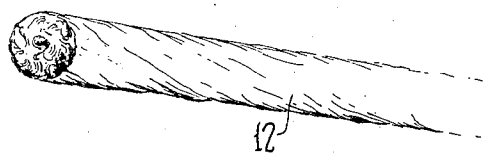
Oct. 17, 1933. J. LEDWINKA 1,930,484

METHOD OF APPLYING UPHOLSTERY OR THE LIKE

Original Filed July 1, 1931 2 Sheets-Sheet 1

FIG. 1



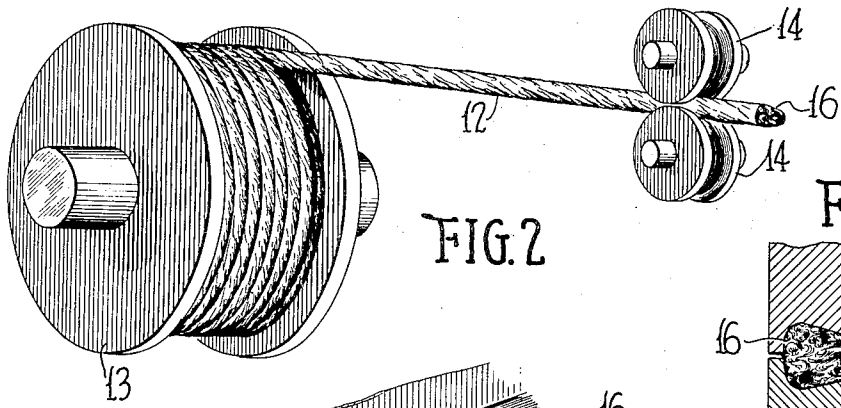
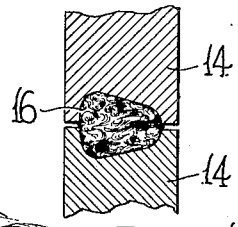


FIG. 2

FIG. 3



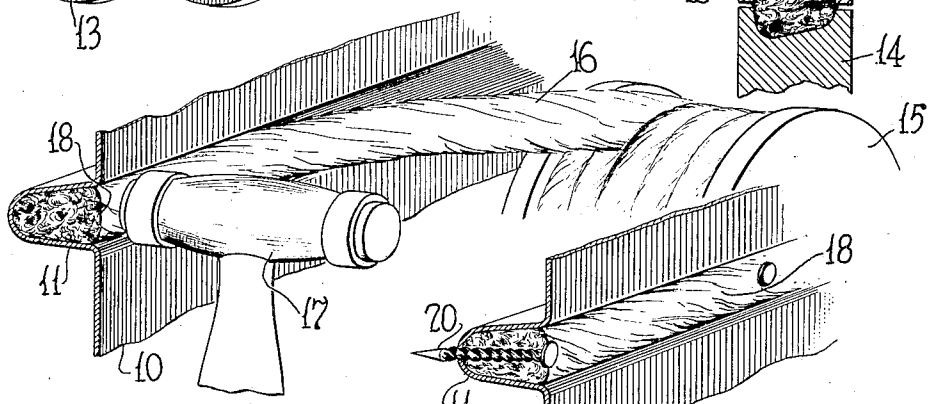


FIG. 4

FIG. 5

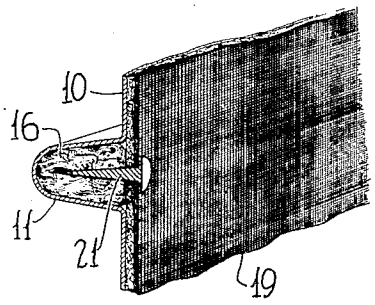


FIG. 6

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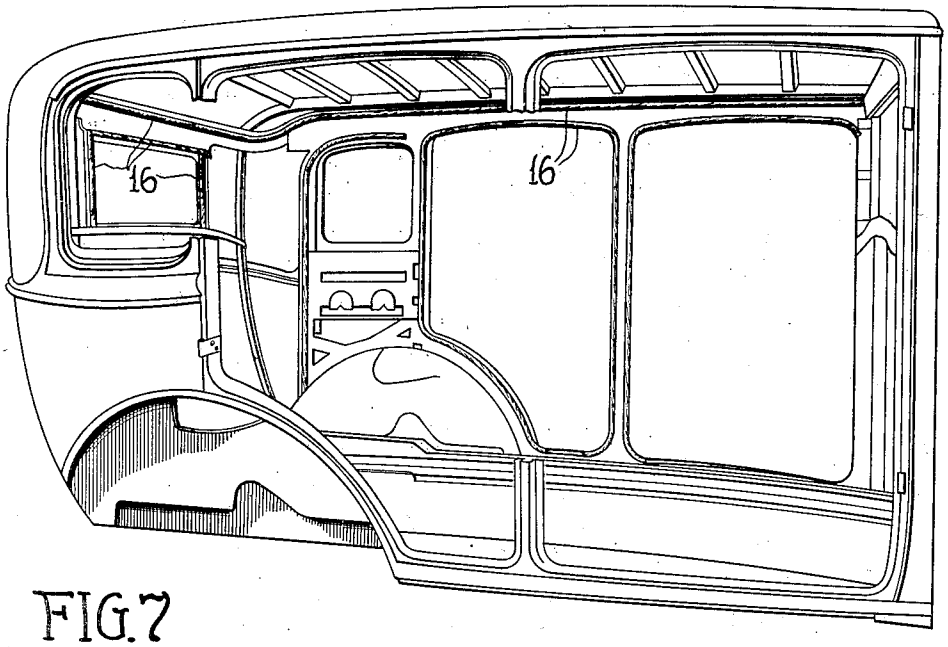


FIG. 7

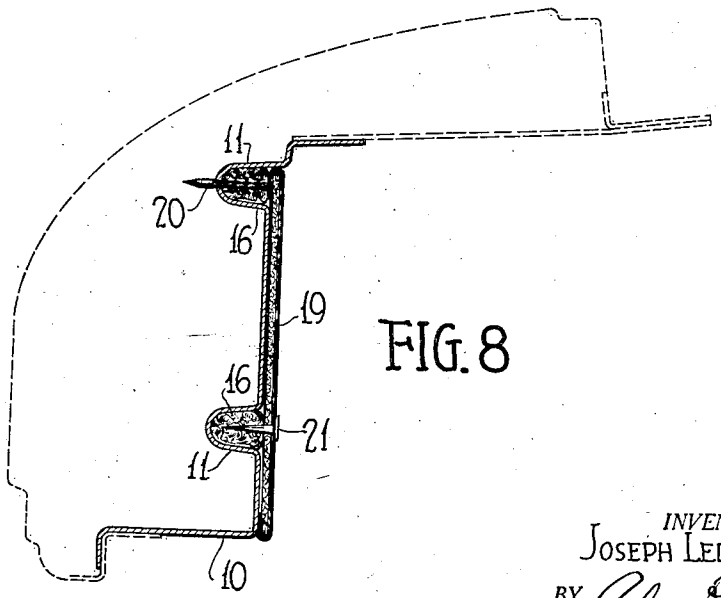


FIG. 8

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UNITED STATES PATENT OFFICE

1,930,484

METHOD OF APPLYING UPHOLSTERY OR THE LIKE

Joseph Ledwinka, Philadelphia, Pa., assignor to Edward G. Budd Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

Application July 1, 1931, Serial No. 548,139
Renewed January 11, 1933

8 Claims. (Cl. 45—138)

The invention relates to a method of applying upholstery or the like and particularly to a method of applying upholstery to metal panels, such as the panels of a sheet metal vehicle body the structural features of which are covered in co-pending application, S. N. 549,598, filed July 9, 1931.

Heretofore it has been the practice to secure the upholstery or the like to metal panels of automobile bodies by providing wooden tacking strips in various parts of the body where the upholstery was to be secured, but this method of attaching upholstery had several very serious drawbacks, in that the wood could not readily be bent into the shapes required, for example, around doorway openings having rounded corners, which required relatively wide strips to avoid splitting by the upholstery tacks, and was likely to work loose and develop noises after the body had been subjected to use.

It is a main object of this invention to provide a method of applying upholstery which overcomes these difficulties, permits applying the upholstery or the like with a minimum of labor, and at low cost, and results in a finished product which excels previous constructions in roominess, smoothness of surface, and general all around efficiency and durability.

In general, this object is attained by providing the metal panel or panels to which the upholstery or the like is to be applied with channels, which may readily be formed in the same stamping operations which give the panels their shape and contour and which add stiffness to the panels and may readily be shaped of tortuous or curved formation to conform to rounded corners of door and window openings, and then taking a twisted flexible cord such as a twisted paper cord, which may be carried in a roll or coil and applied directly from the roll or coil by inserting one end thereof in an end of the channel of the panel and then forcing it progressively into the channel and securing it therein, the cord being cut off when the opposite end of the channel is reached.

Preferably, the twisted cord is compressed and formed prior to inserting into the channel to substantially the cross-sectional shape of the channel, but of somewhat greater transverse width, whereby it is further compressed when hammered or otherwise forced into the channel. The channel may be of tapering sides and the cord of somewhat more abrupt taper, its smaller edge readily entering the mouth of the channel, but its wider edge being wider than the mouth of the channel and compressed forcibly when hammered into the channel so that it is strongly frictionally held in the channel by engagement with its walls. It may be further secured in the channel, as by drive nails, pointed to readily penetrate the cord and metal panel, and provided rearwardly of its point with spiral flutes which lock it to the cord and panel. The upholstery or the like may then be applied to the substantially smooth surface formed by the outer face of the cord and the body of the panel and secured in place, as by tacking it to the cord. The cord, because of its compressed and twisted condition, forms a medium particularly adapted to hold the shanks of the tacks and preventing their working loose.

Other and further objects and advantages of the invention will appear from the following detailed description when read in connection with the appended drawings, in which:

Fig. 1 is a perspective view of a section of round twisted cordage used in the practice of the invention.

Fig. 2 is a similar view showing an apparatus which may be used in shaping the cordage to the desired cross-section.

Fig. 3 is a fragmentary cross-sectional view through the axis of the shaping rolls.

Fig. 4 is a perspective view showing the method of applying the cordage to the channel of the panel.

Fig. 5 is a similar view showing the cordage secured in place.

Fig. 6 is a similar view showing the upholstery applied.

Fig. 7 is a perspective view of an automobile body, parts of the near side being broken away to show the interior of the opposite side wall and a portion of the rear wall, this view illustrating the application of the method to the trimming of the interior of automobile bodies.

Fig. 8 is a transverse section, parts being shown in outline only, of the portion above the window opening of the side wall of the body shown in Fig. 7, showing the upholstery applied.

In the practice of my method, the panel 10, which in this case is shown to be the inner panel or panels of an automobile body wall is formed in appropriate locations, as around the door and window opening and around the top and sides thereof, with a relatively narrow channel or channels 11 of substantial depth and preferably somewhat deeper than its width. For convenience of forming the channel and to facilitate the insertion of the tacking strip therein, the side walls of the

channel are tapering and the bottom wall is rounded. The channel so shaped can be readily formed in the same die stamping operations by which the panel is given the desired shape and contour and these channels around the door and window openings are of tortuous and curvilinear form, and aid substantially in these regions in stiffening the body wall structure.

In the practice of the method, I take a paper cord 12 made of any convenient length out of paper strips twisted together while in a wet condition, as is usual in the manufacture of paper cordage. This cord as it emerges from the twisting process is substantially circular in cross section as shown in Fig. 1 and may be wound on conveniently sized spools 13 or coils which may be conveniently handled.

The cordage, while wet, is wound from the spools and compressed and formed to a cross-sectional shape approximating that of the channel 11 to which it is to be applied. In the apparatus shown, the cord is passed from the spool 13 between a pair of opposed rolls 14 having their peripheral surface contoured as indicated in Fig. 3, and in this passage, the round section cord is compressed to render it more dense and given a shape in cross section approximating that of the channel 11, only having somewhat more tapering sides, and being somewhat wider in its widest portion than the mouth of the channel 11.

The formed cord 16, as it comes from the rolls 14, may again be wound upon a spool, as 15, of convenient size for handling and from such spool it may be led directly and applied to the panel 10 the spool being supported upon a rack for example.

In the application to the panel 10, its end is inserted in one end of the channel and it readily enters the channel some distance due to the relative dimensions and tapers and is finally forced home as by a hammer 17. In this process of forcing it into the channel, the cordage strip is further compressed by the side walls of the channel and is made to fill the channel and intimately engage its side walls, which intimate engagement holds it frictionally in place.

The application of the formed cordage strip 16 to the panel after the end has been inserted in the channel proceeds easily and rapidly since the strip being flexible, it can be guided and partially inserted in the channel with one hand of the operator progressively from one end of the channel to the other, through curved portions of the channel as well as straight, until the other end of the channel is reached, while the operator may with his other hand, hammer the cord home in the channel in the manner indicated in Fig. 4. At the end of one channel the cord is cut off without any waste and the end may again be inserted at the beginning of another channel and the process repeated.

After the cord has been forced into the channel 11, its outer face 18 is substantially flush with the adjacent body of the panel, thus making with the body of the panel a continuous smooth surface against which the upholstery panel, as 19, may be applied.

To additionally secure the cordage in the channel, I may employ any suitable securing means, but a very conveniently applied and secure means is provided by the nails 20 having hardened points adapted to readily pierce the cordage strip and the metal of the panel and a spirally fluted shank which interlocks with the strip and panel to hold the nails, and hence the strip, in place.

The upholstery is secured in place by the tacks 21 driven into the compressed twisted paper cord which, because of its twisted and compressed nature, holds the shanks of the tacks securely in place regardless of the direction in which they are driven.

In the foregoing description I have described the method of my invention in connection with one form of apparatus by the use of which it may be practiced, but it will be obvious to those skilled in the art, that changes may be made in the manner of carrying out the method and that the method may be employed in other relations than in the application of upholstery to automobile bodies, and I do not desire to limit the invention other than as required by the liberal interpretation of the language and scope of the appended claims.

What I claim is:

1. The method of applying upholstery or the like to a metal panel which consists in forming a relatively narrow deep channel in the metal of the panel, taking a twisted flexible cordage strip preformed substantially to the shape of the channel, inserting one end thereof into the channel and forcing it progressively into the channel, and attaching the upholstery or the like to the flexible strip.

2. The method of applying upholstery or the like to a metal panel which consists in forming a relatively narrow deep channel in the metal of the panel, taking a twisted flexible cordage strip of indefinite length, adapted to be compressed when inserted in the channel, inserting one end of the strip in the channel, and forcing it progressively into the channel and finally securing it in the channel.

3. The method of applying upholstery or the like to a metal panel which consists in forming a relatively narrow deep channel in the metal of the panel, twisting strips of paper into a cordage strip and forming the cordage strip substantially to the shape of the channel, and then inserting the cordage strip into the channel at one end thereof and progressively forcing it into the channel and securing it therein, and cutting the cordage strip at the end of the channel remote from that at which the insertion was commenced.

4. The method of applying upholstery or the like to a metal panel, which consists in forming the panel with a channel, taking an indeterminate length of a twisted cordage strip and laying it into the channel progressively, and securing it therein, and finally securing the upholstery or the like to said strip.

5. The method of applying upholstery or the like to a metal panel which consists in forming the panel with a channel having tapered sides, pre-forming a twisted cordage strip to substantially the transverse sectional shape of the channel but of somewhat greater taper and width, inserting one end of the strip into the channel and forcing it progressively into the channel and securing it therein.

6. The method of applying upholstery or the like to a metal panel which consists in forming the panel with a channel, taking an indeterminate length of a twisted cordage strip pre-formed to substantially the shape of the channel but of somewhat wider cross section, inserting one end of the strip into the channel, and forcing it progressively into the channel to compress it and cause it to assume the shape of the channel, whereby it is frictionally held in the channel.

7. The method of applying upholstery or the like to a metal panel, which consists in forming a tortuous channel in the metal of the panel, taking a twisted flexible cordage strip and laying it onto the channel progressively and securing it therein, and finally securing the upholstery or the like to said strip.

8. The method of applying upholstery or the like to a metal panel bearing a tacking strip receiving channel, which consists in forcing a flexible cordage of transverse cross section somewhat larger than the transverse dimension of the channel, progressively into a channel from end to end thereof whereby the friction between the walls of the channel and said strip tend to hold the strip therein and securing upholstery or the like to said strip.

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