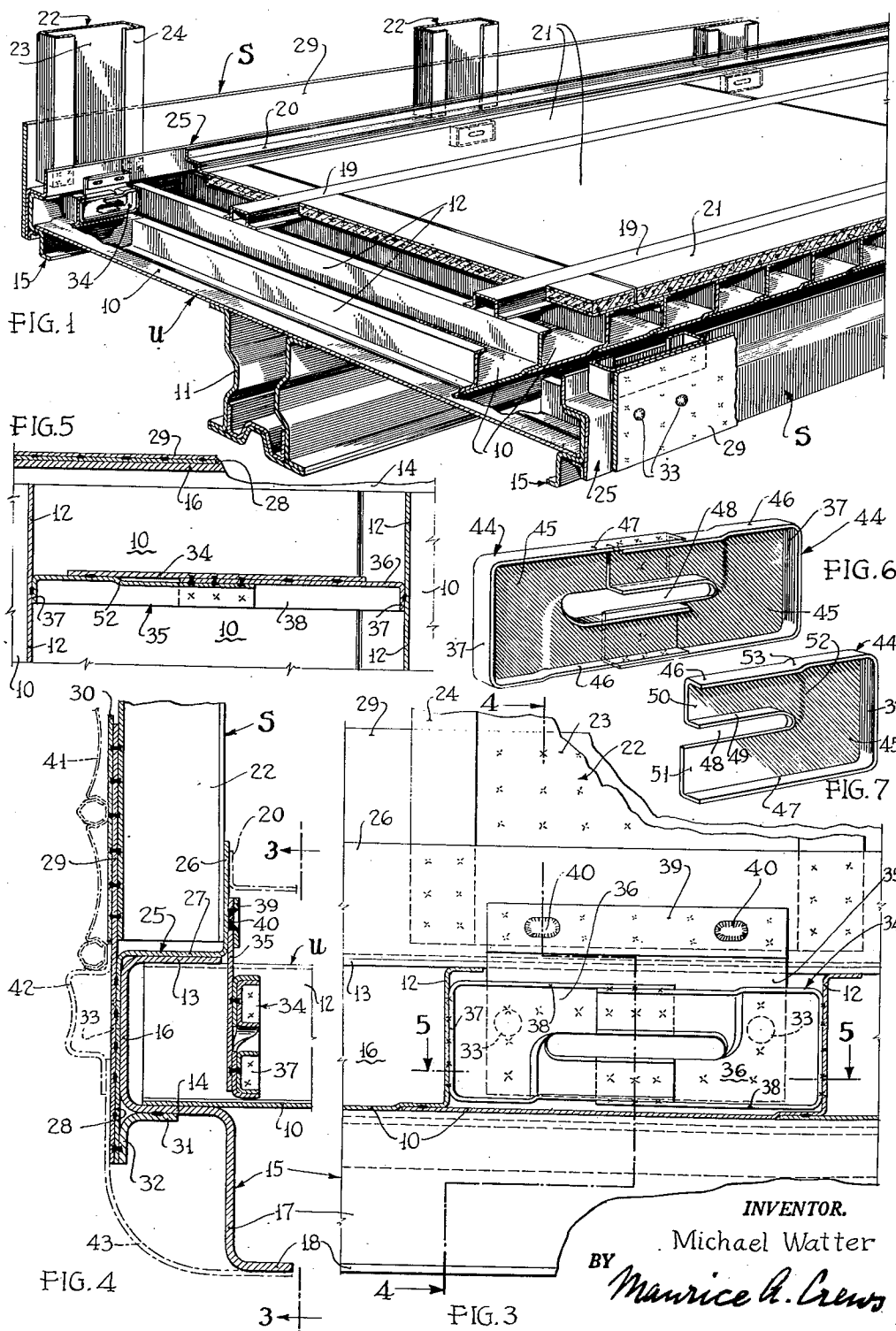


M. WATTER
JOINT ESPECIALLY FOR RAILWAY CARS AND
SIMILAR VEHICLE BODIES

2 Sheets-Sheet 1

Filed Oct. 6, 1948



Aug. 28, 1951

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JOINT ESPECIALLY FOR RAILWAY CARS AND
SIMILAR VEHICLE BODIES

2,565,709

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2 Sheets-Sheet 2

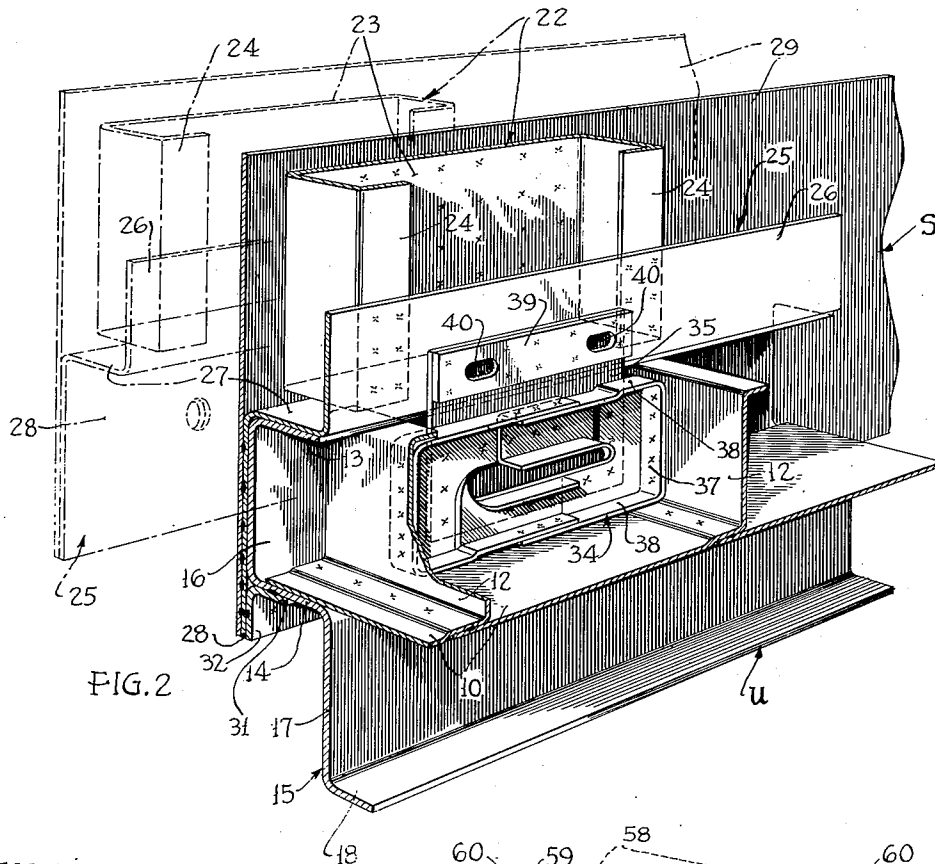


FIG. 2

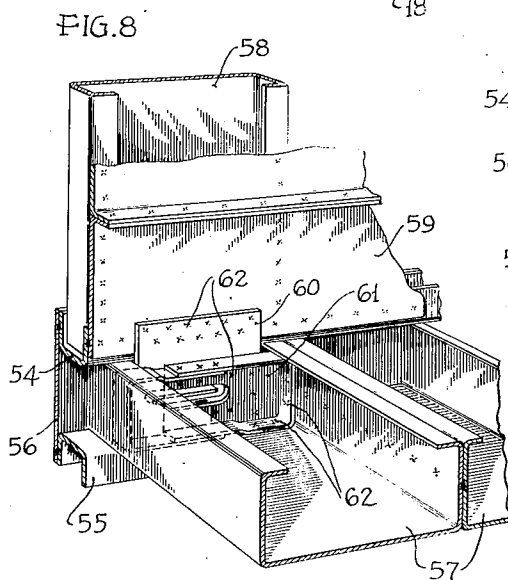


FIG.8

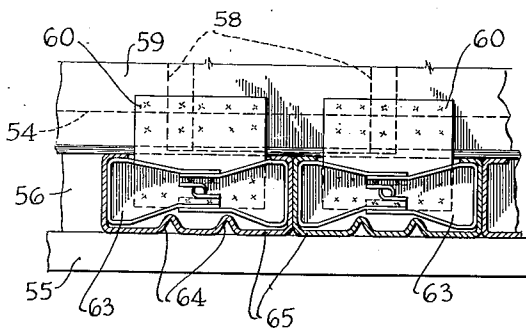


FIG. 9

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14 Claims. (Cl. 105—397)

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This is a continuation-in-part of the inventor's abandoned application Serial No. 573,298, filed January 17, 1945, for "Fabricated Structure."

The invention relates to a joint between adjoining structures of railway car and similar vehicle bodies. More specifically, the invention relates to a final-assembly connection between a preassembled bottom or underframe unit and preassembled side wall units of such bodies. The invention also relates to brackets or gussets adapted specifically for use in the aforesaid type of joint.

Among the objects of the invention is a final-assembly connection between the bottom unit and the side wall units of railway cars and the like, which is strong and durable, which rigidly holds the units together, which can be made without requiring tools reaching from the inside to the outside of the body, which relieves considerably temporary crowding and ensuing mutual interference of the men simultaneously at work in the interior of a car, which can be speedily made thereby reducing the length of the assembly line and permitting earlier start on completion of the body interior, which is simple and relatively inexpensive in regard to the parts entering into it as well as in regard to the procedure of connecting the parts with each other, which affords a high degree of accuracy of the dimensions of the body, which takes care of minor dimensional variations of the units and parts entering into it, which allows the units to be equipped before their final assembly, at least in part, with insulation, accessories, trim, etc., and which can be applied to constructions now in production without extensive changes.

These briefly outlined objects of the invention as well as other advantages and the means for achieving them are fully set forth in the following description of the embodiments of the invention which are illustrated in the attached drawing.

In the drawing,

Figure 1 is a fragmentary, partly sectional, perspective view of the underframe unit of a railway car and of adjoining portions of the side wall units;

Figure 2 is a fragmentary perspective view, on a larger scale, of the portion shown in the left-hand corner of Figure 1, and a phantom view of the side wall unit before its connection with the underframe unit;

Figure 3 is an inside elevation and a vertical longitudinal section along line 3—3 of Figure 4 of the adjoining portions of side wall and underframe unit;

Figure 4 is a vertical transverse section through the connection between side wall unit and underframe unit, the section being taken along line 4—4 of Figure 3;

Figure 5 is a fragmentary horizontal section along line 5—5 of Figure 3;

Figure 6 is a perspective view of one of the brackets entering into the connection illustrated in the preceding figures;

Figure 7 is a perspective view of one of the two members forming the bracket shown in Figure 6;

Figure 8 is a perspective view, similar to but on a smaller scale than Figure 2, of a second embodiment of the invention; and

Figure 9 is a fragmentary inside elevation and vertical longitudinal section, similar to but on a smaller scale than Figure 3, of a third embodiment of the invention.

The railway car body fragmentarily illustrated in Figures 1 to 7 comprises an underframe or bottom unit U and a pair of side wall units S. The parts of the body which are not shown in the drawing, that is, the upper parts of the side wall units, the roof, the end walls, the end portions, bolsters and cross bearers of the underframe, etc., may be of any known or otherwise appropriate construction. The illustrated structure belongs to a body in which underframe, side walls and roof together constitute a closed box-sectional girder.

The underframe or bottom unit U has a horizontal shear panel structure 10 which extends over substantially the entire width and at least a large portion of the length of the car, is secured to a center sill 11, and is reinforced over its entire width by transverse webs 12 which are spaced from each other in longitudinal direction. The margin of panel 10 and the ends of webs 12 on each side of the car fit telescopically between the upper wall 13 and the lower wall 14 of an inwardly facing channel-section portion of a side sill 15 and are secured to these walls. Each sill 15 has a vertically arranged bottom wall or web 16 and downwardly and inwardly directed web or flange extensions 17, 18. The tops of webs 12 are interconnected by longitudinal stringers 19 which, after final assembly, are supplemented by marginal sections 29 and, together with the latter, carry the floor boards 21.

Each side wall unit S has longitudinally spaced upright posts 22 provided with outer and inner longitudinally extending wall portions, arms or flanges 23, 24. A Z-section sill 25 has its one upwardly extending arm 26 secured to the inner surface of the inner flanges 24 of the posts, its

horizontally arranged web 27 arranged underneath the ends of the posts, and its downwardly projecting arm 28 arranged with its outer surface in the plane of the outer surface of the outer walls 23 of the posts. A continuous gusset plate 29 extends between and is overlappingly secured to the outer walls 23 of the posts and arm 28 of the side sill. A shear panel 30 extends gusset plate 29 upwardly and is structurally connected to the outsides of the posts and to a belt rail structure (not shown) interconnecting the posts.

In final assembly, web 27 and arm 28 of sill 25 of each side unit S are nestingly fitted over walls 13 and 16 of sills 15 of the underframe unit U. The general construction of the underframe unit and of the side wall units and their relative arrangement upon final assembly, as described so far, are known. The novel changes in the construction of the units and the changes in the final assembly of the units with each other which represent the invention, will now be described.

As part of the final assembly means of underframe unit U and side wall units S, each underframe sill 15 has its lower horizontal wall 14 connected with one arm 31 of an angle-section profile or rail whose other arm 32 depends downwardly and has its outer surface arranged in the same plane as the outer surface of wall 16 of the sill. In final assembly of each side wall unit S and underframe unit U, arm 32 is overlapped by the margins of sill arm 28 and gusset plate 29 of the side wall unit and is conveniently connected with them by spot welding or riveting. The overlapping arm and margins are accessible exclusively from the outside of the car and present no obstacles to short-throated two-jawed or pincer-type tools, such as welding or riveting guns.

As distinguished from known constructions, arm 28 and gusset plate 30 are extended downwardly beyond the channel-section portion 13, 14, 16 of the underframe side sill 15 so as to overlap the arm 32.

The described outer connection between underframe unit U and side wall units S may be reinforced, preferably at highly stressed points such as the post locations, by plug welds 33 extending through holes in the members 28, 29 of the side wall unit and reaching wall 16 of the underframe sill 15. Plug welding may be replaced by other connecting means, for instance blind riveting, which can be applied exclusively from the outside.

As another part of the final connecting means between the underframe unit U and the side wall units S, the underframe unit is provided with brackets 34 and gussets 35 at longitudinal intervals. These connecting means are preferably arranged in the regions of side wall posts 22. Each bracket 34 is in the form of a shallow box having a bottom wall 36 and side walls 37 and 38, the latter merging into each other and presenting a closed-figure frame. Gusset plate 35 is secured by spot welding or otherwise to the outer surface of bottom wall 36 and it projects beyond one of the side walls 38 of bracket 34. The structures formed of bracket 34 and gusset 35 are arranged between two successive webs 12 of floor pan 10 so that bottom wall 36 and gusset plate 35 extend vertically and in the longitudinally direction of the car. Walls 37 of the brackets are secured, preferably by spot welding, to the adjoining webs 12. Brackets 34 and gussets 35 are so located that in final assembly of underframe unit U and side wall units S the outer surface of gusset plate 35 overlaps with its projecting portion the inner arm

26 of sill 25 of the side unit. The projecting portion of gusset 35 may be reinforced by a welded-on reinforcing plate 39.

In final assembly, the gusset plates 35 of the underframe unit are secured to arms 25 of the side sills 25 by plug welds 40 through holes in plates 35, 39. However, other connecting means may be employed, provided they do not require tools reaching across the side wall from the interior to the exterior of the car. For instance, plates 35 and arms 26 may be connected by spot welding which requires merely a welding tool reaching around the top of arm 26. Plug welds or similar connecting means are preferable inasmuch as they permit equipping the side wall with accessories, insulation, trim, etc., which would impede or prevent welding tools from reaching the outer surface of arm 26.

The angle-section profiles 31, 32 and the brackets and gussets 34, 35 are connected with the underframe unit before final assembly of the latter with the side wall units, that is, at a stage when all connecting points are easily accessible for spot welders or the like. However, the pre-assembled brackets and gusset plates 34, 35 also may be installed in the underframe unit after the latter has been brought together with the side wall units. The connecting points between the bracket walls 37 and the webs 12 of the floor remain accessible and the installation at this stage has the advantage that the gusset plates can be fitted against arm 26 of the side wall sill.

After the described inner and outer connections between underframe units and side wall units are completed, outer and inner trim covering the assembly joints is added. On the inside the baseboard profiles 20 and the outer portions of the floor member 21 are installed; the central floor board portion may have been installed at an earlier stage. On the outside, the car may be covered with known fluted panelings 41, rub rails 42 and skirt moldings 43 (Figure 4).

The rigidity of connection between the side walls, particularly the posts, and the underframe as afforded by the new design, permits the maintenance of great accuracy in regard to the relative position of these units. In other words, the new joint assures verticality of the side walls. This accuracy in turn permits installation of interior partitions, equipment, trim panels, etc., as bench assemblies and prefabricated subassemblies without a considerable amount of hand fitting.

The fact that in the new design the inner final assembly joints are made quickly and without resort to large welding tools within the car, makes it possible to begin the trim and interior installations much nearer the beginning of the assembly line than in previous constructions. It even permits of other work to be done in the car while the inner joints are being made.

The good accessibility of the bracket and gusset connecting means for small tools permits the equipment of the underframe or floor unit with at least a large part of the insulation, floor covering, floor-mounted seats, tables and counters.

Though far-reaching in their effect, the changes of the new design over similar known designs are small in terms of the number of parts to be added or the extent to which previously used parts have to be modified. This greatly facilitates the adaptation of the new design without interruption of production and without extensive changes or additions of manufacturing equipment.

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While the brackets 34 may be one-piece structures, there are advantages in making each of them of two pieces so as to take care of variations in spacing between the floor panel webs 12 and so as to facilitate the installation of the brackets.

The adjustable bracket, most clearly shown in Figure 6, comprises two basically identical parts 44, 44. One of the parts 44 is separately shown in Figure 7. Should special fitting conditions require slight alterations in one or both of the parts, they would still be essentially identical. Each part 44 comprises a bottom wall portion 45, side wall portions 46 and 47, and an end wall 37.

The bottom wall portion 44 is notched at 48 from the end and on one side is provided with a strengthening flange 49 which dies away in a curved rear end at the end of the notch. The notch divides the bottom wall into bifurcations 50, 51 and these furcations are disposed in different planes. The furcation 50 is offset inwardly relative to the plane of the remainder of portion 45 at a joggle 52 by a distance equal to the thickness of the metal stock. Furcation 51 lies in the plane of bottom portion 45. One of the side walls or flanges, 46 here, is offset by the thickness of the stock by a joggle 53 which is a continuation of the joggle 52.

When two mating identical bracket parts 44 are assembled, the furcations are arranged in staggered overlapping relationship, the furcation 50 of each part overlying the furcation 51 of the other part on both sides of the notches. Also the straight side 47 of one part fits with the offset side 46 of the other part. Thus, the two parts together present smooth exterior surfaces on all sides and will fit smooth surfaces of structural parts without tilting and without the necessity for using filler plates. When applied to the structure per Figures 1 to 5, the smooth bottom wall 36 of bracket 34, formed by wall portions 45, presents a smooth supporting surface for gusset plate 35. Similarly, the horizontal walls 38, formed by wall portions 46, 47, present smooth surfaces for contact with floor panel 10 or other parts.

The bracket is very strong but withal very light. The bracket is adjustable for a considerable length variation, but in large production it will be usual to make the brackets of a definite size for definite locations. If the dimensions of structural members vary as the distance between webs 12, the brackets may be adjusted to fit. If the structural parts do not vary, the bracket parts may be assembled and connected together as in a jig and later assembled with the structure. The identical form of the bracket parts and the adjustability of the length of the brackets requires one single set of dies only, thus reducing manufacturing costs and making any part of a lot available for use with any other part.

In the embodiment illustrated in Figure 8, spaced back-adjacent channel members 54, 55 and an outer plate 56 form a channel-section side sill. This sill is connected to horizontal channel members or floor pans 57. A vertical frame member or post 58 is also connected in the assembly and a flat plate 59 is attached to one arm of the sill channel member 54 and to post 58. A gusset plate 60 is attached to plate 59, preferably at the post location, and extends down into the open space of a channel member 57.

An adjustable bracket 61, of similar design as bracket 34 shown in Figures 1 to 7, is brought to the required length and inserted in the space

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of the channel 57, the lower and vertical sides smoothly fitting bottom and sides of channel member 57 and the bottom of the bracket fitting smoothly against gusset plate 60. The parts are secured together at all points of plane contact by any suitable means, as by welding indicated at 62.

The structure shown in Figure 8 also may be composed of two preassembled units, one unit including channel 55, floor pans 57, and preferably, gussets and brackets 61, 62, and the other unit including channel 54, plates 56 and 59, and posts 58. In final assembly, lower margin of plate 56 is welded to outer arm of channel 55 and plate 59 is connected by gussets and brackets 60, 61 to the floor pans 57 in the manner described for the design per Figures 1 to 7.

In Figure 9 a bracket 63 of the same type as before is used, but it is indented on the sides in the middle to span strengthening members or ridges 64 which are provided in the bottoms of the transverse channel members 65. The bottom of bracket 63 still presents a smooth surface throughout and the ends of the sides lie in a common surface in spite of the fact that the center of the sides is indented. When the meeting ends of the sides are indented, the side joggle, as such, may be omitted, the same effect being produced by having one side wall set in more than the other. The construction being otherwise the same, the parts of Figure 9 are designated by the same reference numerals as in Figure 8 and their description is not repeated. Note, however, the provision of two brackets and gussets at the location of one post.

It is to be understood that the present invention is not limited to the embodiments shown and described and that various modifications and refinements may be employed in practice without departing from the spirit of the invention. In describing the illustrated embodiments, several modifications are pointed out, for instance the one-piece formation of the brackets, and the installation of gussets and brackets during the final assembly instead of during the preassembling of the underframe unit.

What is claimed is:

1. In an underframe unit for a railway car or similar vehicle body; a floor panel reinforced by a plurality of longitudinally spaced transverse upright webs; an open-box bracket having a bottom wall and side walls all around the margins and on one side of said bottom wall; said bottom wall extending vertically to the floor panel at a distance from a side margin thereof between two successive webs and two of said side walls overlapping the two webs; a structural connection between said two overlapping side walls and webs; and a gusset plate overlapping secured to said bottom wall on the side opposite said side walls and projecting upwardly beyond said bottom wall; the upwardly projecting portion of the gusset plate providing final assembly means between the underframe unit and the inner surface of a body side wall arranged on top of said webs.

2. In an underframe unit for a railway car or similar vehicle body; a structural floor panel extending over the width of the body; a plurality of longitudinally spaced transverse upright webs reinforcing said floor panel; a bracket in the form of an open box having a bottom wall and side walls, said side walls forming a closed-figure frame and extending toward one side from said bottom wall; said bracket having its bottom

wall fitted between two successive webs adjacent one longitudinal side margin of said panel so that said bottom wall is located above and extends vertically to the floor panel and in the longitudinal direction of the body so that said side walls extend away from said side margin of the panel, and so that two opposite side walls overlap said two webs to which they are secured; and a gusset plate overlappingly secured to said bottom wall on the side opposite said side walls and projecting upwardly beyond said bottom wall, the upwardly projecting portion of the gusset plate presenting itself for overlapping securement to the inside of a body side wall as part of the final assembly of body side wall with the underframe unit.

3. Underframe unit for a railway car or similar vehicle body, comprising: a structural floor panel extending over the width and a large part of the length of the body; a plurality of longitudinally spaced transverse upright webs extending over the width of and reinforcing said floor panel; a plurality of brackets, each in the form of an open box having a bottom wall and marginal walls which present a closed-figure frame and extend toward one side of said bottom wall; said brackets having their bottom walls fitted between pairs of successive webs adjacent the longitudinal side margins of said panel so that said bottom walls extend vertically to the floor panel and in the longitudinal direction of the body, and so that opposite marginal walls overlap the respective webs to which they are secured; and a gusset plate overlappingly secured to each of said bottom walls on the side opposite said marginal walls and projecting upwardly beyond the webs; the upwardly projecting portions of the gusset plates being arranged for overlapping final-assembly securement to the inside of body side walls.

4. Structural floor panel for a railway car or similar vehicle body reinforced by a plurality of spaced upright webs; a bracket having a wall and flanges along two opposite margins of said wall; said wall extending vertically to the floor panel between two successive webs and said flanges overlapping the two webs; a structural connection between said flanges and said two webs; and a gusset plate overlappingly secured to said wall and projecting upwardly beyond said webs, the upwardly projecting portion of the gusset plate providing assembly means between said floor panel with its webs and an adjoining upright structure of the body.

5. In a body of elongated prismatic shape for railway cars and similar land vehicles, incorporating a preassembled underframe unit and preassembled side wall units; said underframe unit comprising side sills each having vertically spaced horizontal upper and lower walls and an upright web interconnecting the outer margins of said horizontal walls, a pair of angle sections, each angle section having a horizontal arm connected with the lower wall of one of said sills and its other arm extended downwardly and arranged with its outer surface in the plane of the outer surface of the web of the respective sill; a bottom sill structure formed along the lower margin of each side wall unit and having an inwardly extending horizontal arm and a downwardly extending arm; said arms of said bottom sills overlapping in final assembly of underframe and side wall units the top walls and webs of said side sills; said downwardly extending arms of said bottom sills being wider than said webs of said

side sills thereby overlapping with their lower margins the downwardly extended arms of the angle sections on the outsides; and final assembly means interconnecting said margins and said last-named arms, the construction permitting application of said assembly means from the outside of the body by tools gripping the overlapping margins and arms between them.

6. In a railway car or similar vehicle body, comprising an underframe unit and side wall units; said underframe unit including a horizontal shear panel reinforced by a plurality of webs which are longitudinally spaced from each other and arranged in upright transverse planes; each of said side wall units including longitudinally spaced upright posts having their lower ends interconnected on the inside by an upright longitudinally extending plate; said underframe unit also including a plurality of brackets and gusset plates arranged close to and distributed along the length of the side margins of the underframe unit, each of said brackets having a wall extending between two successive webs in a longitudinal upright plane and arms on the upright margins of said wall arranged in transverse upright planes, said arms overlapping and being secured to the respective webs, each gusset plate being overlappingly secured to said wall of one of the brackets and projecting upwardly therebeyond; said brackets and gusset plates being arranged so that the outwardly facing sides of the gusset plates overlappingly engage the inwardly facing surfaces of said plates of the side wall units and are secured thereto in final assembly of the underframe with the side wall units.

7. In a railway car or similar vehicle body; an underframe unit having a horizontal shear panel extending over the width of the car and reinforced by transverse upright webs which are longitudinally spaced from each other, the marginal portions of the panel and the ends of the webs extending into and being secured in the interior of inwardly facing U-section side sills of the underframe unit, two angle-section rails, each rail having one inwardly extending horizontal arm secured to the lower arm of one of the U-section side sills and the other arm extended downwardly and arranged in the plane of the vertical web of the U-section, a plurality of inner gusset plates extending between and overlappingly secured at longitudinal intervals to each two adjacent webs of the underframe by transversely and vertically extending arms; a pair of side wall units, one on each side of the body, each side wall unit comprising longitudinally spaced vertical posts interconnected at their lower ends by a Z-section bottom sill, said Z-section sill having its one arm overlappingly secured to the inside of the posts, its web arranged horizontally underneath the ends of the posts and its other arm extended downwardly and arranged in the plane of the outer surface of the posts, the posts of each side wall unit being furthermore interconnected on the outside by an outer gusset plate which extends downwardly beyond the posts and is overlappingly secured to the downwardly extending arm of said Z-section sill; said underframe unit and side wall units being rigidly connected with each other in final assembly by means securing the upwardly projecting portions of the inner gusset plates to the insides of the upwardly projecting arms of the Z-section side sills and by means securing the downwardly extending arms of the angle-section rails of the underframe to the lower margins of the outer gusset plates and

to the downwardly extending arms of the Z-sections.

8. In a railway car or similar vehicle body; an underframe unit having a horizontal shear panel extending over the width of the car and reinforced by transverse upright webs which are longitudinally spaced from each other, two angle-sections, one along each side margin of the underframe unit, each section having one inwardly extending horizontal arm secured underneath said shear panel and its other arm extended downwardly, a plurality of inner gusset plates arranged at longitudinal intervals between each two adjacent webs of the underframe unit and secured by transversely and vertically extending arms to such webs; two side wall units, each comprising longitudinally spaced vertical posts and interconnected by an outer plate which extends downwardly beyond the posts; said underframe unit and side wall units being rigidly secured to each other in final assembly by means connecting the upwardly projecting portions of said inner gusset plates to the insides of the side wall units at the post locations and by means connecting the downwardly extended arms of the angle sections of the underframe unit to the downwardly extending portions of the outer plates of the side wall units.

9. In a body of elongated prismatic shape for railway cars and similar land vehicles, incorporating a preassembled underframe unit and a preassembled side wall unit; said underframe unit comprising a side sill having a horizontal inwardly extending lower wall, an upright wall along the outer margin of said horizontal wall and a flange extended downwardly beyond said lower wall and arranged with its outer surface in the plane of the outer surface of said outer walls; a bottom sill structure along the lower margin of the side wall unit having on its outside a web extending downwardly beyond the inner part of the unit; the downwardly extended portion of said web overlapping said upright wall and with its lower margin said flange; a first set of final assembly means interconnecting said web and said flange, and being of the type made by two-jawed tools gripping between their jaws said flange and the margin of said web; and a second set of final assembly means interconnecting said web to said upright wall and being of the type, like plug welds, made by a tool arranged exclusively on the outside of said web.

10. In a body of elongated prismatic shape for railway cars and similar land vehicles, incorporating a preassembled underframe unit and a preassembled side wall unit; said underframe unit having a stress-transmitting floor structure and a flange which extends along a side margin of the floor structure downwardly beyond the underside of the latter; said side wall unit comprising longitudinally spaced upright posts interconnected at the bottom by a sill and a gusset plate, said sill having a horizontal inwardly directed first arm arranged under the lower ends of said posts and a second arm projecting downwardly from the outer margin of the first arm in the plane of the outer surface of the posts, said gusset plate overlapping the outside of the posts and the second arm of said sill; upon final assembly of said units said side wall unit fitting with its said arms over the longitudinal top edge of the underframe unit, said second arm and said gusset plate both being of such width below said first arm as to overlap said flange of the underframe unit with their lower margins, both sides

of said overlapping margins and of said flange being accessible from the outside of the body to pincer-type connecting tools like electric spot welders, and means connecting the overlapping margins and flange made by such tools.

11. An adjustable bracket comprising a pair of identical one-piece members; each of said members having a wall bifurcated by the provision of a narrow slot emanating from one of the margins of the wall and extending part-way to the opposite margin, one of the furcations of each member being offset, at least in its outer region, by the wall thickness in the direction transversely to the plane of the wall while the other furcation is not offset; said two members having their furcations overlappingly secured to each other so that the non-offset furcation is received by the recessed surface of the offset furcation with the result that one surface of the bracket offers a plane attachment surface for an adjoining plane-surfaced member such as a gusset plate.

12. A one-piece member for forming a bracket together with a second identical one-piece member, said member having a wall bifurcated by the provision of a narrow slot emanating from one of the margins of the wall and extending part-way to the opposite margin, one of the furcations being offset, at least in its outer region, by the thickness of the stock of which it is formed and in the direction transversely to the plane of the wall while the other furcation is not offset, two of said members being adapted for having their furcations overlappingly secured to each other so that the non-offset furcations are received by the recessed surfaces of the offset furcations with the result that one surface of a bracket composed of two members offers a plane attachment surface for an adjoining member.

13. An adjustable bracket composed of identical one-piece members, each of said members having a bottom wall and marginal walls extending toward one side of the bottom wall, said bottom wall being bifurcated by a slot emanating from one edge of the member, only one of said furcations having at least its outer end offset with respect to the remainder of the bottom wall toward the same side toward which said marginal walls extend, the amount of the offset being equal to the thickness of the stock of which the member is formed, said members having their furcations overlappingly secured to each other in such a manner that each member has its non-offset furcation received in the recess formed by the offset furcation of the other member, so that the marginal walls of the two members extend in the same direction, and so that the bottom walls present a substantially plane surface on the side facing away from the marginal walls which surface is adapted for the attachment of a flat-surfaced adjoining member such as a gusset plate.

14. A one-piece member for forming an adjustable bracket together with a second identical one-piece member, said member having a bottom wall and marginal walls extending at least along two opposite edges and toward one side of the bottom wall, said bottom wall being bifurcated by a slot emanating from one edge of the member between said two opposite edges, one of said furcations having at least its outer end offset with respect to the remainder of the bottom wall in the same direction in which said marginal walls extend, and the portion of the marginal wall adjoining the offset furcation also being offset toward the opposite marginal wall,

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the amount of both offsets being equal to the thickness of the stock of which the member is formed, two of said members being adapted for having their furcations and marginal walls overlappingly secured to each other in such a manner that the non-offset furcation and wall of one member are received in the recesses formed by the offset furcation and marginal wall portion of the other member.

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