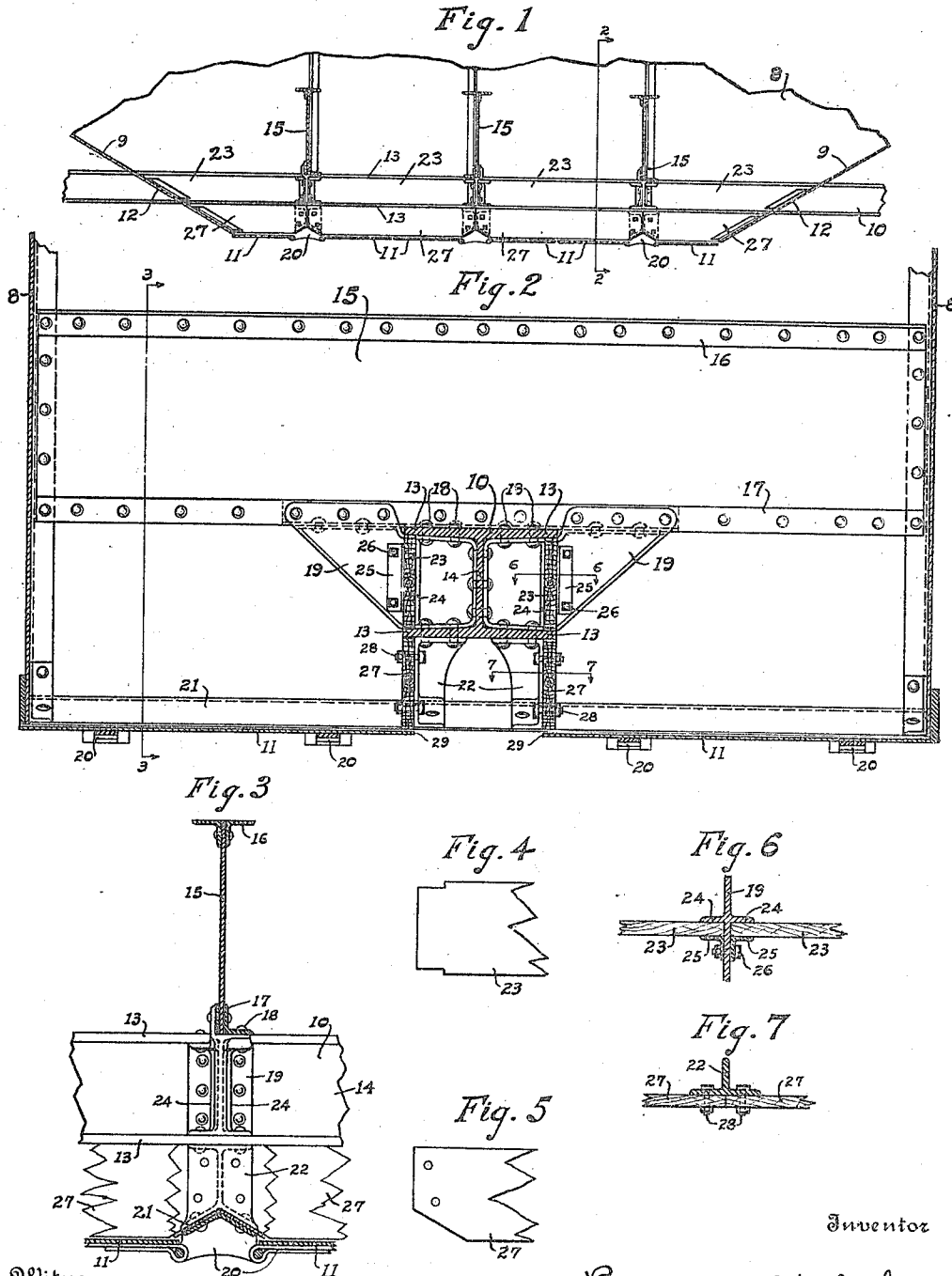


B. W. KADEL.
RAILWAY CAR.

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RAILWAY-CAR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BYERS W. KADEL, a citizen of the United States, residing in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

This invention pertains to railway cars and has for its object to provide improvements in the construction of the bodies of freight cars. With such object in view the invention consists of the formation, combination and arrangement of parts as will be herein set forth and claimed.

In the drawings, Figure 1 is a broken longitudinal section of a railway car constructed in accordance with the present invention. Fig. 2 is a transverse, vertical section of the same taken substantially on the line 2—2 of Fig. 1 and somewhat enlarged over the scale of Fig. 1. Fig. 3 is a transverse, vertical section of the diaphragm, taken approximately on the line 3—3 of Fig. 2. Figs. 4 and 5 are fragmentary views showing in side elevation the ends of the upper and lower filler boards for the side planes of the center sills. Figs. 6 and 7 are broken horizontal sections through the center sill blocking beneath the diaphragms, these being taken on the lines 6—6 and 7—7 respectively, Fig. 2.

Referring now to these drawings, which show a preferred embodiment of the invention, the car body is represented as having sides 8, a floor 9 and a longitudinally disposed center sill 10. The car body shown is of the hopper-bottom type and the center sill 10 is, for a portion of its length, disposed within the cavity of the car body and somewhat above the line of the hopper floor as defined by the transversely-disposed drop doors 11. The ends of the center sill pass through the chute portion of the floor at 12 to the exterior of the cavity of the body.

The center sill is shown as a standard rolled shape of H section having horizontal out-turned flanges 13 at its upper and lower edges and a vertical connecting web 14.

Extending transversely from one car side to the other and within the cavity of the car are diaphragms or cross bearers 15 which are adapted to support the center sill. These have upper flanges 16 and lower flanges 17 and are arranged above the center sill. Rivets 18 pass through the upper flanges 13 of the center sill and the lower flanges 17

of the diaphragms and thus secure the center sill to the diaphragms.

To further tie and brace these parts together lateral braces or brackets 19 extend outwardly and upwardly from the center sill to the diaphragms, these fitting within the side contour of the center sill and being riveted to both the flanges and to the web thereof and being also riveted to the lower flanges 17 of the diaphragms.

In order to accommodate the fixed portions of the door hinges 20, hood plates 21 extend transversely of the car beneath the center sill 10 and just above the drop doors 11. These hood plates are secured to the sides of the car and are supported beneath the center sill by brackets 22, which are secured to the under face of the center sill.

While cars of this type are designed primarily for dumping their contents out through the drop doors provided for that purpose, yet all cars should today be made suitable for use in a car dumper. And in order that such a car may readily clear itself of coal or the like when dumped it is of great advantage to avoid any projections inside of the car that will obstruct the free discharge of the lading. To this end I have provided blocking or vertical side plates for the center sill where it occurs within the cavity of the car, so that this sill, instead of presenting irregular side faces is transformed into a smooth box-like structure that will readily clear itself when the car is dumped in either manner. These fillers, designated 23, consist of boards or planks which extend longitudinally of the car from one brace 19 to the next and are set within the vertical space between the upper and lower flanges 13, the outer faces of the planks alining with the outer edges of the center-sill flanges. Thus the width over the top face of the center sill is not increased and the center sill is changed into a smooth-sided member. The flanges 13 act as stops to prevent vertical movement of the boards and the webs of the braces 19 serve to prevent endwise movement. Stops 24 are provided on the braces 19 against which the ends of the planks 23 bear inwardly and which retain them against inward movement. Removable stops 25 are applied to each side of the webs of the braces 19, these bearing against the outside faces of the planks. These are constructed as short pieces of angle iron, the bolts 26 passing

through the webs of the braces 19 and through both angles 25, which are attached thereto. Thus the blocking is held in place by means accessible from the cavity of the car body and without open holes in the center sills.

For blocking off the space between the bottom of the center sill and the drop door plates, fillers 27 are set beneath the edges of the center sill flanges and on line with the blocking 23. These are attached to the brackets 22 by means of the bolts 28. The door plates close against these blocks or planks and the bolts are accessible beneath the center sill because of the cutting away of the door plates directly beneath the center sill at 29, the planks 27 being cut at their ends to fit the angle of the door hoods. No door operating mechanism is shown as it may be of any approved design, and as it forms no part of the present invention.

I have thus described an embodiment of my invention and its usefulness and merit will be appreciated by those familiar with structures of this character.

What I claim is:

1. A railway car having sides and a flanged center sill extending longitudinally of the car and within the cavity of the same, a diaphragm extending transversely of the car from side to side within the cavity of the car and above the center sill, said diaphragm being adapted to support the said center sill and the upper flanges of the latter being secured to the bottom of the diaphragm, and lateral brackets affixed to the center sill and extending outwardly and upwardly to the bottom of the diaphragm and adapted to further brace and tie the two parts together.

2. A railway car having sides and a center sill extending longitudinally of the car and within the cavity of the same, said center sill having horizontal, out-turned flanges at its upper and lower edges and having a vertical connecting web, a diaphragm extending transversely of the car from side to side within the cavity of the car and above the center sill, said diaphragm being adapted to support the said center sill and the upper flanges of the latter being secured to the bottom of the diaphragm, and lateral brackets shaped to fit the contour of the web and flanges of the center sill and affixed to the web and flanges of the same and extending outwardly and upwardly to the bottom of the diaphragm and adapted to further brace and tie the diaphragm and center sill together.

3. A railway car having a longitudinal center sill disposed for a portion of its length within the cavity of the car, the said center sill having out-turned upper and lower flanges, and vertical filler plates set within the space between the out-turned flanges of the center sill and adapted to

transform the irregular side faces of the same into smooth faces where the same occur within the cavity of the car, the outer faces of said fillers coinciding with the outer faces of the center sill.

4. A railway car having a longitudinal center sill and a floor, a portion of the floor being disposed at some distance below the bottom face of the center sill, brackets secured to the under face of the center sill, and plates extending from the under face of the center sill to the car floor with their outer faces on line with the outer faces of the center sill and being affixed to the outer faces of the said brackets, said plates extending longitudinally of the car for the length of the same in which the floor is disposed beneath the said sills as above set forth.

5. A railway car having sides, a floor and a center sill, the latter extending longitudinally of the car at some distance above the floor and within the cavity of the car and having horizontal, out-turned flanges at its upper and lower edges and having a vertical connecting web, a diaphragm extending transversely of the car from side to side within the cavity of the car and above the center sill, said diaphragm being adapted to support the said center sill and the upper flanges of the latter being secured to the bottom of the diaphragm, lateral brackets shaped to fit within the contour of the web and flanges of the center sill and affixed to the web and flanges of the same and extending outwardly and upwardly to the bottom of the diaphragm and adapted to further brace and tie the diaphragm and center sill together, filler plates within the vertical spaces between the flanges of the center sill with their outer faces on line with the outer faces of the center sill, and additional filler plates extending from beneath the sill to the car floor and on line with the first named filler plates.

6. A railway car having sides, a floor and a center sill, the latter extending longitudinally of the car and within the cavity of the same, and having horizontal, out-turned flanges at its upper and lower edges and having a vertical connecting web, a diaphragm extending transversely of the car from side to side within the cavity of the car and above the center sill, said diaphragm being adapted to support the said center sill and the upper flanges of the latter being secured to the bottom of the diaphragm, lateral brackets shaped to fit within the contour of the web and flanges of the center sill and affixed to the web and flanges of the same and extending outwardly and upwardly to the bottom of the diaphragm and adapted to further brace and tie the diaphragm and center sill together, and plates extending vertically from the upper to the

lower flanges of the center sill and adapted to close the interval between the said flanges, said plates extending longitudinally of the car from one of said brackets to the other.

5 7. A railway car having sides, a floor and a center sill, the latter extending longitudinally of the car and within the cavity of the same, and having horizontal, out-turned flanges at its upper and lower edges and
10 having a vertical connecting web, a diaphragm extending transversely of the car from side to side within the cavity of the car and above the center sill, said diaphragm being adapted to support the said center sill
15 and the upper flanges of the latter being secured to the bottom of the diaphragm, lateral brackets shaped to fit within the contour of the web and flanges of the center sill and affixed to the web and flanges of the
20 same and extending outwardly and upwardly to the bottom of the diaphragm and adapted to further brace and tie the diaphragm and center sill together, and plates extending vertically from the upper to the
25 lower flanges of the center sill and adapted to close the interval between the said flanges, said plates extending longitudinally of the car from one of said brackets to the other, and there being removable means carried by the brackets for holding the said
30 plates in position.

8. A railway car having sides, a floor and a center sill, the latter extending longitudinally of the car and within the cavity of
35 the same and comprising a vertically-webbed member with outstanding flanges at its upper and lower edges, brackets extending outwardly from the sides of the center sill, and vertical plates fitted between the

flanges of the said center sill and extending 40 from one of said brackets to another, the said brackets carrying inner stops against which the ends of the said plates may be inwardly seated, and there being removable outer stops attached to said brackets adapted 45 to hold the said plates against outward movement.

9. In a railway car, a center sill disposed within the cavity of the car and having a vertical web with upper and lower outstanding flanges, brackets disposed at intervals 50 longitudinally of the car and extending outward from the center sill, and means for blanking off the space between the outstanding flanges of the center sill, said means 55 comprising fillers set within the vertical space between the center sill flanges, stops adapted to prevent inward movement of the fillers and removable stops attached to the brackets and adapted to prevent outward 60 movement of the fillers.

10. A railway car having a longitudinal center sill and a floor, the former being disposed at some distance above the latter and there being drop doors in the car floor extending transversely of the car, hoods extending transversely of the car between the 65 drop doors, brackets attached to the under face of the center sill and adapted to support the door hoods, and filler boards attached to the brackets beneath the center sill with their outer faces on line with the outer edges of the center sill, the ends of the filler boards being cut to fit the said door hood. 70

In testimony whereof I affix my signature. 75

BYERS W. KADEL.