Dec. 23, 1958 R. L. LICH 2,865,309

GONDOLA CAR END

Filed Aug. 11, 1954

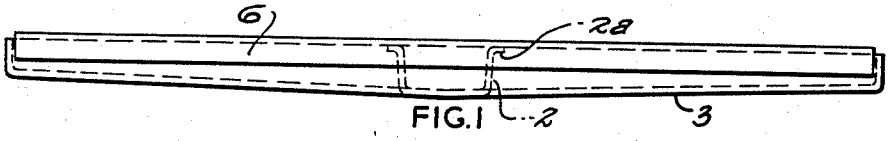


FIG. 1

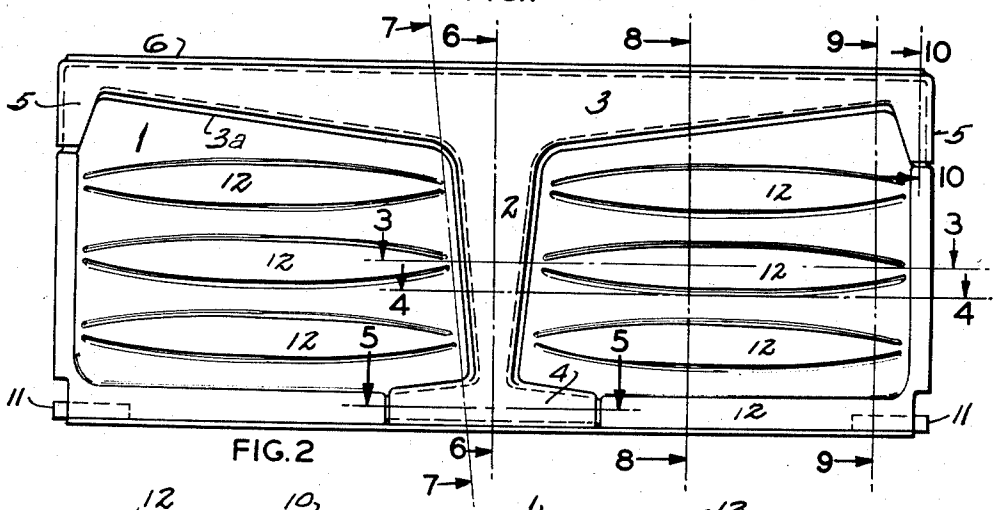


FIG. 2

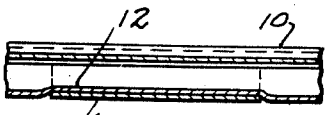


FIG. 5

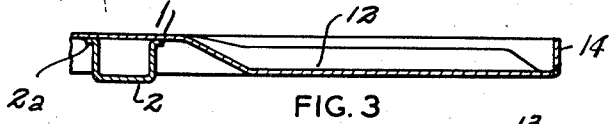


FIG. 3

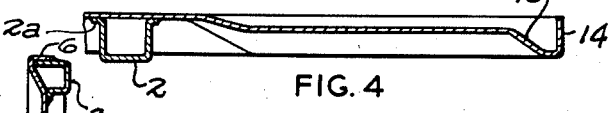


FIG. 4

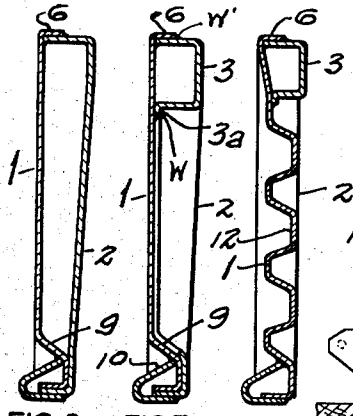


FIG. 6 FIG. 7 FIG. 8

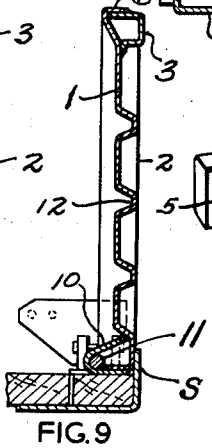


FIG. 9

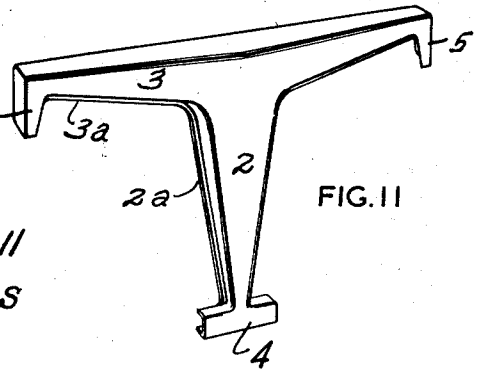


FIG. 11

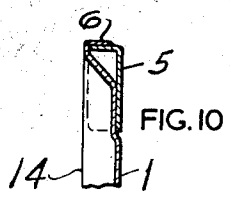


FIG. 10

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GONDOLA CAR END

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Application August 11, 1954, Serial No. 449,138

2 Claims. (Cl. 105—406)

The invention relates to railway rolling stock and more specifically to car wall structure such as embodies the end wall of a car and more particularly the end wall of a gondola car. Such a wall may be a fixed part of the car body or may constitute a drop door which may be lowered to accommodate abnormally long lading.

The object of the invention is to rigidify the car end so as to effectively resist bulging of the end by shifting lading and damage to the top of the end by being struck with hoisting equipment or lading carried by the same.

The significant feature of the invention is the use of a T-shaped reinforcement and the invention may be embodied in a complete car end in which the T-shaped reinforcement is a part, or it may be embodied in the T-shaped reinforcement as a separate unit which may be applied to a car end otherwise inadequate for all conditions to be met.

In the accompanying drawings illustrating the invention, Figure 1 is a top view of a car end provided with the reinforcement.

Figure 2 is a front view of the same.

Figure 3 is a horizontal section taken on the line 3—3 of Figure 2.

Figure 4 is a horizontal section taken on the line 4—4 of Figure 2.

Figure 5 is a horizontal section taken on the line 5—5 of Figure 2.

Figure 6 is a vertical central section taken on the line 6—6 of Figure 2.

Figure 7 is a vertical section taken on the line 7—7 of Figure 2.

Figure 8 is a vertical section taken on the line 8—8 of Figure 2.

Figure 9 is a vertical section taken on the line 9—9 of Figure 2.

Figure 10 is a detailed vertical section taken on the line 10—10 of Figure 2.

Figure 11 is a perspective of the reinforcing unit shown in assembly with the car end in the other figures.

The car end wall proper comprises a substantially rectangular plate 1 extending from side to side of the car and from bottom to top of the car body. The T-shaped reinforcement, best shown in Figure 11, has an upright leg 2 extending from bottom to top of the wall and a horizontal cross arm 3 extending from side to side of the wall.

The T member may be pressed from sheet metal or may constitute a one piece casting. Preferably its leg 2 and arm 3 are each of U-shaped cross section with the edges of the section flanged outwardly, as indicated at 2a and 3a, to parallel and be secured to end wall 1 as by welding W. To obtain maximum strength for a given amount of metal or, conversely, to avoid undue weight, the upright leg 2 is tapered from top to bottom and the cross arm 3 is tapered from the upright leg towards each end. Preferably the bottom of leg 2 has an enlarged base 4 and each end of arm 3 has a downwardly enlarged terminal 5. Portions 4 and 5 provide extended reinforcement and connecting areas. The wide base 4 of the reinforcement provides a greater bearing area against the stop member S on the car end sill and better resists forces applied to the door than would a narrow base member. The upper marginal portion of end wall 1 has a flange 6 overlying the top of reinforcement arm 3 and is welded to the latter at W'. The lower marginal portion of plate 1 is offset forwardly as indicated at 9 and associated therewith is a V-shaped clip 10 forming sockets for hinge pins 11 if the wall is to be a hinged door.

The end wall is provided with a plurality of corrugations 12 extending substantially horizontally from near the ends of the wall to the reinforcement upright leg 2.

The side margins of the end wall are offset forwardly, as indicated at 13, and are flanged, as indicated at 14, for reinforcement and for attachment to the T member arm terminals 5 and for engagement with the car corner posts (not shown).

The structure illustrated and described forms a rigid end wall which will resist forces applied thereto more effectively than the usual corrugated and flanged end walls or end walls with angular structural steel reinforcements of substantially uniform contour from end to end.

The details of the arrangement may be varied substantially without departing from the spirit of the invention and the exclusive use of those modifications coming within the scope of the claims is contemplated.

What is claimed is:

1. A pivoted railway gondola car end wall comprising a generally rectangular steel plate having a T-shaped reinforcing member rigidly secured thereto, said reinforcing member including an upright leg disposed midway between the opposite ends of said plate and extending between the top and bottom edges thereof, and a horizontal cross arm disposed along the top marginal edge of the plate and extending between the opposite ends of the plate, leaving separate, generally rectangular areas of the plate beneath said cross arm on opposite sides of said upright leg, said areas being provided with a plurality of vertically spaced outwardly struck reinforcing ribs running horizontally between said upright leg and the corresponding ends of the plate in general parallelism with said cross arm and disposed throughout substantially the entirety of said areas, said reinforcing member also including a transverse enlarged base presenting laterally projecting arms at the lower end of said upright leg, said plate being provided with corrugations along the lower marginal edge thereof effecting continuations of said arms and extending therefrom to the corresponding opposite ends of the plate, said cross arm being provided with downwardly enlarged terminal end portions at and extending downwardly of the upper corners of said plate, said plate having vertical corrugations therein at the opposite ends thereof extending from the outer ends of the first mentioned corrugations to the lower ends of said downwardly enlarged terminal end portions of the cross arm, a hinge pin secured to each lower corner of said plate and extending therefrom for pivotally mounting the end wall assembly upon an associated gondola car, said reinforcing member being of U-shaped configuration in cross section and being continuously welded to said plate such that the plate and the reinforcing member together form a box section, the cross arm protecting and rigidifying the upper marginal edge of the end wall assembly against damage by collision from loading equipment and the like while said upright leg and reinforcing ribs obviate buckling of the unit due to shifting loads within an associated gondola car.

2. The assembly as defined in claim 1, wherein said assembly is provided with channel-like clips secured to said plate along the marginal edge thereof in opposed relation to said first mentioned corrugations and being con-

tinuously welded thereto to define pockets of box-like configuration in cross section opening upon the opposite ends of the assembly, said pivot pins having portions projecting within said pockets and secured therewithin.

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