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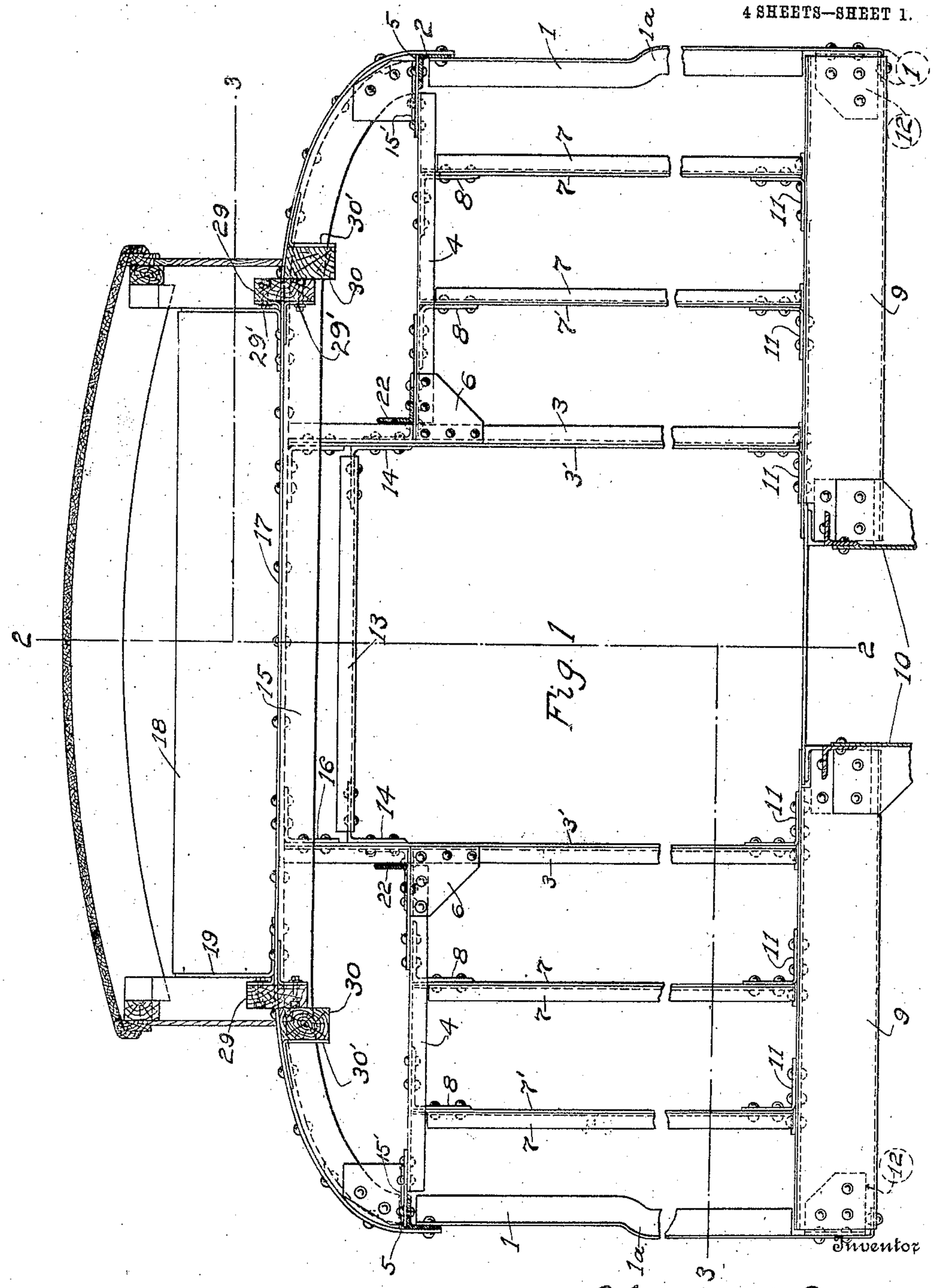
PASSENGER CAR END CONSTRUCTION.

APPLICATION FILED MAY 23, 1908.

917,085. Patented Apr. 6, 1909.

4 SHEETS—SHEET 1.



Witnesses

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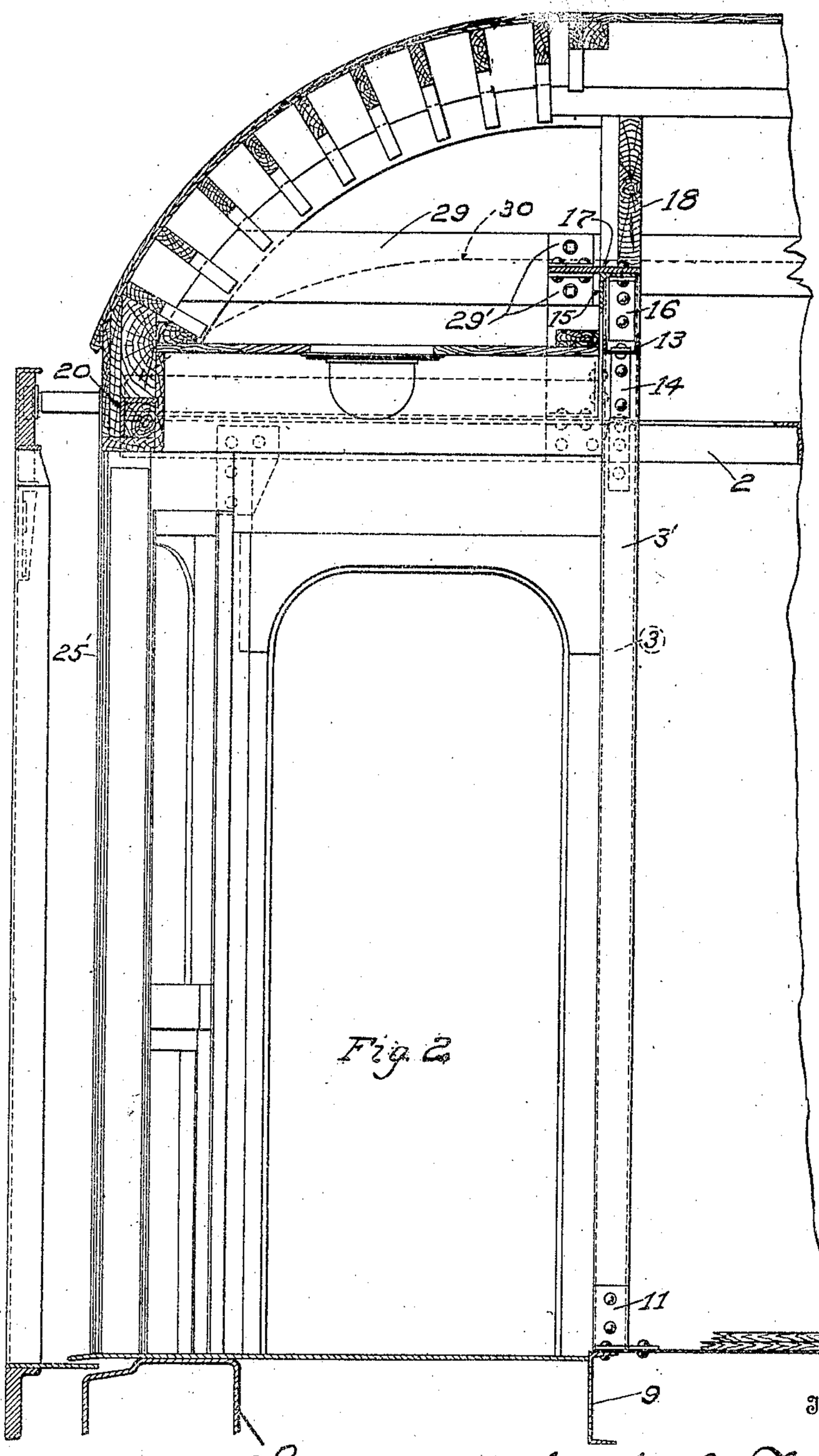

Fig. 2.

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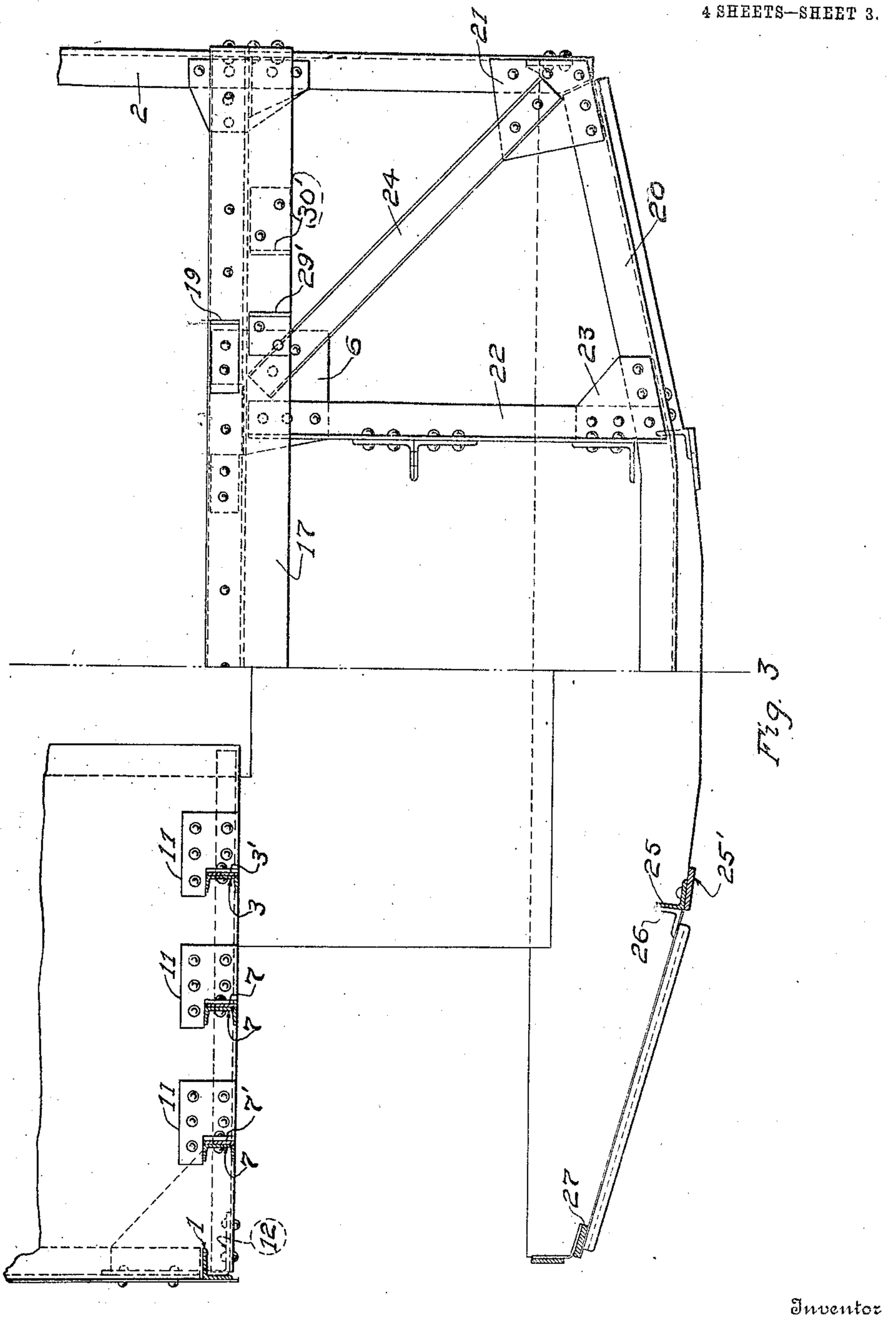

Fig. 3.

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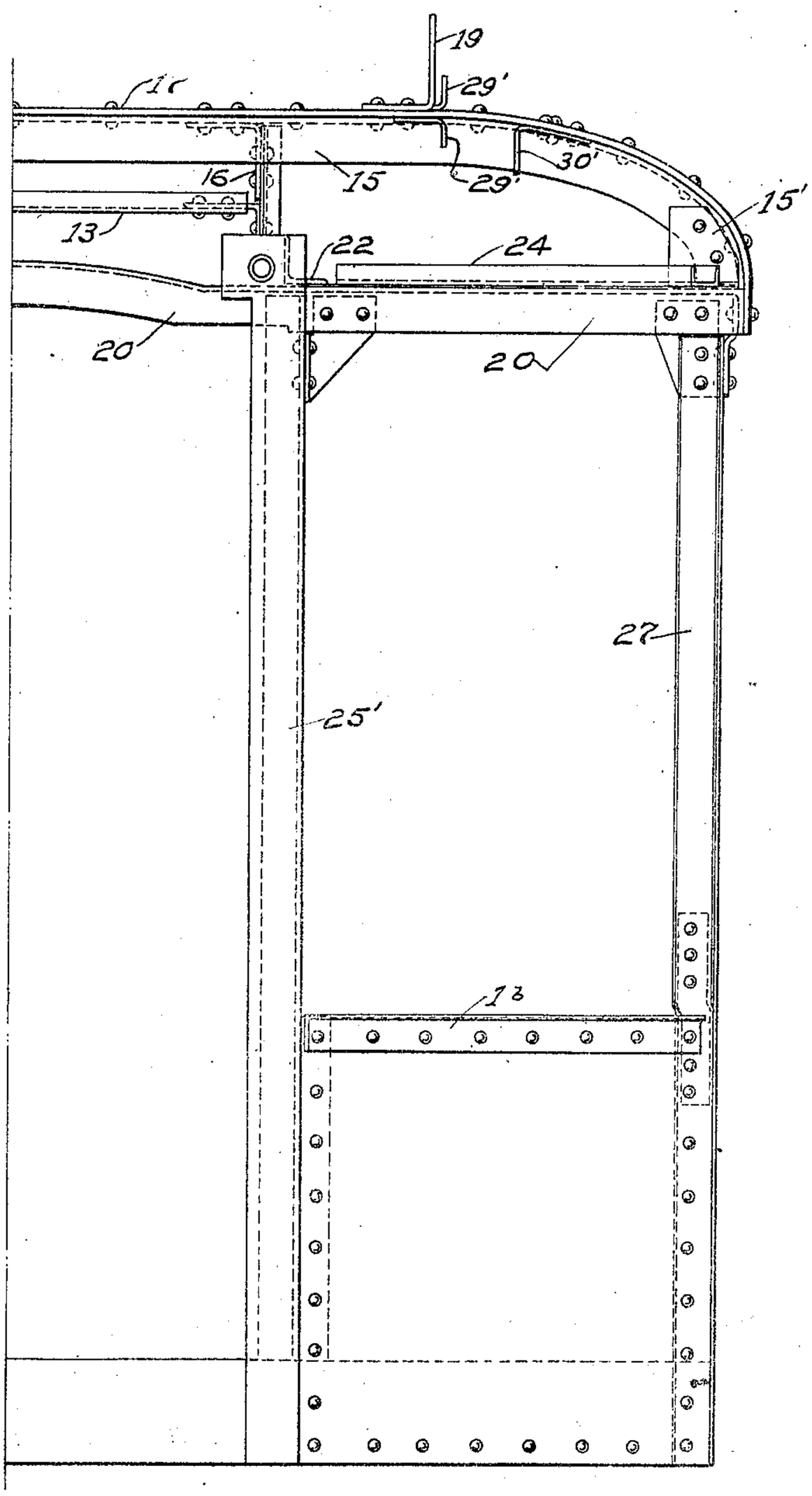

Fig. 4

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UNITED STATES PATENT OFFICE.

CHARLES A. LINDSTRÖM, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

PASSENGER-CAR-END CONSTRUCTION.

No. 917,085. Specification of Letters Patent. Patented April 6, 1909.

Application filed May 23, 1908. Serial No. 434,495.

To all whom it may concern:

Be it known that I, CHARLES A. LINDSTRÖM, residing at Pittsburg, Northside, county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Passenger-Car-End Construction, of which the following is a full, clear, and exact description.

An object of the present invention is to strengthen the bulkhead construction in a passenger car with a view to more successfully resisting the effect of the pulling and buffing stresses on the superstructure and to more effectually eliminate the dangerous and frequently fatal results of collisions through the staving in of the car end.

A further object of the present invention is to improve the details in the bulkhead construction.

The invention is clearly illustrated in the accompanying drawings in which like reference characters refer to like parts, and in which:

Figure 1 is an elevation of the bulkhead frame with contiguous parts in section; Fig. 2 is a central section through the same on line 2—2 of Fig. 1 with adjacent parts of the car structure, showing location of the bulkhead; Fig. 3 is a sectional top plan view on line 3—2—3, Fig. 1, showing bulkhead and vestibule posts and vestibule frame and bracing; and Fig. 4 is a half end elevation of the car, showing vestibule posts and eave plate and the bulkhead brace or car body end carline.

Referring now in detail to the drawings, 1 (Fig. 1) represents the side posts in a car, 2 the side or eave plates riveted to the upper ends of side posts 1, 3 are door posts extending upwardly to a point above the horizontal plane of the side or eave plates 2.

4 are angular horizontal post braces extending from door posts 3 to side or eave plates 2 and secured by rivets and gussets 5 to side or eave plates 2.

6 are gussets connecting door posts 3 and post braces 4.

7 are car body end or bulkhead posts connected at their upper ends by rivets and connecting angles 8 to post braces 4. Posts 3 and 7 are provided with conterminous reinforcing plates 3′ 7′ of any suitable section riveted to their webs.

9 are channel car body end sills suitably riveted or secured to the center sills 10 which in this particular construction are preferably widely spaced apart. Posts 3 and 7 at their lower ends are riveted to the vertical flanges of angle connecting plates 11 riveted to the upper flange of end sill 9. Angle connecting plates 11 (Fig. 3) are provided with recesses in one corner formed by cutting and bending upwardly a portion of the plate to form the vertical connecting flange, which recess receives the lower end of the post 3 or 7. Angle plates 11 thus extend on two sides of posts 3 or 7 so that a greater purchase on the end sill and hence more rigid support is provided for the posts 3 or 7.

Posts 1 are offset or bent outwardly at 1^a in the plane of the car belt rail 1^b, of which the end section only is shown (Fig. 4) and together with the other posts of the car support the side sheeting of the car, which construction has the functions of a girder. Posts 1 are secured to the underframe (Fig. 1) at their lower end by removal of the lower end portions of their inwardly projecting flanges for a distance slightly greater than the depth of end sill 9 and then riveting the webs of the posts to connecting angles 12, and further by turning in the lower end of the web portion of the side posts 1 and riveting same to the lower flanges of end sills 9. The connecting angles 12 are in turn riveted to the webs of the end sills 9.

At a point above the plane of the post braces 4 the two door posts 3 are connected by a lintel plate 13 of angle, channel or other suitable shape, which is connected to posts 3 by connecting angles 14.

15 is the car body end carline riveted to angles 16 and door posts 3, continuous across the car from side to side and bent downwardly and secured at its ends to angle connecting plates 15′ riveted to gussets 5 and side or eave plates 2. Carline 15 is of any suitable section, such as channel, tee or angle, it being here shown of angle shape. Carline 15 forms an upper member or arched brace of the car bulkhead. In order to stiffen the car bulkhead against end shocks carline or arched brace 15 is reinforced by a conterminous plate 17 of suitable shape and section, here shown as a proportionately

wide plate secured to the upper surface of carline 15 and preferably extended only far enough beyond the ends of carline 15 for riveting to side or eave plates 2. As shown on drawing, this plate is riveted to a rearwardly extended flange along the upper edge of carline 15. The intermediate or central portion of carline 15 and plate 17 is substantially horizontal.

18 is the upper deck bulkhead, mounted on carline 15 and its stiffening or reinforcing plate 17, secured at its ends to angles 19 riveted to plate 17 and carline 15.

29 (Fig. 2) is an upper hood brace which is split at its inner end and embraces reinforcing plate 17. Brace 29 is secured to plate 17 through means of angles 29′.

30 is the hood sill secured to plate 17 by angle 30′.

The remainder of the car upper deck is constructed and mounted in any suitable manner on the car superstructure or the car body carlines comprised therein.

Each of the eave plates 2 is extended out to the end (Fig. 3) of the car vestibule where they are joined by vestibule end eave plates 20 through the medium of gussets 21. Eave plates 20 are bent to conform to the shape of the end wall of the vestibule and are stiffened or braced through means of lower hood angle braces 22 connecting them with post braces 4 through the medium of gussets 23 riveted to eave plate 20 and angle gussets 6, connecting door posts 3 and post braces 4. There are two lower hood braces 22 at each end of the car, one being on each side of the central passageway through the car.

The frame of each vestibule is furthermore braced by diagonal channel braces 24 extending from angle gussets 6 to gusset plates 21, there being one for each corner of the car.

25 are vestibule end posts reinforced by bellows diaphragm securing plates 25′ and located in line with angle braces 22 and secured at their bases in any suitable manner, such as by angles 26, to the car end frame.

27 are the car vestibule corner end posts connecting vestibule end eave plate 20 and the car platform end sill 28 at their ends.

The car lining is secured to the framework herein described in any suitable manner.

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

1. In a car, a bulkhead comprising a brace member narrower than one-half its length and of greater width than the thickness of said bulkhead and projecting from said bulkhead only on the vestibule side thereof.

2. In a car, a bulkhead comprising as a brace member a flat plate narrower than one-half its length and of greater width than the thickness of said bulkhead.

3. A brace for car end roof structure consisting of a flat plate narrower than one-half its length and extending from side to side of the car.

4. In a car, a bulkhead comprising posts, a continuous member connecting the ends of said posts and a reinforcement narrower than one-half its length and mounted on and of greater width than said member.

5. In a car, a bulkhead comprising posts, an angle plate connecting the ends of said posts and a conterminous reinforcing plate riveted to said angle plate.

6. In a car, a bulkhead comprising central posts and shorter end posts, eave plates secured to the end posts and a reinforced member connecting said eave plates and the ends of said central posts.

7. In a car, a bulkhead comprising central posts and shorter end and intermediate posts, a member connecting the ends of said central and end posts and members connecting the central posts and the ends of said intermediate and end posts.

8. In a car, a bulkhead comprising car body corner posts, car body end posts and door posts of greater height than the said end and corner posts, brace members extending from the door posts to the corner posts secured to the said end posts and a continuous arched member connected to the upper ends of said door posts and corner posts.

9. In a car, a post angular in section, a reinforcing plate riveted to the back of said post and an angle plate securing said post in position.

10. In a car, a post-securing plate having a portion cut and struck up to form a post recess and a perpendicular post-securing flange.

11. In a car, a bulkhead comprising channel posts, reinforcing plates riveted to the backs of said posts, and connecting plates having perpendicular flanges secured to said posts.

12. In a car, an end construction comprising a vestibule end eave plate, a bulkhead and diagonal braces extending from intermediate portions of said bulkhead to said eave plate.

13. In a car, an end construction comprising a vestibule end eave plate and a bulkhead, a brace connecting said eave plate and bulkhead intermediate their lengths and the diagonal braces connecting said bulkhead and the end of said eave plate.

14. In a car, an end construction comprising a bulkhead, a vestibule end eave plate, a side eave plate, a diagonal brace connecting the intermediate portion of said bulkhead and ends of said end and side eave plates.

15. A hood brace support comprising an arched plate embraced by said brace.

16. A hood brace support comprising a plate projecting from the car bulkhead and

embraced by said brace and angles riveted to said plate and secured to said brace.

17. In a railway car, a car end construction comprising a cross brace member in the upper portion thereof narrower than one-half its length but wider than the thickness of the car end wall.

The foregoing specification signed a McKees Rocks, Allegheny county, Pennsylvania, this 16th day of May, 1908.

CHARLES A. LINDSTRÖM.

Witnesses:

T. J. JONES,

H. B. FISHER.