Jan. 17, 1939. J. F. COMEE ET AL 2,144,450

CAR REINFORCING CONSTRUCTION

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Fig. 1

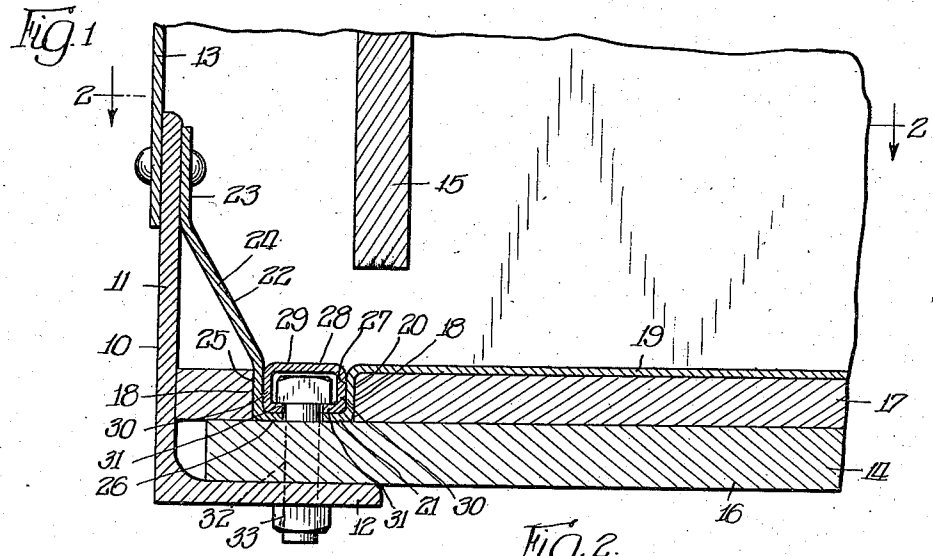


Fig. 2.

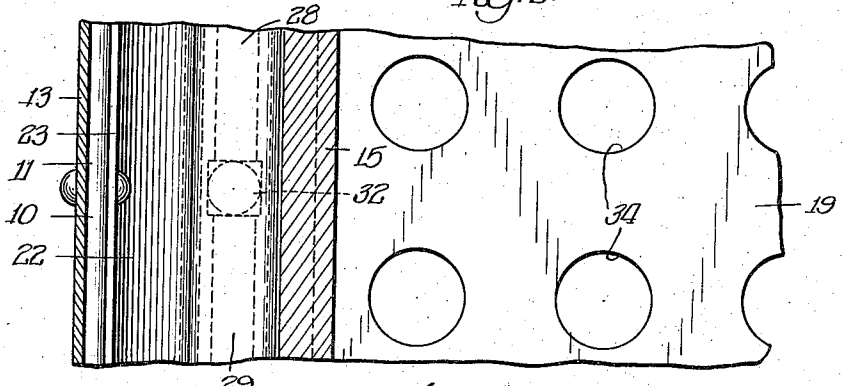
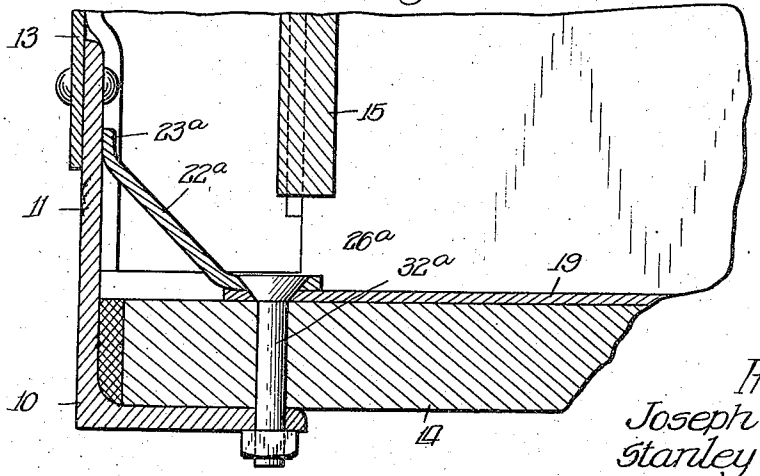


Fig. 3



Inventors.
Joseph F. Comee,
Stanley J. Stone,
By Wilkinson, Huxley, Byron & Knight
Attys.

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CAR REINFORCING CONSTRUCTION

Joseph F. Comee and Stanley J. Stone, Chicago, Ill., assignors to Chicago-Hutchins Corporation, Chicago, Ill., a corporation of Delaware

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5 Claims. (Cl. 105—424)

The present invention relates to improvements in car reinforcing construction.

In box car construction it is common practice to provide a wood floor member which may be sheathed with metal plates. Such cars are commonly used for bulk lading which may be of relatively small grain size. In service, leaks frequently occur, permitting the escape of a portion of such lading, resulting in considerable financial loss.

An object of the present invention is to provide a reinforcing construction for railway box cars which is simple in construction, which may be readily applied, and which is efficient in operation.

A further object is to provde a reinforcing construction which will unite the floor plate construction referred to the car body in a manner which will reinforce the floor plate construction and which will prevent the leaks referred to.

A further object is to provide a reinforcing construction for railway box cars which will effectually seal up the edges at the floor of the car and will cooperate with the usual floor plate construction, to the end that an efficient sealing and reinforcing means is provided without requiring great accuracy in workmanship.

Further objects will appear as the description proceeds.

Referring to the drawing—

Figure 1 is a sectional view taken transversely of a railway box car and showing a portion of shch a car;

Figure 2 is a sectional view taken along the plane indicated by the arrows 2—2 of Figure 1; and

Figure 3 is a view similar to Figure 1 but showing a modification.

Referring first to Figures 1 and 2, the numeral 10 indicates the side sill of a car. The particular side sill chosen for illustration is an angle member having a vertically disposed flange 11 and a horizontally disposed flange 12. The vertical flange 11 has secured thereto the side sheathing of the car, which side sheathing is indicated by the numeral 13. Secured to the horizontal flange 12 is the wooden floor member 14. Disposed inwardly of the sheathing 13 is the wood lining 15. The floor member 14 is illustrated as being made up of two layers of boarding 16 and 17. The layer of boarding 17 may be made up of sections to provide grooves, one of which is indicated by the numeral 18. Said grooves 18 serve to receive downwardly extending portions of metallic floor plate construction, indicated as a whole by the numeral 19. Each downwardly extending portion includes the downwardly extending flange 20 and the horizontally extending flange 21. Also located in the groove 18 is the grain strip or reinforcing strip 22. As clearly indicated in Figure 1, the strip 22 comprises the flange 23 adapted to be secured to the upwardly extending flange 11 of the side sill 10. Said strip 22 also includes the diagonal portion 24, the vertically extending portion 25 and the horizontally extending flange 26. The vertically extending portion 25 and flange 26 lie within the groove 18 in the floor member 14. The portion 25 and the flange 26 of the strip 24 and the downwardly extending flange 20 and the horizontally extending flange 21 of the floor plate construction 19 form a groove indicated by the numeral 27. Disposed within the groove 27 is the batten 28. Said batten comprises a channel member having the horizontal wall 29, the vertically extending walls 30—30, and the horizontally extending flanges 31—31. Disposed within the channel forming the batten 28 are the heads of a plurality of bolts 32. The head of each of said bolts 32 will fit within the walls 30—30 of the batten 28 sufficiently closely to prevent turning of said head. The shank of each of said bolts 32 extends downwardly between the flanges 31—31 of the batten 28 and between the flange 26 of the strip 22 and the flange 21 of the floor plate construction 19. Nuts 33 are provided for tightening up the bolts 32, whereby to hold the batten 28 in securing relationship with the flange 26 of the strip 22 and the flange 21 of the floor plate construction 19. A plurality of bolts 32 will be disposed longitudinally of the batten 28, whereby to minimize the loosening effect if certain of said bolts 32 should become loose. The flange 23 of the strip 22 may be riveted and/or welded to the inner side of the flange 11 of the side sill 10. The floor plate construction may be provided with the holes 34 to provide an anti-skid surface and to permit the use of nails for securing blocks to the wood floor member 14 for preventing shifting of lading.

Strips 22 may extend along the two side walls and the two end walls of the car, the end strips being mitered to the side strips.

By reason of the construction above described, the strip 22 will provide a reinforcing construction between the floor 14, including the floor plate construction 19 thereof, and the side sill and end sill of the car. Moreover, said strip will effectually prevent the escape of bulk lading through any cracks or openings which may develop in service at the side edges or ends of the floor of

the box car. The construction has the advantage that the functions above referred to may be had without accurate workmanship in mounting the floor or the floor plate construction within the car.

The description of the construction shown in Figure 3 will be clear without detailed explanation. In the construction shown in Figure 3, the strip 22*a* has the upwardly extending flange 23*a* lying against the flange 11 of the side sill 10. Said flange 23*a* may be welded or otherwise secured to said side sill. Said strip 22*a* is provided with a horizontally extending flange 26*a*. Said flange 26*a* is bolted to the floor 14 and the floor plate construction 19.

Though certain preferred embodiments of the present invention have been described in detail, many modifications will occur to those skilled in the art. It is intended to cover all such modifications that fall within the scope of the appended claims.

What is claimed is—

1. Box car construction comprising, in combination, a sill comprising an angle member having a pair of flanges, a floor carried by one of said flanges, and a grain strip secured at one side to said floor and to said one flange and secured at its other side to the other flange of said angle member, said strip having an intermediate portion disposed in angular relationship with said flanges.

2. In box car construction, in combination, a sill comprising an angle member, a floor member carried by one flange of said angle member, floor plate construction carried by said floor member, a protective strip having a portion disposed in angular relationship with the flanges of said angle member, and securing means cooperating with a side edge portion of said strip and with said sill and with said floor plate construction for holding said floor plate construction in rigid relationship with said floor member and with said sill.

3. In box car construction, in combination, a sill comprising an angle member having two flanges at right angles to one another, a floor member carried by one of said flanges, said floor member being provided with a longitudinal groove, floor plate construction having an edge portion seated within said groove and providing a horizontally presented portion, a protective strip having a side edge portion secured to said sill and having a horizontal flange disposed within said groove, said strip having a portion diagonally disposed with respect to the flanges of said sill, and a batten disposed within said groove and cooperating with said flanges of said strip and said floor construction for holding said strip and said floor construction in rigid relationship with said floor member and said sill.

4. In box car construction, in combination, a sill comprising an angle member, a floor member carried by one flange of said angle member, floor plate construction carried by said floor member, a protective strip having a portion disposed in angular relationship with the flanges of said angle member, said protective strip having a side edge portion secured to said sill, the other side edge portion of said strip having a flange, and a batten cooperating with said other side edge portion and with said floor plate construction for holding said other side edge portion and said floor plate construction in abutting relationship with said floor member.

5. In box car construction, in combination, a sill comprising an angle member, a floor member carried by one flange of said angle member, floor plate construction carried by said floor member, a protective strip having a portion disposed in angular relationship with the flanges of said angle member, said protective strip having a side edge portion secured to said sill, the other side edge portion of said strip having a flange, a batten cooperating with said other side edge portion and with said floor plate construction for holding said other side edge portion and said floor plate construction in abutting relationship with said floor member, said batten having a cross section in the form of a box having one side slotted, and bolts having their heads located within said box, and shanks extending through said slotted side, said bolts extending through said floor member.

JOSEPH F. COMEE.
STANLEY J. STONE.