June 1, 1937. H. B. WARREN 2,082,235

PANEL MOUNTING MEANS

Filed May 25, 1935

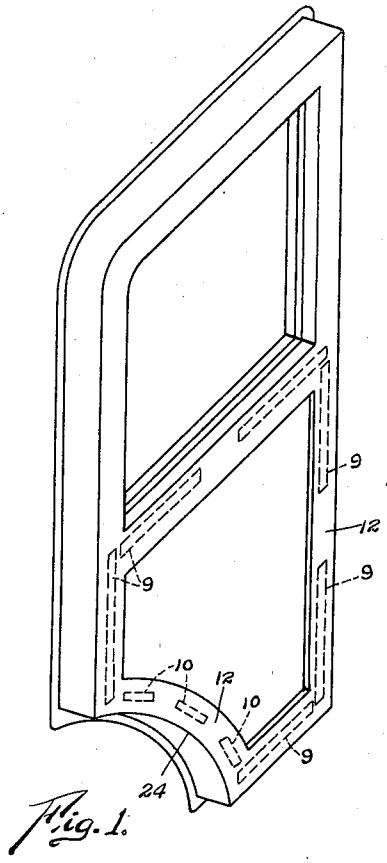


Fig. 1.

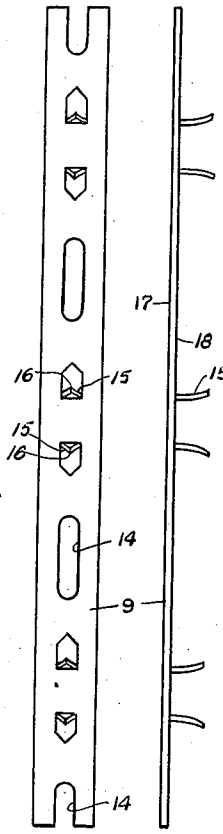


Fig. 2.

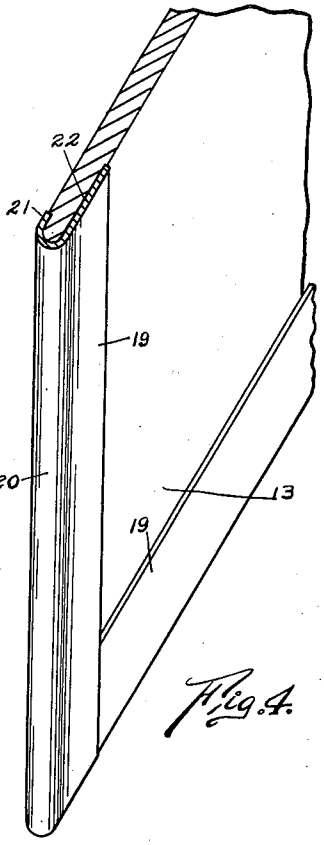


Fig. 4.

Fig. 3

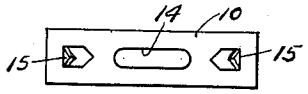


Fig. 8.

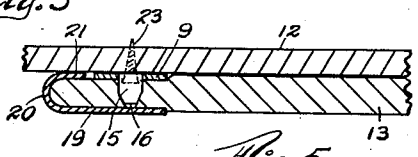


Fig. 5.

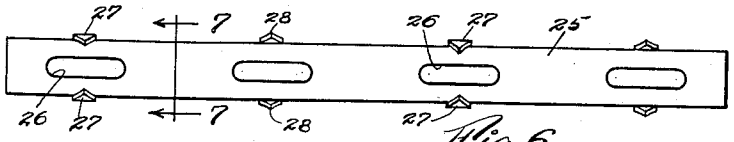


Fig. 6.

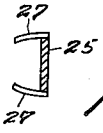


Fig. 7.

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PANEL MOUNTING MEANS

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Application May 25, 1935, Serial No. 23,480

6 Claims. (Cl. 45—138)

This invention relates to a method and means for securing a finishing panel to a support.

An object of the invention is to provide a simple and inexpensive method and means for the above stated purpose.

Another object is to provide a simple and inexpensive means for the purpose stated, which holds a panel upon a support more securely than do other means heretofore employed.

A further object of the invention is to provide a novel method and means for securing panels to plane surfaces which are complex or irregular of contour, or peripheral outline.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter disclosed and claimed.

In the drawing: Fig. 1 is a perspective view of a panel support, in this instance a vehicle door, embodying the present invention.

Fig. 2 is a plan view of a clinch strip.

Fig. 3 is an edge view of the clinch strip.

Fig. 4 is a fragmental perspective view of a panel to be attached to a support by means of the clinch strip.

Fig. 5 is an enlarged fragmental cross-sectional view of a panel attached to a support.

Fig. 6 is a plan view of a modified form of clinch strip.

Fig. 7 is a cross-sectional view taken on line 7—7 of Fig. 6.

Fig. 8 illustrates a clinch strip of the Fig. 2 type, which is adapted for use on panel supports that are complex or irregular of contour.

In the accompanying drawing, the characters 9 and 10 indicate, respectively, long and short clinch strips which are adapted to be secured to any suitable supporting means 12 in such a manner as to provide a mounting for a finishing panel 13. The drawing shows but one form of support 12, this being the frame portion of a vehicle door, but it is to be understood that the clinch strips are applicable to any other type of support which it may be desired to panel. In Fig. 1, the broken lines indicate conventionally the locations of the various clinch strips 9 and 10 when applied to a vehicle door frame.

The clinch strip 9 preferably is made of a suitable metal strap or ribbon punched out as at 14 to provide apertures for the reception of fastening means such as screws, nails, bolts or the like whereby the strips may be secured to a support such as 12. Intermediate the apertures 14, the strip is punched or otherwise treated to form a series of prongs 15, each of which prongs has its pointed end 16 slightly turned over so that it may be further deformed when struck by an impenetrable object. The rear face 17 of the prong strip is regarded as the mounting face, and is substantially flat. The outer face 18 has the prongs 15 extending therefrom substantially at right angles. The prongs may be formed in pairs, if desired, with the pointed ends thereof directed either toward one another, or way from one another as shown. The first step in securing a panel to a support such as 12, is to apply the strips 9 and 10 to the support by means of suitable fastening devices such as screws, nails, bolts or the like inserted through the apertures 14 and engaging the support 12.

The type of panel or finishing sheet employed in connection with the clinch strips 9 and 10, is illustrated by Figs. 4 and 5. The panel has an impenetrable marginal portion which preferably is provided by the relatively long leg 19 of a J-shaped border element 20. The border element preferably is in the form of a metallic strip having the legs 19 and 21 turned toward one another to clamp the material of the panel 13 therebetween. The panel, therefore, may be said to have a metal backed portion 19. In applying the panel, as disclosed in Fig. 5, the panel is placed with the metal backing 19 over the prongs 15, and is then hammered or pressed sufficiently to cause the pointed ends of the prongs to strike the inner face 22 of the metallic strip 20, thereby to turn over the pointed ends of the prongs and cause them to clinch the material of the panel. It will be noted that the prongs will penetrate the panel material 13 before the metal backing 19 turns the prongs over, with the result that the prongs are afforded a tenacious hold in the panel material 13. By thus providing for complete penetration of the panel material 13 by the prongs, a strong union is secured even though the panel be made of cheap or comparatively soft material such as cardboard, fiber board, papier-mâché, or the like. The relationship of the prongs to the panel material 13 and the metal border 19 after application of the panel, is clearly disclosed in Fig. 5. A fastener for the clinch strip 9 is indicated at 23.

In locations where the contour of the support 12 or the panel is complex, or irregular, the short clinch strips 10 are employed for the reason that a series of such strips may be applied in order to accommodate a curved part such as is indicated at 24 of Fig. 1. The provision of short lengths of clinch stripping is considered quite important to

the invention, as it represents probably the cheapest and most convenient mode of fastening a panel along a supporting means of complex or irregular contour, however, curved long strips could be substituted therefor.

In Figs. 6 and 7 is shown a modified form of clinch strip **25** having the apertures **26** for the fastening devices disposed between prongs **27** located along opposed side edges of the strip. To furnish the most effective clinching of a panel, alternate pairs of prongs **27** are turned outwardly of the strip, as indicated by the character **28**. By locating the apertures **26** between opposed prongs **27**, the method of manufacture of the strip is greatly simplified and expedited. It is of course possible, however, to locate the apertures **26** otherwise than directly between opposed prongs of the strip.

By reference to Fig. 5, it will be noted that the clinch strip **9** rests alongside the shorter leg **21** of the metallic strip or border element **20**, while the other leg **19** of the strip or border element substantially overlies the clinch strip or, at least, the prongs thereof. This construction not only provides for turning the prong points, but it also stiffens the marginal portions of the panel inwardly of the periphery.

As will readily be understood, the panel may be provided with a finishing sheet of fabric or other suitable material, before application of the panel to the prongs of the clinch strips.

What is claimed is:

1. A finishing panel structure comprising in combination, a panel of penetrable board-like material and means on the panel providing a substantially impenetrable marginal portion, and panel support means including deformable prongs longer than the thickness of the board-like panel and clinching the material of the panel while abutting the impenetrable marginal portion of the panel.

2. In combination, a support including deformable prongs extending therefrom, a panel of lesser thickness than the length of the prongs, said panel being penetrable by the prongs and having opposed faces and a marginal portion, a member impenetrable by the prongs, said member being carried by the marginal portion of the panel and located to abut the prongs while the prongs clinch the panel.

3. In combination, a support, a clinch strip secured to the support and including extending deformable prongs, a panel comprising a board-like sheet of lesser thickness than the length of the prongs and having opposite faces and a marginal portion, a border element carried by the marginal portion of the sheet and comprising a short leg and a long leg embracing the opposite faces of the sheet, the long leg being impenetrable by the prongs and disposed in the path of extension thereof through the panel, the short leg of the border element being disposed closely alongside of the clinch strip.

4. A finishing panel structure comprising in combination, a panel of penetrable board-like material having an inner and an outer face, and means adjacent to said outer face providing a substantially impenetrable marginal portion, and panel support means including deformable prongs longer than the thickness of the board-like panel and clinching the material of the panel while abutting said impenetrable marginal portion of the panel.

5. A finishing panel structure comprising in combination, a panel of penetrable board-like material having an inner and an outer face, and means adjacent to said outer face providing a substantially impenetrable marginal portion, a panel support, and a fastening strip on the support said strip including outwardly extended deformable prongs longer than the thickness of the board-like panel and clinching the material of the panel while abutting said impenetrable marginal portion of the panel.

6. A finishing panel structure comprising in combination a support having straight and curved sides, a panel of penetrable board-like material having an inner and an outer face, and means adjacent to said outer face providing a substantially impenetrable marginal portion, a long fastening strip on the support along the straight side thereof, and a plurality of short fastening strips along the curved side of the support, all of said strips including outwardly extended deformable prongs longer than the thickness of the board-like panel, said prongs clinching the material of the panel while abutting said impenetrable marginal portions of the panel.

HAROLD B. WARREN.