

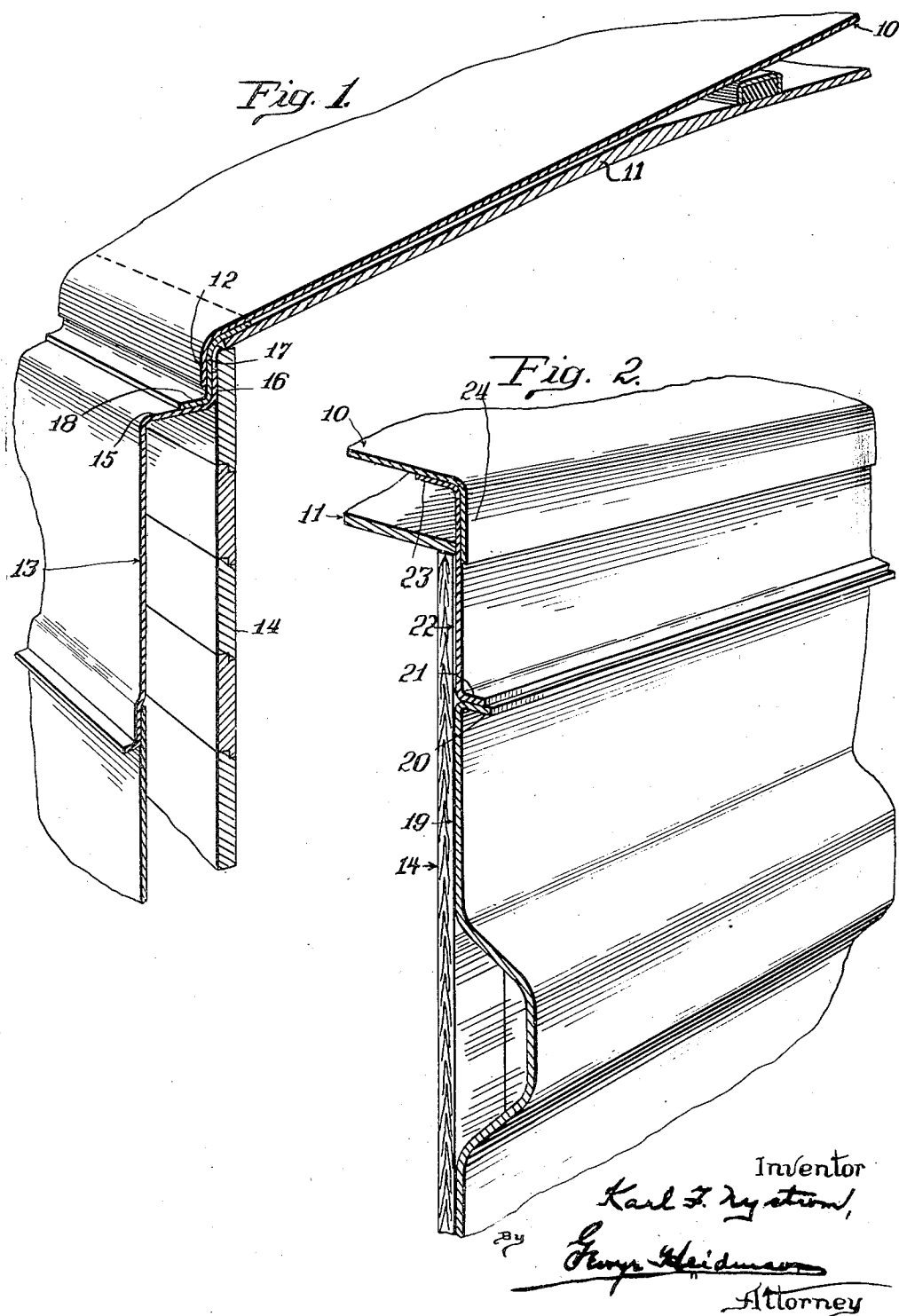
Jan. 16, 1945.

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2,367,603

HOUSE CAR

Filed Jan. 22, 1942



UNITED STATES PATENT OFFICE

2,367,603

HOUSE CAR

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Application January 22, 1942, Serial No. 427,725

1 Claim. (Cl. 105-410)

My invention relates to the construction of a house car and more particularly of a roof and ceiling unit for house cars which may be fabricated or assembled independently of the car sub-assembly and then applied to the sub-assembly and in conjunction therewith provide a rigid structure; the invention enabling the pre-fabrication of a single unit composed of metallic roof sheets and non-metallic ceiling elements secured together to permit the unit to be placed onto the car sub-structure and be rigidly secured thereto and to provide the house car with a uniform ceiling throughout.

The objects and advantages of my invention will be readily comprehended from the detailed description of the accompanying drawing wherein—

Figure 1 is a transverse sectional view in perspective of a portion of one side and of the roof and ceiling unit of a house car involving my invention.

Figure 2 is a perspective view of a portion of the end wall and end of the roof and ceiling unit.

My invention relates to the construction of the top of a railroad house car and more especially to the construction of a roof and ceiling unit which may be readily superimposed on the car sub-structure so as to permit the ceiling portion of the unit to effect proper relation with the inner walls of the car and the roof portion of the unit to be intimately secured to the side plates and end wall sheets of the car.

It is customary with certain car builders to pre-fabricate the roof and then apply it to the car sub-structure; securing the roof to the usual side plates and to the metallic end wall. In view of damage to certain lading, such as cereals, furniture and other commodities resulting from condensation on the metal roof sheets, it then became necessary to introduce non-metallic ceilings to prevent the moisture dropping on the lading and also prevent the creeping of frost from the roof exterior to the car interior; while at the same time providing a uniform smooth ceiling which would eliminate improper packing of such commodities as light cereal containers and prevent damage claims.

The application of a roof and ceiling unit to the car sub-assembly, consisting of side sheets, side plate, sub-side sill and posts and the car end walls, involved the difficulty of providing a separately constructed unit whose ceiling portion would permit proper contact with the inner walls of the car to be made; namely a unit which could

be readily applied without subjecting the ceiling and its fastenings to improper strains.

My invention relates to a structure designed to overcome the difficulties mentioned and involves a unit composed of the roof sheets 10 and the ceiling sheets 11 which are suitably suspended from or secured to the lower sides of the roof sheets, as for example in the manner disclosed in my application Serial Number 335,297, filed May 15, 1940.

The roof sheets extend from eaves to eaves of the car and are bent or curved downwardly at their ends as shown at 12 to overlap the upwardly disposed top longitudinal edges of the side plates 13 to which they are secured. The side plates as heretofore constructed, in order to afford proper support for the ends of the roof sheets, curved inwardly at their upper longitudinal edges and extended substantially throughout the curved ends of the roof sheets; with the curved longitudinal marginal portions of the side plates overlying the top of the inside wall or sheathing 14 of the car. With the side plates of the subassembly of the car constructed as described, proper application of a prefabricated roof and ceiling unit was impossible because seating of the ceiling portion of the unit on the upper edges of the inner car wall or sheathing was obstructed or prevented by the inwardly curved upper portions of the side plates.

In order to eliminate the difficulty mentioned I form the side plate 13 of the car sub-assembly with the substantially horizontal shoulder portion 15 and the vertically disposed flange or marginal portion 16 which terminates on the side of the car sub-assembly, in a plane preferably beneath the top of the inner wall 14 and hence in a vertical plane spaced from the vertical plane of the outer edge of the ceiling portion of the unit, as shown in Figure 1.

In order to impart sufficient rigidity to the combined roof and ceiling unit during fabrication and to properly reinforce the roof assembly and side plate portion of the car sub-assembly and also provide for a continuous flat welding or attaching surface, I provide an auxiliary side plate 17 which is transversely curved to match the curved ends 12 of the roof sheets 10, while the other or lower longitudinal marginal portion matches the contour of the upper end of the side plate and extends beyond the ends of the roof sheets in seating relation with the substantially horizontal shoulder portion 15 of the side plate 13. The auxiliary side plate 17 extends throughout the curved ends of the roof sheets and inter-

mediate the ends of the ceiling sheets or elements 11, thus providing a wide reenforcement for the roof sheet, as well as a wide attaching surface which permits the auxiliary side plate to be welded to the roof sheets and constitute an integral or intimate part of the combined roof and ceiling unit, while at the same time permitting a full width ceiling to be employed whose ends are in sealing contact relation with the top boards of the inner sheathing of the car sub-structure, as shown in Figure 1.

The outwardly disposed flat portion 18 seats on the horizontal shoulder 15 of the side plate 13 to which it is rigidly secured after the roof and ceiling unit is lowered onto the car sub-assembly; the wide flat flange portion 18 and the wide shoulder 15 of the side plate providing a comparatively wide flat and more accessible welding surface which enables the roof and ceiling unit to be rigidly secured to the previously constructed sub-assembly of the car.

In sheet metal house cars as at present employed, the car end walls consist of corrugated steel sheets to which the metal roof is secured. As the steel end walls, which form a part of the sub-assembly, are of comparatively heavy gage it is impossible to deform or bend the upper edges of these sheets so as to permit a prefabricated roof and ceiling unit to be applied to the sub-structure. I therefore employ a steel end wall 19 on the sub-structure which terminates at a predetermined distance beneath the top of the sub-structure and is formed with an outwardly disposed substantially horizontal flange 20, as shown in Figure 2, to provide a flat seating and attaching surface for the lower outwardly flanged portion 21 of an auxiliary end sheet 22 whose upper marginal portion extends inwardly at 23 in overlapping relation with the inner side of the longitudinal side of the roof sheet 10 and its down turned edge 24. The auxiliary end sheet 22, which is arranged in contact with the edge of the ceiling element or sheet 11, is of considerable width as shown, affords a sufficient welding surface for the sloping roof sheet to which it is secured and forms a part of the prefabricated roof and ceiling unit; the upper edge of the auxiliary end sheet 22 being slopingly cut and formed to match the slope of the roof so that the lower outwardly flanged edge 21 will extend in a substantially horizontal plane in keeping with the flange 20 of the car end wall 19 and thus provide a flat welding surface after the roof and ceiling unit has been lowered onto the car sub-structure which involves the end walls 19 of the car.

As is apparent from the construction illustrated, the assembled car along its sides is provided with a reenforcement disposed longitudinally throughout the length of the car, while the ends of the car are each provided with a rigidifying rib composed of the flanges 20 and 21 and intimately or rigidly secured together preferably by welding. It is also apparent that the roof and ceiling unit may be provided with a ceiling element disposed throughout the entire width and length of the

car to effect sealing contact with the inner wall or sheathing of the car, without distortion; the improved construction and arrangement enabling the prefabrication of a unit with a uniform ceiling which eliminates improper packing of light cereal containers and damage to the lading and hence eliminates the excessive damage claims encountered by the railroads.

My improved structure, as is apparent from the drawing and the foregoing description, provides a uniform roof and ceiling unit with depending flange portions at the sides and at the ends composed of the auxiliary side plates 17, of somewhat S-shape cross-section, and auxiliary end plates 22, of substantially Z-shape cross-section, respectively, which present uniform flat welding surfaces about the sides and ends of the car and which also tend to reenforce the car and afford a rigid structure; it being understood, of course, that the construction and arrangement at both sides and at both ends of the car are similar to that shown and described.

The exemplifications are believed to be the best adaptations but certain modifications may be possible without, however, departing from my invention as defined in the appended claim.

What I claim is:

In a metal house car provided with metal side and end walls and an inner non-metallic wall extending above said side and end walls, said end walls at the top having outwardly bent longitudinal edges, the combination of side plates with inwardly bent flat upper marginal portions having upwardly extending longitudinal edges which terminate in a vertical plane outside of the inner wall and in contact therewith while the lower marginal portions of said side plates are off-set outwardly and in overlapping relation with the metal side walls and intimately secured thereto; and a prefabricated roof and ceiling unit composed of transversely disposed metallic roof sheets bent downwardly at the sides and at the ends of the unit, auxiliary side plates of S-shape cross section and auxiliary end plates whose upper and lower marginal edges are bent toward opposite sides of the plates, the upper marginal portions of both auxiliary side plates and auxiliary end plates being disposed inwardly between the ceiling and the roof sheets and welded to the main portions and to the bent ends and to the longitudinal bent edges of the roof sheets, respectively, the lower outwardly disposed portions of the auxiliary side plates extending outwardly beyond the vertical plane of the downwardly bent ends of the roof sheets and overlapping the inwardly bent upper portions of the side plates and intimately secured thereto, while the auxiliary end sheets increase in width toward the longitudinal median line of the car and have their outwardly bent lower portions seating on the outwardly bent upper edges of the end plates and are intimately secured thereto.

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