door 2 respectively are disposed in juxtaposition with the edges of the door while the longitudinal bar 26 is disposed a short distance inwardly from the left edge of door 2 in order to present a flange 27 to overlap the contiguous edge of door 1. This particular arrangement of reinforcing angle bars not only stiffens the doors in their longitudinal direction but also produces in the edge of door 1 a direct support for the flange 27 as shown clearly in Figure 9, thus effecting a tight joint at this point.

This construction also, it will be observed, presents an unobstructed door opening.

To discharge a car equipped with my invention the supporting bar 15 is displaced in the usual manner thus allowing the doors to drop onto the support 16. When the car has been discharged the door members may be readily closed by the operator by simply lifting them successively to place, door 2 being lifted first and then door 1. The clips 150 are each in turn projected over the bar 15 to hold up the doors while the bar is shifted to supporting position.

A car equipped with my invention has the advantage of expeditious operation, the

relatively slow process of closing the door, due to the use of leverage, being eliminated as well as comparatively high cost of providing and maintaining the lifting mechanism.

Although I have described my invention applied to a general service railway car it may be applied to any vehicle for carrying loose commodity such as grain, gravel, coal and sand or the like, or the discharge opening may be closed by any desired number of door sections provided they are constructed to properly co-act as described, without departing from the spirit of my invention.

What I claim is as follows:

1. In a car for the purpose set forth the bottom of which has a discharge opening, a plurality of coacting door sections and means for hinging the same at one and the same side of the door opening with the axes of the hinges in alignment, and displaceable means for supporting the door sections in raised position.

2. In a car for the purpose set forth the bottom of which has a discharge opening, a plurality of coacting door sections and means for hinging the same at one and the same side of the door opening, and displaceable means for supporting the door sections in raised position.

3. In a car for the purpose set forth the bottom of which has a discharge opening, a plurality of coacting door sections and means for hinging hte same at one and the same side of the door opening, the contiguous edges of the said door sections having reinforcing members, one of which is disposed inwardly from the edge to present a flange to overlap the edge of the other door section, and displaceable means for supporting the door sections in raised position.

4. In a car for the purpose set forth the bottom of which has a discharge opening, a plurality of coacting door sections and means for hinging the same at one and the same side of the door opening, the contiguous edges of the said door sections having reinforcing members, one of which is disposed inwardly from the edge to present a flange to overlap the edge of the other door section and the said other door section having a reinforcement member in juxtaposition with its overlapped edge, and displaceable means for supporting the door sections in raised position.

5. In a car for the purpose set forth the bottom of which has a discharge opening, a plurality of coacting door sections and means for hinging the same at one and the same side of the door opening, each door having longitudinal and transverse reinforcement members upon its underside and the said hinging means consisting of hinge-plates rigidly secured to the longitudinal reinforcement members and angle hinge-plates disposed in juxtaposition with the said hinged plates and rigidly secured to the transverse reinforcement means, brackets rigidly secured to the center sill, hinge pins disposed in alignment through the brackets and hinges of the door sections, and displaceable means for supporting the door sections in raised position substantially as described.

6. In a dump car, the combination of an unobstructed door opening, of a plurality of doors hinged at the same side of such door opening, to close said door opening, and means for opening and closing such doors.

7. In a dump car, the combination of a door opening, of a plurality of doors hinged at the same side of such door opening, to close said door opening, said doors being adapted to be closed independently.

8. In a dump car, the combination of a door opening, of a plurality of doors closing such opening and adapted to be closed independently of each other, and means for opening the doors simultaneously.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

FRANK H. HOPKINS.

Witnesses:

WINFIELD H. YOST,

M. E. ANDERSON.