Feb. 18, 1969 T. C. SODDY 3,427,998

RAILROAD CAR SIDE WALL

Filed June 28, 1966

Sheet 1 of 2

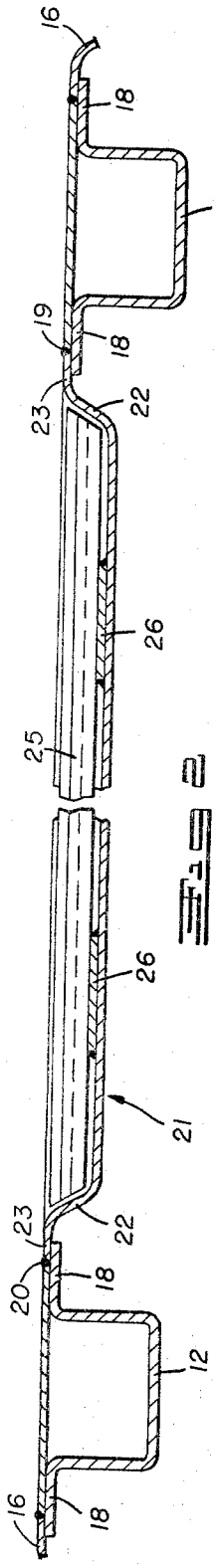


Fig 2

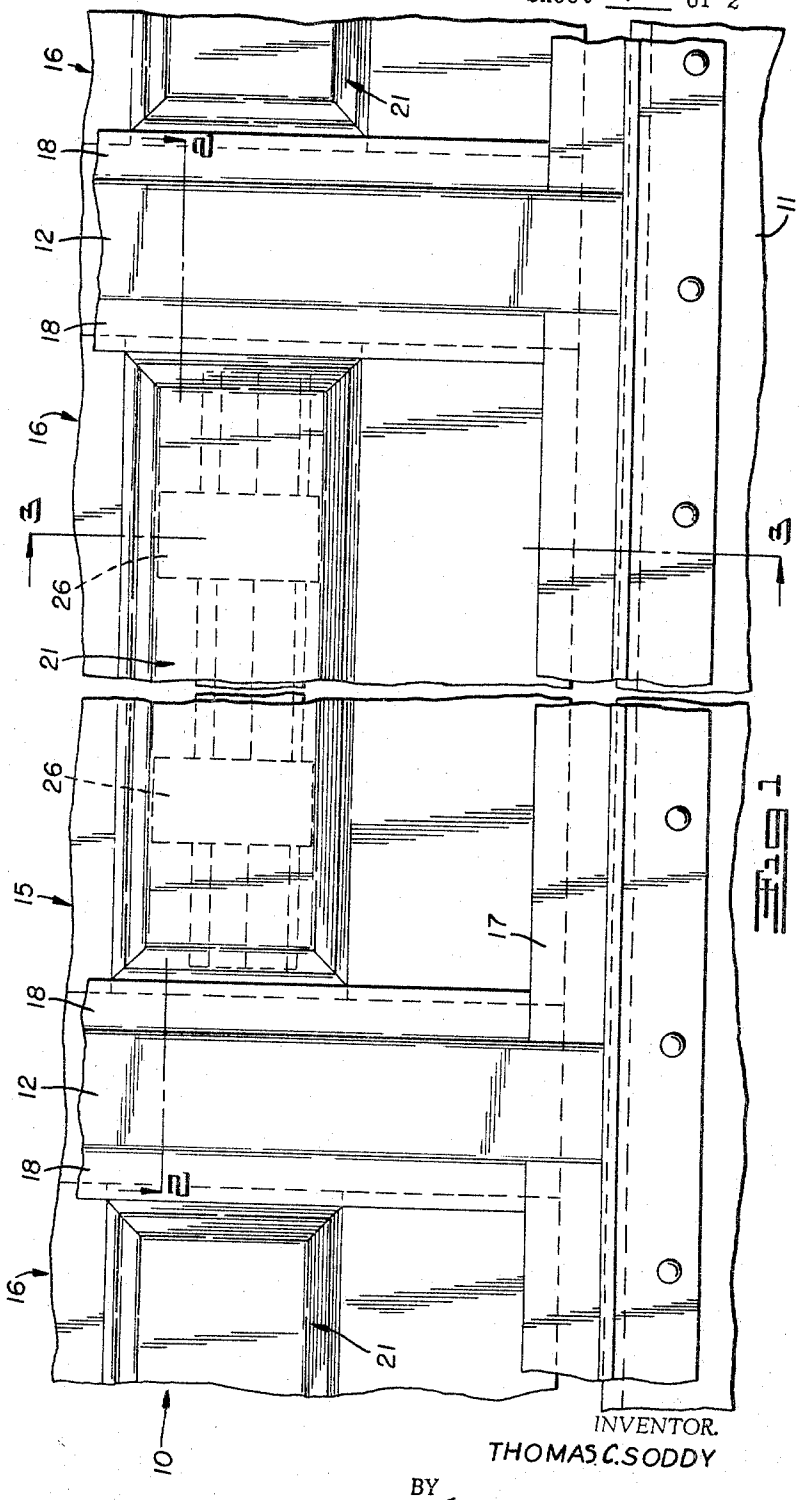


Fig 1

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Sheet 2 of 3

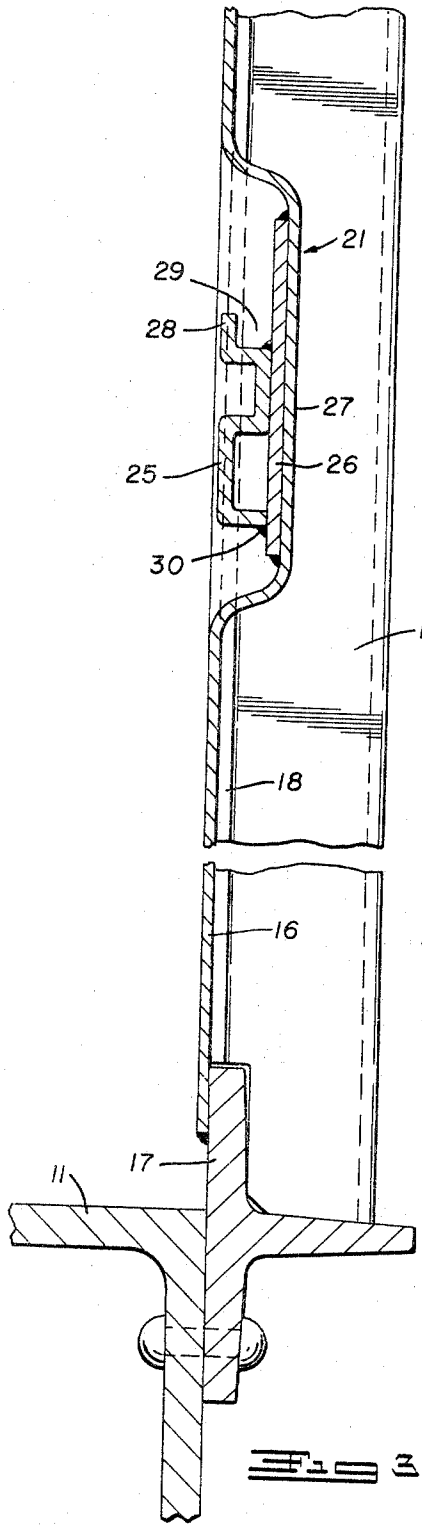


Fig 3

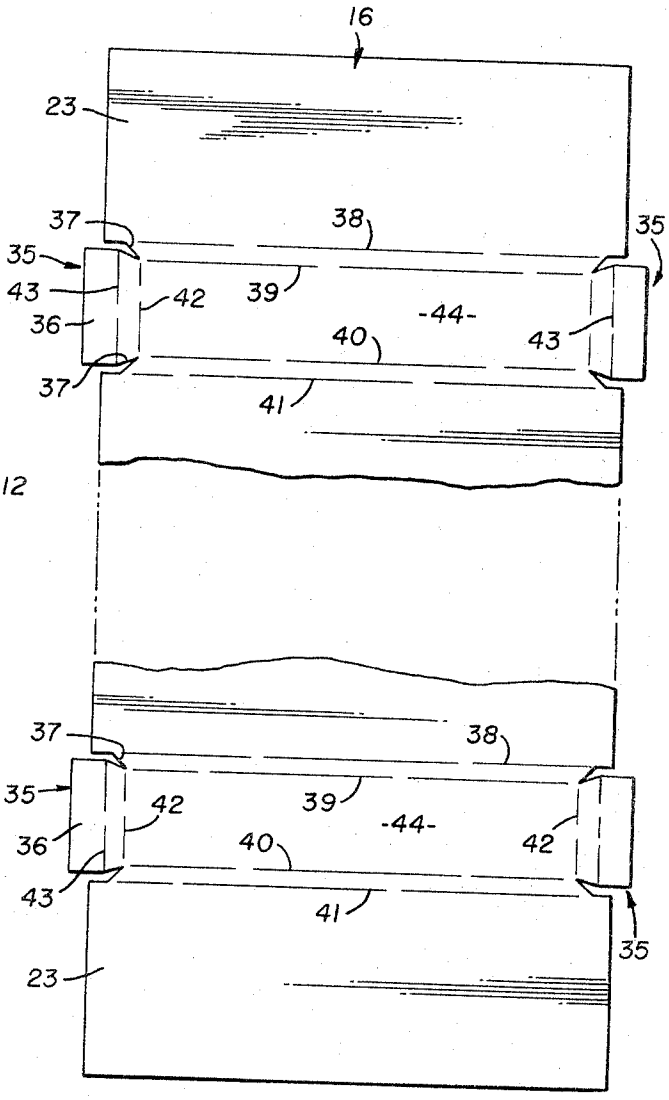


Fig 4

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RAILROAD CAR SIDE WALL

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U.S. Cl. 105—409 4 Claims
Int. Cl. B61d 17/00, 45/00

ABSTRACT OF THE DISCLOSURE

A railroad car having a side wall of single thickness of metallic sheathing with exterior side posts extending vertically between top and bottom horizontal frame members at spaced locations along the side of the car. A plurality of groups of depressions in the sheathing with each of the groups located between adjacent posts. Each group including a plurality of depressions in vertically spaced relationship. The depressions being pressed outwardly in the sheathing and having a bottom wall substantially parallel to and spaced from the plane of the car side wall. End walls of the depressions extend substantially transversely to the car side wall at points spaced from the side posts. Each of the depressions having means for securing a length of belt rail therein such that the belt rails are wholly within the depressions.

This invention relates to railroad cars and more particularly to a belt rail construction for a single sheath car side.

Various types of belt rails and cross bars have been used for many years as a means to restrain freight in transportation vehicles. The usual approach in employing belt rails has been to attach the belt rails to the inner wall of the car with the belt rail protruding into the space which receives the freight with a consequent diminution of the space available to carry freight. Another approach has been to form recesses or notches in the side wall and place the belt rails in these notches. This latter method has been satisfactory with a double sheath car side, since the side wall has sufficient thickness to accommodate the recess. However, with the advent of single sheath wall constructions there is no longer available any space between the inner and outer wall in which to form the recess.

In the railroad industry, there is a standard classification of box cars designated as XML box cars. The XML classification indicates that any box car so classified must be returned by the borrowing railroad to the home railroad at a designated point on the home railroad's line. To qualify for the XML designation, it is necessary that the car have a minimum of four belt rails in the interior of the car. In cars of single sheath wall construction, the problem thus arises as to how to accommodate the belt rails.

It is an object of this invention to provide a belt rail construction for a single sheath car side.

More specifically this invention contemplates a railroad car side having a side plate and side sill with single thickness metallic sheathing secured to the side plate and side sill. Side posts are secured to the exterior of the metal sheathing at spaced points therealong. The metal sheathing intermediate the side posts contains a plurality of vertically spaced, outwardly pressed portions forming recesses with the recesses terminating short of the side posts. Disposed in each of the recesses is a length of belt rail with the depth of the recess being such that the belt rail does not protrude inwardly of the metal sheathing.

In the drawings:

FIG. 1 is a partial side elevation showing the instant invention in a railroad car side;

FIG. 2 is a view taken along line 2—2 of FIG. 1;

FIG. 3 is a view taken along line 3—3 of FIG. 1;

FIG. 4 illustrates schematically a length of metal sheathing prior to being formed to produce the side wall of the instant invention.

Referring now to FIG. 1, there is shown a railroad car side indicated generally by the reference numeral **10**. This car side includes a side sill **11** which supports vertically extending hat-shaped side posts **12**. These posts extend from the side sill vertically to the side plate which is normally present in a conventional railroad car. It will be understood that the side sill and the side plate extend from end to end of the car. Moreover, as is usual in the construction of railroad cars, the side posts **12** are spaced along the length of the side sill at regular intervals with door posts framing a door opening midway of the car.

Metallic sheathing **15** in the form of a plurality of separate metal sheets **16** extends between each of the intermediate posts and up to the door posts to complete the side wall construction. The metal sheets are welded at their lower ends to the upstanding flange **17** on the side sill **11**. It is contemplated that the vertical margins of each metallic sheet **16** will be secured to flanges **18** on the hat-shaped side posts **12**. Referring to FIG. 2, the metal sheet is secured by welds **19** along one edge to the flange of the side post and by welds **20** along the other edge to the flange on the next adjacent side post. It is desirable to employ an automatic welding machine to lay the beads **19** and **20** thereby reducing the labor cost and assembly time.

To accommodate belt rails with the single thickness metallic sheathing **15** it is contemplated that each metal sheet **16** will include a plurality of vertically spaced outwardly pressed portions or recesses **21**. Each of these recesses extends horizontally between adjacent side posts with the side walls **22** of the recesses terminating short of the longitudinal edges **23** of the metallic sheets **16**. Referring to FIG. 3, there is received in each of the recesses **21** a length of belt rail **25**. These belt rails may be of a construction such as that shown in U.S. Patent No. 3,071,086. As is apparent from FIG. 3, the belt rail, when received in the recess **21**, does not protrude into the space in the interior of the car.

The belt rail **25** is normally sub-assembled by welds **30** to a pair of shims **26** which are adapted to be received against the bottom wall **27** of the recess **21**. These shims provide a base for the sub-assembly of the belt rails **25** and also provide adequate means for attaching the belt rails to the side sheets. Ordinarily, the belt rails are of heavier material than the side sheets so that the welding of the belt rails to the sheets directly would raise the problem of burning through the side sheet material. By employing the shims **26**, this problem is removed. An additional benefit derived from employing the spaced shims **26** is that the shims space the belt rail **25** laterally from the bottom wall **27** of the recess. As is apparent from FIG. 3, the belt rails **25** include an upwardly opening flange **28** which forms a pocket **29** and which tends to entrap any loose material such as grain that is carried in the car. However, by employing the shims **26**, the belt rails are spaced from the bottom of the recess and any material that would tend to be entrapped in the pocket **29** will be discharged between the belt rail and the bottom wall **27** of the recess.

It is contemplated that the recesses **21** may be formed directly in the metal sheets **16** through the use of forming dies with the belt rails **25** being sub-assembled to the shims **26** and then secured in the recesses **21**. In view of the desirability of using an automatic welding machine to

secure the marginal edges of the sheets **16** to the flanges **18** on the side posts, the recesses or depressions terminate short of the edges **23** of the sheets **16**, thereby providing a continuous flat surface along the edge of each sheet **16** on which the weld material may be applied.

An alternative method of constructing the recesses or depressions is illustrated schematically in FIG. 4. By this method, each sheet **16** is formed in the configuration shown in FIG. 4. Each of the marginal edges **23** of the sheet **16** includes a plurality of spaced coped portions indicated generally by the reference numeral **35**. The number of coped sections corresponds to the number of belt rail recesses desired for each particular sheet. Each coped section includes a flap section **36** which extends outwardly of the marginal portion **23** of the sheet **26**. A coped section **37** is formed on either side of the flap section **36**. The same configuration is employed on the opposite side edge of the sheet **16**. As shown in FIG. 4, each of the sections includes bend lines **38, 39, 40, 41** which extend transversely of the sheet **16**. The flap section **36** also includes a bend line **42** and a bend line **43**. It will be appreciated that by bending the sheet **16** along the bend lines **38–43**, a recess or depression for the belt rail is formed in the sheet **16**. Thus, the area **44** of the sheet **16** between the bend lines **39, 40** forms the bottom wall of the recess. The area between the bend lines **38, 39** and the area between the bend lines **40, 41** provides the two side walls for the recess. The area between the bend lines **42** and **43** of the flap section **36** provides the end walls of the recess. With the sheet **16** formed in the described manner, the flap **36** is, in effect, drawn inwardly of the sheet **16** so that the outer edge of the flap **36** becomes coextensive with the marginal edge **23** of the sheet **16**. As a result, a continuous weld machine may be employed to lay a bead along the entire length of the sheet **16** and it is not necessary to stop the machine at the flap section. Moreover, when the sheet **16** is bent, the coped section **37** permits the side edges of the flap **36** to be placed adjacent to the remaining portion of the sheet **16**. By welding the coped section, a continuous seam is formed between the flap **36** and the remainder of the sheet.

I claim:

1. In a railroad car, the combination comprising:

a side wall comprising a single thickness of metallic sheathing;

vertically extending side posts spaced along said side wall and secured to the exterior of said side wall;

a plurality of groups of horizontally disposed and vertically spaced depressions formed in said side wall with each of said groups being located between adjacent ones of said side posts and said depressions extending in length a substantial portion of the distance between said posts;

each of said depressions comprising outwardly pressed portions having a bottom wall substantially parallel to and spaced from the plane of said side wall and end walls extending substantially transversely of said side wall with said end walls located in said side wall at points spaced from the area of attachment of said side post to said side wall;

a plurality of lengths of belt rails;

means for securing a length of belt rail in each of said depressions with no portion of said lengths of belt rails projecting from said depressions.

2. The combination of claim **1** wherein said metallic sheathing comprises a plurality of coplanar vertically extending sheets;

said groups of depressions being formed in said metal sheets;

the end walls of each of said depressions in said metal sheets being spaced from the marginal edge of the metal sheet;

said side posts each including a flange secured to the marginal edge of at least one of said sheets.

3. The combination of claim **1** and further including:

said lengths of belt rails each having a longitudinal extent substantially equal to the length of said bottom wall in said depressions;

said securing means including means spacing said belt rails inwardly of said side wall and out of contact with said bottom walls of said depression;

the depth of each of said depressions being at least equal to the combined thickness of said belt rail and said spacing means for said belt rail.

4. The combination of claim **2** and further including:

said securing means including means spacing said belt rails inwardly of said side wall and out of contact with said bottom walls of said depressions.

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U.S. Cl. X.R.

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