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SIDE SILL CONSTRUCTION

Filed June 6, 1952

2 Sheets-Sheet 1

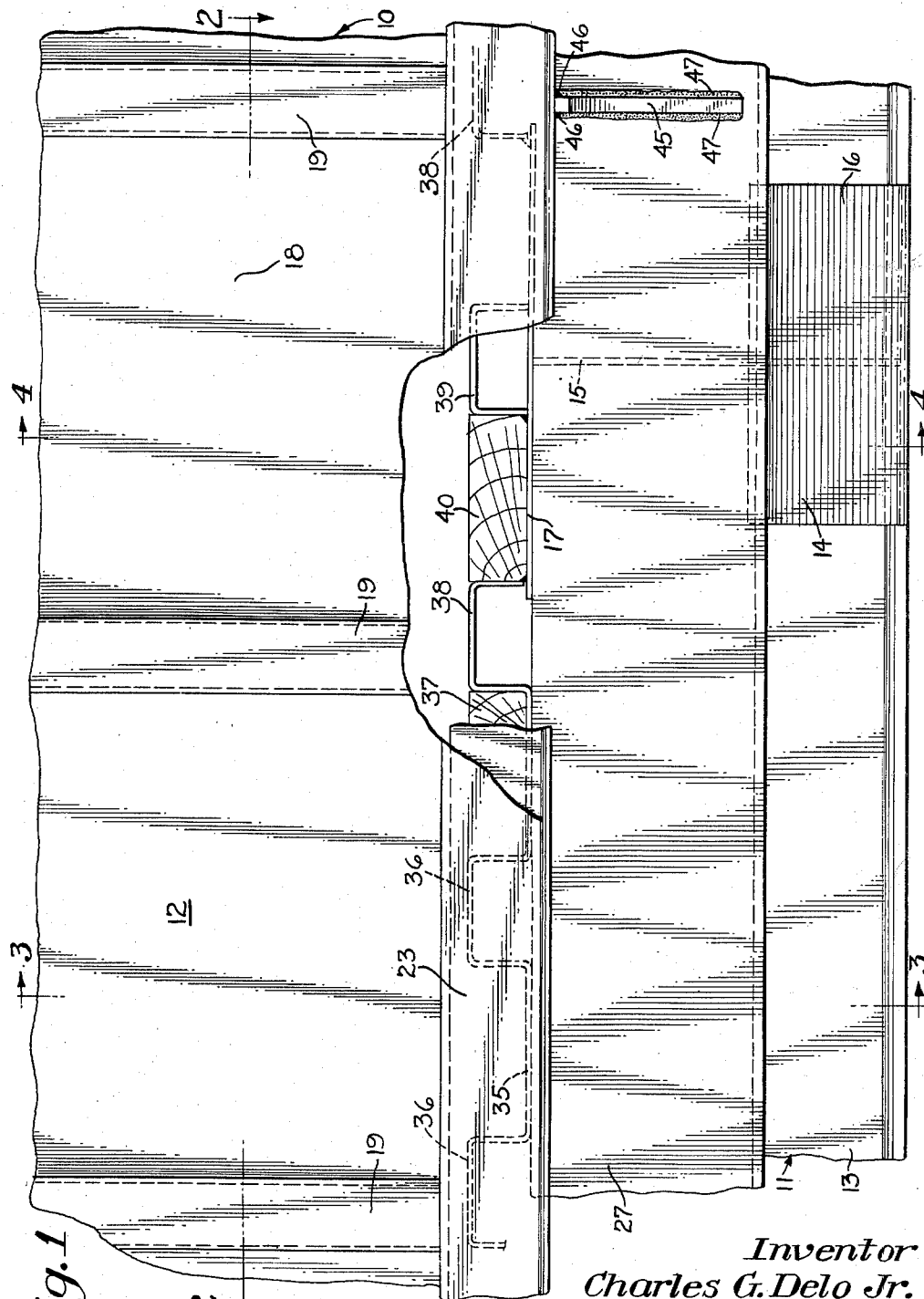


Fig. 1

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2 Sheets-Sheet 2

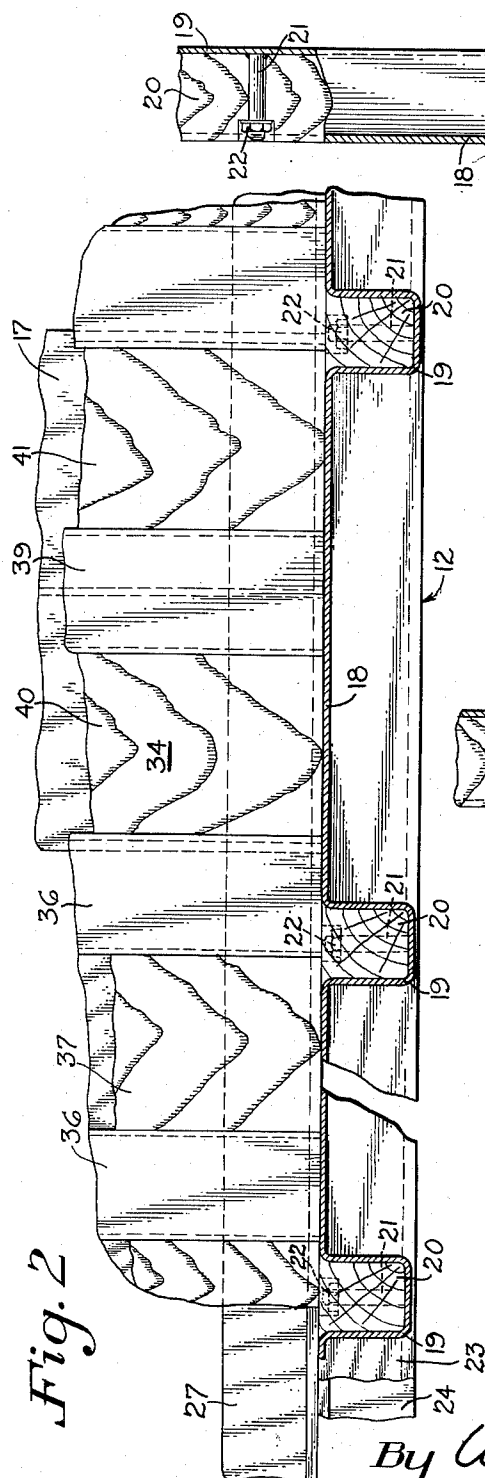
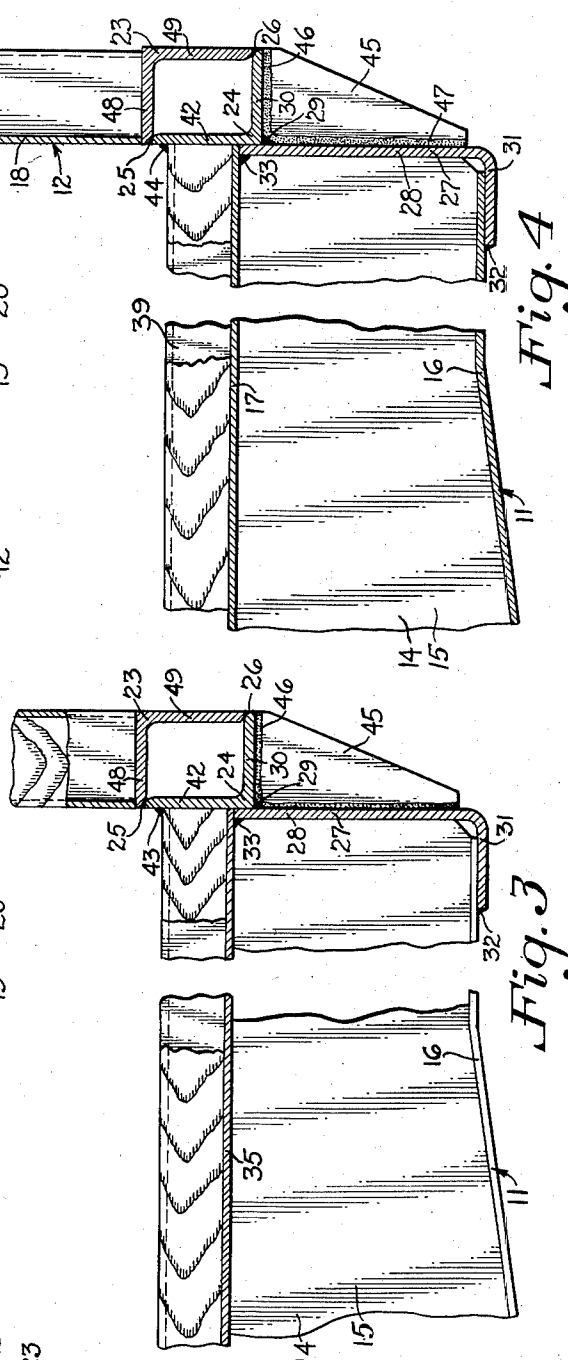


Fig. 4

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## SIDE SILL CONSTRUCTION

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3 Claims. (Cl. 105—409)

This invention relates to railway car side walls and is primarily concerned with a novel means and method of securing a railway car side wall to the underframe of the car.

The principal object of the invention is to provide in a railway car a member depending from the side wall and a side sill attached to the underframe, the member and the side sill being adapted to be secured together to form a beam.

A more specific object of the invention is to provide in a railway car an L-shaped member depending from the side wall and L-shaped side sill attached to the underframe, the member and the side sill being adapted to be secured together to form a rectangular-shaped beam.

Another object of the invention is to provide in a railway car a method of securing a side wall to an underframe which includes the steps of securing a member to the side wall and securing a side sill to the underframe and securing the member to the side sill.

Another object of the invention is to provide in a railway car a method of securing a side wall to an underframe which includes the steps of securing a member to the side wall to form one subassembly and securing a side sill to the underframe to form another subassembly and securing the first subassembly to the second subassembly by securing the member to the side sill.

An important object of the invention is to provide in a railway car a side sill and a side sill reinforcement depending from the side sill and secured thereto and a cross member seated upon the side sill reinforcement and secured thereto and flooring positioned upon the cross member and secured to the side sill.

Another object of the invention is to provide in a railway car an L-shaped side sill and an L-shaped side sill reinforcement having one flange depending from the side sill and secured thereto and one flange of the side sill and the other flange of the side sill reinforcement projecting in opposite directions and a cross member seated upon the other flange of the side sill reinforcement and secured thereto and flooring positioned upon the cross member and secured to the other flange on the side sill.

The foregoing and other objects of the invention are attained by the construction and arrangement illustrated in the accompanying drawings wherein:

Fig. 1 is a fragmentary side elevational view of a railway box car showing a portion of the side wall and showing a portion of the underframe;

Fig. 2 is a horizontal sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 1; and

Fig. 4 is a cross sectional view through the bolster taken on the line 4—4 of Fig. 1.

The invention proposes a novel means and method of securing the side wall of a railway car to the underframe thereof. A member is dependently secured to the bottom of the side wall, the member and the side wall together forming one subassembly. An outturned side sill is at-

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tached to the underframe, the side sill and the underframe together forming another subassembly. The first subassembly is secured to the second subassembly by securing the member to the side sill. The member and the side sill when secured together form a beam of rectangular cross section. The invention further proposes a novel means of securing the side sill, side sill reinforcement, cross member, and flooring together. The side sill reinforcement is dependently secured to the side sill, and the cross member is seated upon the flange of the side sill reinforcement and is secured thereto. The flooring is positioned upon the cross member and is secured to one flange of the side sill.

In the drawings, 10 generally designates a railway house car or railway box car having an underframe 11 and side walls 12. The underframe 11 comprises a center sill 13 and a cross member or bolster 14. The cross member or bolster 14 is made up of a web plate 15, a bottom cover plate 16, and a top cover plate 17. The side wall 12 is comprised of a metal side sheathing 18 having vertically extending corrugations 19 therein and furring strips 20 are disposed in the vertically extending corrugations. Bolts 21 are disposed in the corrugations 19 and welded thereto and extend through the furring strips 20 and nuts 22 are threaded on the bolts and serve to hold the furring strips in place in the corrugations.

An L-shaped member 23 extends the entire length of the car and is secured to the bottom of the side wall 12 and depends therefrom. The member 23 has a vertical flange and a horizontal flange integral with the vertical flange and the horizontal flange projects toward the inside of the car. An L-shaped side sill 24 extends the entire length of the car and is secured to the member 23 by welds 25 and 26. The side sill 24 has a vertical flange and a horizontal flange integral with the vertical flange and the horizontal flange projects away from the car. An L-shaped side sill reinforcement 27 extends between and beyond the car bolsters and has one flange 28 depending from the side sill 24 and secured thereto by a weld 29. One flange 30 of the side sill 24 and the other flange 31 of the side sill reinforcement 27 project in opposite directions as best shown in Figs. 3 and 4. The cross member 14 is seated upon the flange 31 of the side sill reinforcement and the flange 31 is secured to the cross member by a weld 32 and the flange 28 of the reinforcement is secured to the cross member by a weld 33. A floor 34 is comprised of a plurality of metal sheets 35 arranged end to end and having corrugations 36 extending transversely of the car and wooden boards 37 are disposed in the corrugations; this being the floor construction over the major length of the car. However, over the bolsters 14 this floor construction is changed somewhat. The endmost corrugation 38 of the adjacent sheet 35 is positioned upon and welded to the top cover plate 17 of the bolster 14 as best shown in Fig. 1. A single metal member 39 in the form of a corrugation extends transversely of the car over the middle of the bolster 14 and is welded to the top cover plate 17 of the bolster. A pair of wooden boards 40 and 41 are positioned upon the top cover plate 17 on opposite sides of the member 39.

The sheets 35 are welded to the other flange 42 of the side sill 24 by a weld 43 as shown in Fig. 3, and the member 39 is positioned upon the cross member 14 and welded to the flange 42 of the side sill 24 by a weld 44 as shown in Fig. 4. Spaced gusset plates 45 are secured to the side sill 24 by welds 46 and to the side sill reinforcement 27 by welds 47. The member 23 and the side sill 24 together form a hollow beam rectangular-shaped in cross-section and the flanges 30, 42, 48, and 49 form the four sides of the beam, as best shown in Figs. 3 and 4.

The method of securing the side wall 12 to the underframe 11 comprises the following steps. The intumed

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L-shaped member 23 is welded to the bottom of the side wall 12 to form one subassembly. The outturned L-shaped side sill 24 is welded to the underframe 11 to form another subassembly. The first subassembly is then secured to the second subassembly by welding the member 23 to the side sill 24 by welds 25 and 26 as best shown in Figs. 3 and 4.

From the foregoing it will be seen that there has been provided a novel means and method of attaching the side wall of a railway car to the underframe thereof so that a beam extending the entire length of the car is formed at the point of joinder of the side wall to the underframe which greatly strengthens the car body. Further, there has been provided a novel means of securing the side sill, side sill reinforcement, cross member, and flooring together which greatly strengthens the car body.

What is claimed is:

1. In a railway car having a side wall and an underframe, a side sill attached to the underframe, extending substantially the full length of the car, and being L-shaped in cross section throughout its full length, and a member depending from the side wall, having substantially the same length as the side sill and being L-shaped in cross section throughout its full length, the free edges of said sill and member being at the upper inner and lower outer edges of the sill and member respectively, and said edges of the sill and member being secured together so that the sill and member form a beam of rectangular cross section.

2. In a railway car having a side wall and an underframe, a side sill attached to the underframe, extending substantially the full length of the car, and being L-shaped in cross section throughout its full length, and a member depending from the side wall, having substantially the same length as the side sill and being L-shaped in cross section throughout its full length, the free edges of said sill and member being at the upper inner and lower outer edges of the sill and member respectively, and said sill

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and member being secured together by welds joining the two upper inner edges and by welds joining the two lower outer edges, both welds extending the full length of the edges, so that the sill and member form a beam of rectangular cross section.

3. In a railway car having a side wall and an underframe, a side sill attached to the underframe, extending substantially the full length of the car, and having an upper inner and a lower outer free edge, a member depending from the side wall and having substantially the same length as the side sill and having an upper inner and a lower outer free edge, means securing the upper inner free edge of the member to the upper inner free edge of the side sill, and means securing the lower outer free edge of the member to the lower outer free edge of the side sill, the member and the sill together forming a beam having four sides with said free edges diagonally opposite each other.

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