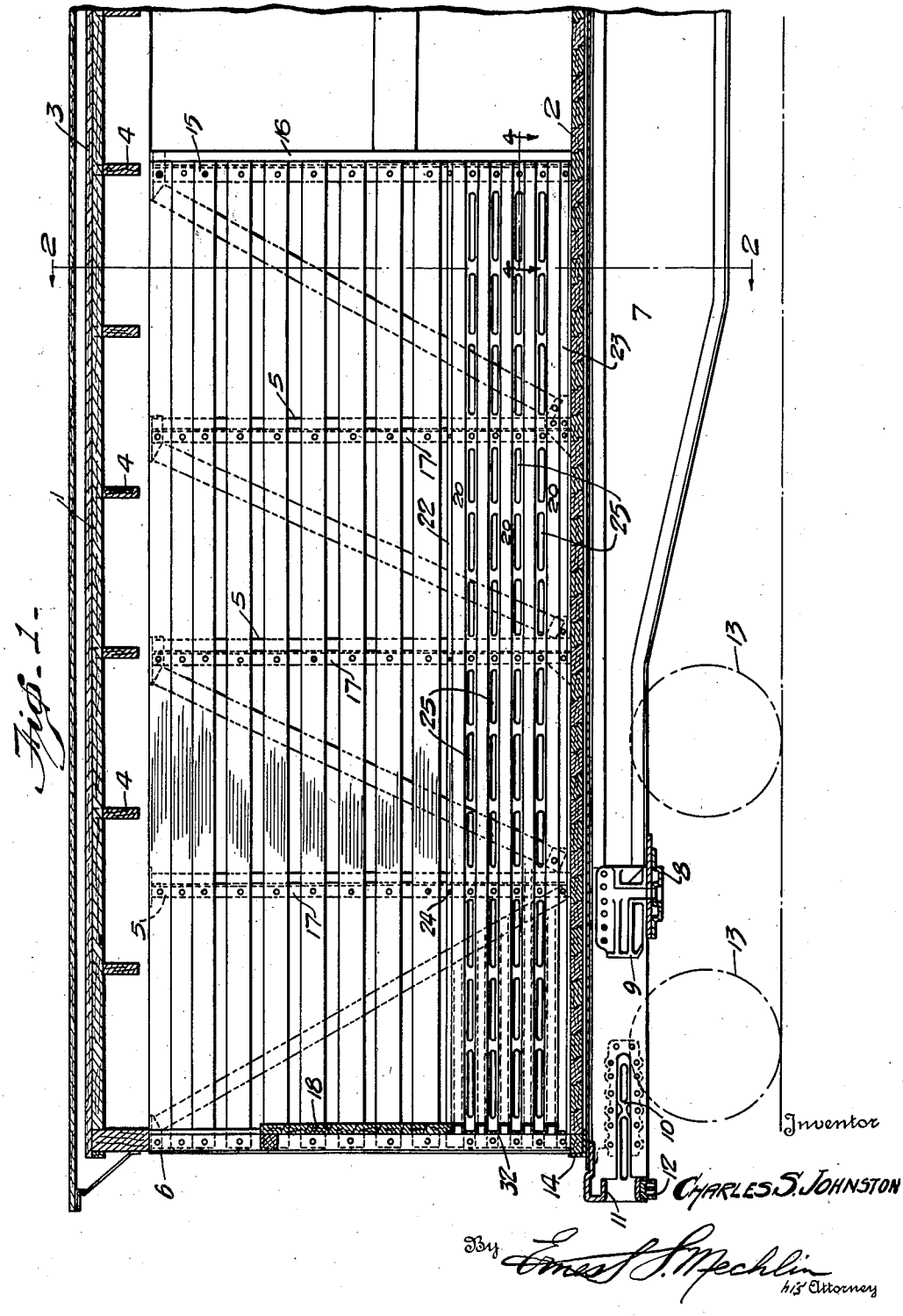
April 13, 1943. C. S. JOHNSTON 2,316,696

FREIGHT CAR

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FREIGHT CAR

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Fig. 2.

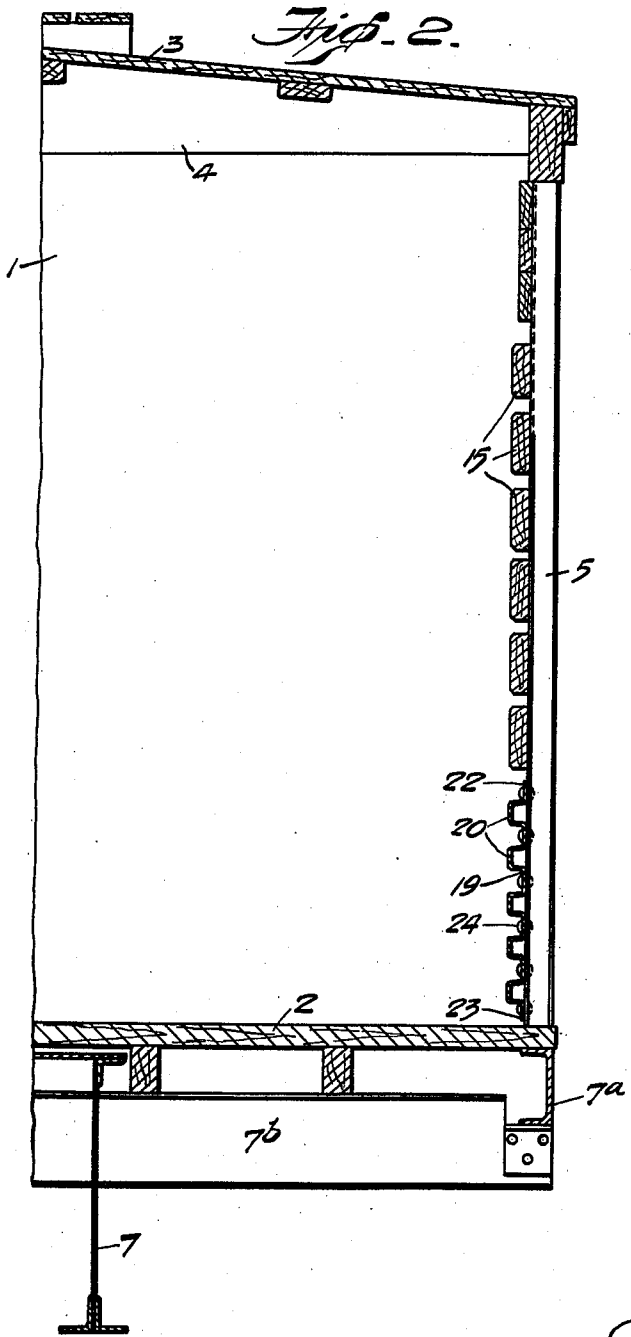


Fig. 3.

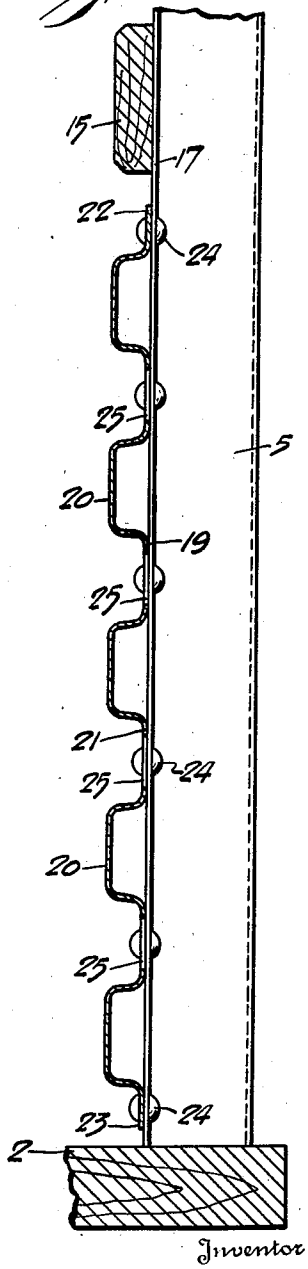
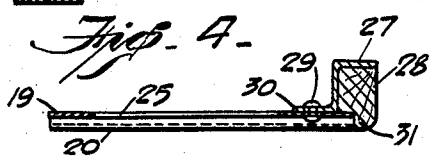


Fig. 4.



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2,316,696

FREIGHT CAR

Charles S. Johnston, Chicago, Ill.

Application June 25, 1941, Serial No. 399,695

4 Claims. (Cl. 105—409)

The invention relates to freight cars and more particularly to improvements in the wall structure of stock or cattle cars.

The principal object of the invention, generally considered, is to provide a composite wall structure having a metallic member or lower wall portion and an upper portion formed of wooden horizontal slats, the composite wall not only preventing injury to the stock transported in such cars but serving also to materially strengthen the wall structure thereof.

A still further object of my invention is to provide, as a part of such composite wall structure, pressed or rolled plate members corrugated or convoluted so as to provide convolutions substantially equal in depth to the wooden slats, said convolutions projecting inwardly into the car body so as to be in substantial alinement with the inner faces of the slats, said members being further provided intermediate said convoluted portions with open slots for reducing the weight of said plates without detrimentally affecting the strength thereof.

A still further object of my invention is to provide plate members in composite walls of the character described, said members having adjacent the sides and end wall posts flat surfaces formed from convolutions for engagement with said posts, said surfaces providing means whereby the plates may be secured effectively in position.

Still another object of the invention is to provide plates for use in composite wall structures for stock or cattle cars, certain of which plates are readily adaptable for rigidly connecting the same to adjacent door posts without any sacrifice of rigidity in the car structure.

Other objects of the invention will hereinafter appear from the more detailed description of the same, particularly when the invention is considered in connection with the accompanying drawings, in which:

Figure 1 is a vertical longitudinal section of a stock car showing the invention applied to a side and end wall thereof.

Figure 2 is a transverse vertical section taken on line 2—2 of Figure 1.

Figure 3 is an enlarged fragmentary section showing the form and method of connection between the plate and a side or end post.

Figure 4 is a fragmentary section taken on line 4—4 of Figure 1, showing the method of connection between the plate and a door post.

Throughout the specification and drawings like parts are designated by like reference characters.

The numeral 1 designates generally, a characteristic stock car body, the latter being provided with a floor 2, a roof 3, carlines 4, side posts 5, and end posts 6. Beneath the floor 2 there is provided the usual center sill 7, side sills 7a, cross sills 7b, center bearing 8, center filler 9, cheek plates 10, striking casting 11 and coupler carry iron 12. The truck wheels 13 are diagrammatically illustrated positioned on either side of the center plate 8.

As is usual in stock car construction, there is provided, projecting upwardly from the side sills, the side wall posts 5, and projecting upwardly from the end sill 14 are the spaced end posts 6. Slats 15 arranged in horizontally extending vertically spaced relation are provided to form the upper portion of the composite wall, said slats extending from the ends of the car to the door posts 16, each slat being bolted to the inner flange 17 of one of the posts 5 and likewise at the car ends the slats or other type of lining extend from a point spaced from the car floor to the upper end of the side posts 5 and the end posts 6. The composite end walls of the car are formed by providing matched boards extending the full width of the end, said boards preferably terminating in alinement with the lower edge of the lowermost side slat. This construction is illustrated in Figure 1 by the reference character 18.

The wall structure formed entirely from wooden slats is a constant source of possible injury to stock transported by the car. These slats often crack and splinter and in the event of derailment break from the posts and cause terrific injury to the cattle. I therefore form a composite wall structure in which I replace the lower rows of slats by a plate or plates such as are designated by the reference character 19. Each of these plate structures is provided with a series of inwardly projecting convolutions 20 having interposed between each of said convolutions an oppositely directed convolution, the latter each having a flattened portion 21. Extending both upwardly and downwardly from the outer edge of the upper and lower convolutions I provide flanges 22 and 23, respectively. The flattened portions 21 adjacent the flange 17 of each side post 5 are provided with openings through which and through corresponding openings in said flange rivets 24 are adapted to be passed, said rivets serving to rigidly unite the plate 19 with the side posts 5. The flattened portions 21,

formed by the out-turned convolutions, are also each provided with a series of longitudinal slots **25**, said slots being positioned between each adjacent pair of posts **5** or **6**.

A composite door post **16**, comprising the angle member **27** and the wooden post **28**, is adapted to be connected to the plates **19** by means of the rivets **29** which extend through suitable openings provided in the flange **30** of the angle member **27** and through suitable openings provided in the flattened portions **21** and the flanges **22** and **23**, the wooden beam or post **28** being recessed, as at **31**, to receive the projecting end of the plate **19**.

Also, I substitute in each car and for the corresponding portion of the end sheathing **18**, a plate **32** corresponding in form and construction to the plate **19**. These plates are, of course, connected to suitable flanges of the end posts **6**.

It will be readily apparent from the foregoing description that I have provided a convoluted plate, the inner face of the convolutions **20** being substantially in alinement with the inner faces of the slats so that these convolutions **20** form in effect a smooth side wall which will effectively prevent injury to the stock carried by the car and that I have also provided in place of the usual wooden slats at points of maximum wear, plates of steel which are not liable to splinter and which cannot separate from the side or end posts without the destruction of the entire car body. Further, by providing a series of openings interposed between adjacent uprights, I not only lighten the plates but provide ample space for the passage of air. The plates **19** and **32** being of metal, are not affected by water used to clean the car and there is no tendency for these plates to shrink or warp as did the wooden slats heretofore used.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A composite wall for stock cars comprising a plurality of spaced uprights, a plurality of horizontally extending slat members each formed of wood and connected to the inner faces of a plurality of said uprights, the lowermost slat member being spaced from the lower end of said wall, a metal plate member interposed between the lower end of said wall and the said slat member, said metal plate member being provided with a plurality of horizontally extending convolutions, the inner vertical faces of all of said convolutions lying substantially in the vertical plane of the inner faces of said slat members, and means for connecting said convoluted plate member to the adjacent faces of said uprights.

2. A composite wall for stock cars comprising a plurality of spaced uprights, a plurality of horizontally extending slat members each formed of wood and connected to the inner faces of a plurality of said uprights, the lowermost slat member being spaced from the lower end of said wall, metal plate members engaging the lower ends of said uprights beneath the adjacent slat member, said plate members being of convoluted form, the faces of certain of said convolutions engaging and being connected to said uprights, the vertical faces of the alternating convolutions being coplanar with the inner faces of said slats, said first named convolutions each being provided with a series of longitudinal slots therein intermediate the points of connection to said uprights.

3. A composite wall structure for stock cars comprising spaced upright post members connected at opposite ends to the roof and floor structure of the car, the upper portion of said wall comprising a plurality of horizontally extending vertically spaced wooden slat members each of which is connected to the inner face of a plurality of said posts, the lower portion of said wall structure comprising one or more metal plates with alternating oppositely directed convolutions, the faces of one set of convolutions being coplanar with the inner wall of said post and the vertical faces of the opposite set of convolutions being coplanar with the vertical inner faces of the slats, and means extending through said first named convolutions for uniting said plates to said post members.

4. A composite wall structure for stock cars comprising spaced upright post members connected at opposite ends to the roof and floor structure of the car, the upper portion of said wall comprising a plurality of horizontally extending vertically spaced wooden slat members each of which is connected to the inner face of a plurality of said posts, the lower portion of said wall structure comprising a metal plate or plates each of which is provided with smooth inner faces spaced from adjacent recessed portions, the said faces being coplaned with the vertical inner faces of said slat members, and means for rigidly uniting the said plate to a plurality of said post members.

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