Aug. 17, 1965 G. V. JAKEWAY 3,200,551

MOLDABLY CONFORMABLE SHEET METAL STOCK

Filed Nov. 14, 1962

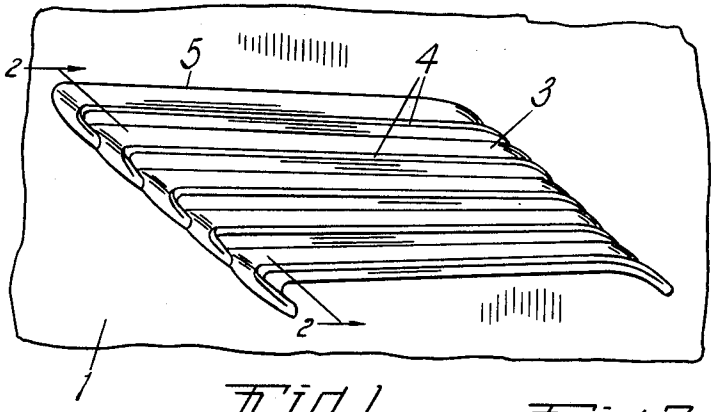


Fig. 1

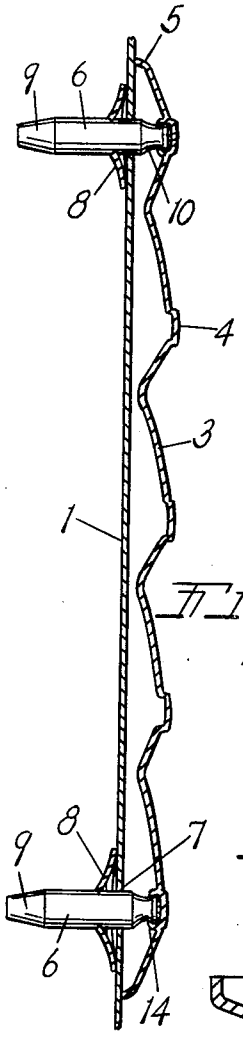


Fig. 2

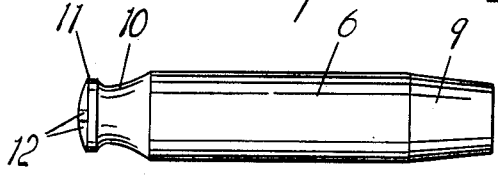


Fig. 5

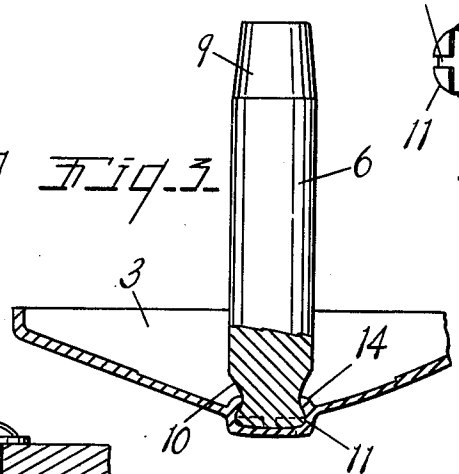


Fig. 3

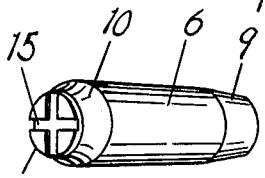


Fig. 6

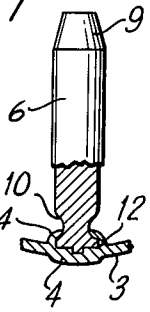


Fig. 7

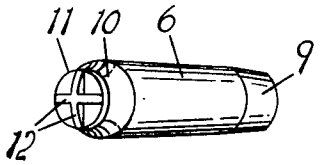


Fig. 4

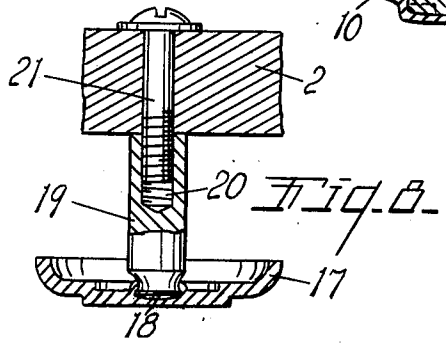


Fig. 8

INVENTOR.
Gerald V. Jakeway
BY
ATTORNEY.

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MOLDABLY CONFORMABLE SHEET METAL STOCK

Gerald V. Jakeway, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich.

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3 Claims. (Cl. 52—511)

This invention relates to structures of the ornamental and functional type which include body members of sheet metal stock and attaching studs which are connected thereto to form an integral unit.

The main objects of this invention are,

First, to provide a unitary structure comprising a body portion formed of sheet metal and having an attaching stud or studs in which the studs are fixedly and securely connected to the body member to project rearwardly therefrom and the securing means to the stud is not disclosed or evident from the front of the unit.

Second, to provide a unitary structure having these advantages in which the attaching studs, although of rod stock and of relatively small diameter, are attached to the body member so that they are capable of withstanding relatively severe stresses without becoming detached.

Third, to provide a structure having these advantages in which the studs are fixedly secured to the body member without welding.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims. A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a front perspective view of a unit embodying my invention shown in mounted relation to a support unit.

FIG. 2 is an enlarged fragmentary view on a line corresponding to line 2—2 of FIG. 1, the studs being shown in full lines.

FIG. 3 is an enlarged view, partially in section, illustrating the body member and one of the studs in assembled relation.

FIG. 4 is an enlarged perspective view of one of the studs of the preferred embodiment.

FIG. 5 is a side view thereof.

FIG. 6 is a perspective view of a modified form of the stud embodying my invention.

FIG. 7 is a fragmentary inside perspective view of the body member 3 illustrated in FIGS. 1, 2 and 3.

FIG. 8 is a fragmentary view partially in section illustrating an embodiment of my invention adapted as a drawer pull.

The embodiments of my invention illustrated in FIGS. 1 to 6 inclusive are primarily an adaptation to an ornamental device, 1 representing a support member such, for example, as the fender of an automobile, the particular device illustrated in FIGS. 1 and 2 being a commercial embodiment of an ornamental device adapted for attachment to the fender of a motor vehicle, conventionally illustrated at 1. It will be understood, however, that the support member forms no part of my invention and that structures embodying my invention may be purely ornamental or functional as, for example, shown in FIG. 7 in which 2 represents the front end of a drawer or the like.

The body member 3 of the embodiment illustrated in FIGS. 1 to 5 inclusive is formed of sheet metal, preferably of aluminum or aluminum alloy, and has a plurality of parallel corrugations designated by the numeral 4 and with inwardly projecting border flanges 5. The embodiment of my invention illustrated is of substantial size

and is provided with four attaching studs 6. These studs are duplicates and are of such length that they may be inserted through holes 7 provided therefor in the support member 1 and are secured by the clamp members 8 desirably formed of sheet stock, as illustrated, but structural details are not described as they form no part of my present invention. The ends 9 of the studs are tapered to facilitate the slipping of the attaching members 8 thereover.

In the preferred embodiment illustrated in FIGS. 1 to 6 inclusive, the studs have annular grooves 10 and are provided with annular flange-like portions 11 and have angularly spaced ribs 12 on their inner ends. In assembling, the body member is suitably supported to permit the positioning of the studs in endwise supported relation thereon and in abutment therewith and the body member, which is desirably of sheet aluminum stock or of other stock which permits portions thereof when subjected to pressure as by means of a die to be moldingly upset so that portions 14 of the body member are upset into the annular grooves of the studs into clamping engagement with the flange portions thereof at the inside of the grooves and into the grooves or recesses on the inner ends of the studs, as is illustrated in FIG. 3. This assembling step is made without the necessity of subjecting the parts to heat or fusing temperatures.

The rib portions 12 are clampingly embedded in the body member with portions of the body member between the ribs 12, as is illustrated in FIG. 3. In the embodiment shown in FIGS. 1 to 5 inclusive, the ribs 12 are embedded in the body member. In the embodiment illustrated in FIGS. 1 and 2, the body member is provided with four studs and these are duplicates. In the embodiment shown in FIG. 6, the stud 6 is formed with grooves 15 in its inner end instead of the ribs 12. The stud is otherwise the same as disclosed in FIGS. 1 to 5 inclusive.

In FIG. 8 I illustrate my invention as embodied in a drawer pull. The numeral 2, as stated, represents the front end of a drawer or the like. In this embodiment the body member 17 is dimensioned for grasping and has a single socket 18 disposed centrally thereof and adapted to receive the stud 19 which is provided with a longitudinal threaded bore 20 adapted to receive the coupling or attaching screw 21 disposed through the drawer member 2. In this particular embodiment it will be understood that either form of stud may be used. Studs of the form shown in FIGS. 1 to 5 inclusive are illustrated as they are the preferred form. The end of the stud is the same as shown in FIGS. 1 to 5 inclusive.

The studs 6 of FIGS. 1 to 6 and 19 of FIG. 7 are desirably formed of rod-like stock commonly known or designated as soft aluminum alloy, and after the studs are formed they are heat treated and quenched so that they are form-retaining and the parts may be assembled as described. Also, as the assembled parts are all of aluminum in the preferred embodiment the assembled units may be anodized and otherwise treated as units.

This manner of securing the studs to the body member results in an assembly which is capable of withstanding severe tearing apart or other stresses. This feature is of importance particularly where the invention is embodied in devices such as illustrated in FIGS. 1, 2 and 3 adapted to be attached to a fender which may be subject to severe stresses.

I have illustrated and described my invention in two embodiments, but it will be understood that it has a wide range of adaptations and uses. I have not illustrated or described other embodiments or adaptations, as it is believed that the disclosure made will enable those skilled in the art to embody or adopt my invention as may be desired.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. The combination of a body member of sheet aluminum stock of substantially uniform thickness and which is moldably conformable without heating, and laterally spaced studs of metal stock which is relatively nonconformable as compared to the conformable stock of said body member which have axially projecting and angularly disposed ribs on their inner ends and annular curved peripheral grooves adjacent but spaced from their inner ends providing outwardly projecting flange-like portions on the inner ends of the studs, portions of said body member being moldably and conformably upset into clamping supporting engagement with the said annular flange-like portions on the inner ends of said studs and said ribs on the inner ends of the studs whereby said body member and studs are fixedly connected and constitute an integral unit with the studs fixedly projecting inwardly relative to the body member.

2. The combination of a body member of moldingly conformable sheet stock of substantially uniform thickness, and a rod-like stud of stock which is substantially nonconformable relative to said body member disposed in end abutting angular relation to the inner side of said body member, said stud having a peripheral groove adjacent to but spaced from its inner end providing a radially projecting flange-like portion and having an axially projecting lug-like portion on its inner end, means forming relatively angularly disposed and axially inwardly extending projections on the inner end of said lug-like portion, portions of said body member being upset into said

peripheral groove and in embedding clamping engagement with said flange-like portion of said stud and into clamping engagement with said inwardly extending projections on the inner end of said stud whereby said stud and body member are fixedly connected and constitute an integral unit with the stud projecting angularly relative to said body member and constituting an attaching means therefor.

3. The combination of a unitary body member of form retaining but flowably conformable stock, and a stud of rod-like stock having axially inwardly extending and angularly spaced projections on its inner end and having an annular peripheral groove-like recess adjacent its inner end and located outwardly of said projections, portions of said body member being conformably upset into engagement with said projection on the inner end of said stud and into said peripheral groove thereof into clamping engagement with the portion of the stud at the inner end of the peripheral groove whereby the body member and stud are fixedly connected and constitute an integral unit with the stud projecting laterally from the body member.

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FRANK L. ABBOTT, *Primary Examiner.*

RICHARD W. COOKE, *Examiner.*