Nov. 10, 1970 B. ERI 3,538,667

FLUSH-TYPE PANEL AND SHAFT CONSTRUCTION

Filed March 12, 1968

FIG.1.

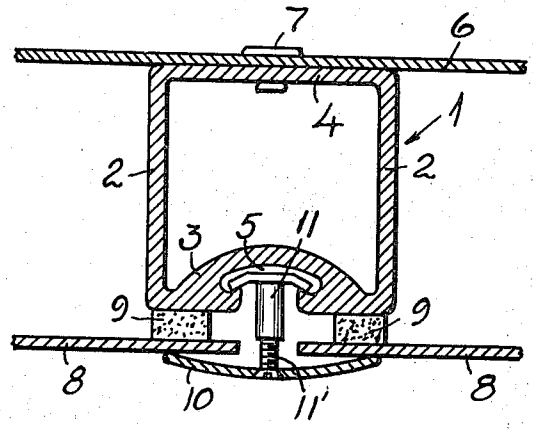


FIG.2.

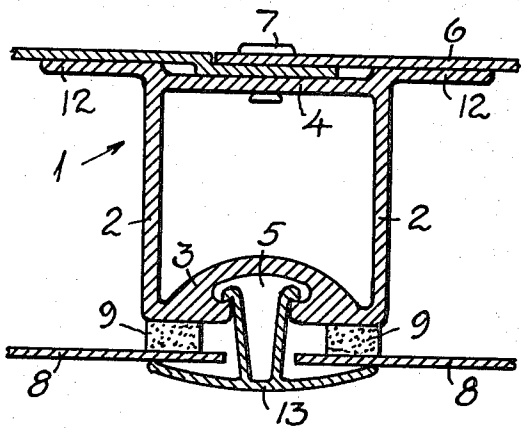
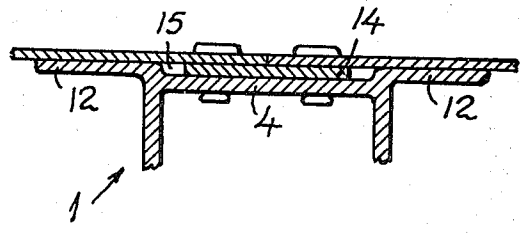


FIG.3.



INVENTOR:
BAARD ERI
BY Kurt Kelman
AGENT

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FLUSH-TYPE PANEL AND SHAFT CONSTRUCTION

Baard Eri, Larvik, Norway

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U.S. Cl. 52—489 2 Claims

ABSTRACT OF THE DISCLOSURE

The panels of a double-walled frame are connected to the opposite walls of a hollow, rectangular bar. One wall has a dove-tailed channel which carries a clamp for fixing one of the panels to this wall. The opposite wall has two laterally projecting flanges which are offset relative to the wall so that the inner surfaces of the flanges are coplanar with the outer surface of the opposite wall. The other frame panel is secured to the other wall in contact with the outer surface of the flanges.

This invention relates to hollow bars or rods for use as posts, rafters and the like in the frame of bus bodies having a curved outline.

Conventional frame-supporting bars of this type are difficult to bend into necessary curves without deforming their cross section.

An object of the present invention is to provide a hollow bar extruded form a convenient material, such as aluminium, having a rectangular, hollow cross-section, which bar is easy to bend without distortion, and retains its torsion stiffness and to which inner and outer panels or sheets may be attached in a simple and effective manner to form the frame.

According to the invention, one of the walls of the hollow bar is formed with a longitudinally extending channel or groove having inwardly increasing width, such as a T-shaped or C-shaped cross section. The bar wall opposite that forming the channel or groove is provided with laterally projecting flanges which are offset relative to the outer surface of said opposite wall so that the outer surface thereof is coplanar with the inner surfaces of said flanges.

This form of bar saves time in mounting the outer and inner panels thereon, and due to the offset positioning of the flanges, joinings at junctions and repairs may easily be effected by using fish plates coplanar with the outer surface of the bar.

Preferred embodiments of the invention will now be descibed by way of example with reference to the accompanying drawing, in which:

FIG. 1 is a cross sectional view of a hollow bar,

FIG. 2 is a similar view of the hollow bar according to the invention, and

FIG. 3 is a part of a cross section illustrating the use of a fishplate.

In the drawing **1** denotes generally a hollow bar which may be extruded from a suitable material such as plastic, aluminium or similar light metal.

In the embodiment shown, the hollow bar has a square cross-sectional shape but, as will be understood, it may be of any polygonal shape.

The bar comprises two side walls **2**, **2**, an inner wall **3**, to which an inner panel is to be secured, and an opposite outer wall **4** to which the outer panel is to be secured.

The cross-section of the inner wall **3** of the bar forms a longitudinally extending channel or groove **5** having an inwardly increasing width, being, for instance, T-shaped or C-shaped in cross section.

As shown in FIG. 1 the outer panel **6** is secured to the outer wall **4** of the bar **1** by means of rivets **7**, screws or the like, while the inner panels **8** are clamped, with intermediate strips **9** of suitable insulating material, against the inner side wall **3** of the bar **1** by means of securing means engaging said longitudinal channel **5** and cooperating with a clamping and covering moulding **10** on the inside of the wall. Said securing means may consist of a hollow bolt **11**, the head of which is received unrotatable in the channel **5**, for cooperation with a clamping screw **11'** passing through said moulding **10**.

A somewhat modified embodiment is shown in FIG. 2 in which the bar at the outer wall **4**, and parallel thereto, is provided with laterally projecting flanges **12** positioned offset relative to the outer surface of the wall **4** so that the inner surfaces of the flanges **12** are coplanar with the outer surface of said wall **4**.

In this embodiment, the panels or sheets **6** may overlap each other as shown. Further, the panels or sheets **8** are secured by means of a covering moulding **13**, preferably formed from elastic material, provided at the rear side with outwardly diverging hook shaped locking ribs engaging said channel **5**.

FIG. 3 shows panels or plates **6** joined by means of a fish plate **14** received in the recess **15** between the flanges **12**.

What is claimed is:

1. A double-panelled frame comprising two panels and a hollow bar having four integrally connected walls at right angles to each other, the bar interconnecting the two panels, one of said walls defining an outwardly facing, longitudinally extending channel inwardly increasing in width, one of said panels being adjacent said one wall, means securing said one panel to said one wall, said means being secured in said channel, a pair of longitudinally extending flanges laterally projecting from another one of said walls opposite to the one wall and parallel thereto, said flanges being offset relative to said other wall so that the outer surface of the other wall and the inner surface of said flanges facing the one panel are coplanar, the other one of said panels being adjacent said other wall and in contact with the outer surface of said flanges, said other panel comprising two adjacent panel members, one of said panel members having an offset edge portion of the same thickness as said flanges and in contact with the other wall, and the other panel member extending over the offset edge portion of the one panel member, and means securing the other panel to the other wall.

2. A double-panelled frame comprising two panels and a hollow bar having four integrally connected walls at right angles to each other, the bar interconnecting the two panels, one of said walls defining an outwardly facing, longitudinally extending channel inwardly increasing in width, one of said panels being adjacent said one wall, means securing said one panel to said one wall, said means being secured in said channel, a pair of longitudinally extending flanges laterally projecting from another

one of said walls opposite to the one wall and parallel thereto, said flanges being offset relative to said other wall so that the outer surface of the other wall and the inner surface of said flanges facing the one panel are coplanar, the other one of said panels being adjacent said other wall and in contact with the outer surface of said flanges, said other panel comprising two abutting panel members, a fishplate interposed between the abutting panel members and the other wall, and means securing the other panel to the other wall.

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FRANK L. ABBOTT, Primary Examiner

S. D. BURKE III, Assistant Examiner

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52—731