United States Patent

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[54] **RAILROAD BOXCAR SIDE CONSTRUCTION**
3 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **105/409,** 105/369
[51] **Int. Cl.** **B61d 17/08,** B61d 45/00
[50] **Field of Search** ..... 105/369 A, 409

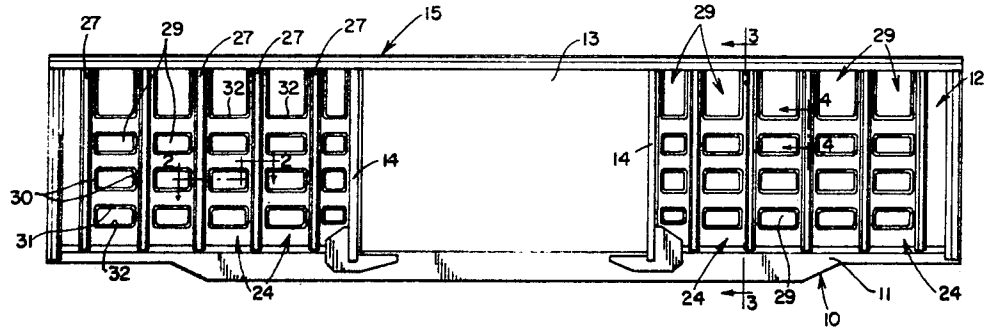
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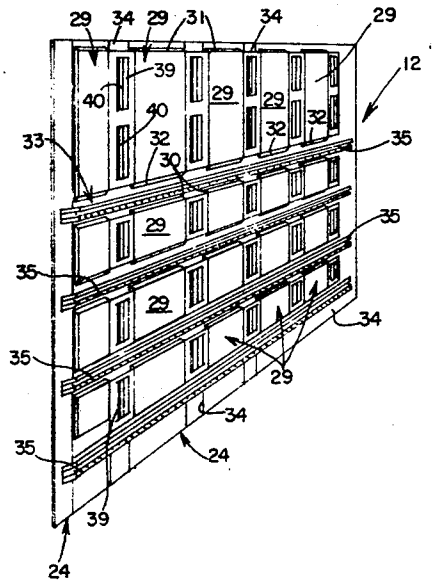
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ABSTRACT: A boxcar side having a sidewall of single sheathed construction comprising a plurality of vertical sheets connected to and disposed between side posts. The sheets are provided with inwardly pressed panels of rectangular dish-shaped configuration vertically spaced to provide therebetween a plurality of longitudinally extending areas in the original plane of the sheets and horizontally spaced to provide therebetween a plurality of vertically extending areas also in the original plane of the sheets with the several areas intersecting whereby to provide a waffle pattern on the inner side of the sidewalls. The horizontal areas have contained therein anchoring members which extend continuously from each doorpost to respectively opposite ends of the car and to which cargo restraining beams may be connected. The anchoring members are disposed entirely within the areas so as to provide a generally flush inner side with the surface of said panels. The vertical areas are covered with a coverplate providing with said panels a smooth inner surface. The coverplates are apertured to provide access to lading strap anchor bars which are disposed in said vertical areas and which terminate short of said anchoring members.





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SHEET 1 OF 2

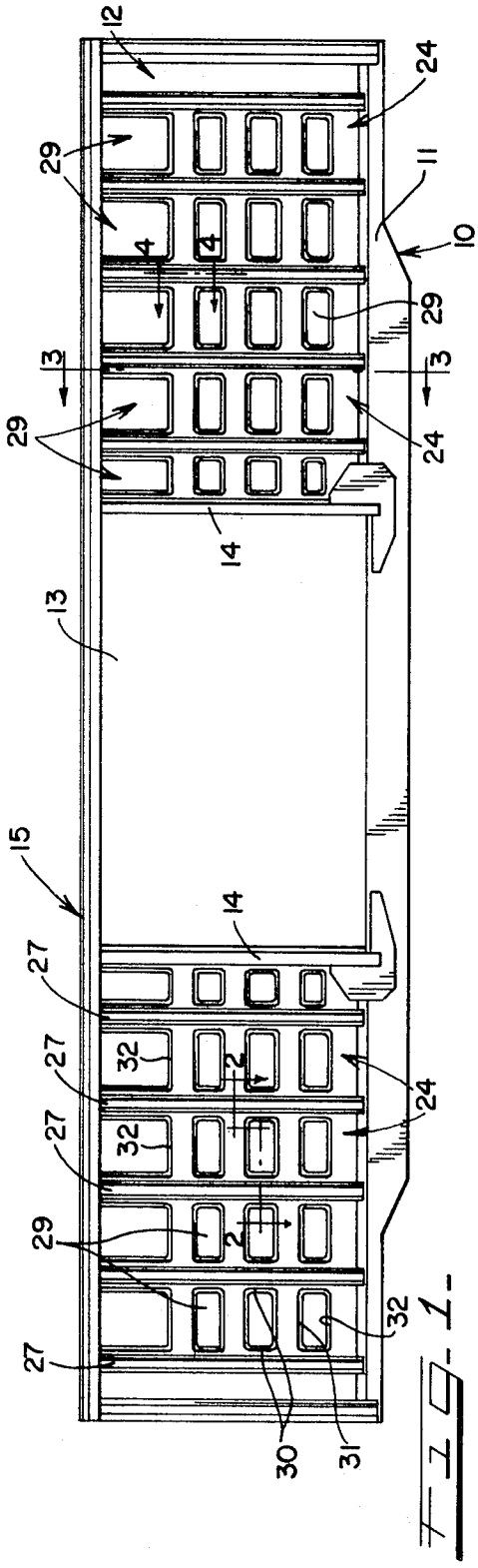


FIG. 1

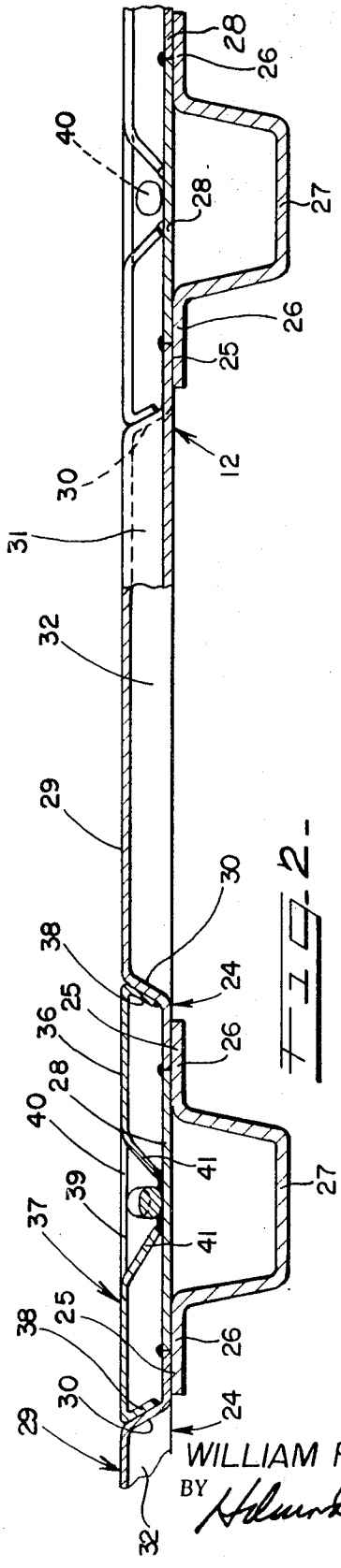


FIG. 2

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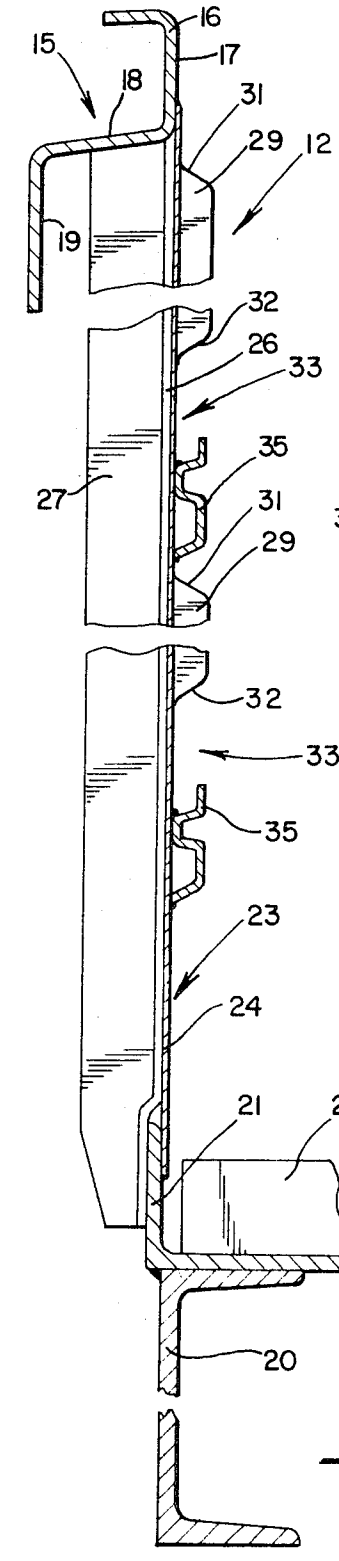


FIG. 3

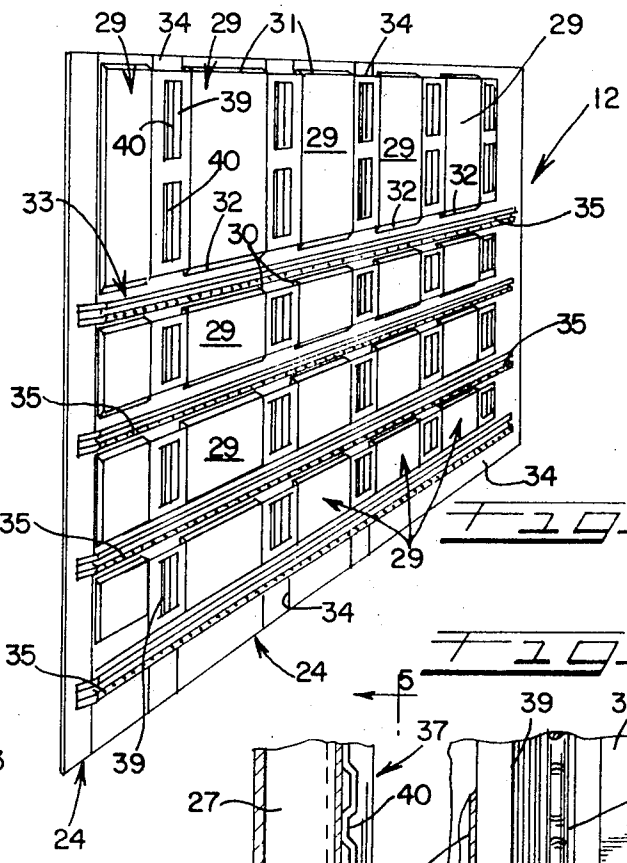


FIG. 6

FIG. 5

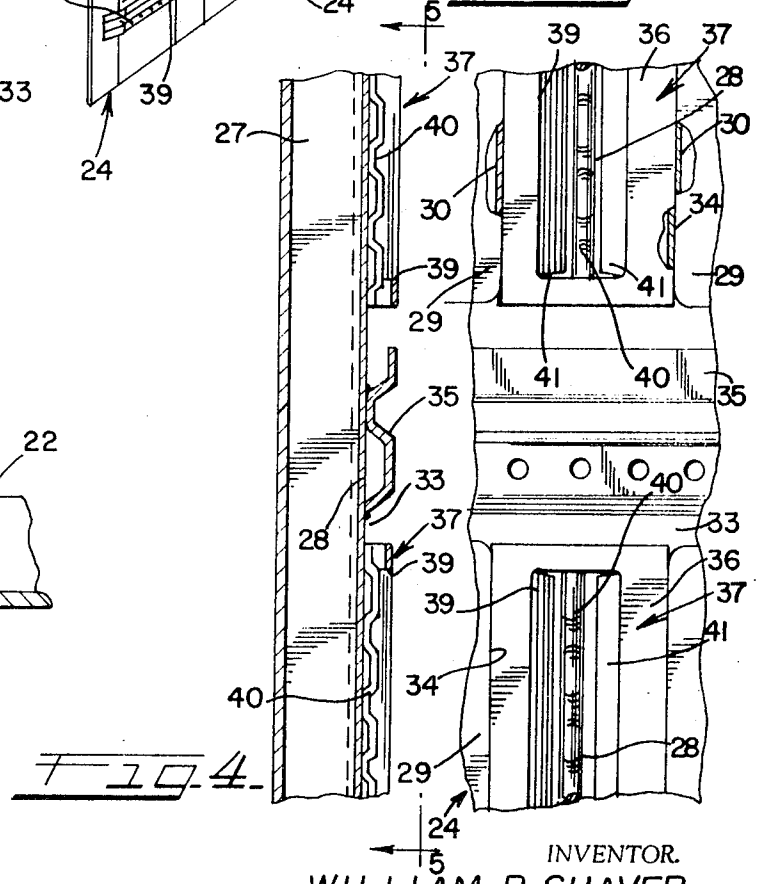


FIG. 4

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RAILROAD BOXCAR SIDE CONSTRUCTION

SUMMARY

The railroad car of the present invention comprises car sides of single sheath construction. The sides consist of individual sheets which are connected between and to vertical side posts positioned in horizontally spaced relation from the doorposts to opposite ends of the car. The side sheets are formed with inwardly extending panels or corrugations serving to stiffen and reinforce the single sheathed sides. The corrugations or panels are so formed on the inner surface of the sides as to provide a plurality of longitudinally extending areas therebetween which communicate with vertically extending horizontally spaced areas extending normal relative the horizontal areas and also disposed between adjacent panels.

The primary object of the invention is to provide a single sheathed side or wall construction which will accommodate both belt rails and lading strap anchors and provide a substantially smooth inner surface which will prevent damage to lading. The belt rails are secured within the horizontal areas and are substantially coextensive therewith. They are so disposed that they do not project beyond the inside surface of the panels or corrugations and thereby will not present any obstruction with respect to lading in the car. The vertical areas are provided with sections of a lading strap anchor rod to which lading straps may be secured in conventional fashion. These are also disposed within the vertical areas so as not to project beyond the surface of the panels and a coverplate is provided over the vertical areas and anchor rods with openings providing access to the rods at vertically spaced intervals. These covers also serve to provide a substantially continuous smooth surface on the inner sides of the sidewalls of the car.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a railway car body showing an improved wall construction;

FIG. 2 is a cross-sectional view taken substantially along the line 2–2 of FIG. 1;

FIG. 3 is a cross-sectional view taken substantially along the line 3–3 of FIG. 1;

FIG. 4 is a cross-sectional view taken along the line 4–4 of FIG. 1;

FIG. 5 is an elevational view taken substantially along the line 5–5 of FIG. 4; and

FIG. 6 is a perspective view of a railway car side showing the inner wall portion of the same.

DETAILED DESCRIPTION

A railway car in FIG. 1 is generally designated by the reference character 10 and includes a conventional underframe 11 supporting a boxcar body having sidewalls 12. Each sidewall 12 is provided with a door opening 13 defined by a pair of horizontally spaced vertically extending doorposts 14. As best shown in FIGS. 1 and 3 each sidewall 12 is provided with an upper sideplate 15 having an upper horizontal roof supporting flange 16, a vertical web 17, a lower diverging flange 18, and a depending flange 19. The sideplate extends continuously along the length of the sidewall 12. The underframe 11 also includes a pair of horizontally spaced longitudinally extending side sill angle members 21 to which the subsill channel members 20 are connected. The side sill members 21 provide attaching means for the lower marginal edges of the single thickness side sheathing 23. The sheathing 23 comprises a plurality of vertical sheets or wall portions 24 having marginal portions 25 suitably secured by means of welding to flanges 26 of side posts 27. As best shown in FIG. 2 the side posts 27 are of hat-shaped cross section with outwardly extending flanges 26. The hat-sections are closed by means of suitable vertically extending sidewall plates 28 which in turn have their marginal vertical edge portions welded to the flanges 26 together with the edge portions 25 of the sidewall sheets 24.

Each of the vertical wall sheets 24 is provided with a plurality of vertically spaced rectangular dish-shaped panels 29 which are pressed into the material so as to project inwardly into the car with respect to the marginal edge portions 25. The panels 29 thus extend in vertically and horizontally spaced relation with the panels 29 being aligned horizontally and vertically. Each of the dish-shaped panels 29 is provided with side or end walls 30, a top wall 31, and a bottom wall 32 as best shown in FIGS. 1 and 5. The disposition of the panels 29 provide in the inner surface of each sidewall 12 a plurality of vertically spaced longitudinally extending areas 33 and a plurality of horizontally spaced vertically extending areas 34 which intersect or communicate with the horizontal areas 33 thus completely surrounding the panels 29 and both such areas are in outwardly offset relation to the plane of the inner surface of the panels. The panel areas 29 may be comprised of a plurality of inward corrugations if preferred. Each of the areas 33 has suitably mounted therein a belt rail or anchoring member 35 to which crossbars may be suitably connected for restraining lading during transit. Such a belt rail and associated structure is disclosed in Dunlap U.S. Pat. No. 3,071,086 granted Jan. 1, 1963.

The vertical areas 34 as best shown in FIGS. 5 and 6 are suitably covered by means of a closure or coverplate 37 which includes a wall portion 36 having its lower and upper margins terminating in vertically spaced relation from the belt rail 35. The lower and upper margins of the coverplates 37 are substantially in the plane of the top and bottom walls 31, 32. The coverplates 37 are also provided with vertically extending flanges 38 suitably welded to the sidewalls 30 of the panels 29. The vertical wall portion 36 of each of the plates 37 is suitably provided with vertical apertures 39 to provide access to lading strap anchor rods 40 connected to the vertical sideplates 28. Inwardly extending guide flanges 41 extend from the apertures 39 adjacent the rods 40 to facilitate insertion of lading straps through the openings provided by the spacing of said rods 40 from plates 28 at vertical intervals.

The function of lading strap anchors is of course well known in the art and need not further be described. The closure or coverplate 37 as well as the anchors 40 terminate in spaced relation relative to the belt rails 35. The anchor 40 may also be attached to the coverplate 37 instead of the plate 28 in which case the apertures 39 may comprise a plurality of vertically spaced openings along the coverplate with the coverplate constructed to provide sufficient rigidity for the lading strap anchor 40.

In the embodiment of the invention disclosed the horizontal belt rails 35 extend continuously between the doorposts and the respectively opposite ends of the car and the vertical lading strap anchor rods 40 are interrupted at the belt rails so that the anchor rods are disposed at vertically spaced intervals extending only between the belt rails. However, if desired the vertically disposed lading strap anchor rods 40 may be constructed to extend uninterruptedly throughout their height and the belt rails arranged in individual sections extending only between the respectively adjacent lading strap anchor rods so that the anchors then will extend continuously from top to bottom and the belt rail sections while interrupted by the vertical anchor rods will afford longitudinally aligned rails for the attachment of loader bars generally in any manner required by lading conditions in areas of the car having the belt rails so disposed. With either arrangement of the belt rails and anchor strap rods it is apparent, as best shown in FIG. 6, that the interior of the sidewall presents a substantially flush surface throughout the car side thus preventing any damage which might occur due to shifting of the load in transit and its engagement with projecting portions of securing means which are present in prior art structures.

What I claim is:

1. A railroad car comprising:

a vertical sidewall,

said sidewall having a plurality of vertically extending interconnected side sheets spaced horizontally of one another,

each side sheet having a plurality of vertically spaced central dished panel portions on the exterior side thereof and upper and lower horizontally extending outwardly protruding exterior edge portions on the exterior side thereof and first and second vertically extending outwardly protruding exterior edge portions on the exterior side thereof, the inwardly facing wall portions of said dished panel portions forming the inside wall portions and the vertically and horizontally extending edge portions forming on the interior of the car vertically and horizontally extending interior recessed portions at the periphery of the inside wall portions of the car,

the dished panel portions of each sheet being in general horizontal alignment with the dished portions of the adjacent panel portions and sidewall plate means interconnecting the vertically and horizontally extending interior recessed portions of adjacent side sheets defining therewith interior continuous horizontal and vertical lading anchor mounting surface portions, the plate means interior surface portion and the inside wall portions providing a generally flat continuous inside wall,

exterior vertically extending car mounted side post means mounted over the outside of sidewall plate means and between adjacent dished panel portions,

vertically extending lading anchor means being mounted on the interior surface portions of the plate means, and

horizontally extending lading anchor means being over the adjacent interconnected vertically and horizontally extending interior recessed portions.

2. The invention according to claim 1, and

interior lading coverplate means extending over the vertically extending lading anchor means on the inside wall between respective vertically spaced dished panel portions of respective sheets.

3. The invention according to claim 2, and

said coverplate means including a cutout portion providing access to the vertically extending lading anchor means.