Dec. 5, 1933. J. C. ABEL 1,937,540

RAILWAY CAR

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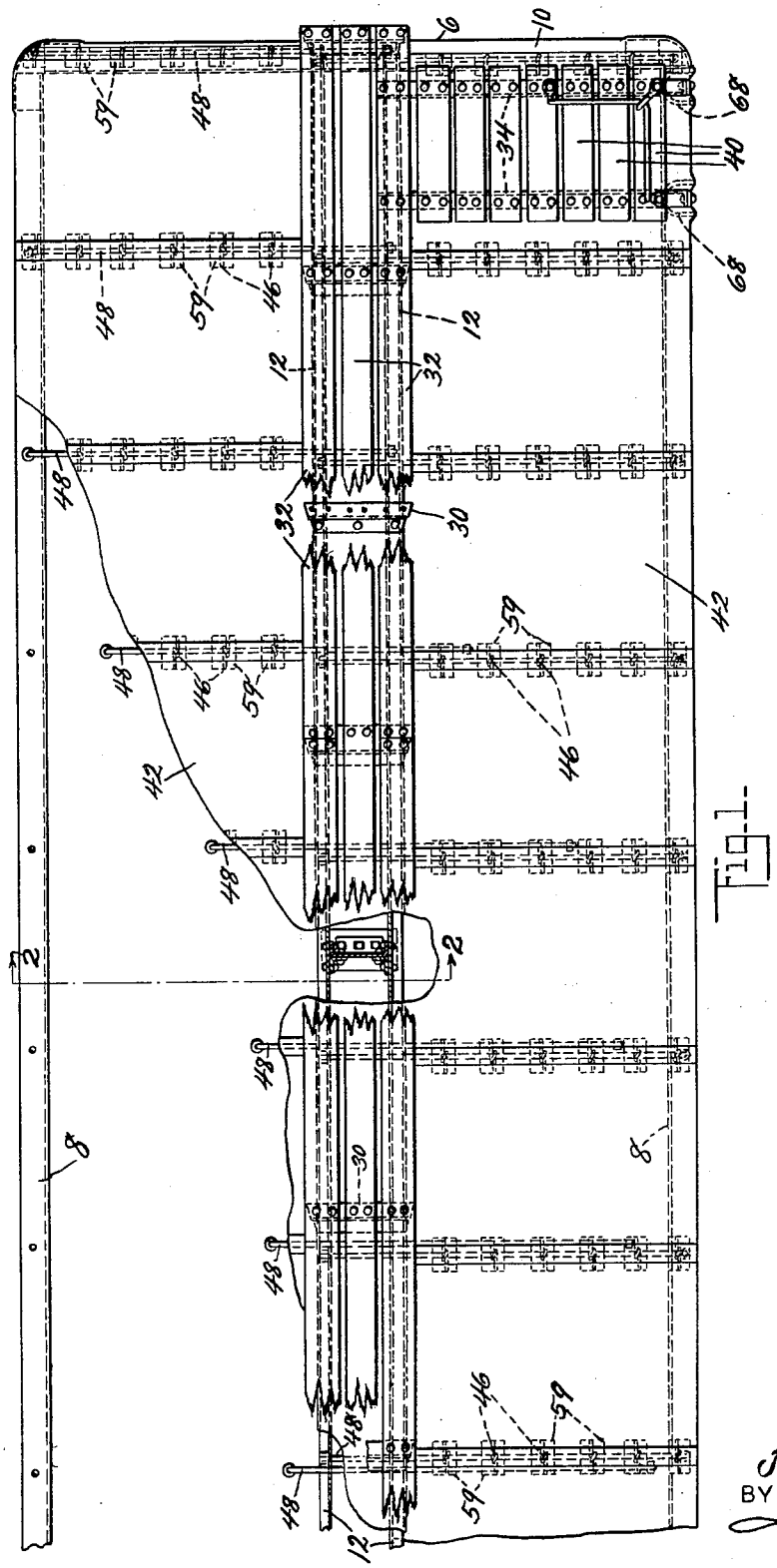


Fig. 1.

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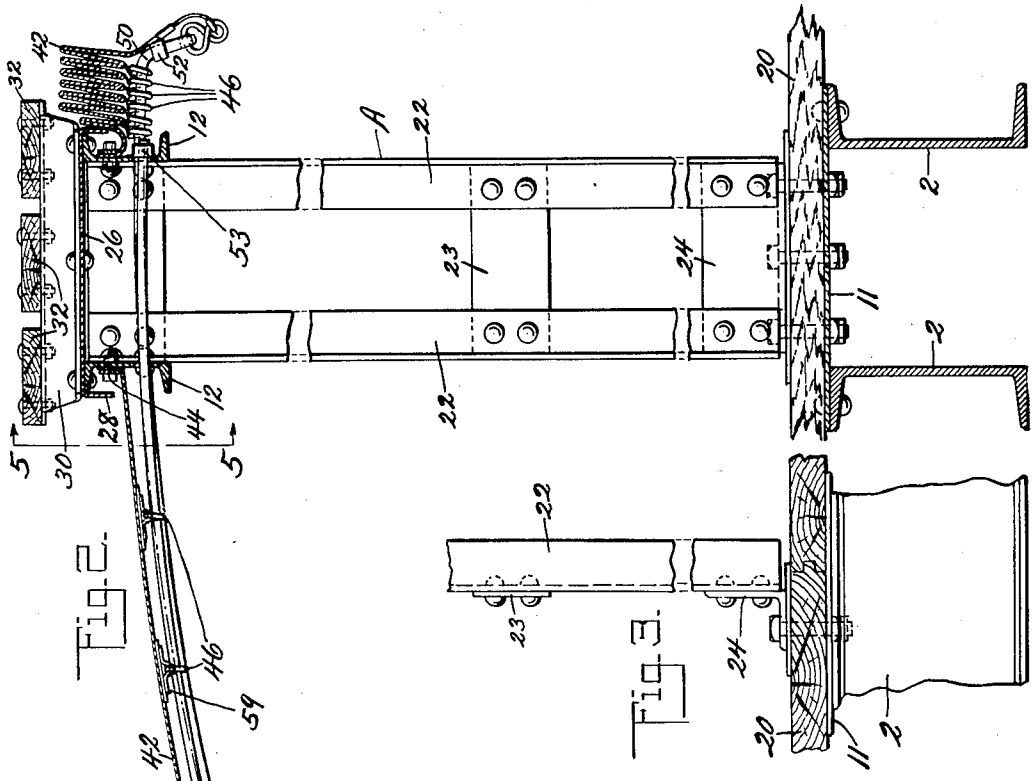


Fig. 2.

Fig. 3.

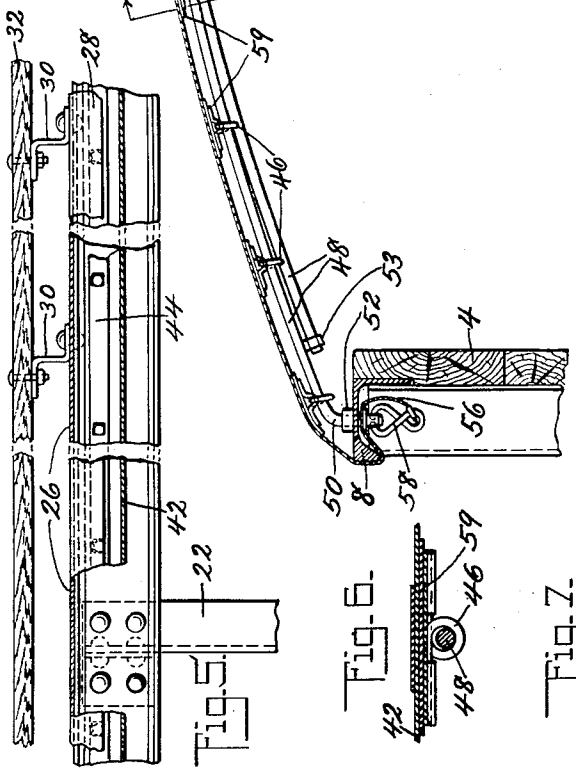


Fig. 5.

Fig. 6.

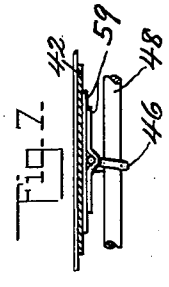


Fig. 7.

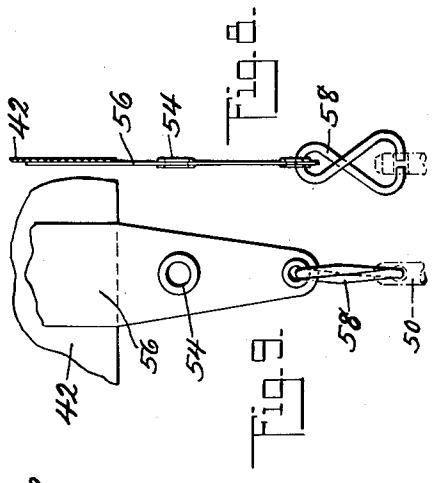


Fig. 8.

Fig. 9.

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RAILWAY CAR

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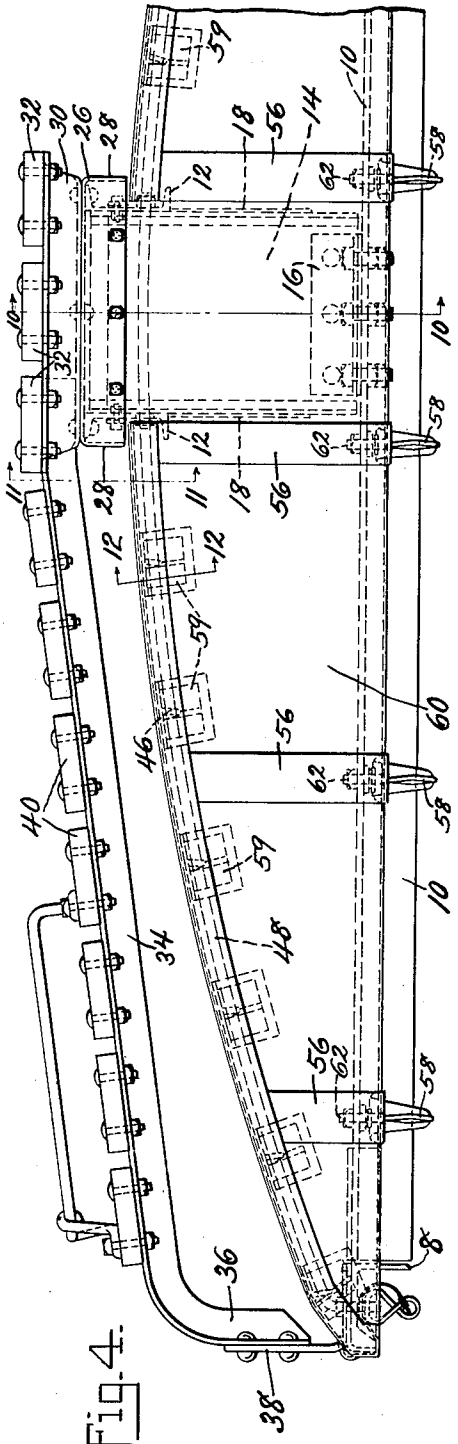


Fig. 4.

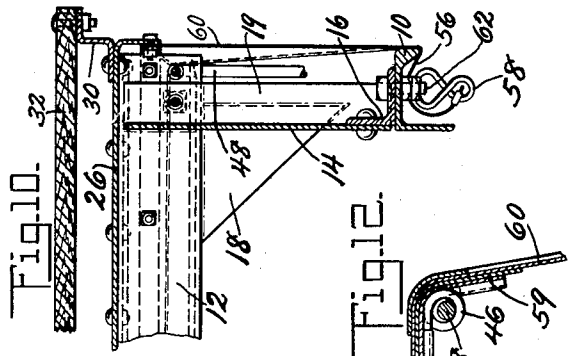


Fig. 10.

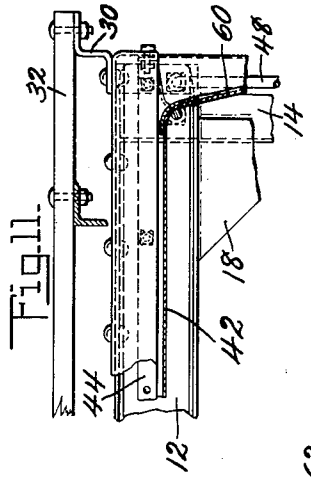


Fig. 11.

Fig. 12.

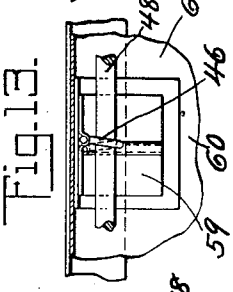


Fig. 13.

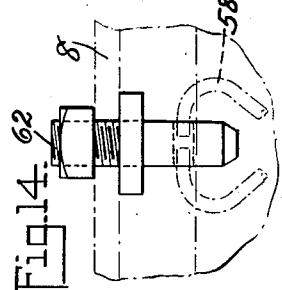


Fig. 14.

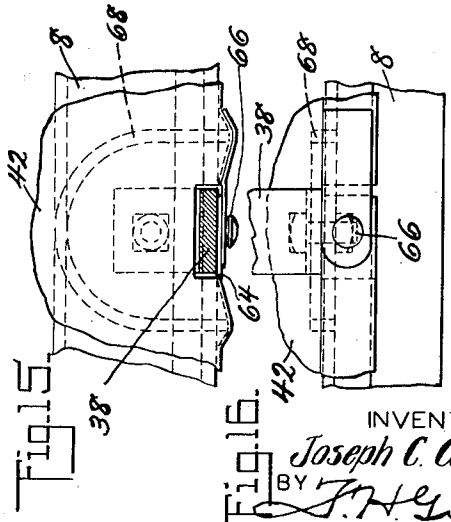


Fig. 15.

Fig. 16.

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UNITED STATES PATENT OFFICE

1,937,540

RAILWAY CAR

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Application December 8, 1932. Serial No. 646,219

7 Claims. (Cl. 105—377)

This invention relates generally to railway cars and has particular reference to a car which may be easily and quickly converted from an open or gondola type car to a closed or box type car.

One object of this invention is the provision of a gondola car having a flexible roof therefor which may be adjusted in such a manner as to expose the interior of the car for loading or unloading and to close or cover the lading zone of the car.

Another object of this invention is the provision of a new and improved adjustable roof for railway cars.

A further object of this invention is the provision of a gondola car having a running board structure arranged at substantially the longitudinal center line of the car body and adjustable means extending from said running board structure to the side walls of the car for providing a closure or roof for the car body.

Other objects and advantages of this invention will be apparent from the following description taken in conjunction with the accompanying drawings in which

Figure 1 is a plan view of a portion of the railway car of the present invention, certain parts thereof being shown broken away to disclose other parts in section and the view showing the car roof;

Fig. 2 is a sectional view on the line 2—2, Fig. 1;

Fig. 3 is a fragmentary detail view of a portion of the intermediate running board support shown in Fig. 2, the view showing the running board support in side elevation;

Fig. 4 is an end elevation of a portion of one end of the car shown in Fig. 1;

Fig. 5 is a sectional view on the line 5—5, Fig. 2;

Fig. 6 is a sectional view on the line 6—6, Fig. 2;

Fig. 7 is a side view of the construction shown in Fig. 6;

Fig. 8 is a side view showing in section a portion of one of the roof sections and showing, in side elevation, the securing means for said section;

Fig. 9 is a front elevation of the construction shown in Fig. 8;

Fig. 10 is a sectional view on the line 10—10, Fig. 4;

Fig. 11 is a sectional view on the line 11—11, Fig. 4;

Fig. 12 is a sectional view on the line 12—12, Fig. 4;

Fig. 13 is a front view of the construction shown in Fig. 12;

Fig. 14 is a view showing the fastening means for the end closure means of the roof;

Fig. 15 is a plan view taken at the latitudinal running board, the supporting bracket for the latter being shown in section, the view showing the means for securing the roof section at this zone of the car; and

Fig. 16 is a front view of the construction shown in Fig. 15.

The drawings show portions of a gondola car having center sills 2, side walls 4, end walls 6 and angle shaped top chords or rails 8 and 10 secured, respectively, to the upper portions of the side and end walls. This gondola car may be of conventional design and the center sills also include a top cover plate indicated at 11.

The car of the present invention is convertible from an open gondola to a closed or box car, as will be fully described hereinafter, and includes a running board structure A as a supporting and attaching means for the roof, this structure comprising spaced outwardly facing channels 12 extending the full length of the car body and supported at their end portions by upright supporting elements 14, a flanged plate in the instance shown, connected to the running board channels 12 in any suitable manner and to the top chord or rail 10 of the end walls by angle shaped connectors 16. Gussets 18 are secured to the flanges 19 of the supporting elements 14 and extend between said elements and the channels 12 to stiffen the running board structure against end thrusts.

Intermediate their ends the running board channels 12 are supported from the car floor 20 by spaced uprights 22 connected to each other by bars 23 and to the car floor by an angle 24. One or more of these intermediate running board supports may be provided throughout the length of the car as desired.

The running board channels are provided with a cover plate 26 the side edge portions of which are downwardly flanged as shown at 28 to provide a water shed and to afford weather protection for the area of attachment for the roof sections as pointed out more clearly hereinafter. To plate 26 running board saddles 30 are fastened in any suitable manner on which are mounted the boards 32. At the end portions of the car latitudinal running board supports 34 are provided (see Fig. 4) comprising angles in the instance shown, one end portion thereof being downwardly bent or flanged as at 36 and secured to brackets 38 connected to the top chords

8 of the side walls. The supports 34 carry boards 40 as shown clearly in Figs. 1 and 4.

The running board structure A may be formed as a unit and applied to the car body and it forms a part of the roof structure. As clearly shown in Fig. 2 the running board structure A serves as an attaching element for the roof sections which cover the car body and which extend from the channels 12 to the side walls, these roof sections being formed of flexible material such as tarpaulins 42. The tarpaulins 42 are each secured to one of the channels 12 by batten strips 44 and each thereof is connected by means of rings or loops 46 to stay rods 48 whereby they may be shifted thereon to a position adjacent the running board to expose the interior of the car body for loading or unloading. The stay rods 48 comprise, in effect, shiftable carlins and the rods on one side of the running board are slightly staggered with relation to those on the other side, as shown clearly in Fig. 1. Each stay rod or carlin 48 extends through the spaced channels 12 and is of a length sufficient to extend from the running board structure to the top chords 8 of the side walls and their free ends are downwardly bent or flanged as at 50 to project through suitable openings formed in the top chords and said flanged ends are provided with fixed collars 52 to effect proper positioning of said carlins. The opposite ends of the carlins are provided with stops 53 to prevent complete removal of the carlins from the channels. The flanged ends 50 of the carlins project through and below the horizontal flanges of the top chords 8, (see Fig. 2) and through reinforced openings 54 formed in tabs 56 secured to the free edge portions of the tarpaulins 42. To secure the tarpaulins in position such that they cover the lading zone of the body and are prevented from accidental displacement, spring clips 58 or other suitable fasteners are provided at the ends of the tabs 56 which are adapted to be secured in openings formed in the flanged ends 50 of the carlins as shown clearly in Fig. 3. It will be apparent that each tarpaulin 42 is provided with a plurality of rings 46 for engaging each of the carlins, a plurality of the latter being provided. The drawings illustrate one particular means for attaching these rings 46 wherein these rings are attached to pads 59 secured to the under or lower surfaces of the tarpaulins.

The end portions of the car are preferably closed by a flexible member 60, canvas, a tarpaulin, or the like, which may extend the full width of the car body. This closure member is secured in any suitable manner to the tarpaulins 42 and at its lower edge is provided with tabs 56, identical with those previously described, which are adapted to fit over the shanks of stud bolts 62 arranged in the top chords 10 of the end walls; the spring clips 58 being utilized to secure the tabs against accidental displacement. If desired, the member 60 may be formed of two or more independent sections connected together at adjacent edge portions by any suitable means, such as, for example, snap fasteners. At the latitudinal running board the tarpaulin 42 is provided with openings 64 adapted to fit around the brackets 38 and the adjacent portions of the tarpaulin are adapted to overlap and be secured together by suitable fastening means such as snap fasteners 66. At this portion of the car a water shed element 68 is welded or otherwise secured to the top chord 8 of the side wall to prevent leakage of water into the car body.

In use it will be apparent from the above description that when the tarpaulins 42 are connected to the rails 8 of the side walls the structure presents, in effect, a box car or a car in which the lading zone is completely covered and the lading thus protected. To uncover or open one side of the car for loading or unloading the spring clips 58 are removed or freed from cooperative engagement with portions 50 of the carlins 48 and stud bolts 62 whereupon the tabs 56 may be detached and the tarpaulins pushed on the carlins to the folded position illustrated clearly in Fig. 2. The carlins 48 for the particular side being opened are then removed from their engagement with the rails 8 of the side walls and then pushed inwardly, as shown in Fig. 2, thus fully exposing the car body at this side of the car.

The present invention provides a simple and comparatively inexpensive construction for effecting closing of the normally open body of a railway car and while the drawings show certain constructions it is to be understood that they are for illustrative purposes only and various changes in the form and proportion of the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. In combination with a gondola car, a running board structure, flexible roof sections attached to the running board structure and each of a size sufficient to extend from said structure to the side walls of the car whereby to cover the car lading zone, and stay rods to which the roof sections are slidably attached said stay-rods being slidably supported by the running board structure and of a length sufficient to extend to the top rails of the side walls of the car.

2. In combination with a gondola car, a running board structure supported by the end walls thereof and arranged at substantially the longitudinal center zone of the car, flexible roof sections attached to the running board structure and each of a size sufficient to extend to the side walls of the car to cover the lading zone, and stay rods to which the roof sections are slidably attached slidably supported by the running board structure and of a length sufficient to extend to and detachably engage the top portions of the side walls of the car.

3. In combination with a gondola car, a flexible roof adapted to cover the lading zone of the car, a running board structure supported by the car and to which the roof is secured, and stay rods to which the roof is secured slidably supported by the running board structure and adapted to detachably engage the upper portions of the side walls of the car.

4. A flexible roof for gondola cars comprising a running board structure, flexible roof sections secured to said structure and extending in opposite directions therefrom, and stay rods slidably supported by the running board structure and extending in opposite directions therefrom for supporting the roof sections.

5. In combination with a gondola car, means for covering the lading zone thereof comprising a running board structure supported by the car, stay rods slidably supported by said structure and extending in opposite directions therefrom, flexible roof sections secured to said running board structure and slidably attached to said stay rods, said roof sections extending in opposite directions from the running board structure and being of a size sufficient to extend to and lap the upper

portions of the side walls of the car, and flexible closure means secured to the roof sections at the end portions thereof and having means for attachment to the end walls of the car.

6. In combination with a gondola car, a running board structure, stay rods slidably supported by said structure and extending in opposite directions therefrom, said rods having their outer end portions downwardly flanged to extend through the top portions of the side walls of the car, flexible roof sections secured to the running board structure and extending in opposite directions therefrom, means slidably connecting the flexible roof sections to said stay rods, and fastening means secured to said flexible roof sections and adapted to engage the extended end portions of the stay rods.

7. A railway car of the kind described comprising a body having side and end walls, a running board arranged at substantially the longitudinal center zone of the car body, supporting elements for said running board secured to the top portions of the end walls, supplemental supporting elements for the running board secured to the car bottom, flexible roof sections secured to the running board structure and extending in opposite directions therefrom and of a size sufficient to extend to the side walls of the car, a cover plate forming a part of the running board structure and adapted to weather-proof the points of connection of the roof sections with said running board structure, carlins slidably supported by the running board structure and extending in opposite directions therefrom with their outer end portions extended through the top portions of the side walls of the car, means slidably connecting said flexible roof sections to said carlins, fastening elements secured to the flexible roof sections and adapted to engage the extended end portions of said carlins, and flexible end closures secured to the before-mentioned roof sections and having means for attachment to the end walls of the car.

JOSEPH C. ABEL.