

Feb. 24, 1942.

C. E. CARPENTER

2,273,833

DECORATIVE UPHOLSTERY PANEL

Filed Oct. 11, 1937

2 Sheets-Sheet 1

Fig. 1.

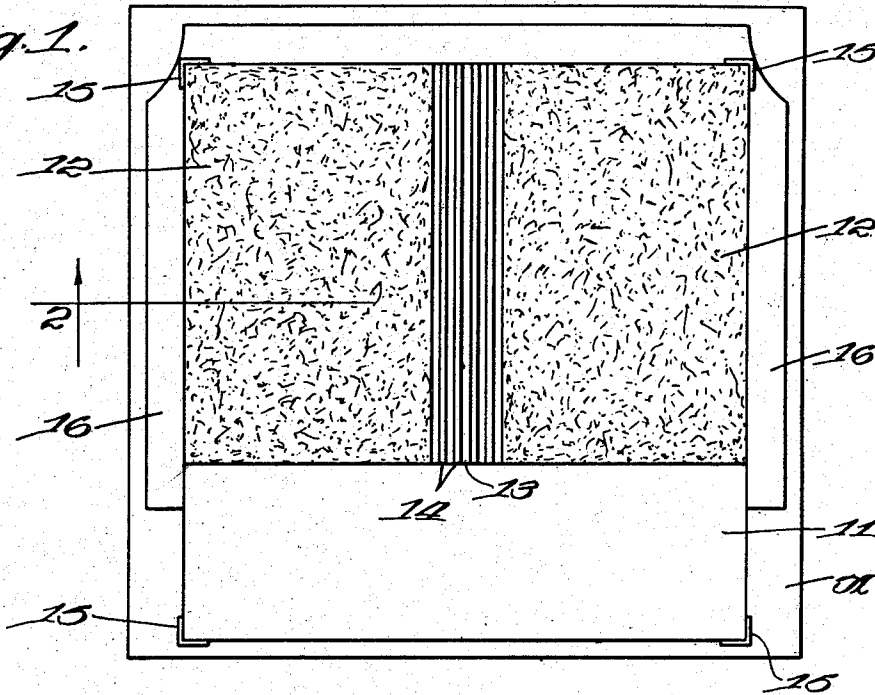


Fig. 2.

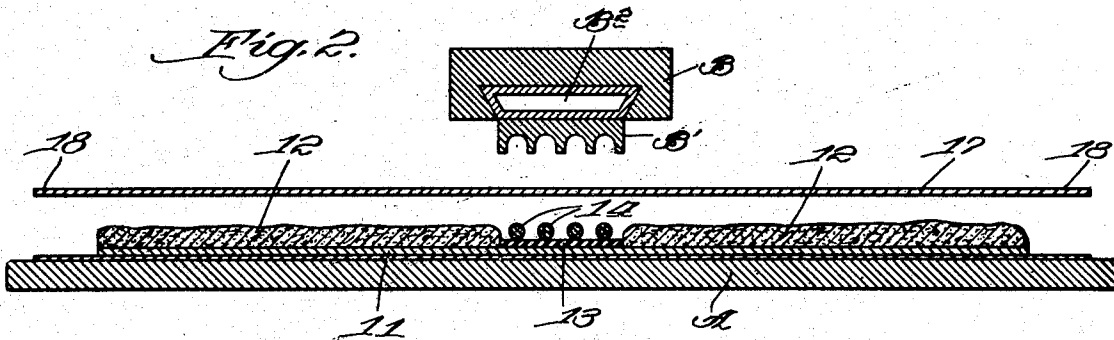


Fig. 5.

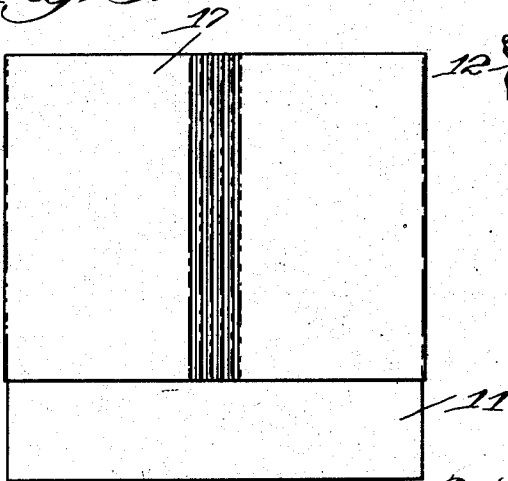


Fig. 3.

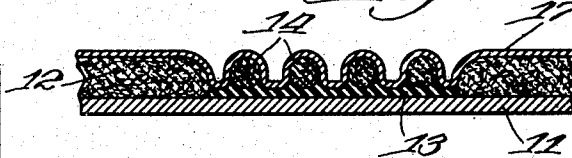
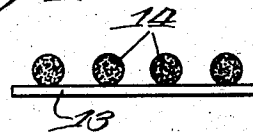


Fig. 4.



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Fig. 6.

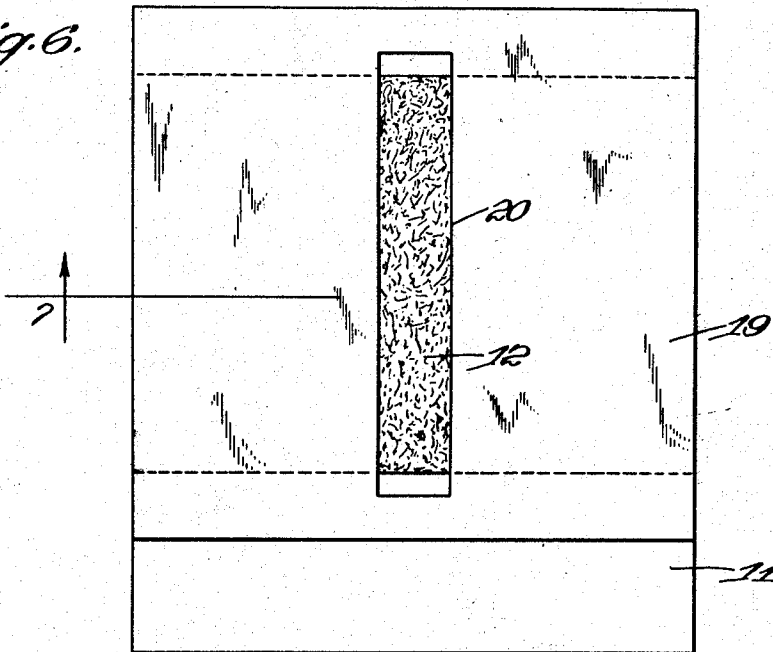


Fig. 7.

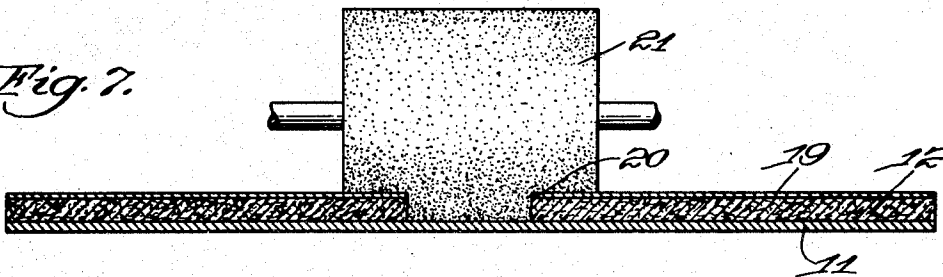


Fig. 8.

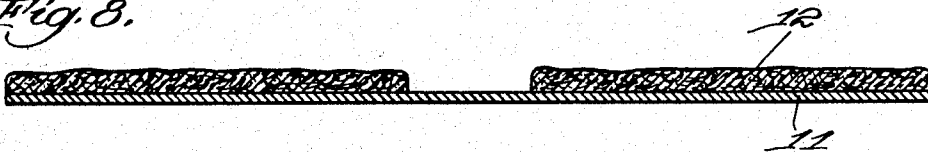


Fig. 9.

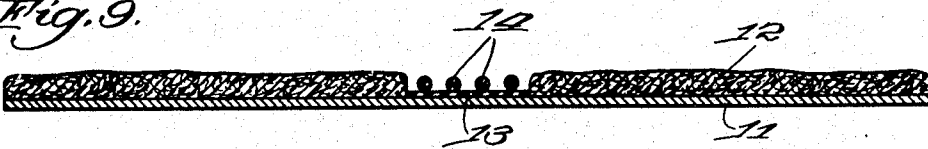
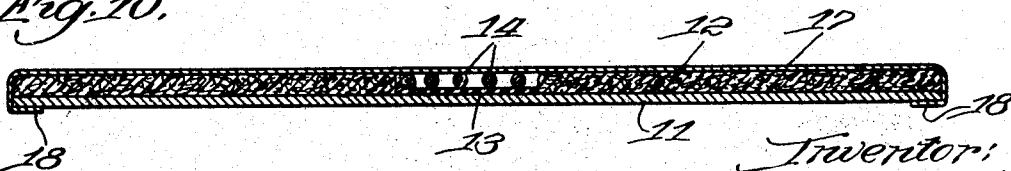


Fig. 10.



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UNITED STATES PATENT OFFICE

2,273,833

DECORATIVE UPHOLSTERY PANEL

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Application October 11, 1937, Serial No. 168,460

8 Claims. (Cl. 154—2)

This invention relates to a decorative upholstery panel adapted for use in motor vehicles or the like, and to an improved method of manufacturing the same.

In the manufacture of upholstery trim-panels, it has been the practice to sew, emboss, or otherwise form a design in the cover before attaching it to the backing-panel which is usually made of heavy cardboard or the like. In some cases certain designs have been applied after the cover and backing-panels were assembled either by embossing a design in both the panel and cover-fabric or by sewing directly through both parts. This practice presented several difficulties, for if embossing occurred in the backing-panel, heavy presses were required and clearly defined designs were difficult to produce without damaging the cover-fabric. Sewing through the panel produced lines of weakening and if the work was done in automatic machines, the lines of stitching were practically confined to straight parallel lines.

One of the purposes of the present invention is to provide a complete panel which may be used on automobile doors or the like, wherein a design of any desired contour may be provided by a comparatively simple and quickly performed method without the use of heavy and expensive equipment.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which:

Figure 1 is a plan view of the panel and press before the cover-fabric is applied; Fig. 2 is a sectional view, somewhat diagrammatic, showing the various parts of the panel before hot-pressing; Fig. 3, an enlarged broken sectional view of a decorated portion of one form of a panel design after pressing; Fig. 4, an end elevational view of a thermo-setting strip provided with risers; Fig. 5, a plan view of a decorative upholstery panel; Fig. 6, a plan view of a panel-member which has been covered with cotton padding and covered with a templet to permit the area to be decorated to be cleared of cotton padding and receive the thermosetting strip; Fig. 7, a diagrammatic sectional view showing how the templet covered panel may be brushed to remove the cotton from the area to be decorated; Fig. 8, a sectional view of the panel after the brushing operation, illustrated in Fig. 7; Fig. 9, a sectional view showing the panel after the thermo-setting strip has been adhesively secured to the area of the panel which has been cleared of padding; and Fig. 10, a sectional view showing how the

cover-fabric may be attached to the panel before the design is hot-pressed, if desired.

In the embodiment illustrated in Figs. 1 and 2, a press is shown diagrammatically, provided with a table or lower plate A which may be heated if desired. The press is further provided with an upwardly movable plate B provided with a female die B' bearing any desired design which is to be reproduced in the panel. Preferably the die is detachably secured to the upper plate B so that various designs can be embossed by means of one press. The die is heated by any suitable means B² such as steam, hot water, electricity or the like. Suitable mechanism is provided for applying a moderate amount of pressure on the die. The upholstery panel has a backing-panel or foundation board 11 which is usually made of waterproofed cardboard or the like. Those portions of the panel which are not to be decorated are shown covered with a layer of soft fibrous material such as cotton 12, and the area to be decorated is covered with a thermo-setting strip of material 13, preferably of uncured rubber, bearing riser members 14 arranged in the desired design found in the die B'. The riser members may be used or omitted, as desired, but when used produce a more pronounced embossed effect. They may be formed of twisted paper, twine, or other materials as desired. The thermo-setting strip 13 is adhesively secured to the backing-panel 11 before the pressing step.

As shown in Fig. 1, the table or plate A may be provided with positioning members 15 to align the backing-panel in the press. The plate is shown provided with a pattern 16 of the same shape as the cover-fabric 17 before it is attached to the backing-panel. Thus, it will be understood that after the backing-panel has been properly positioned within the press, aligning the strip 13 with the die B', the cover-fabric 17 may be placed over the assembly and in alignment with the pattern 16 so as to properly register with the remainder of the assembly. The heated die is then lowered and pressed into contact with the cover-fabric so as to press it firmly around the risers 14 and vulcanize the strip 13 permanently to the cover-fabric. The press may then be opened and the marginal edge portions of the cover-fabric 18 are turned under the backing-panel and secured thereto in the well known manner.

If desired, the marginal edge portions 18 may be secured to the backing-panel before the application of heat and pressure to produce the embossed design. If this is done, the pattern 16 is

not needed and the embossing step will stretch the cover-fabric more tightly over the panel.

The strip 13 may be of any suitable thermo-setting material but preferably is flexible after the heat treatment. Uncured rubber has been found more satisfactory than most materials for these reasons and a suitable composition is as follows:

	Per cent (approximately)
New rubber-----	50
Reclaimed rubber-----	30
Sulphur-----	3
Accelerator-----	1

Material of this character has been used for inner tube patches in automobile tires for many years.

In preparing the cotton coated panel for the hot-pressing operation, the cotton padding may be adhesively secured to the desired areas not to be decorated but in manufacturing such panels on a production basis, it has been more satisfactory to spray the outer face of the panel with a suitable adhesive such as latex, apply the cotton, and then remove the cotton from the area which is to receive the rubber strip. As shown in Figs. 6 and 7, this may be done by covering the cotton coated backing-panel with a templet 19 having cut-out portions 20 conforming in shape to the area to be decorated and positioned so that after the strip 13 has been applied it will register with the die in the press. The panel is then passed under a suitable rotary brush 21 which will brush away all of the cotton which is accessible through the opening 20. The templet is then removed from the panel, as shown in Fig. 8, and is ready to receive the rubber strip. The exposed area is next coated with a suitable adhesive and the strip 13 permanently secured in position. The assembly shown in Fig. 9 may then be placed in the press and the cover-fabric 17 applied as explained above. As explained above, the marginal edge portions 18 may be adhesively secured to the backing-panel before the hot-pressing operation, if preferred.

While the opening 20 in the templet is shown as rectangular, it will be understood that openings of any shape may be disposed anywhere on the panel so that a design of any shape may be produced.

In some cases it is found desirable to place a thin strip of uncured rubber of the same composition as the strip 13, over the risers 14 before the cover-fabric is applied and the heat treatment is given. This step enables the risers to be completely enclosed in rubber, and after hot-pressing they will be vulcanized to the cover-fabric.

In practicing the method for producing the decorative panel herein described, it is convenient for one operator to operate from five to ten presses. He can pass from one press to the next in rotation and unload and reload one press while the panels in the other presses are given sufficient time for the heat and pressure to set the adhesive or vulcanize the rubber strip.

The method is simple to perform and the final product although more attractive and producible in almost any desired design, competes favorably with the cost of panels decorated by sewing or embossing in any of the known processes. The final embossed design is permanent, practically unaffected by moisture or heat such as is ordinarily encountered in motor vehicles.

The foregoing detailed description has been given for clearness of understanding only, and no

unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

I claim:

1. A decorative upholstery panel comprising: a backing-panel; a strip of soft, cured rubber secured to said panel; a plurality of soft fibrous riser members disposed on said strip in an ornamental design; fibrous padding adhesively secured to said backing-panel adjacent to the strip-covered portion; and a cover-fabric vulcanized to the strip around said risers so as to afford an outwardly extending ridge design.

2. The method of producing a decorative upholstery panel which comprises: adhesively securing to an area of a panel board a strip of uncured rubber provided with upwardly extending risers disposed in a desired design; placing a strip of uncured rubber over the risers; placing a cover-fabric over the assembly in registration with the backing-panel; and hot-pressing an embossed design in said cover-fabric by vulcanizing the fabric to said strip.

3. The method of making a decorative trim panel which comprises: positioning on a panel board a plurality of risers of predetermined outline and arrangement and a thermo-setting adhesive material at the sides of said risers of a type adapted on heating to set without passing through a state of sufficient fluidity to penetrate a trim fabric; placing a trim fabric over said panel board overlying said risers and adhesive material; securing the edges of said trim fabric to the edges of said panel board; hot pressing said trim fabric over said risers into contact with said adhesive material in a manner to substantially tension said trim fabric; and maintaining heat and pressure for an interval sufficient to effect a substantial cure of said adhesive material.

4. The method of making a decorative trim panel which comprises: positioning on a panel board a plurality of risers of predetermined outline and arrangement and a thermo-setting adhesive material at the sides of said risers of a type adapted on heating to set without passing through a state of sufficient fluidity to penetrate a trim fabric; placing a trim fabric over said panel board overlying said risers and adhesive material; positioning a recessed hot die in registry with said risers; hot pressing said trim fabric with said die over said risers into contact with said adhesive material; and maintaining heat and pressure for an interval sufficient to effect a substantial cure of said adhesive material.

5. The method of making a decorative trim panel which comprises: positioning on a panel board a plurality of risers of predetermined outline and arrangement and a thermo-setting adhesive material at the sides of said risers of a type adapted on heating to set without passing through a state of sufficient fluidity to penetrate a trim fabric; placing a trim fabric over said panel board overlying said risers and adhesive material; securing the edges of said trim fabric to the edges of said panel board; positioning a recessed hot die in registry with said risers; hot pressing said trim fabric with said die over said risers into contact with said adhesive material; and maintaining heat and pressure for an interval sufficient to effect a substantial cure of said adhesive material.

6. The method of making a decorative trim panel which comprises: securing to a panel board a thin sheet of uncured soft rubber having a plurality of risers of predetermined outline and arrangement thereon; placing a trim fabric over said panel board overlying said rubber and risers; securing the edges of said trim fabric to the edges of said panel board; hot pressing said trim fabric over said risers into contact with said rubber in a manner to substantially tension said trim fabric; and maintaining heat and pressure for an interval sufficient to effect a substantial cure of said rubber and to bond said fabric to said rubber.

7. The method of making a decorative trim panel which comprises: securing to a panel board a thin sheet of uncured soft rubber having a plurality of risers of predetermined outline and arrangement thereon; placing a trim fabric over said panel board overlying said rubber and risers; positioning a recessed hot die

in registry with said risers; hot pressing said trim fabric with said die over said risers into contact with said rubber; and maintaining heat and pressure for an interval sufficient to effect a substantial cure of said rubber and to bond said fabric to said rubber.

8. The method of making a decorative trim panel which comprises: securing to a panel board a thin sheet of uncured soft rubber having a plurality of risers of predetermined outline and arrangement thereon; placing a trim fabric over said panel board overlying said rubber and risers; positioning a recessed hot die in registry with said risers; hot pressing said trim fabric with said die over said risers into contact with said rubber; and maintaining heat and pressure for an interval sufficient to effect a substantial cure of said rubber and to bond said fabric to said rubber.

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