

No. 854,404.

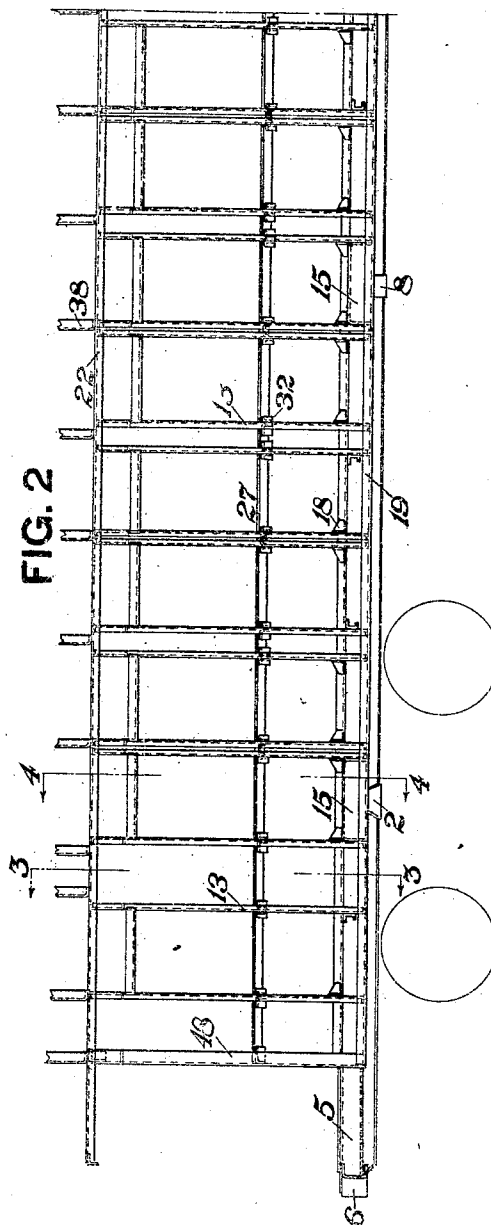
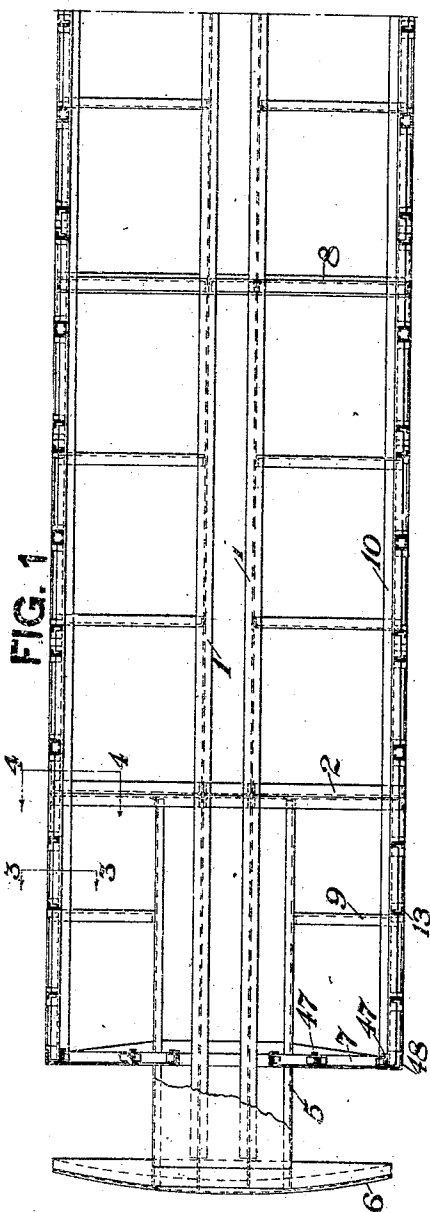
PATENTED MAY 21, 1907.

A. CHRISTIANSON.

FRAME FOR PASSENGER AND LIKE CARS.

APPLICATION FILED AUG. 25, 1908.

3 SHEETS—SHEET 1.



WITNESSES.

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3 SHEETS—SHEET 2.

FIG. 5

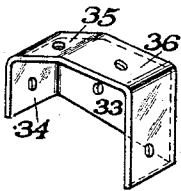


FIG. 6

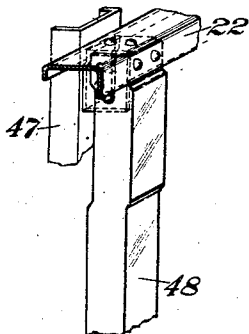


FIG. 4

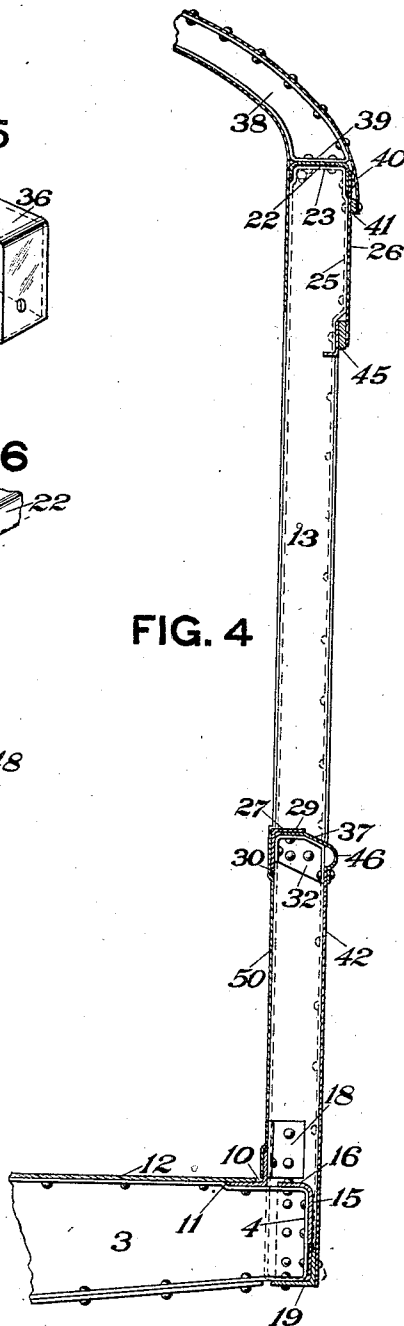
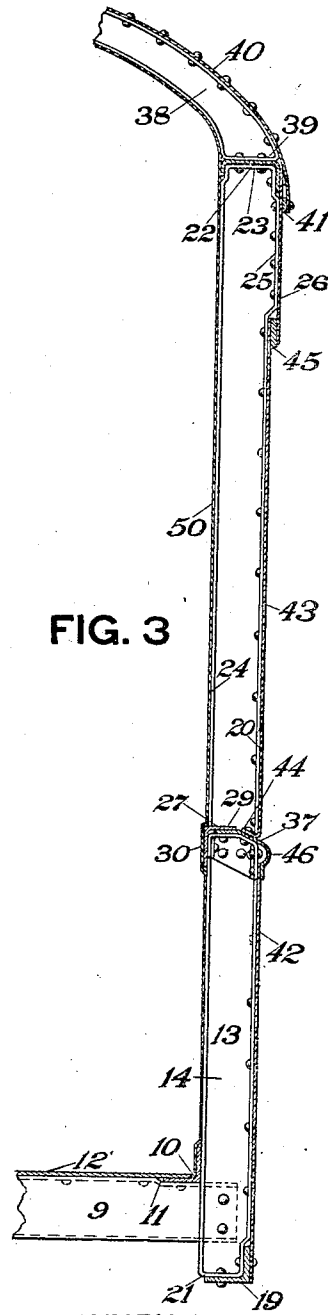


FIG. 3



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3 SHEETS—SHEET 3.

FIG. 8

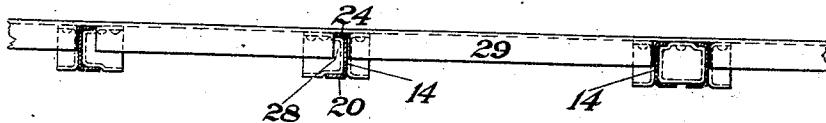
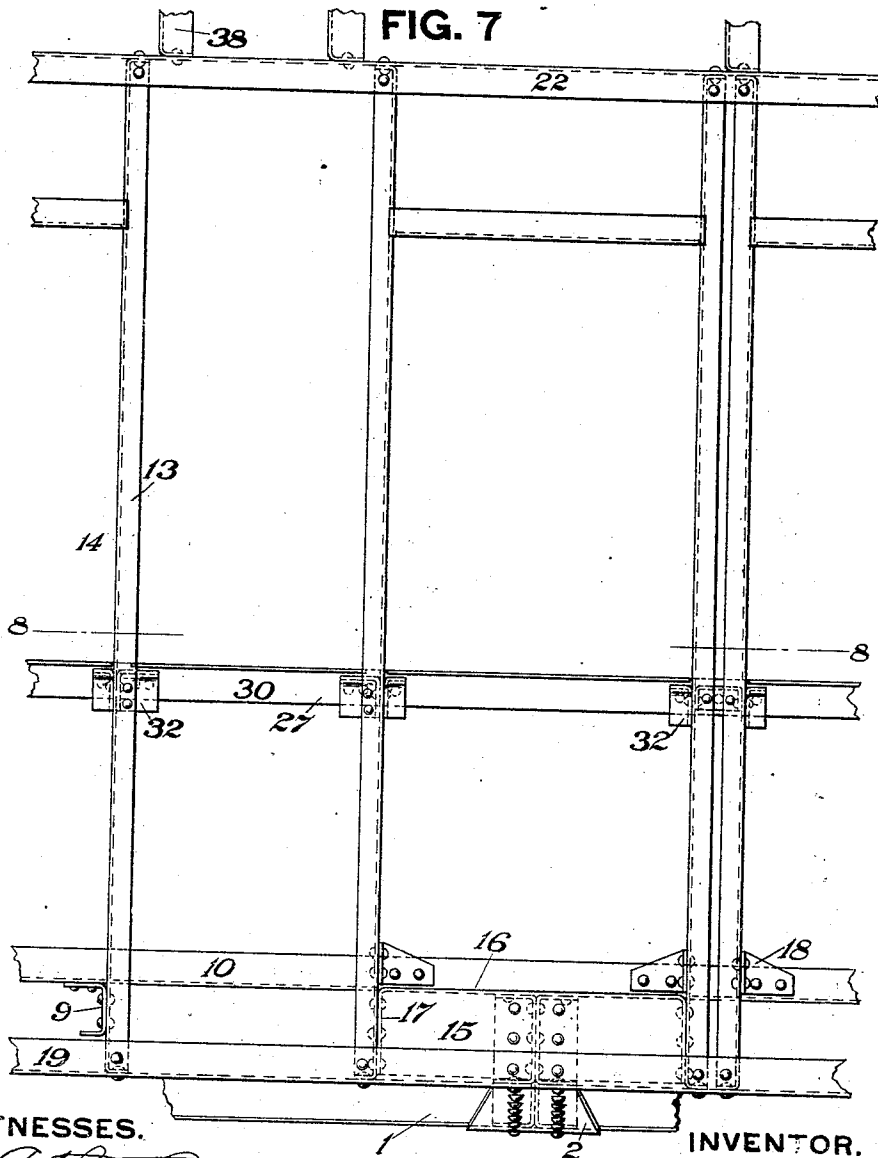


FIG. 7



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UNITED STATES PATENT OFFICE.

ANDREW CHRISTIANSON, OF BUTLER, PENNSYLVANIA, ASSIGNOR TO
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FRAME FOR PASSENGER AND LIKE CARS.

No. 854,404.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed August 25, 1906. Serial No. 332,015.

To all whom it may concern:

Be it known that I, ANDREW CHRISTIANSON, a resident of Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement in Frames for Passenger and Like Cars; and I do hereby declare the following to be a full, clear, and exact description thereof.

This invention relates to metallic frames for railway cars, and more especially to frames for passenger, baggage, express, mail and similar cars.

The object of the invention is to provide a frame for a car of this character which is capable of having applied thereto external and internal sheathing either of metal, composition board, or wood, and which frame is composed of a minimum number of parts and of a sufficiently reduced weight to correspond favorably with cars of the usual wooden construction.

The invention consists of the arrangement of parts hereinafter described and claimed.

In the accompanying drawings Figure 1 is a horizontal section of the car frame taken above the belt rail; Fig. 2 is a side view of the frame; Fig. 3 is a cross section of a side frame on the line 3—3 Fig. 2; Fig. 4 is a similar view on the line 4—4, Fig. 2; Fig. 5 is a perspective view of one of the brackets connecting the belt rail and posts; Fig. 6 is a similar view of the upper portion of a corner post; Fig. 7 is an outside side view of a portion of a side frame on an enlarged scale; and Fig. 8 is a horizontal section on the line 8—8 Fig. 7.

The underframe of the car is provided with center sills 1 extending from end to end of the car. The body bolsters 2 may be of any desired construction, those shown being flanged pressed plates 3 built up between the center sills and car sides and having end flanges 4, but as they are not claimed in this application they will not be specifically described. Extending from the body bolsters beyond the end of the car body, are the platform beams 5, and connected to the ends of the center sills and platform beams is the platform end sill or buffer beam 6, which is a rolled channel beam curved to the contour of the end of the car. The end sill of the body of the car is shown at 7, and this is

made up of sections built in between the center sills, platform beams and car sides. Between the body bolsters the underframe is provided with cross bearers or transoms 8, also of a built-up construction somewhat similar to the bolsters. Intermediate the transoms or cross-bearers and body bolsters and also between the body bolsters and end sills are transverse floor supports 9 which as shown are of pressed shape with the webs arranged vertically.

The car frame has no distinct side sills, but the side frames act as trusses. To the upper flanges of the bolsters, cross bearers and floor supports, is riveted an angle bar 10, known as a floor angle and extending continuously from end to end of the car. The bolsters, transoms and floor supports have their upper edges depressed as shown at 11, in which depressions the floor angle 10 is located, so that the floor plates 12 which are riveted to the top flanges of the bolsters, transoms and floor supports, can lap over the horizontal leg of the floor angle without bending or bulging, so as to give a flat floor. The bolsters, transoms, floor supports and body end sills 7 project slightly beyond the floor angle 10, and the posts 13 of the side frame of the car are riveted to these projecting ends.

The posts are composed of pressed plates of general channel form, arranged with their webs 14 transversely of the body of the car and having flanges integral with the webs both at their inner and outer edges and top and bottom. These posts are suitably spaced to provide the necessary window openings, this requiring that some of the posts be placed close together and others wider apart. The cross floor supports 9 obviously can be placed in any desired position, and consequently some of the posts are riveted directly through their webs to the vertical webs of the projecting ends of these floor supports, as shown in Figs. 1 and 3. The body bolsters 2 and cross-bearers or transoms 8, however, must have a fixed position in the car underframe, and the window openings do not permit the spacing of the posts in such manner as to connect the same directly to the ends of these members. Consequently at these points the posts are supported by means of

plates 15 arranged vertically and riveted to the end flanges 4 of the bolsters and transoms, and having a top flange 16 resting on and riveted to the bolster and transoms, as well as end flanges 17 arranged transversely of the body of the car, to which end flanges the webs of the posts are riveted. The posts are secured to the floor angle 10 by means of angle brackets 18 riveted to the webs of the posts and floor angle.

The bottom chord of the side frame is formed by an angle bar 19, riveted to the outer flanges 20 of the posts at their lower ends, and to the bottom flanges 21 thereof. The top chord of the side frames is formed by a plate 22, which, as shown, is composed of a channel beam placed with its flanges projecting downwardly, and riveted through its web to the top flanges 23 of the posts. The outer flange 20 of the posts is wider than the inner flange 24 and the plate 22 has similar flanges. The object of this is to provide a sufficient width of flange on one side for connecting to the members the necessary finishing sheets, which usually requires two rows of rivets where abutting edges of plates meet on the members, while the other flange is reduced in width to give only the necessary amount of metal for the required strength. In this way all superfluous metal is avoided, and the weight of these parts reduced to a minimum.

The posts at their upper ends are bulged outwardly as shown at 25, this being accomplished by merely carrying the outer flange out slightly beyond the edge of the main body of the post. The object of this is to permit of the application of a facia plate or lettering board 26 directly to the post and so as to give a slight beaded or ornamental finish at the lower edge of the plate, and without the necessity of beading the plate itself or inserting filling strips, which would add weight.

At the bottom of the window opening is applied a belt rail 27, which is shown as of an angle bar, although it may be of other flange shapes. This belt rail is notched as at 28 so as to pass over the posts and present a horizontal face 29 between the same. The vertical leg 30 of the rail is continuous from end to end of the car and lies inside the posts. This belt rail is connected to the posts by means of brackets 32, these being formed from plates pressed to shape with integral flanges on top, inside and outside. The webs 33 of these brackets are riveted to the posts, while the inner flange 34 is riveted to the vertical leg 30 of the angle rail 27, and the top flange 35 is riveted to the horizontal leg 29 of the belt rail. The outer portion of the top of these brackets is sloping as shown at 36 in order to give a direct support to a metallic water table or window sill 37.

The roof of the car is supported by suitable carlines, but as the same form no part of

this invention, they will not be specifically described except to say that the lower deck member of the carline, shown at 38, is provided with a bottom flange 39, which is riveted to the web of the side plate 22. The facia plate 26 is riveted to the outer flanges of the posts at their upward outwardly bulging portions, and the roof sheets 40 lap over the top edge of this facia plate, and between the same a filling strip 41 is inserted so as to give a slight cornice at this point. At the lower portion of the car side the exterior finish is by means of a plate 42 riveted to the outer flanges of the posts, as well as to the bottom angle 19, this plate extending up to the window openings. Between the window openings are plates 43 whose lower edges are flanged inwardly on a bevel, as at 44, and rest upon the water table 37, and their upper edges are overlapped by the lower edge of the facia plate 26, at which point a filling strip 45 may be inserted to give a more ornamental finish. The water table 37 forms a sill upon which the window sash may abut directly, and the outer edge of this water table is beaded as shown at 46, and its lower edge overlaps the upper edge of the lower finishing sheet 42.

The end posts 47 are of substantially the same construction as the side posts, being formed of pressed members of general channel form, and placed with their webs transversely of the end wall, that is, longitudinally of the car body. The corner posts 48 are of angle shape, also preferably being pressed members, and having the outward bulge 49 at the upper ends for securing thereto the facia plate or lettering board. The end posts 47 may, when the design of the car requires, have a similar outward bulge.

The interior finish may be of any character, either metal plates as shown at 50, or special composition boards, or even wood, and is secured directly to the inner flanges of the posts. As this is not claimed in this specification, it is not shown fully nor described.

The frame described is composed of a minimum number of parts, thus not only reducing the cost and labor of construction, but also very materially reducing the weight of the frame, and at the same time giving sufficient strength. Consequently, a car provided with a frame of the character described, compares favorably in weight with wooden passenger cars.

What I claim is:

1. In a metallic railway car frame, the combination of an underframe having cross members, side posts secured to the ends of said cross members, a side plate secured to the upper ends of the posts, and a bottom chord secured to the inner edges of the posts and top edges of the cross members.

2. In a metallic railway car frame, the

combination of an underframe having cross members, side posts secured to the ends of said cross members, a side plate secured to the tops of the posts, a continuous flanged member secured to the lower ends of the posts, and a continuous floor angle secured to the inner edges of the posts and top edges of the cross members of the underframe, said posts being provided with flanges on their inner and outer edges for receiving the inner and outer finishing sheathing.

3. In a metallic railway car frame, the combination of an underframe having cross members, side posts provided with integral top and bottom flanges and secured to the ends of said cross members, a side plate secured to the top flanges of the posts, a continuous flanged member secured to the bottom flanges of the posts, and a continuous floor angle secured to the inner edges of the posts and top edges of the cross members of the underframe.

4. In a metallic railway car frame, the combination of an underframe having cross members providing vertical faces at their ends arranged transversely of the car body, side posts of general channel form secured directly to the vertical faces of said cross members, a continuous flanged member secured to the lower ends of said posts, a continuous side plate secured to the top ends of the posts, and a continuous floor angle secured to the inner flanges of the posts and the tops of the cross members of the underframe.

5. In a metallic railway car frame, the combination of an underframe having cross members whose top edges are provided with depressions near their ends, a floor angle secured to the underframe and having its horizontal leg in said depressions, and floor plates secured to the cross members and overlapping the horizontal leg of the floor angle.

6. In a metallic railway car frame, the combination of an underframe having cross members or beams, connecting plates secured to the ends of said cross members and provided with vertical faces extending transversely of the car, and posts having webs arranged transversely of the car and secured directly to the vertical transverse faces of said connecting members.

7. In a metallic railway car frame, the combination of an underframe having cross members or beams, connecting plates secured to the ends of said cross members and provided with top flanges resting on the cross members and with integral end flanges arranged transversely of the car body, and side posts having webs arranged transversely of the car and secured directly to the vertical transverse flanges of said connecting plates.

8. In a metallic railway car frame, the combination of an underframe, posts secured thereto and having inside and outside flanges, and a belt rail of flanged shape

notched to fit over the posts and having a continuous flange located inside of the posts.

9. In a metallic railway car frame, the combination of an underframe, posts rising therefrom, and a belt rail consisting of an angle bar having one flange notched and fitting over the posts, and having the other flange continuous and lying inside of the posts.

10. In a metallic railway car frame, the combination of an underframe having cross members, posts rising therefrom, a continuous flanged belt rail notched to fit over the posts and having an uninterrupted flange inside of the posts, and a continuous floor angle secured to the inner edges of the posts and the tops of the underframe cross-members.

11. In a metallic railway car frame, the combination of an underframe having cross members providing vertical faces, channel shaped posts riveted through their webs directly to the vertical faces of the cross members, a continuous floor angle riveted to the tops of the cross members of the underframe and secured to the inner edges of the posts, and a flanged belt rail notched to fit between the posts and secured thereto and having a continuous flange inside of said posts.

12. In a metallic railway car frame, the combination of posts, a belt rail notched to fit over and between the posts, and brackets securing said belt rail to the posts.

13. In a metallic railway car frame, the combination of vertical posts of channel form, a belt rail consisting of an angle having one flange notched and fitting over the posts and the other flange uninterrupted, and brackets riveted to the posts and to the flanges of said belt rail.

14. In a metallic railway car frame, the combination of vertical posts, a continuous bottom chord therefor, a continuous top chord therefor, a continuous floor angle secured to the underframe and to the inner edges of the posts, and a continuous belt rail secured to the posts and notched to fit in between the same.

15. In a metallic railway car frame, the combination of vertical posts, an underframe to which the same are secured, a continuous floor angle secured to the underframe, brackets connecting the vertical flange of said angle to the posts, and an angle shaped belt rail notched to fit between the posts and having a continuous flange on one side of the posts, and brackets securing said belt rail to the posts.

16. In a metallic railway car frame, the combination of vertical posts, a belt rail of flanged shape notched to fit over said posts but having an uninterrupted flange on the inside thereof, and brackets consisting of plates riveted to the posts and having top and inside flanges secured respectively to the continuous vertical flange of the belt rail and the notched horizontal portion thereof.

17. In a metallic railway car frame, the combination of posts of channel shape placed with the webs transversely of the car, a belt rail of flanged shape notched to fit over said posts and having a continuous vertical flange on the inner side of the posts, and brackets securing the belt rail to the posts consisting of plates having flanges on the top, inner and outer edges, said top and inner flanges being secured to the horizontal and vertical portions of the belt rail.

18. In a metallic railway car frame, the combination of channel shaped posts placed with their webs transversely of the car, an angle shaped belt rail having one flange notched and fitting between the posts and having the other flange vertical and uninterrupted inside of the posts, brackets securing the belt rail to the posts and, consisting of plates having integral flanges on top, inner and outer edges, the webs being secured to the webs of the posts, the inner flanges to the vertical flange of the belt rail, the top flange to the horizontal flange of the belt rail, and said top flange being sloped downwardly on the outside to serve as a support for a water table.

19. In a metallic railway car frame, the combination of an underframe, posts rising therefrom and provided with top flanges, a channel shaped plate resting directly on top of said post and having its web riveted to the flanges thereof and its flanges projecting downwardly on each side of the posts.

20. In a metallic railway car, the combination of posts, a side plate resting on, and secured to, said posts, said plate being of channel form having flanges of different widths.

21. In a metallic railway car frame, the combination of posts provided with flanges on their upper ends, a channel shaped plate secured to the flanges of the posts, said plate being arranged with its flanges projecting downwardly and having flanges of different widths.

22. In a metallic railway car frame, the combination of posts provided with flanges on their upper ends, a channel shaped plate resting directly on said posts with the flanges projecting downwardly on each side of the posts, carlines provided with flanges resting on said plate, and rivets securing the web of the plate to the flanges of the carlines and posts.

23. A side plate for railway cars consisting of a channel having flanges of different widths.

24. A side plate for railway cars consisting of a pressed channel shaped member having flanges of different widths.

25. In a metallic railway car frame, the combination of side frame, a metallic side plate at the upper edge of said side frame and consisting of a channel shape having flanges

of different widths and projecting downwardly.

26. A metallic post for railway cars having a web with inside and outside flanges integral with the body thereof, the outside flange being wider than the inside flange.

27. A metallic post for railway cars composed of a pressed plate having flanges of different widths.

28. A metallic post for railway cars having an integral offset portion at its upper end.

29. A metallic post for railway cars having a web and inside and outside flanges, the outer flange being offset near the upper end.

30. A metallic post for railway cars consisting of a pressed plate having flanges on its inner and outer edges, the flange at the outer edge being bulged outwardly at its upper end.

31. A channel shaped metal post for railway cars having a web of varying width.

32. A metallic post for railway cars of flanged shape and having one flange at the upper end of the post bulged outwardly.

33. A metallic corner post for railway cars of angle shape and bulged outwardly at its upper end.

34. A metallic post for railway cars having a web and flanges on the inner and outer edges, the outer flange being wider than the inner flange and having its upper portion bulged outwardly.

35. A metallic post for railway cars of general channel shape having the web arranged transversely of the wall of the car, the outer flange of the post being wider than the inner flange.

36. A metallic post for railway cars of general channel shape having a web of varying width and having flanges of different widths.

37. A metallic post for railway cars consisting of a pressed plate of general channel form having integral flanges on both edges and top and bottom, the flanges on the two edges being of different widths.

38. A metallic post for railway cars consisting of a pressed plate having integral flanges on both edges and at top and bottom, and the flange on one edge being bulged outwardly near one end of the post.

39. A metallic post for railway cars consisting of a pressed plate having integral flanges on both edges and both ends, the flange on one edge being wider than that on the other edge and being bulged outwardly at one end of the post.

In testimony whereof, I, the said ANDREW CHRISTIANSON have hereunto set my hand.

ANDREW CHRISTIANSON.

Witnesses:

ROBERT C. TOTTEN,
J. R. KELLER.