June 7, 1927. 1,631,327

A. E. OSTRANDER

CAR END CONSTRUCTION

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Fig. 6.

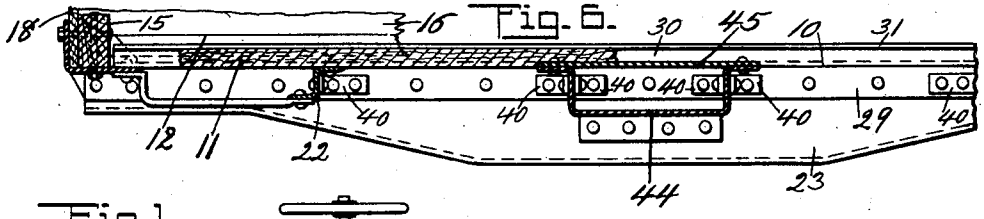

Fig. 1.

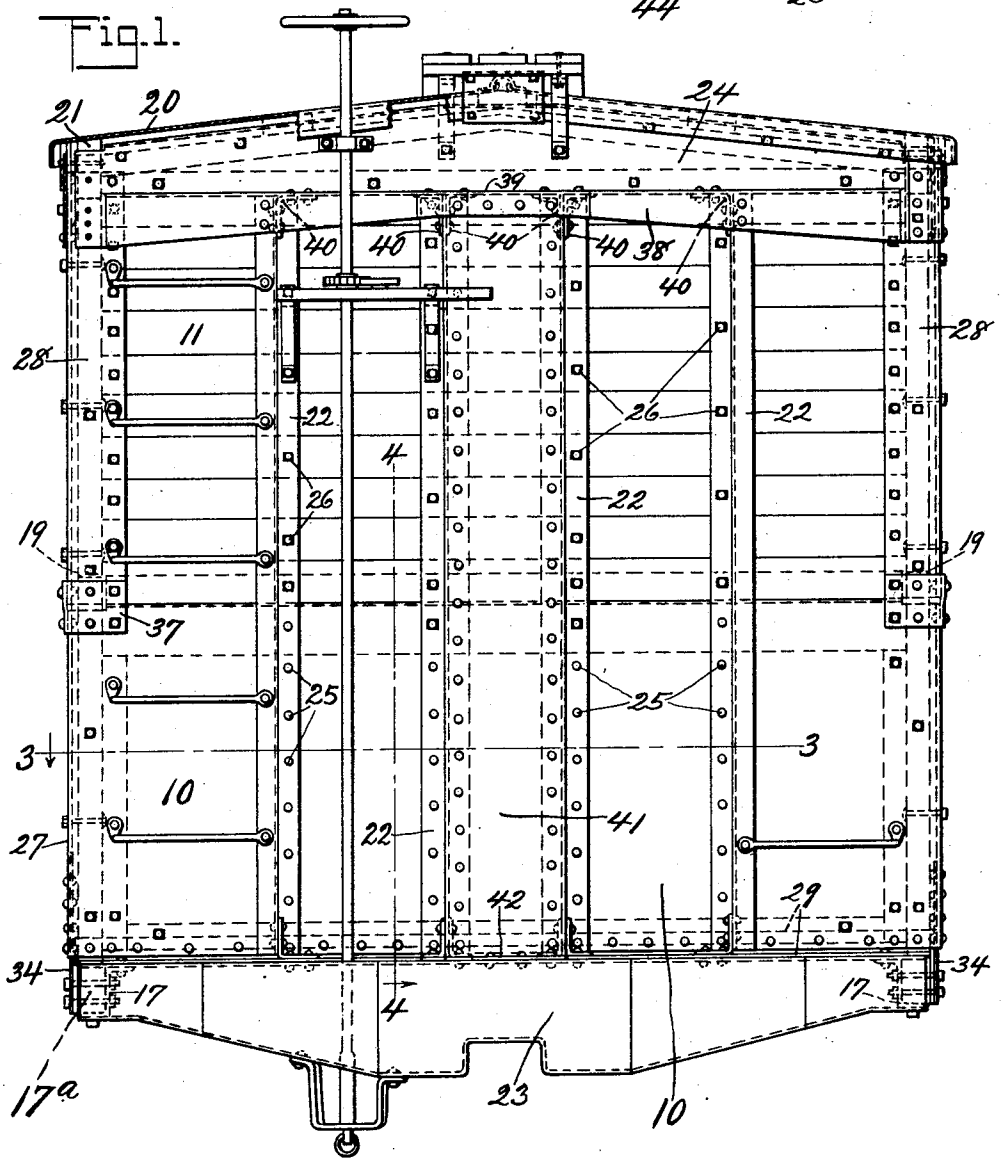

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Fig. 3.

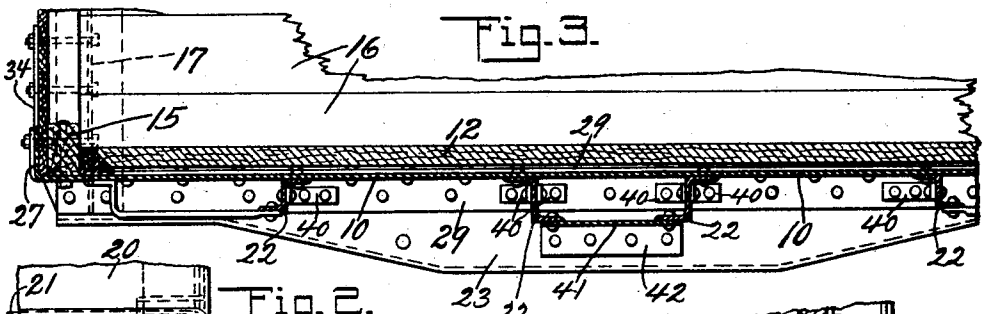


Fig. 2.

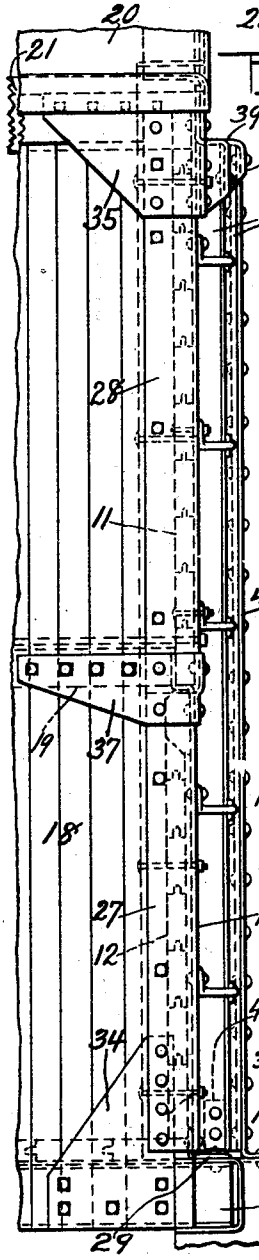


Fig. 5.

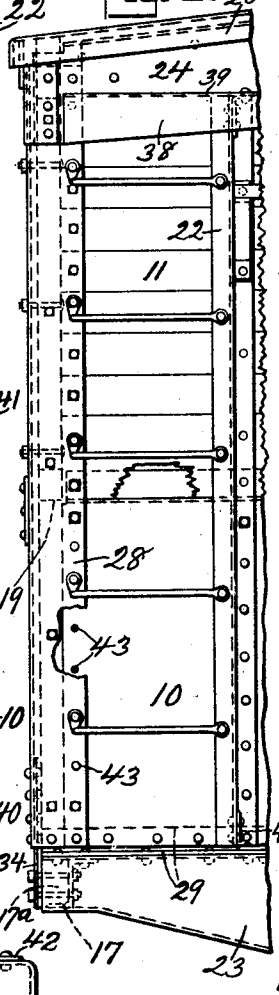
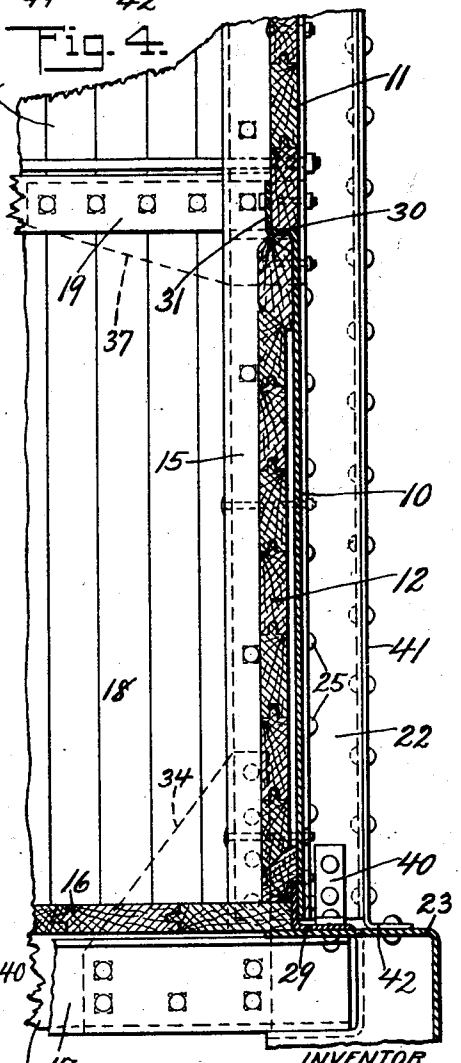


Fig. 4.



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Patented June 7, 1927.

1,631,327

UNITED STATES PATENT OFFICE.

ALLEN E. OSTRANDER, OF BRONXVILLE, NEW YORK, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAR-END CONSTRUCTION.

Application filed October 12, 1926. Serial No. 141,161.

In the drawings:

Fig. 1 shows a car end construction, embodying the present invention, in elevation, as seen when the car is looked at end on;

Fig. 2 is a fragmentary side view of the end portion of the car, from the left of Fig. 1;

Fig. 3 shows a horizontal section through a portion of the car end and an adjacent side, taken as indicated by the line 3—3 in Fig. 1;

Fig. 4 shows a vertical section through a portion of the car end and floor, taken as indicated by the line 4—4 in Fig. 1;

Fig. 5 is a fragmentary end view similar to Fig. 1, illustrating a somewhat different construction.

Fig. 6 is a fragmentary plan and horizontal sectional view similar to Fig. 3, illustrating yet another difference in construction,—the section being taken somewhat higher than that of Fig. 3, however.

This invention relates to railway car construction and the like, and is especially concerned with car end construction. It is an aim of the invention to provide a strong, light, simple construction that can be easily and inexpensively manufactured and repaired. In suitable forms of embodiment, such as here shown and described, the invention combines advantages of metal and wood construction in a high degree, and is especially adapted for the ends of wooden freight cars. As will appear hereinafter, the invention affords various novel parts, features, and combinations that are useful and advantageous in other relations or combinations besides the particular car end constructions here illustrated.

The car end here illustrated is of composite wood and steel construction, comprising an interior sheet metal end panel or reinforcing plate 10 in its lower portion, and an outer wall of wooden planking 11 for its upper portion. In the present instance, the sheet metal 10 in the lower portion of the wall has a lining of wood planking 12 behind it, which may be regarded as a downward extension of the upper plank wall 11. As shown, the plank walls 11 and 12 consist of tongued and grooved boards extending transversely of the car, horizontally, with their ends abutting on a bevel against wooden strips secured to the inner sides of wooden corner posts 15 in the case of the wall 12, and squarely against the corner posts 15 themselves in the case of the wall 11. The car is shown with a floor of tongued and grooved wood planking 16, laid transversely on longitudinal metal sills 17 and wooden sills 17ª; with sides of upright wood planking 18, and a longitudinal belt rail 19; and with a sheet metal roof 20 overlapping wood side plates 21 at its eaves.

The end wall formed by the plate 10 and the planking 11 and 12 is reinforced and laterally sustained by metal end posts 22 of Z-bar section, extending between the end sill 23 (of pressed sheet metal) and the sheet metal end plate 24. The end posts 22 are secured to the plate 10 by rivets 25 and to the planking 11 by bolts 26. There are also external metallic corner posts of angular cross section, consisting partly of the bent ends 27 of the plate 10 and partly of angle bars 28 extending upward from the plate 10 to the side plate 21 and the end plate 24, outside the planking 12, 11 and 18, and secured at their ends to said plates 10, 21, 24, as by riveting and bolting. The lower edge of the plate 10 is connected and attached to the sill 23 by an angle bar 29, whose flanges may be secured to said plate and sill by riveting, as shown. The upper edge or margin of the plate 10 is reinforced and stiffened with a flange 30 that extends inward through the planking, between the upper plank wall 11 and the lower plank lining 12. As shown, this inturned flange 30 is itself provided with an upturned flange 31. Both these flanges may be formed by offsetting or joggling the upper margin of the plate 10 inward appropriately. The flange 31 extends up behind the lower portions of the planking 11. The lower ends of the corner posts 27 may be connected and attached to the side planking 18 and sills 17 by gusset plates 34 appropriately riveted and bolted, and the upper ends of the upward post extensions 28 may be connected

and attached to the side plates 21 by gusset plates 35. At their junction, the corner posts 27 and 28 and the upper portion of the plate 10 may be connected and secured to the car side and the corresponding end of the wooden belt rail 19 by means of angular tie plates 37, appropriately riveted and bolted to the various metallic and wooden parts.

As shown in Figs. 1 and 2, the lower portion of the end plate 24 is offset or joggled outward, so as to form a sort of hood 38 over the upper ends of the end posts 22. The lower and upper ends of the end posts 22 may be secured to the sill 23 and to the horizontal shelf portion 39 of the hood 38 by angle clips or brackets 40, suitably riveted to these parts. The outturned flanges of two Z-bar end posts 22 (in the present instance, the wider posts 22 nearest the middle of the car) may be connected by a web or cover plate 41, here shown as extending substantially from the end sill 23 to the shelf portion 39 of the end plate 24. The lower end 42 of this cover plate 41 is shown bent or flanged outward and secured to the sill 23, as by rivets, while its upper end overlaps the depending flange of the hood 38 and is secured thereto by rivets. This cover plate 41 co-acts with the Z-bar end posts 22 to which it is secured to form a channel-like column, whose lower portion is given a box-like character by the attachment of the inner Z-bar flanges to the plate 10. This channel-like column serves to stiffen and brace the whole end of the car as against transverse swaying, besides affording it lateral support in the same way as the other Z-bars 22 and the corner posts 27, 28.

The construction shown in Fig. 5 differs from that of Figs. 1–4 in that the angular corner posts 28 extend the full height of the car, and are attached at their lower ends directly to the angle bar 29 and the gusset plates 34. Accordingly, the plate 10 does not have its ends extended and bent around the corners of the car as shown at 27 in Fig. 2, but merely overlaps the corresponding flange of the corner post 28, to which it may be secured by rivets 43.

The construction shown in Fig. 6 differs from those of Figs. 1–5 in that the two middle Z-bar end posts 22 and their cover plate 41 are consolidated into one unitary pressed or rolled upright channel 44, which is supplemented with a cover plate 45 extending upward from the upper edge of the panel plate 10 to the shelf 39 of the end plate 24 against the wood planking 11, in the plane of said plate 10.

What is claimed is:

1. A car end construction comprising a sheet metal end panel, an end wall of transverse planking extending upward above said panel, a hood extending entirely across the upper end of the wood planking, external end posts for laterally sustaining said planking and panel, and vertical brace members having their lower ends attached to portions of the car and their upper ends secured within the hood.

2. A car end construction comprising an end sill, a sheet metal end panel, an end wall of transverse planking extending upward above said panel, an end plate, and external end posts for laterally sustaining said planking and panel, including a channel column with its flanges secured to said panel and planking.

3. A car end construction comprising a sheet metal end panel, an end wall of transverse planking extending upward above said panel, an end plate, and a column girder attached to said end panel extending upward across said planking and secured to said end plate, so as to brace the upper portion of the car transversely.

4. A car end construction comprising an end sill, a sheet metal end panel, an end wall of transverse planking extending upward above said panel, an end plate, and a channel column extending across said panel and planking, with its flanges secured to them and its web secured to said sill and said end plate.

5. A car end construction comprising an end sill, a sheet metal end panel, an end wall of transverse planking extending upward above said panel, an end plate, metal corner posts of angle section outside said planking, attached to said panel and end plate, Z-bar end posts outside said panel and planking, at intervals across the car end, attached to said sill and end plate, and a web plate attached to the outer flanges of a plurality of such end posts and extending from panel to end plate.

6. A car end construction comprising a sheet metal panel, an end wall of transverse planking extending upward above said panel, metal corner ports of angle section attached to said panel and extending upward therefrom outside said planking, and an external channel column with its flanges secured to said panel and planking.

7. A car end construction comprising an end sill, an end plate, a hood forming a part of the end plate and extending entirely across the same, an end wall extending from side to side of the car, an external channel column having its flanges secured to said end wall, and attached to said sill and said end plate at its ends, and vertically disposed posts secured to the end wall and having their upper ends received in and attached to the hood.

8. A car end construction comprising an end wall of wood planking, and an external reinforcing plate for the lower portion of said end having a stiffening flange at its

upper edge extending inward into the wood end.

9. A car end construction comprising an end wall of wood planking, an external reinforcing plate for the lower portion of said end, having its upper margin joggled inward to afford a stiffening flange extending through the wood end, and means for securing the stiffened edge of said reinforcing plate to the ends of strength members of the car sides.

In witness whereof I have hereunto set my hand.

ALLEN E. OSTRANDER.