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AUTOMOBILE TRIM PANEL

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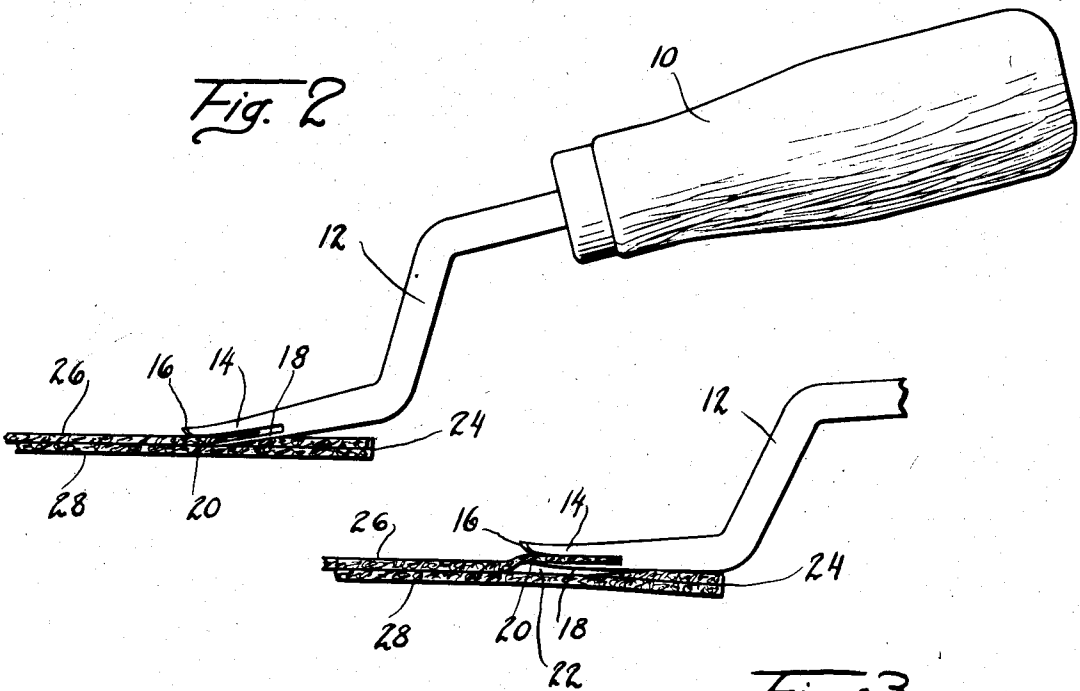


Fig. 3

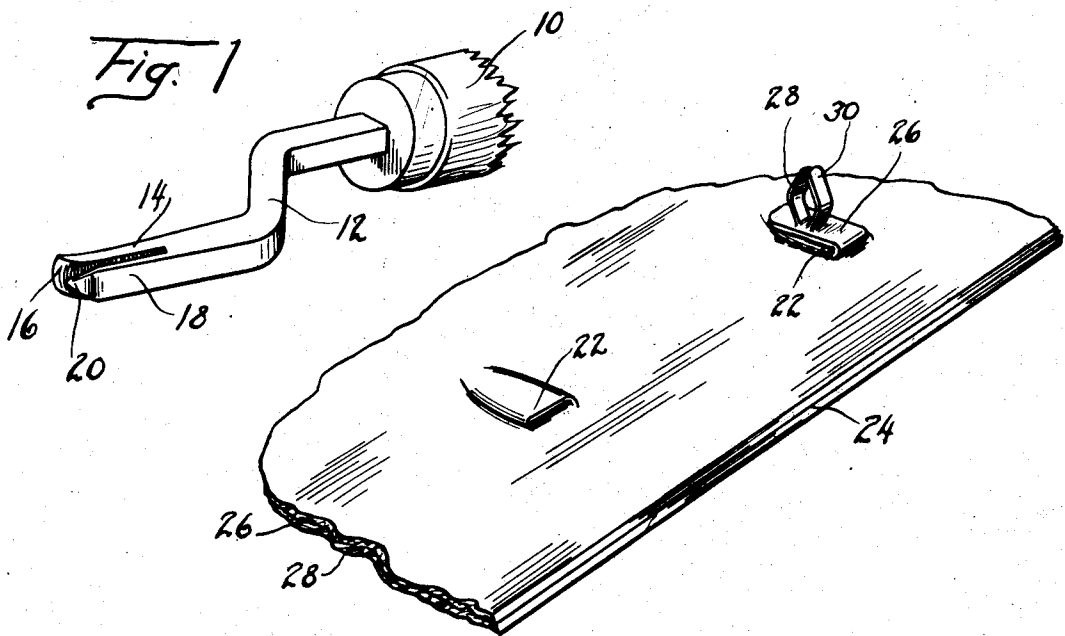


Fig. 4

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AUTOMOBILE TRIM PANEL

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3 Claims. (Cl. 45—138)

My invention relates to improvements in automobile trim panels and to improvements in the method of and apparatus for constructing the same and has particular reference to the formation and construction of the panels for being positioned upon a supporting structure.

It is customary to utilize various types of fiber board panels on the interior of automotive vehicle bodies. These panels may be covered with trim material upon their outer surfaces or such outer surfaces may be finished in some suitable manner. Various means of securing the panel to the body frame have been devised and used. Copending applications of this applicant illustrate improved means whereby the trim panel after being first covered with trim material is provided with fastener elements subsequently positioned in the panel, and the panel thus prepared is then finally positioned on the supporting frame by inserting the fasteners into apertures provided in the said frame.

One object of this invention is to provide an improved trim panel possessing the general characteristics above described and to provide an improved method of and apparatus for producing such a panel. My improved panel structure may be readily positioned upon a supporting frame by a diversity of types of fastening elements and a panel embodying my invention here shown may be used either as a covered panel provided on one side with upholstering cloth or without such covering cloth on one side. The invention is equally adaptable for either type and the fasteners are usable with the uncovered panel as well as with the covered panel which has not heretofore been the case.

It has been a common practice heretofore to form apertures extending through the entire panel, these apertures being located at spaced apart intervals adjacent the margin of the panel. The apertures take various shapes for the purpose of positioning a headed fastener therein, but such apertures extended entirely through the cardboard portion of the panel necessitated the head of the fastener lying between the trim material which covers the outer face of the panel and the surface of cardboard itself.

This type of construction possessed certain pronounced disadvantages. First, the covering material was raised by the fastener head located thereunderneath, and with certain types of covering material the head of the fastener was clearly outlined. This was objectionable as to appearance. Furthermore, certain types of covering material were unusable because of this fact.

Second, it was for this reason almost incumbent upon the trim worker to exert pressure directly upon the head of the fastener itself when positioning the panel upon its supporting frame in order to urge the shank of the fastener into the provided opening in the frame and at the same time to preclude the possibility of the head ripping through the trim material and thus spoiling the appearance of the trim panel.

My improved panel eliminates these disadvantages in that means are provided around its marginal edges to which a fastener may be secured without extending entirely through the cardboard panel. I propose to form a series of spaced apart pockets located adjacent the margin of the panel, these pockets being formed of the panel material itself and being gouged out, so to speak, from the rear surface of the panel. To facilitate the carrying out of my invention I prefer to employ cardboard panel material formed of a plurality of laminations.

Another object of my invention is to provide an improved method of and apparatus for forming the pockets aforesaid. The apparatus here shown takes the form of a simple inexpensive hand tool which may be readily and quickly manipulated and which is of such a type that it may be readily incorporated in a machine for the purpose of forming a plurality of pockets at one and the same operation. An important feature of the implement resides in the fact that it is designed with specific reference to the thickness of the panel with which it is to be used in order that it establishes automatically the depth of the pocket and eliminates the danger of puncturing the panel during the gouging of the pocket without requiring the constant attention of the manipulator.

Various other objects and meritorious features of the invention will be apparent from the following description taken in conjunction with the drawing wherein like numerals refer to like parts throughout the several figures and wherein:

Fig. 1 is a perspective of my improved tool which is to be used in the formation of the fastener receiving pockets,

Fig. 2 illustrates one stage of the pocket forming operation,

Fig. 3 shows a second stage of the pocket forming operation and the tool ready for withdrawal, and

Fig. 4 illustrates the manner in which fastener elements may be secured to the panel.

The manually manipulated implement illustrated in the drawing comprises a handle

to which is secured the curved shank 12 of the tool provided with the bifurcated cutting forming end. The working or forming portion of the tool is located at the extremity thereof and comprises a bifurcation, the upper arm 14 of which terminates in a rounded nub or cam shaped portion 16, and the lower arm 18 of which comprises the knife like pocket gouging portion. It will be noted from Figs. 1, 2, and 3 that the nose 16 projects slightly beyond the point 20 of the gouging portion and that the said point 20 is tilted slightly upwardly with respect to the rearward portion of lower arm 18.

The manner in which the pocket 22 is formed will be clear from the foregoing description of the implement and an examination of the drawing. On dropping the implement downwardly in a substantial perpendicular direction upon the panel 24, illustrated as being composed of two plies 26 and 28, the nose 16 will strike the surface thereof. In this way careless manipulation of the tool will not result in puncturing the panel surface. Upon subsequent drawing of the handle 10 to the rear, or to the right, as illustrated in Fig. 2, while at the same time maintaining a downward pressure upon the tool, the nose 16 will roll over the top surface of the panel to guide the point 20 of the gouging arm 18 as it begins to bite the panel. The space between the arms 14 and 18 of the bifurcation is such that only a portion of the thickness of the panel may be gouged out, as illustrated in the drawing. When utilized with panels composed of a plurality of layers, it is preferable that the spacing should be such as to cause the gouging out of a single layer or ply of the panel.

Fig. 3 illustrates the completion of the operation and upon withdrawal of the implement the resulting pocket 22 is formed. As clearly illustrated in Fig. 4, each pocket constitutes a seat for a fastener unit such as 26. For purposes of illustration I have shown the fastener 26 as comprising a U shaped element of somewhat springy resilient nature with a plurality of flexible arms 28 and 30 extending laterally away from one of the arms of the U. It is preferable that these

arms be first divergent and subsequently convergent, as illustrated in Fig. 4, in order that it may be readily inserted into an aperture by pressure upon the opposite or front face of the panel.

While I have illustrated a manually manipulable tool for the purpose of forming the seating pockets for the fastener, it will be understood that my invention contemplates the association of a plurality of such tools with a machine for automatically manipulating them and the inventive concept herein described is limited only by the scope of the appended claims.

It is also apparent that though the cardboard is shown as laminated, the invention is adaptable to any board structure suitable for use therewith. If desirable the board herein shown may be covered at its front face (opposite the pockets) with a covering material.

What I claim:

1. A trim panel built up of a plurality of superimposed layers of material such as cardboard firmly secured together and having a preformed pocket between two layers provided with an opening in the outermost layer and adapted to receive a fastener inserted through the opening.

2. A fastener installation of the class described comprising, in combination, a panel of cardboard and the like having a preformed, longitudinally extending pocket formed between the faces of the panel and open at one face only of the panel and a snap fastener member having a U-shaped base portion, one side of which is inserted into the pocket thereby to secure the fastener to the panel.

3. A panel having a cardboard foundation material provided with a plurality of individual spaced apart fastener-receiving preformed longitudinally extending pockets around the margin thereof and between the faces of the cardboard, each of said pockets having a slit-like opening at one face only of the foundation material to permit passage of a portion of a fastener into a pocket.

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