April 18, 1950 A. G. DEAN 2,504,660

BODY FOR VEHICLES, ESPECIALLY RAILWAY CARS

Filed May 10, 1947

FIG. 1

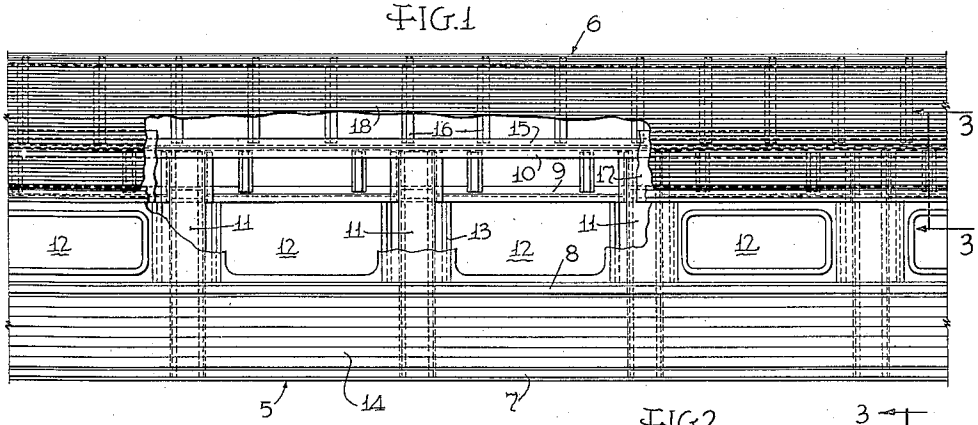
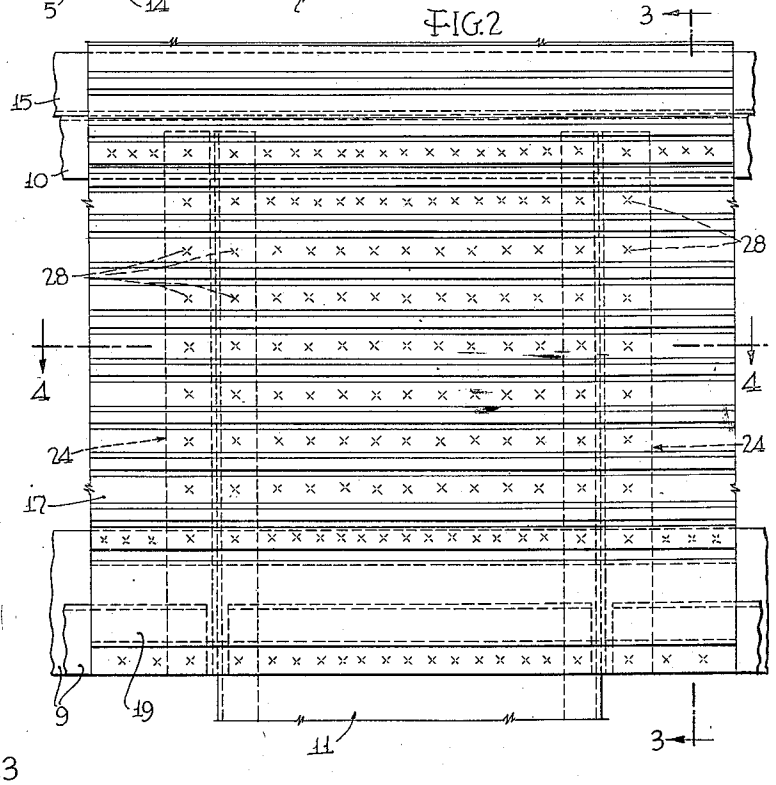


FIG. 2



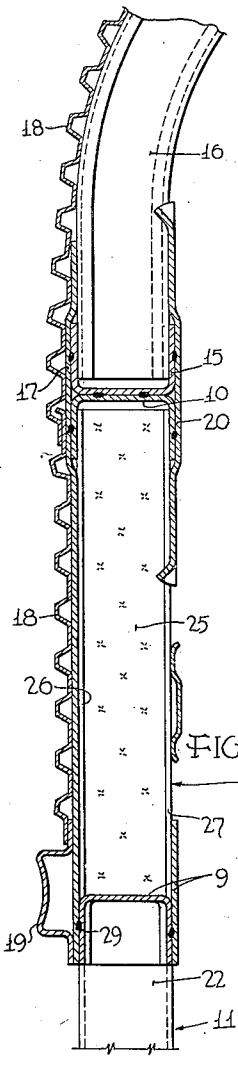


FIG. 3

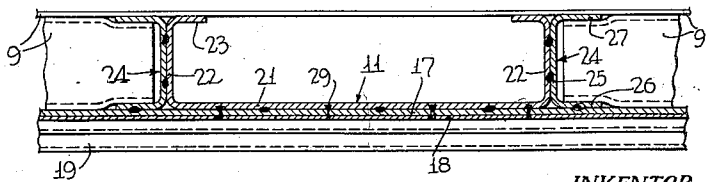


FIG. 4

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BODY FOR VEHICLES, ESPECIALLY RAILWAY CARS

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5 Claims. (Cl. 105—397)

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The invention relates to an improvement in the construction of railway cars or other vehicles with bodies presenting similar problems. More particularly, the invention involves an improved construction of the side wall posts of a vehicle body and of the connection of such posts with adjoining body elements. Still more specifically, the invention relates to an improvement of the construction disclosed in the applications of Walter B. Dean, Serial No. 585,899, "Body side wall for vehicles, especially railway cars," and Serial No. 585,900, "Body, especially roof for vehicle such as railway cars," both filed March 31, 1945.

The main object of the invention is to provide a vehicle body having posts between adjoining window openings which are mainly formed by straight-sided vertical members of constant cross section, and which are so constructed as to reduce the space occupied by these posts between the windows to a minimum, while providing adequate strength and an area for the overlapping attachment of the posts to adjoining members in a region beyond the window openings which is greater than the width of the posts in the region of the window openings.

The aforesaid and other objects are mainly achieved according to the invention by providing posts comprising a main member in the form of a straight-sided shallow transversely facing channel section throughout its height, and one or more additional angle- or U-sections attached to the side walls of the main member in a region beyond the window openings so that the effective width of the post available for overlapping connection with adjoining body members is increased while retaining a relatively small width of the post in the region between adjacent window openings.

The aforesaid and other objects, features and advantages of the invention will be more easily and fully understood from the illustration of one embodiment of the invention in the attached drawing and from the following description of such embodiment.

In the drawing:

Figure 1 is a fragmentary side elevation of a railway car body, certain parts of the outer panel being broken away for exposing the framework;

Figure 2 is a fragmentary elevation, on a larger scale, of the upper end of one of the posts shown in Figure 1 and of the adjoining body members;

Figure 3 is a fragmentary section on the scale of Figure 2, the section being taken along lines 3—3 of Figures 1 and 2; and

Figure 4 is a horizontal fragmentary section along line 4—4 of Figure 2.

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The illustrated body comprises two side wall units 5 (only one being shown in the drawing) interconnected by a roof unit 6.

The side wall unit 5 has as main strength elements longitudinally extending chords 7, 8, 9 and 10 interconnected by vertical posts 11 arranged between large window openings 12. The window openings may extend all the way to the posts 11 or their size may be reduced by vertical members 13 inserted near the posts 11 between the chords 8 and 9. So as to permit the maximum size of window openings, it is desirable to keep the width of the posts 11 in the window regions as small as possible without, of course, encroaching upon the necessary strength of the structure. The side wall comprises also other reinforcing members, such as diagonals (not shown) between the chords 7 and 8, outer panelling 14, etc.

The roof unit 6 has on each side a channel-section chord member 15 connected to the ends of transverse carlines 16. A shear panel 17 is connected to the lower ends of the carlines 16 and the chord 15 and extends downwardly beyond the chord 15. The carlines 16, the chord 15 and the shear panel 17 are structurally connected with longitudinally corrugated sheet metal 18 and a molding 19 is secured along the lower margin of the panel 17.

The side wall units and the roof unit are connected with each other through the overlapping bottom walls of their marginal chords 10 and 15, through the overlapping portions of the upper ends of the posts 11 and the chords 9 and of the roof members 17, 18 and 19, and by an inner longitudinal member 20 overlapping the adjacent ends of the posts 11 and the carlines 16 as well as the inner walls of the chord members 10 and 15.

The posts 11 each have a main member in the form of a shallow channel having a bottom wall 21 on the outside, inwardly extending side walls 22 and inner marginal flanges 23 directed toward each other. The bottom wall 21 and the flanges 23 offer surfaces for the above-mentioned overlapping connection, for instance, by electric spot welding, with the adjoining body members 9, 10, 17, 18, 19 and 20.

The construction described so far is substantially identical with the construction disclosed in the aforesaid applications.

The width of the main members of the posts 11 in the region above the window openings 12 is increased by laterally facing channel-section members 24 each having its bottom wall 25 overlappingly secured, as by spot welding, to a side

wall 22, whereas their side walls 26 and 27 are arranged respectively in the planes of the bottom wall 21 and the flanges 23 of the post's main member. The side walls 26 and 27 of the members 24 constitute extensions of the walls and flanges 21, 23, thereby increasing the effective area available for placing connections between the posts and the adjoining members of side wall and roof. Such connections, which are preferably made by electric spot welding, are indicated in Figure 2 of the drawing by small crosses 28, while in the other cross sectional Figures 3 and 4 the location of the spot welds is indicated by black spots 29.

The illustrated main member of the post 11 has a constant cross section over its entire height and can, therefore, be made by simple manufacturing methods, for instance, on a draw bench or a brake. The width of the posts between window openings is as small as is consistent with the required strength. On the other hand, the post with the added members 24 offers a connecting area for adjoining body members which is much greater than would be afforded by its width between the window openings.

The invention is not restricted to the specific illustrated embodiment but is subject to modifications and adaptations which will occur to those skilled in the art, and it should be understood that protection is sought for the invention as covered by the spirit and the language of the attached claims.

What is claimed is:

1. In a vehicle body having window openings in a side wall and a post between adjacent window openings, said post comprising a main member extending upwardly beyond the upper margin of said openings and having a constant transversely facing channel section throughout its height and at least one additional angle-section member arranged in a region above the upper margins of the window openings and secured by one of its arms to one of the side walls of said channel-section member while its second arm extends in the plane of the bottom wall of the channel-section member, said bottom wall and said second arm presenting a wide surface for the attachment of adjoining body members.

2. In a vehicle body having a body wall provided with a pair of window openings and a vertical post between these openings, said post comprising a main member of channel section having a bottom wall arranged in the longitudinal direction of said body wall and side walls extending transversely to the direction of said body wall, said post having, furthermore, at least one additional member arranged in a region vertically beyond the window openings and secured by a transversely extending arm to one of the side walls of the posts, said additional member having a second arm arranged coplanar with the bottom wall of the channel section so as to present together with the latter a wide surface for the attachment of adjoining body members while the width of the post between the window openings is restricted to the width of said main member.

3. In a railway car having a body side wall unit surrounding a row of window openings and a roof unit provided with a marginal outer panel portion overlappingly secured to portions of the side wall unit above the window openings, vertical side wall posts between said window openings, said posts comprising a straight-sided main member of U-section with an outer bottom wall extending in the direction of the side wall, transversely extending side walls terminating in laterally extending marginal flanges, and additional U-section members in the regions of the post above the window openings, said U-section members facing in the longitudinal direction of the car and having their bottom walls secured to the side walls of the main member of the post whereas their side walls are arranged respectively in the planes of the bottom wall and flanges of the main post member, said bottom wall of the main post member and the side walls of the said additional members presenting a wide attachment surface for said marginal panel portion of the roof.

4. In a railway car, a body side wall provided with window openings and with posts between such openings, the latter extending upwardly beyond the upper margin of the window openings, said posts comprising a main member of channel section having its bottom wall arranged on the outside in the general plane of the body side wall, transversely inwardly extending side walls and inner marginal flanges on the latter directed toward each other, said posts comprising, furthermore, in the region above the window openings a pair of additional U-section members fastened by their bottom walls to the side walls of said main member and having their side walls arranged in the planes of the bottom wall and the flanges respectively of the main member, said bottom wall and flanges of the main member and the side walls of said additional members presenting together large areas for the attachment of adjoining body members in the region above the window openings whereas the width of the post between the window openings is restricted to the width of said main member.

5. In a railway car, a body side wall unit provided with window openings, with posts between such openings, the latter extending upwardly beyond the upper margin of the window openings, and with a pair of vertically spaced chords above said openings connected to said posts, said posts comprising a main straight-sided member of channel section having a bottom wall arranged on the outside in the general plane of the body side wall, transversely extending side walls and inner marginal flanges on the latter directed toward each other, said main members of the posts extending between said window openings and to the uppermost of said chords, said posts having, furthermore, in the region between said chords a pair of additional U-section members fastened by their bottom walls to the side walls of said main member and having their side walls arranged in the planes of the bottom wall and the flanges respectively of the main member, said bottom wall and flanges of the main member and the side walls of said additional members presenting together in the region above the window openings wide surfaces for the attachment of a downwardly projecting panel of an adjoining roof unit whereas the width of the post between the window openings is restricted to the width of said main member.

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No references cited.