Nov. 13, 1934. F. E. DAYES 1,980,787

VEHICLE STRUCTURE

Filed Aug. 9, 1933 2 Sheets-Sheet 1

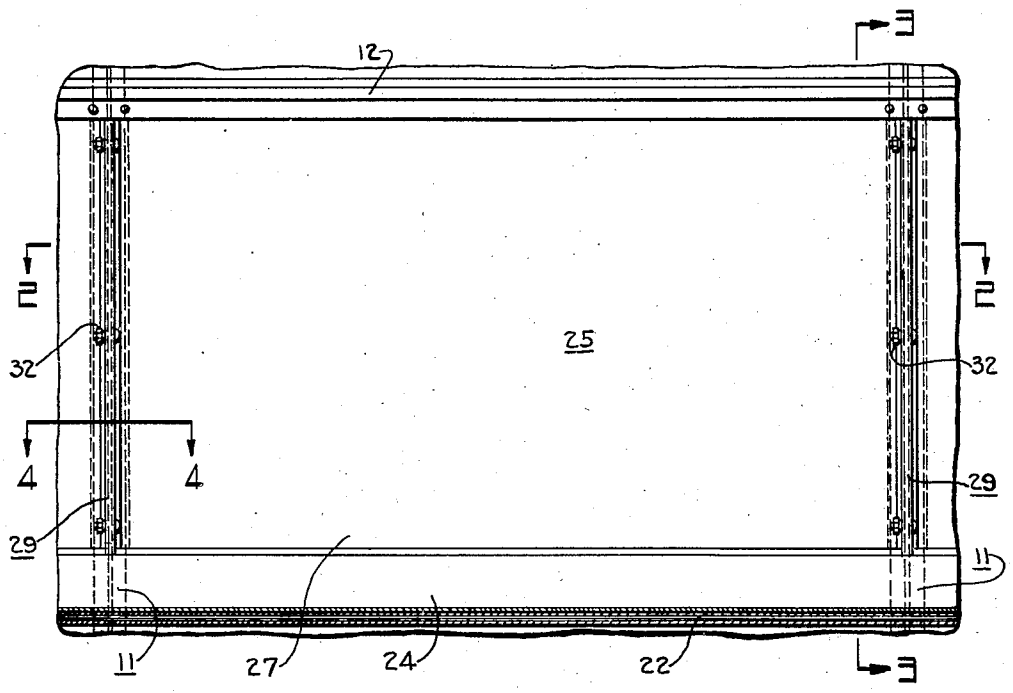


Fig. 1

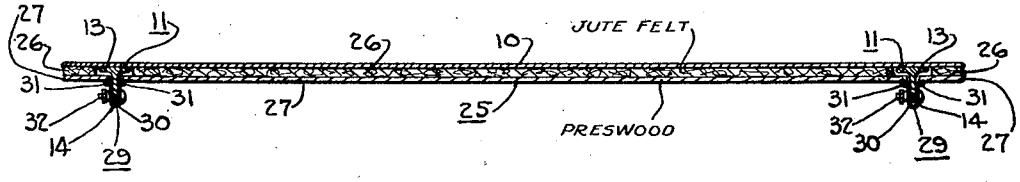


Fig. 2

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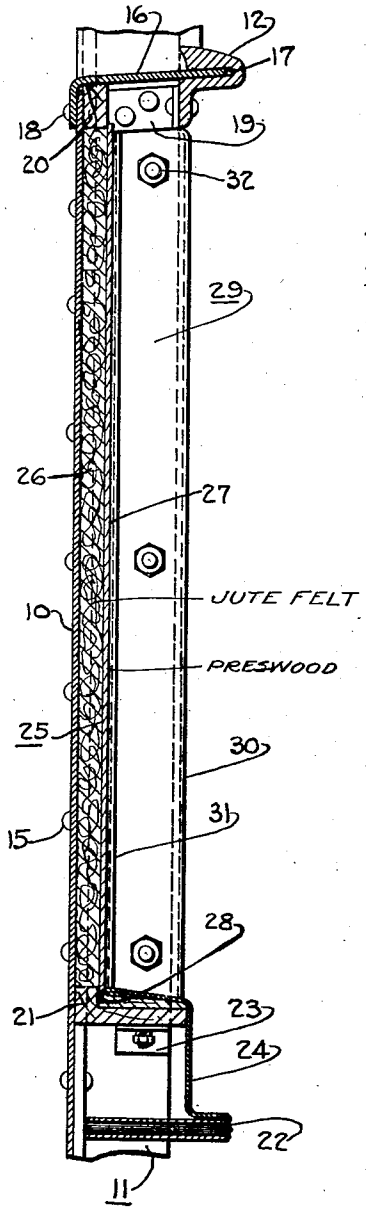


Fig. 3

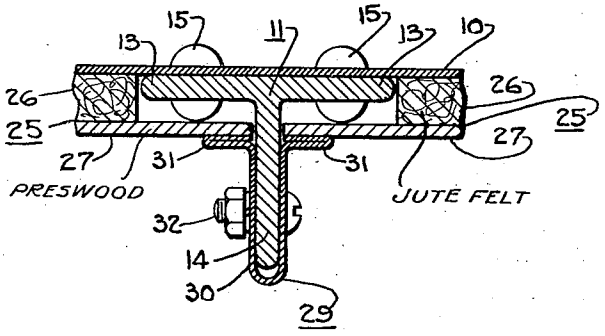


Fig. 4

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UNITED STATES PATENT OFFICE

1,980,787

VEHICLE STRUCTURE

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Application August 9, 1933, Serial No. 684,337

3 Claims. (Cl. 296—28)

The invention relates generally to vehicle structures, and more particularly to wall structures for buses.

In the operation of buses, the shell or walls below the windows are bumped and damaged from time to time and much difficulty is experienced in making repairs because access cannot readily be had to the inner surfaces of the outer shell. The result is that the dents and depressions made in the bus wall are not removed and a comparatively new bus often presents the appearance of a mutilated vehicle in which the passengers do not have the confidence they should have, and which does not attract traffic.

An object of the invention is to provide a side wall structure for buses and other vehicles which may be readily removed in part to give access to the outer shell of the bus or vehicle to permit workmen to remove dents and repair damaged portions.

The invention accordingly is disclosed in the embodiment thereof shown in the accompanying drawings and comprises the feature of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which

Figure 1 is a view in side elevation of a bus panel, viewing it from the inside, constructed in accordance with this invention.

Figure 2 is a view in horizontal section of a bus panel taken along the line 2—2 of Figure 1.

Figure 3 is a view in vertical section of a bus panel taken along the line 3—3 of Figure 1 showing details of a structure, and

Figure 4 is an enlarged view in horizontal section of a portion of a panel taken along the line 4—4 of Figure 1.

Referring to the drawings, and Figures 1 and 2 in particular, the portion of a bus wall illustrated comprises an outer shell or sheathing 10 and a frame structure for supporting the sheathing. Metal plate, either steel or an aluminum alloy, is employed for the sheathing. The gauge of the plate will depend on the conditions to be met. The shell of the average bus is fabricated from plate about $\frac{3}{32}$'' thick.

The portion of the frame structure shown comprises a plurality of vertical body posts 11 and a belt rail 12. The body posts 11 may be made of any desired cross-sectional shape provided they have a head 13 to which the sheathing may be connected, and a flange 14 extending inwardly for carrying other members employed in the wall structure. The number of body posts will depend on the design of the frame structure. The greater the strength required, the greater the number of posts 11 employed.

Some of the body posts 11 will extend the full height of the bus body, and carry the roof, while others may only extend as high as the belt rail 12. The shape of the body posts in cross-section will depend on the conditions to be met. In this embodiment of the invention a body post which is T-shaped in cross-section is employed. The posts are preferably made from steel or an aluminum alloy which satisfies the conditions as to strength and weight.

In bus structures in which the upper portion of the body is substantially all windows, as in the ordinary passenger bus, the body posts 11 may be utilized for carrying the window-frames and the finishing members provided to give the bus a good appearance.

The sheathing 10 is connected to the heads 13 of the body posts in any suitable manner, such as by riveting, shown at 15. The spacing and size of the rivets will depend on the strength required.

The window sill 16 comprises an L-shaped angle-plate disposed with the short flange overlapping the sheathing 10 of the bus wall and the long flange extending into a longitudinal groove 17 provided in the inner face of the belt rail 12. The short flange of the sill 16 is riveted to the sheathing as illustrated at 18.

The angle members 16 employed as window-sills may be made from any suitable material. Since they are exposed to the weather it is preferable to make them from some non-corrodible metal, such as aluminum.

As illustrated, the belt rail 12 is carried by angle-irons 19 riveted to the flanges 14 of the body posts 11. This belt rail not only adds greatly to the rigidity of the frame structure, but is employed as a finishing member for the window-sills 16.

In fabricating the belt rail any metal which has the required strength and which will take a good polish may be employed. Aluminum has been found satisfactory. When aluminum is employed the belt rail is made by a process of extrusion.

As illustrated, filler strips 20 and 21 are dis-

posed between the body posts 11, the filler strip 20 being mounted in the corner between the window-sill 16 and the sheathing 10, while the filler strip 21 is disposed near the floor 22. These filler strips may be made from some suitable insulating material, such as wood and their function will appear as the specification proceeds.

The lower filler strip 21 is supported on angle-irons 23 carried by the body posts 11. This filler strip carries the upper flange of a Z-shaped base-board 24. The member 24 is termed a base-board but is preferably made from sheet aluminum or some other metal that may be finished to present a good appearance.

Panels, shown generally at 25, are disposed between the body posts 11 below the window-sills 16. Each panel comprises a layer of insulating material 26 which may be made from any suitable material such as jute felt. This insulating material 26 serves to prevent the conduction of heat either into or out of the vehicle, and to damp out vibrations of the sheathing 10. The layer of insulating material 26 is carried by a finishing sheet or plate 27 which may be made from some suitable material such as preswood. The insulating layer and the finishing member 27 may be connected in any manner well known in the art, as by means of glue.

As illustrated, the upwardly extending flange provided on the filler strip 21, the filler strip 20 and the layer of insulating material 26, are all of substantially the same thickness. The layer of insulating material 26 is made of the proper height to fit between the filler strips 20 and 21 and of the proper width to seat between the heads of the body posts 11. Therefore, when the panel 25 is placed in position, the outer surface of the layer of insulating material 26 seats against the sheathing 10.

The finishing member 27 is slightly larger in area than the layer of insulating material 26 presenting at the top and bottom flanges which seat against the filler strips 20 and 21, and at the sides flanges which project over the laterally extending heads 13 provided on the body posts 11. The bottom flange of the panel 25 engages in a groove 28 formed between the base-board 24 and an upwardly extending flange provided on the filler strip 21.

In order to retain the panels in position, a clamping member, shown generally at 29, is provided. The clamping member 29 comprises a U-shaped body portion 30 shaped to fit over the flange 14 of the body post 11, which in this particular construction is T-shaped. Two laterally extending flanges 31 are provided on the arms of the U-shaped body portion 30 for seating over the edges of the panels 25.

As illustrated, these flanges 31 are formed by bending portions of the arms of the U-shaped body member outwardly at substantially right angles and then doubling them back on themselves. The flanges 31 formed in this manner have rounded edges, present a good appearance, and are resilient. The clamping members may be made from some metal such as stainless steel or aluminum which takes a good polish permitting it to be utilized as a finishing member.

The clamping member 29 is attached to the flange of the body post 11, by means of screw bolts 32 which extend through aligned openings provided in the flange 14 and the body 36 of the clamping member. Any number of screw bolts may be provided and the number employed will depend on the length of the clamping member.

Assuming that the side of the vehicle has been damaged, and that it is desired to gain access to the inside of sheathing 10 to hammer out a dent, then predetermined clamping members 29 are removed and the panel 25 disposed over the dent withdrawn by pulling the top portion of the panel outwardly, rotating it about its lower edge, that is, the portion seated in the groove 28. As illustrated, the panel is of the proper height to swing beneath the belt rail 12. After the upper edge of the panel is drawn clear of the belt rail, the panel is lifted upwardly between the seats in the vehicle and the belt rail.

The removal of the panel gives access to the dented portion of the vehicle sheathing 10 and repairmen may hammer out dents or make other repairs that may be necessary. From the foregoing it will be obvious that the providing of the removable panels greatly facilitates the making of repairs in the sheathing 10 and enables service stations to keep buses in good condition.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:

1. In a bus structure, in combination, a metal sheathing, angular posts for supporting the sheathing, said posts comprising a head and flange, the head seating against the sheathing and being connected to it, the flange extending inwardly, a finishing panel disposed parallel to the sheathing and abutting against the flange of the post, and a substantially U-shaped clamping member for retaining the panel in position, the clamping member enclosing the flange of the post and being detachably connected therewith to provide for the removal of the panel to gain access to the inside of the sheathing.

2. In a bus structure, in combination, a metal sheathing, a supporting post comprising a head and an inwardly extending flange for supporting the sheathing, the head of the post extending parallel to the sheathing, means connecting the head of the post to the sheathing, a finishing panel extending parallel to the sheathing, a U-shaped member mounted on the flange of the post, and oppositely extending flange portions formed with the body portion of the U-shaped member and so arranged as to engage the panel to retain it in position, the U-shaped member being removably mounted to facilitate the removal of the panel to gain access to the inside of the sheathing.

3. A car body side comprising a frame including a belt rail and body posts connected therewith and provided with inwardly projecting flanges, an outer sheathing connected with the body posts, panels extending between adjacent body posts and each including an interior finish member and a filler member in engagement with the sheathing, contiguous portions of adjacent panels extending substantially to the projecting portions of the posts, and substantially U-shaped clamp members enclosing the projecting portions of the posts and having outturned flanged portions constituting resilient holding members engaging the contiguous portions of adjacent panels.

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