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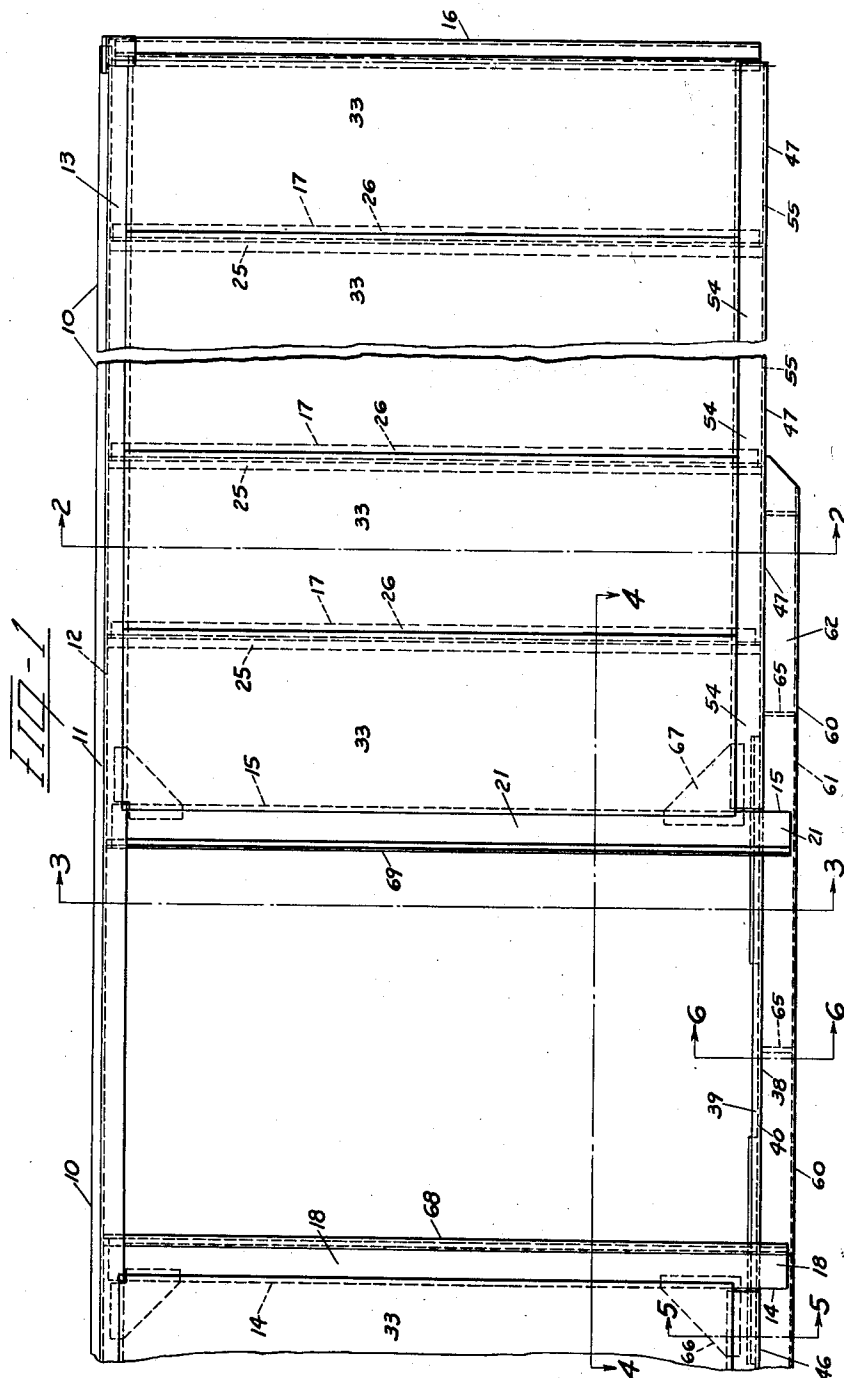
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2,686,480

WELDED CARSIDE

Filed May 23, 1950

3 Sheets-Sheet 1



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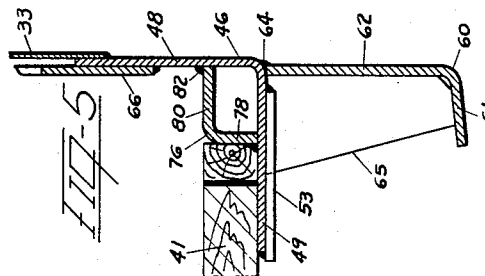
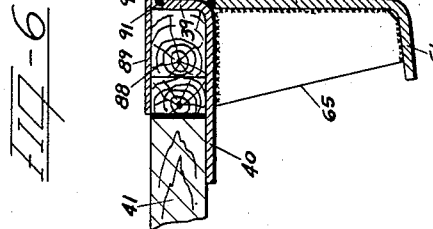
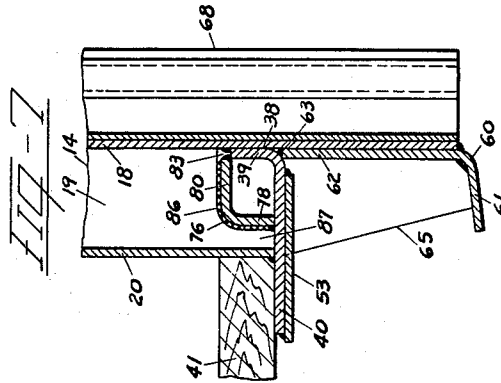
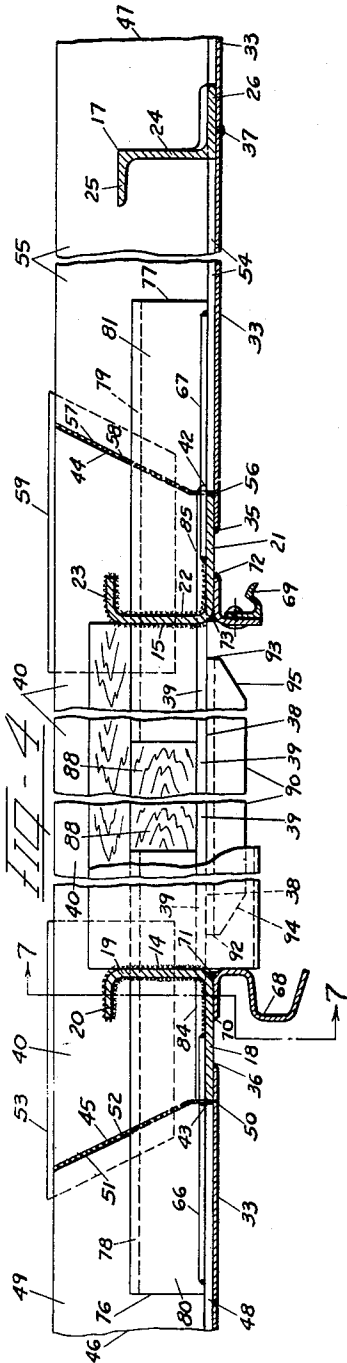
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WELDED CARSIDE

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UNITED STATES PATENT OFFICE

2,686,480

WELDED CARSIDE

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Application May 23, 1950, Serial No. 163,666

13 Claims. (Cl. 105—409)

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This invention relates to welded carsides.

It is an object of this invention to provide welded sides for railway cars which shall embody side sills so constructed that desirable thicknesses and dimensions for various parts of the sill may be had commensurate with the stresses to which such parts are subjected.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills so constructed that danger of breakage of the sills is obviated.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills so constructed that the coping operation of the usual side sill in the doorway is eliminated.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills, side sill reinforcements and door posts so associated that the door posts serve to tie the car underframe and superstructure together.

A further object is to provide a construction of the character described immediately above which shall include front and rear door stop and sealing members so related to the door posts as to constitute parts thereof and aid in tying the car underframe and superstructure together.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills and door posts so associated that portions of the door posts are incorporated into the side sills.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills, side plates and door posts so constructed and related as to avoid offsetting of the sheathing of the cars.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills and door posts so constructed and related that gussets may be employed to connect the door posts and side sills which shall not be required to be offset.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills constructed of a plurality of sections formed from plate members of the desired shape so that the limitations inherent in rolled members are avoided and selectivity of thickness and size of sections obtained.

A further object of the invention is to provide welded sides for railways cars which shall embody in addition to side sills and door posts welded threshold support angles so related to

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the door posts as to avoid an abrupt change in the deflection curve of the side sills at the door posts.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills substantially L-shaped in cross section, reinforcements welded to the bottom of the side sills and reinforcements welded to the legs of the side sills and serving to increase the strength of the combined structure substantially.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills, side sill reinforcements and door posts so associated that the bending tendency of the side sills in the riveted carside construction about the rivets connecting the side sill reinforcements to the side sills is eliminated.

A further object of the invention is to provide welded sides for railway cars which shall embody side sills, door posts and side sill reinforcements cooperatively associated with the side sills to prevent breakage of the latter at the door posts and with the door posts to prevent shifting thereof under pressure of the lading in the cars.

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

In the drawings forming part of this specification:

Fig. 1 is an elevation of a portion of a carside embodying the instant invention a portion being broken away.

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

Fig. 3 is a vertical section taken on line 3—3 of Fig. 1.

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 1.

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

Fig. 6 is a vertical section taken on line 6—6 of Fig. 1.

Fig. 7 is a vertical section taken on line 7—7 of Fig. 4.

Referring to the drawings in which a preferred embodiment of the invention is illustrated, numeral 10 designates a side plate of the usual Z-shaped section which extends substantially from end to end of the car side of which it forms a part. The side plate 10 embodies an inner upwardly extending flange 11, an outwardly extending web 12 and a depending flange 13. The car side also embodies front and rear door posts 14 and 15, corner posts, one of which is indicated at 16 and spaced intermediate posts 17.

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The front door post 14 embodies an outer vertical flange 18 of substantial length, an inwardly directed web 19 and a forwardly extending inner flange 20 which is shorter than the outer flange 18 and which extends in the same direction as the outer flange. The rear door post 15 embodies a rearwardly extending outer flange 21 aligned with the outer flange 18 of the door post 14, an inwardly extending web 22 and a rearwardly extending inner flange 23. The flange 21 is substantially of the same width as flange 18 and it is to be understood that the construction of the front and rear door posts inwardly of the outer flanges 18 and 21 may be varied as desired.

The intermediate side posts are of the same construction and each embodies a Z-shaped member having an inwardly extending web 24 and inner and outer flanges 25 and 26.

As is more clearly shown in Figs. 1, 2 and 3 of the drawings the upper portions of the door posts 14 and 15 are offset inwardly as indicated at 27 adjacent to the lower edge of the depending flange 13 of the side plate so as to lie behind the depending flange for welding thereto as indicated at 28 and to the underside of the web 12 of the side plate as indicated at 29. As illustrated the outer face of each of the flanges 18 and 21 of the door posts below the depending flange of the side plate lies in the same plane as the outer face of the depending flange.

Similarly the upper portion of each of the intermediate posts 17 is offset inwardly as indicated at 30 adjacent to the depending flange 13 so as to lie behind this flange for welding thereto as indicated at 31 and to the underside of the web 12 as indicated at 32. Below the depending flange 13 the outer face of the outer flange 26 of each of the intermediate posts lies in the same plane as the outer face of the depending flange.

By reason of the construction and relationship between the door posts and the intermediate posts and the side plate described immediately above the metallic sheathing 33 of the carside is adapted to lie against these posts and the depending flange of the side plate without the need for offsetting the metallic sheathing. The sheathing is secured to the side plate by means of welding as indicated at 34, to the door posts by means of welding indicated at 35 and 36 and to the intermediate posts by means of welding as indicated at 37. As is clearly shown in Fig. 4 of the drawings the sheathing 33 is formed of separate sections which are butt welded together and to the intermediate posts by the welding indicated at 37.

The door posts and intermediate posts extend downwardly from the side plate and are secured to a side sill which extends substantially from end to end of the car as hereinafter explained.

As illustrated the side sill is formed of three sections welded together, each of which is substantially L-shaped in section and formed desirably from a plate. The side sill embodies an intermediate section 38 having an upstanding flange 39 and an inwardly extending flange 40. The inwardly extending flange is utilized to support the adjacent end of a car floor 41, the upper surface of which limits the height of the upstanding flange 39. The intermediate section 38 of the side sill as shown in Fig. 4 of the drawings extends between and beyond the webs and inner flanges of the door posts. The upstanding flange 39 of this section terminates at the vertical edges of the outer flanges 18 and 21 of the door posts and is welded thereto as indicated at 42 and 43.

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The inwardly extending flange 40 is formed with inwardly diverging edges 44 and 45.

The side sill also embodies end sections 46 and 47 which are substantially similar in construction. The end section 46 embodies an upstanding flange 48 and an inwardly extending flange 49. The upstanding flange 48 as shown in Fig. 4 of the drawings lies in the same plane as the outer flange 18 of the door post and is secured thereby by welding as indicated at 50. The edge 51 of the inwardly extending flange 49 which lies adjacent to the edge 45 of the inwardly extending flange of the intermediate section of the side sill is sloped similar to the slope provided on the edge of the inner flange of the intermediate section of the side sill and is welded to the latter as indicated at 52. The joint thus formed is reinforced by means of a splice plate 53 welded to the underside of the inwardly extending flanges of the two sections of the side sill.

The end section 47 of the side sill embodies an upstanding flange 54 and an inwardly extending flange 55. The upstanding flange 54 lies in the same plane as the outer flange 21 of the door post 15 to which it is butt welded as indicated at 56. The edge 57 of the inwardly extending flange 55 is sloped similar to the slope of the adjacent edge of the inwardly extending flange of the intermediate sill section and is butt-welded to the latter as indicated at 58. This joint is reinforced by means of a splice plate 59 welded to the underside of the inwardly extending flanges of the two side sill sections.

The side sill is reinforced by means of a substantially L-shaped member 60 which extends between the door posts 14 and 15 and for a substantial distance beyond the door posts as is more clearly shown in Fig. 1 of the drawings. The side sill reinforcement 60 embodies an inwardly extending flange 61 and an upstanding flange 62, the upper edge of which is welded to the intermediate and end sections of the side sill as indicated at 63 and 64. The side sill reinforcement is reinforced by means of a plurality of plate members 65 welded to the underside of the inwardly extending flanges of the side sill sections, the upstanding flange 62 and the inwardly extending flange 61 and served also to reinforce the butt-reference joints 50 and 56.

With reference to Figs. 1, 3 and 7, it will be seen that the webs and inner flanges of the door posts terminate above the intermediate section of the side sill and that the outer flanges 18 and 21 are continued downwardly so as to lie against the outer faces of the upstanding flanges of the intermediate side sill section and the sill reinforcement to which they are welded. To accomplish this while permitting the outer flanges of the door posts to lie in the same plane as the upstanding flanges of the end sill sections, the upstanding flange 39 of the intermediate sill section is offset inwardly relative to the upstanding flanges of the end sill sections a distance equal to the thickness of the outer flanges of the door posts. This construction also permits alinement between the inner and outer faces of the outer flanges of the door posts and the inner and outer faces of the upstanding flanges of the end sill sections. The metallic sheathing 33 thus overlaps the outer flanges 18 and 21 of the door posts without requiring offsetting of the sheathing. Similarly offsetting is avoided in connection with the gussets 66 and 67 which are welded, respectively, to the inner faces of outer door post flange 18 and upstanding flange 48

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and inner faces of outer door post flange 21 and upstanding flange 54.

By the relationship between the outer flanges 18 and 21 of the door posts and the upstanding flanges of the intermediate and end sill sections the instant invention obtains a greatly strengthened construction. The outer flanges 18 and 21 of the door posts become in effect an integral part of the side sill construction and, of equal importance, the posts serve to tie together the side sill reinforcement and the side plate and thereby to tie together the underframe and superstructure of the car. This becomes apparent from the fact that the cross members of the car underframe which extend from the customary center sill in the area of the side sill reinforcement are secured to the side sill reinforcement as illustrated.

The noted relationship, moreover, tends in large measure to obviate breaking of the side sills at the door posts which occurs frequently in the riveted car side constructions. In the latter construction the side sill reinforcement is in the form of a channel or a bulb angle the flanges of which extend inwardly. The upper flange of the reinforcement lies against and is riveted to the underside of the inwardly extending flange of the side sill. In this construction the door posts lie behind the upstanding flange of the side sill and are riveted thereto. The tension which is set up in the door posts under both static and dynamic loads causes an upward pull to be exerted upon the side sill which results in upward bending of the side sill relative to the side sill reinforcement about the line of rivets securing these two members together and cracking of the side sill along this line. Tearing of the upstanding flange of the side sill also occurs. These serious defects are overcome by the hereinabove described relationship and securement between the door posts and the intermediate section of the side sill.

The effectiveness of the door posts in the accomplishment of this purpose is augmented by the front and rear door stop and sealing members 68 and 69 which as shown in Figs. 3 and 7 continue downwardly to the same extent as the outer flanges 18 and 21 of the door posts and are welded thereto as indicated at 70 and 71 and at 72 and 73.

The intermediate posts 17 extend downwardly from the side plate 10 and adjacent to the upper edge of the upstanding flanges 48 and 54 of the end side sill sections are offset inwardly as indicated at 74 so as to lie behind these flanges. The lower portions of the intermediate side posts are welded to the upstanding flanges and to the inwardly extending flanges 49 and 55 of these sill sections. This construction places the outer faces of the intermediate posts and upstanding flange of the end sill sections in the same plane so it is not necessary to offset the metallic sheathing which is welded to the upstanding flanges as indicated at 75.

Additional reinforcement for the side sill, particularly in the area of the door posts where breakage of the side sill is most apt to occur, is provided by means of angle members 76 and 77. These angle members, as is shown more clearly in Fig. 4 of the drawings, extend for a substantial distance in each direction beyond each of the door posts and embody inner upwardly extending vertical flanges 78 and 79 and outwardly extending horizontal flanges 80 and 81. The vertical flanges 78 and 79 are welded to and

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along the inwardly extending flanges of the intermediate and end sections of the side sill and the outwardly extending flanges 80 and 81 are welded to and along the upstanding flanges of the intermediate and end sections of the side sill as indicated at 82 and 83. Because of the fact that the upstanding flange 39 of the intermediate sill section is offset inwardly relative to the upstanding flanges 48 and 54 of the end sill sections the outwardly extending flanges 80 and 81 of the reinforcing angles 76 and 77 are coped from their inner ends to the respective ends of the upstanding flange 39 as indicated at 84 and 85, so that the portions of the flanges 80 and 81 beyond the latter upstanding flange may abut and be welded to the upstanding flanges of the end sill sections. The difference in width between the coped portions and the end portions of the reinforcing angle is clearly indicated in Figs. 5 and 7 of the drawings.

In order to permit the reinforcing angles 76 and 77 to extend on both sides of each of the door posts 14 and 15 the webs of these posts are coped as indicated at 86 to follow the contour of the reinforcing angles. This coping leaves a portion of the webs of the door posts and their inner flanges behind the vertical flanges 78 and 79 of the reinforcing angles as indicated at 87 so that the latter serve as abutments for the bottom portions of the door posts to resist outward thrust upon the posts by the lading in the car.

A wooden filler block 88 extends between the adjacent ends of the sill reinforcing angles 76 and 77. If desired, however, a single reinforcing angle extending between the remote ends of the reinforcing angles 76 and 77 may be utilized.

In addition to the function of each of the reinforcing angles 76 and 77 described immediately above, they serve to reinforce the butt-welded joints 50 and 56 and 52 and 58. Additional reinforcement for these joints is provided by the gussets 66 and 67.

A threshold plate 89 is customarily provided in the door opening of the car the width of which is defined by the door posts. The portion of the threshold plate which projects outwardly beyond the intermediate section of the side sill is supported by means of an angle member 90. In accordance with the instant invention the angle member is welded to the upstanding leg 39 of the intermediate sill section as indicated at 91 and 92 so as to serve as a reinforcement for the side sill. As shown in Fig. 4 of the drawings the ends of the angle 90 terminate as indicated at 92 and 93 short of the adjacent door posts. Moreover, the ends of the angle member 90 are sheared so that they slope as indicated at 94 and 95. By reason of each of these features, the abrupt change in the direction of deflection of the side sill which occurs at the door posts is ameliorated so that the tendency of breakage of the side sill substantially at the door posts is diminished.

According to the invention a substantial increase in strength is afforded in the vicinity of the door posts. It has been determined by computation that the strength at the top of the combined side sill and side sill reinforcement structure has been increased by 75% and at the bottom thereof by 52%. Thereby the change in the nature of the deflection in the side sill which occurs in the vicinity of the door posts is amply provided for so that breakage heretofore occur-

ring in side sills at these points is substantially obviated.

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 welded side for railway cars comprising a side plate, a side sill having an intermediate section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, and a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement.

2. A welded side for railway cars comprising a side plate, a side sill having an intermediate section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, and a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, the outer faces of said door post flanges being flush with the outer faces of said upstanding flanges of said end sill sections.

3. A welded side for railway cars comprising a side plate, a side sill having an intermediate section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, and a reinforcement welded to and extending longitudinally downwardly from said sill sections, said reinforcement extending beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, the inner faces of said door post flanges being flush with the inner faces of said upstanding flanges of said end sill sections.

4. A welded side for railway cars comprising a side plate, a side sill having an intermediate section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, and a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, the inner and outer faces of said door post flanges being flush with the inner and outer faces of said upstanding flanges of said end sill sections.

5. A welded side for railway cars comprising a side plate, a three piece side sill embodying an intermediate section and end sections, each of said sections being formed from a plate and having an inwardly extending flange and an outer upstanding flange, spaced door posts welded to said side plate, said door posts having vertical flanges butt welded to said upstanding flanges of said end sill sections, said upstanding flanges of said intermediate sill section being offset inwardly relative to said upstanding flanges of said end sill sections a distance equal to the thickness of said door post flanges, and a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending beyond said door posts, said door post flanges extending longitudinally downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, said inwardly extending flange of said intermediate sill section being welded to said inwardly extending flanges of said end sill sections.

6. A welded side for railway cars comprising a side plate, a three piece side sill embodying an intermediate section and end sections, each of said sections being formed from a plate and having an inwardly extending flange and an outer upstanding flange, spaced door posts welded to said side plate, said door posts having vertical flanges butt welded to said upstanding flanges of said end sill sections, said upstanding flange of said intermediate sill section being offset inwardly relative to said upstanding flanges of said end sill sections a distance equal to the thickness of said door post flanges, and a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door post flanges extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, said inwardly extending flange of said intermediate sill section being butt-welded to said inwardly extending flanges of said end sill sections, said butt welds lying at an angle to said upstanding flanges of said sill other than a right angle.

7. A welded side for railway cars comprising a side plate, a side sill having an intermediate

section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, and door stop and sealing members welded to and along said door post flanges, said members lying outwardly of said upstanding flanges of said intermediate sill section and said sill reinforcement.

8. A welded side for railway cars comprising a side plate, a three piece side sill embodying an intermediate section and end sections, each of said sections being formed from a plate and having an inwardly extending flange and an outer upstanding flange, spaced door posts welded to said side plate, said door posts having vertical flanges butt welded to said upstanding flanges of said end sill sections, said upstanding flange of said intermediate sill section being offset inwardly relative to said upstanding flanges of said end sill sections a distance equal to the thickness of said door post flanges, a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door post flanges extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, said inwardly extending flange of said intermediate sill section being welded to said inwardly extending flanges of said end sill sections, and door stop and sealing members welded to and along said door post flanges, said members lying outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement.

9. A welded side for railway cars comprising a side plate, a side sill having an intermediate section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, a reinforcement having a vertical flange welded to and extending downwardly from said sill sections and an inwardly extending flange, and spaced plate members welded to the underside of said inwardly extending flanges of said sill sections and said flanges of said reinforcement, said reinforcement extending longitudinally beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement.

10. A carside for railway cars comprising a side

plate, a side sill having an inwardly extending flange and an outer upstanding flange, spaced door posts secured to said side plate and sill, and means for reinforcing said sill at said door posts, said means extending along said sill on both sides of each of said door posts and embodying an inner vertical flange welded to and along said inwardly extending flange of said sill and an outwardly extending flange spaced above said inwardly extending flange of said sill and welded to and along said upwardly extending flange of said sill.

11. A carside for railway cars comprising a side plate, a side sill having an inwardly extending flange and an outer upstanding flange, spaced door posts secured to said side plate and sill, said door post being coped adjacent to said sill and means for reinforcing said sill at said door posts, said means extending along said sill through said copes in said door posts and embodying an inner vertical flange welded to and along said inwardly extending flange of said sill and an outwardly extending flange spaced above said inwardly extending flange of said sill and welded to and along said upwardly extending flange of said sill, a portion of each of said door posts lying behind said vertical flange of said means, said door posts being secured to said reinforcing means.

12. A welded side for railway cars comprising a side plate, a side sill having an intermediate section and end sections, each of said sections embodying an inwardly extending flange and an outer upstanding flange, said upstanding flanges of said end sections lying in the same plane, said upstanding flange of said intermediate section being offset inwardly of said upstanding flanges of said end sections, spaced door posts welded to said side plate and sill, a reinforcement welded to and extending downwardly from said sill sections, said reinforcement extending longitudinally beyond said door posts, said door posts having vertical flanges welded to said upstanding flanges of said end sections, said flanges of said door posts extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, said door post being coped adjacent to said sill and means for reinforcing said sill at said door posts, said means extending along said sill through said copes in said door posts and embodying an inner vertical flange welded to and along said inwardly extending flanges of said sill sections and an outwardly extending flange spaced above said inwardly extending flanges of said sill sections and welded to and along said upwardly extending flange of each of said sill sections, a portion of each of said door posts lying behind said vertical flange of said means, said door posts being welded to said flanges of said reinforcing means.

13. A welded side for railway cars comprising a side plate, a three piece side sill embodying an intermediate section and end sections, each of said sections being formed from a plate and having an inwardly extending flange and an outer upstanding flange, spaced door posts welded to said side plate, said door posts having vertical flanges butt welded to said upstanding flanges of said end sill sections, said upstanding flange of said intermediate sill section being offset inwardly relative to said upstanding flanges of said end sill sections a distance equal to the thickness of said door post flanges, a reinforcement welded to and extending downwardly from

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said sill sections, said reinforcement extending longitudinally beyond said door posts, said door post flanges extending downwardly outwardly of said upstanding flange of said intermediate sill section and said sill reinforcement and being welded to said intermediate sill section and sill reinforcement, said inwardly extending flange of said intermediate sill section being welded to said inwardly extending flanges of said end sill sections, said door posts being coped adjacent to said sill, and means for reinforcing said sill at said door posts, said means extending along said sill through said copes in said door posts and embodying an inner vertical flange welded to and along said inwardly extending flanges of said sill sections and an outwardly extending flange spaced above said inwardly extending flanges of said sill sections and welded to and along said

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upwardly extending flange of each of said sill sections, a portion of each of said door posts lying behind said vertical flange of said means, said door posts being welded to said flanges of said reinforcing means.

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