Nov. 2, 1937. C. E. EKLIND 2,098,183

HOUSE CAR

Filed Jan. 21, 1936 3 Sheets-Sheet 1

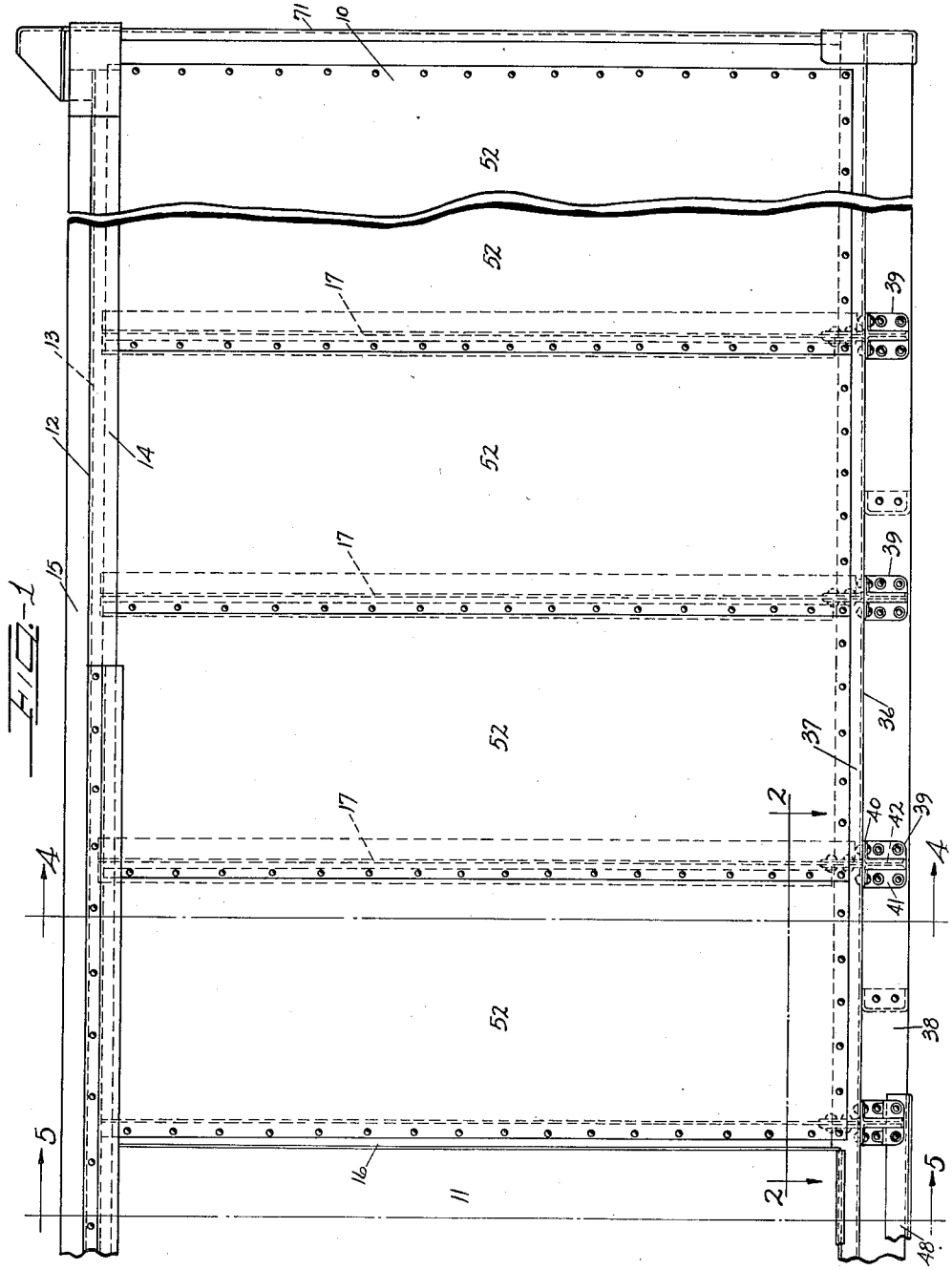


FIG. 1

~INVENTOR~
CARL E. EKLIND

By~Samuel Reese
ATTY.

Nov. 2, 1937. C. E. EKLIND 2,098,183

HOUSE CAR

Filed Jan. 21, 1936 3 Sheets-Sheet 2

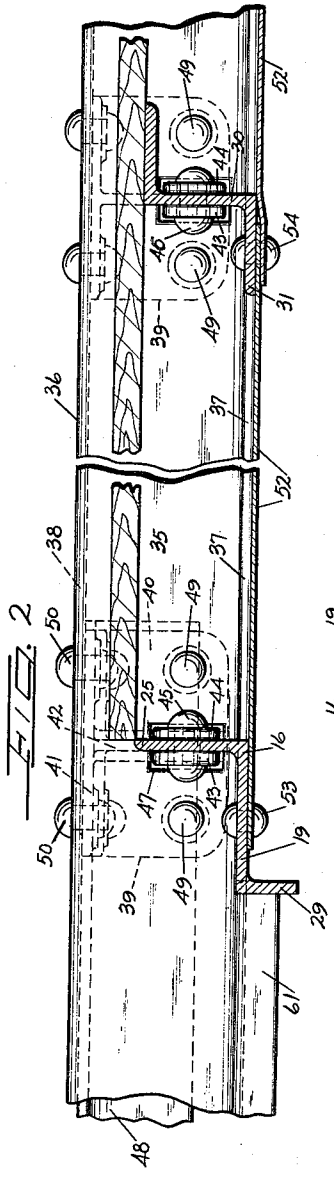


FIG. 2

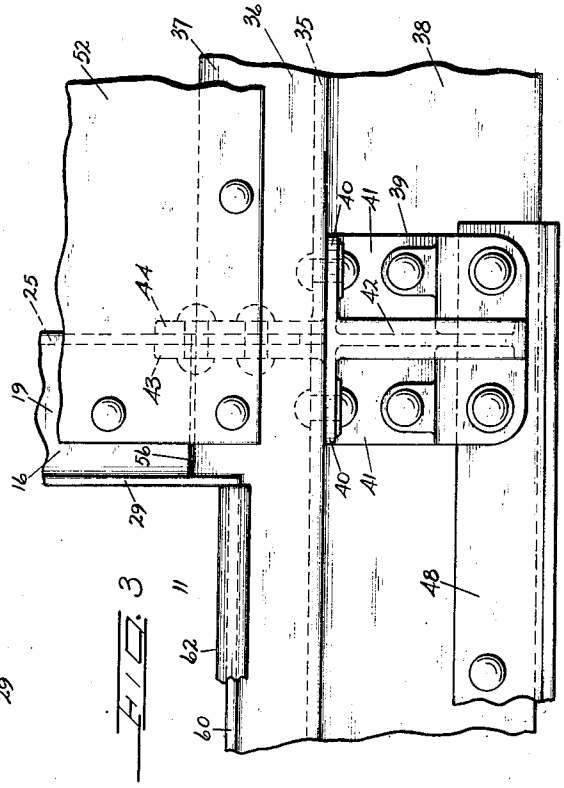


FIG. 3

~INVENTOR~
CARL E. EKLIND
By Samuel Reese
ATTY.

Nov. 2, 1937. C. E. EKLIND 2,098,183

HOUSE CAR

Filed Jan. 21, 1936 3 Sheets-Sheet 3

FIG.-4

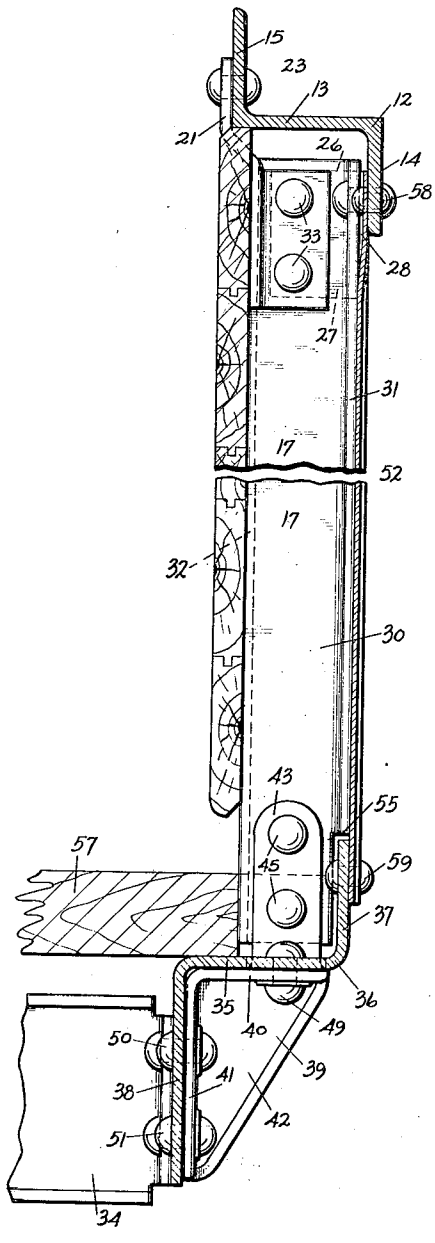
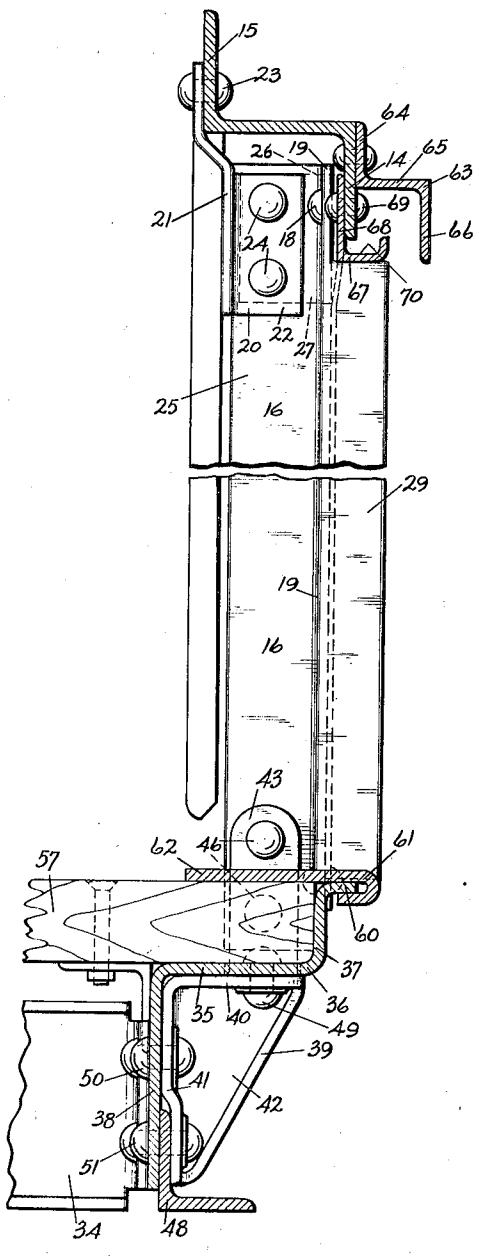


FIG.-5



-INVENTOR-
CARL E. EKLIND
By- Samuel Reese
ATTY.

Patented Nov. 2, 1937 2,098,183

UNITED STATES PATENT OFFICE

2,098,183

HOUSE CAR

Carl E. Eklind, Chicago, Ill., assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio

Application January 21, 1936, Serial No. 60,085

7 Claims. (Cl. 105—409)

This invention relates to improvements in railway house cars.

Various proposals have been offered looking toward the conversion of wooden sheathed railway house cars having metallic underframes to metallic sheathed house cars whose cubical capacity is substantially increased. According to one proposal the existing metallic side sills of these wooden sheathed cars have been utilized and metallic members employed to close the space introduced by the spacing of the metallic sheathing of the car side walls outwardly of the side sills to provide for the desired increase in inside width of the car and, hence, in its cubical capacity. The posts of the car side walls have, similarly, been spaced outwardly of the side sills, the spacing of which defines the width of the car underframe.

The instant invention departs from this proposal which has now become accepted practice in railway house car conversion as well as all other proposals and affords a conversion for wooden sheathed house cars having metallic underframes and more especially in the case of those wooden sheathed house cars whose underframes embody wooden side sills. The instant invention presents also a conversion of wooden sheathed house cars wherein the metallic side sills of the car underframes had best be replaced and as well for a conversion to metallic railway house cars of those freight cars not designated as house cars which may or may not in their former condition be provided with side sills. In these instances the desired increase in inside width and cubical capacity may be obtained.

It is an object of this invention, therefore, to provide a car side construction which may be erected as a unit or not, as desired, applicable for the conversion of wooden sheathed cars to metallic sheathed cars and as well in the construction of new metallic house cars, wherein an increase in cubical capacity is obtainable and the member for spanning the interval between the sheathing and the cross members of the underframe of the car constitutes the side sill of said underframe.

A further object is to provide a car side construction, the bottom member of which extends continuously from end to end of the bar whereby said member when secured to the cross members of a car underframe serves not only to span the gap between the sheathing and the cross members but serves also as the side sill of said underframe thereby dispensing with the need for a separate side sill.

A further object is to provide a car side wall as a unitary structure applicable as such in railway house car construction, wherein said side wall unit shall incorporate a combined spanning and side sill member.

A further object is to provide a car side wall structure including a combined spanning and side sill member of angular construction presenting an upstanding flange which is deformed in the door opening provided in said side wall to constitute a support for a threshold plate disposed in said door opening.

A further object is to provide side wall construction for metallic railway house cars including a side plate, door and intermediate posts, metallic sheathing and a combined spanning and side sill member secured to the sheathing and extending from end to end of said side wall construction wherein said combined member lies below the ends of said posts to permit employment of substantially the same connecting brackets for establishing direct connection between the bottoms of said posts and said member.

Other objects of the invention will become clear as the description thereof proceeds.

In the drawings forming part of this specification:

Figure 1 is a partial elevation of a side wall construction embodying the instant invention.

Figure 2 is a horizontal section taken on line 2—2 with parts omitted in order to better illustrate the invention.

Figure 3 is an enlarged fragmentary elevation of the side wall construction at the lower right-hand corner of the door opening provided in the side wall.

Figure 4 is a vertical section taken on line 4—4 of Figure 1.

Figure 5 is a vertical section taken on line 5—5 of Figure 1.

Referring to the drawings which illustrate a preferred embodiment of the invention the numeral 10 designates in its entirety a side wall construction for railway house cars, the extent of which is substantially from one end of the side wall to and including a portion of the door opening 11 provided therein. It is to be understood that the remaining portion of the side wall 10 is complemental to that portion illustrated.

The side wall construction 10, which is preferably erected as a unit for application in the construction or in the conversion of a railway house car, embodies a side plate 12 which extends continuously from end to end of the side wall. As illustrated in Figures 4 and 5 of the drawings the

side plate 12 is of Z cross section and is arranged with its web 13 horizontally, the outer vertically disposed leg 14 extending downwardly and the inner vertically positioned leg 15 extending upwardly. To the side plate 12 door posts, one of which is indicated at 16, and spaced intermediate posts 17 are secured. This securement is effected in the case of each door post by means of rivets 18 passing through the web 19 of the door post and the depending leg 14 of the side plate. Additional securement of the upper portion of the door post to the side plate is obtained by means of an angle member 20, one leg 21 of which is extended upwardly above the leg 22 for securement to the inner vertical leg 15 of the side plate as by means of rivets 23 while the leg 22 is riveted as indicated at 24 to the inwardly extending flange 25 of the door post. A further securement between the upper portion of the door post and the side plate is had by means of an angle clip 26, the flange 27 of which is secured to the inwardly extending leg 25 of the door post and the flange 28 of which is riveted to the depending leg 14 of the side plate. By reason of this securement it will be apparent that a very rigid connection between the upper portion of the door post and the side plate is obtained. It will be clear from the foregoing description of the securement of the upper portion of the door post to the side plate, together with the fact that the door post is of substantially Z cross section, that said post is arranged with its web 19 parallel to the side wall construction. The inwardly extending flange 25 and the outwardly extending flange 29 are at right angles to said wall construction.

For the securement of the upper portion of each of the intermediate posts 17 to the side plate the member 20 and the clip 26 are utilized in addition to the securement of the intermediate post to the depending leg 14 of the side plate. It will be clear from Figure 2 of the drawings that each of the intermediate posts is arranged relative to the side wall construction so as to present its web 30 at right angles to the side wall and its flanges 31 and 32 extending parallel thereto. By virtue of this arrangement of the intermediate door posts the flange 22 of member 20 will be riveted as indicated at 33 to the web 30 of the post while the flange 21 will, as in the case of the door post, be riveted to the upstanding leg 15 of the side plate. Similarly, because of this arrangement of the intermediate post, the flange 27 of the angle clip 26 will be secured to the web of the intermediate post by means of the rivets 33 utilized to secure the flange 22 of the member 20 to said web. The flange 28 of the clip 26 will be riveted to the depending leg 14 of the side plate and the flange 31 of the intermediate post will also be riveted to the depending leg 14 of the side plate.

From the points of securement of the posts to the side plate these posts extend downwardly and terminate, as indicated in Figures 4 and 5 of the drawings, short of the cross members 34 of the car underframe. As shown in these figures of the drawings the door and intermediate posts are spaced outwardly beyond the ends of the cross members a distance sufficient to give the desired increase in inside width of the house car.

The lower ends of the door and intermediate post terminate above the web 35 of a substantially Z-shaped member 36 which extends continuously from end to end of the side wall construction. The member 36 is so disposed that its web 35 extends substantially horizontally while the vertical flanges 37 and 38 are directed respectively upwardly and downwardly from the web 35. The flange 37 is disposed outwardly while the flange 38 is disposed inwardly. Upon securement of the lower ends of the door and intermediate posts the frame construction for the side wall embodying the side plate, the door and intermediate posts and the bottom member 36 becomes integrated.

This securement is obtained by means of brackets 39 preferably in the form of castings. Each bracket 39 comprises a horizontal flange 40 and a vertical flange 41. These flanges are secured together and reinforced by means of an integral triangularly shaped rib 42. Spaced flanges 43 and 44 extend upwardly from the horizontal flange 40 for securement to the door and intermediate posts. With regard to the door post 16 the flanges 42 and 43 are disposed upon opposite sides of the inwardly extending flange 25 and are riveted to said flange as indicated at 45. In the case of the intermediate post the flanges 43 and 44 are disposed upon opposite sides of the web 30, being secured thereto by means of rivets 46. To obtain the securement of the flanges 43 and 44 to the door and intermediate posts the web 35 of the botom member 36 is coped, as indicated at 47, to permit extension of said flanges upwardly through said web for the purpose indicated. It will be observed from Figures 4 and 5 of the drawings that by reason of the employment of a continuous bottom member 36 the connecting brackets for securing the lower portions of the door and intermediate posts to said continuous member may be identical in construction. In Figure 5 the lower portion of the connecting bracket 39 is shown offset somewhat at its lower portion in order to provide for the instance where a reinforcing member 48 is utilized to strengthen the continuous member 36 across the door opening 11 of the side wall. The connecting brackets 39 are fastened to the web 35 of the bottom continuous member 36 by means of rivets 49 and are fastened additionally to the inner depending flange 38 of the continuous member 36 by means of rivets 50 and 51.

The side wall construction embodies additionally metallic sheathing composed preferably of a plurality of metallic panels 52 extending between and secured to the web of the door post as by means of rivets 53 and to the flange 31 of each intermediate post as by rivets 54. At each intermediate post the panels 52 are overlapped, as shown in Figure 2 of the drawings.

Referring to Figures 2, 4 and 5 of the drawings it will be seen that the upstanding vertical leg 37 of the continuous member 36 is arranged in vertical alinement with the web 19 of the door post 16 and the flange 31 of each intermediate post. In view of this fact each intermediate post is coped, as indicated at 55, in order to receive the flange 37 of the continuous member. To provide for the proper disposition of the leg 37 at the door post, the web 19 of the latter is coped, as indicated at 56. The inwardly directed flange 25 of the door post extends downwardly below the web so as to provide for securement of the door post to the upstanding flanges 43 and 44 of the connecting brackets 39. The outwardly directed vertical flange 29 of the door post terminates, as indicated in Figure 3 of the drawings, at substantially the level of the floor 57.

The upper margins of the metallic panels 52

are riveted to the depending leg 14 of the side plate as by means of rivets 58 and the lower margin of each of the metallic panels is riveted to the upstanding flange 37 of the continuous member 36 as by means of rivets 59.

It will be apparent from a consideration of Figure 5 of the drawings that the upstanding flange 37 of the continuous bottom member 36 projects above the upper plane of the floor 57. To eliminate this projection and at the same time maintain the cross section of the continuous member 36, the flange 37 is bent outwardly to provide a horizontal flange 60 lying in the plane of the floor 57. This flange 60 is utilized additionally to provide a support for the projecting portion 61 of a threshold plate 62 disposed upon the floor in the door opening.

Guide retaining and weatherproofing means is provided on the car side construction by means of a Z-shaped member 63 arranged with its upstanding leg 64 riveted to the depending leg 14 of the side plate, its web 65 extending outwardly so as to dispose the depending leg 66 in spaced relation to the depending leg 14 of the side plate and in spaced relation to a substantially J-shaped header member 67, the upstanding flange 68 of which is riveted to the depending leg 14 of the side plate as by rivets 69. The header member 67 provides a trough 70 which serves to collect and drain water outwardly of the door opening.

As indicated hereinbefore the construction hereinabove described is preferably erected as a unit for application in the construction or in the conversion of railway house cars. This application is effected by means of the securement of the vertical depending leg 38 of the bottom continuous member 36 to the ends of the cross members 34 as clearly indicated in Figures 2, 4 and 5 of the drawings. The side wall construction is secured at each end to a car end designated generally by the numeral 71. The continuous member 36 is, therefore, constructed to have such cross sectional area that it will provide not only the means for spanning the gap between the lower margin of the sheathing and the ends of the cross members but will function at the same time as the side sill for the car underframe. The continuous member 36, therefore, dispenses with the separate side sills heretofore utilized and takes unto itself the function formerly performed by such separate side sill.

It will be apparent that numerous changes and modifications in the details of the invention will be clear to those skilled in the art. It is intended, therefore, that all such modifications and changes be comprehended within this invention, which is to be limited only by the scope of the claims appended hereto.

I claim:

1. A railway house car converted from a wooden sheathed house car having an underframe, including metallic cross members and side sills, said converted house car embodying the parts of said underframe with the exception of said side sills which are removed, metallic side and door posts spaced laterally outwardly of the ends of said cross members, side plates, means securing the upper ends of said posts to said side plates, metallic sheathing, means securing the upper margin of said sheathing to said side plates, means securing said sheathing to said posts in laterally outwardly spaced relation to the ends of said cross members, metallic connecting members for closing the space between said sheathing and cross members secured to the lower margin of said sheathing, said connecting members extending inwardly below the lower ends of said posts and being secured directly to said cross members, said connecting members extending continuously from end to end of the car and constituting side sills for said underframe and brackets secured to the lower ends of said posts and to said connecting members.

2. A railway house car converted from a railway freight car, said converted house car including the metallic cross members of the railway freight car, metallic side and door posts, side plates, means securing the upper portions of said posts to said side plates, metallic sheathing, means securing the upper margin of said sheathing to said side plates, means securing said sheathing to said posts in laterally outwardly spaced relation to the ends of said cross members and metallic connecting members for closing the space between said sheathing and said cross members, said connecting members being Z-shaped in cross section and having an outer upstanding flange secured to and along the lower margin of said sheathing, an inwardly directed flange and a downwardly directed flange secured directly to the end faces of said cross members, said connecting members extending continuously from end to end of said car and forming the side sills for the underframe of said converted house car, and brackets securing the lower ends of said posts to said connecting members.

3. A railway house car converted from a railway freight car, said converted house car including the metallic cross members of the railway freight car, metallic side and door posts spaced laterally outwardly from said cross members, side plates, means securing the upper portions of said posts to said side plates, metallic sheathing, said sheathing being secured along its upper margin to said side plates, said sheathing being secured to the outside of said posts in laterally outwardly spaced relation to said cross members, integral combined connecting and side sill members extending continuously from end to end of said car secured to and along the lower margin of said sheathing and extending inwardly therefrom and secured directly to said cross members, brackets for securing said posts to said combined connecting and side sill members, said brackets being arranged below and having flanges extending upwardly through said latter members, said flanges being secured to the lower portions of said posts.

4. A car side wall construction adapted to be applied as a unit in the assembly of a metallic railway house car and embodying metallic door and intermediate posts, metallic sheathing secured to said posts, a metallic member extending continuously from end to end of said side wall construction and secured to and along the lower margin of said sheathing, said posts terminating above said member and brackets rigidly securing said posts to said member, said metallic member extending inwardly for securement directly to the ends of cross members of the car underframe to constitute the side sill of said underframe.

5. A metallic car side wall construction for railway house cars comprising metallic sheathing and a metallic member embodying an upstanding flange, said member extending continuously from end to end of said wall construction and said upstanding flange being secured to the lower margin of said sheathing, a door opening provided in said wall construction, said upstanding flange in said opening being bent outwardly

to provide a flange adapted to support a threshold plate extending from said door opening, said metallic member extending inwardly for securement directly to the ends of cross members of a car underframe to space said sheathing laterally outwardly from said cross members and to form the side sill for said underframe.

6. A metallic car side wall construction for railway house cars comprising metallic sheathing, metallic door and intermediate posts and a metallic member extending continuously from end to end of said wall construction, said member being secured to the lower margin of said sheathing and having an inwardly extending flange disposed below the lower ends of said posts and a vertical flange adapted to be secured directly to the ends of cross members of a railway house car underframe, brackets secured directly to the lower ends of said posts and said vertical flange of said member, said member forming the side sill for said underframe and the means for spacing said sheathing laterally outwardly of said cross members.

7. A metallic car side wall construction for railway house cars comprising metallic sheathing, metallic door and intermediate posts and a metallic member extending continuously from end to end of said wall construction, said member being secured to the lower margin of said sheathing and having an inwardly extending flange disposed below the lower ends of said posts and a vertical flange adapted to be secured directly to the ends of cross members of a railway house car underframe, brackets secured directly to the lower ends of said posts and said vertical flange of said member, said brackets being substantially identical for said door posts and said intermediate posts, said member forming the side sill for said underframe and the means for spacing said sheathing laterally outwardly of said cross members.

CARL E. EKLIND.