

Aug. 4, 1942.

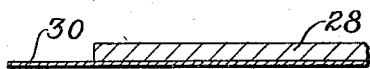
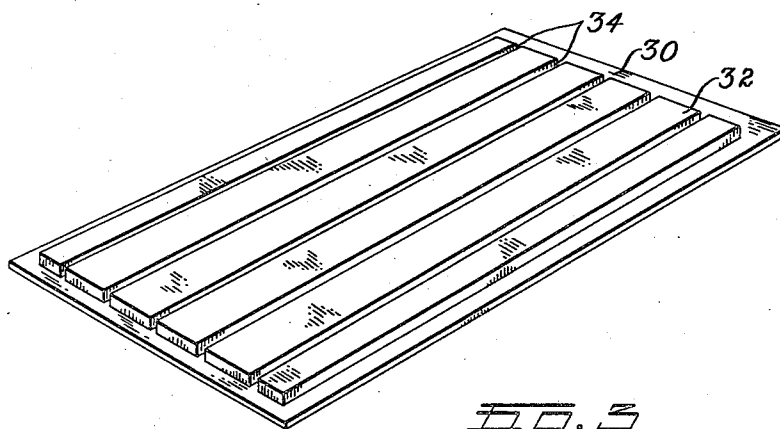
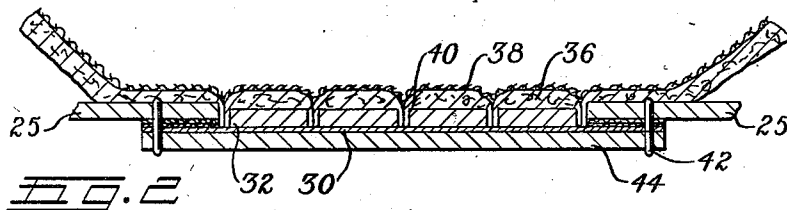
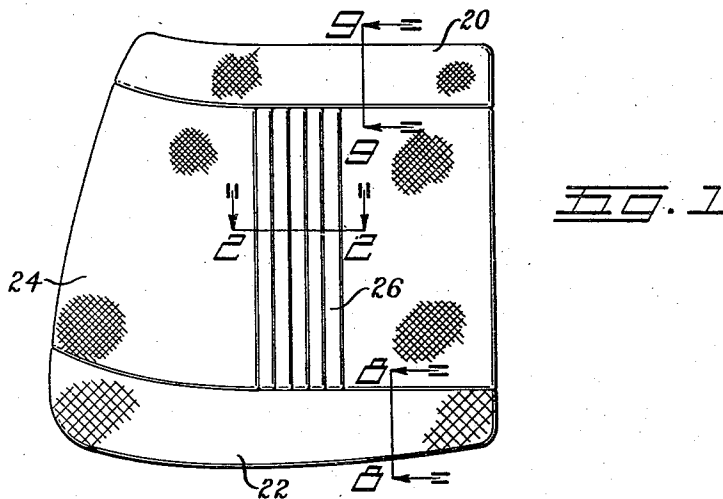
H. J. WOODALL ET AL

2,291,935

TRIM PANEL ASSEMBLY

Filed Dec. 27, 1938

2 Sheets-Sheet 1



INVENTORS.
HERBERT J. WOODALL
CHARLES BAYARD JOHNSON
BY *Parker & Burton*
ATTORNEYS.

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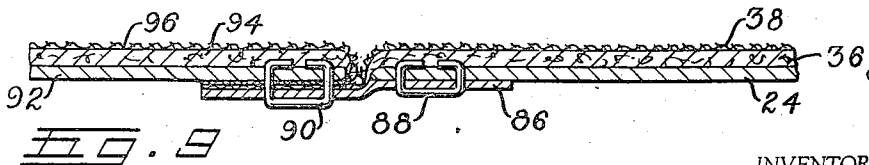
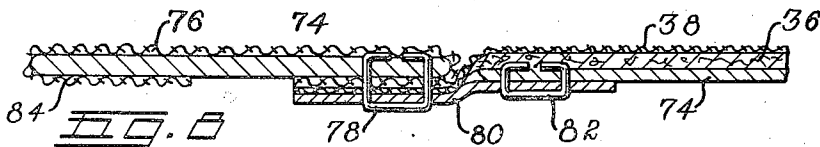
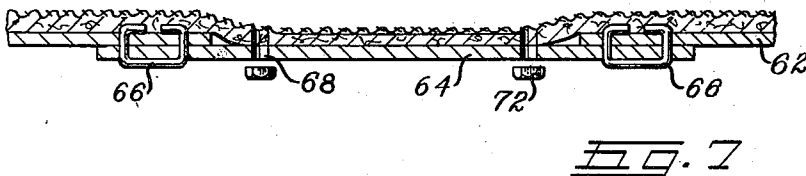
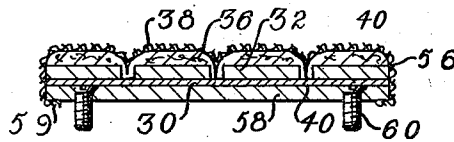
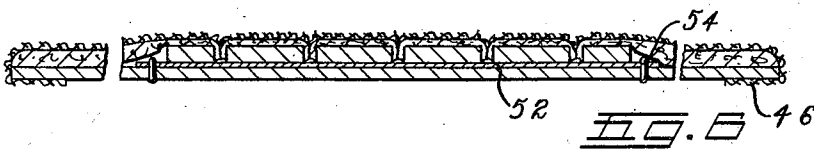
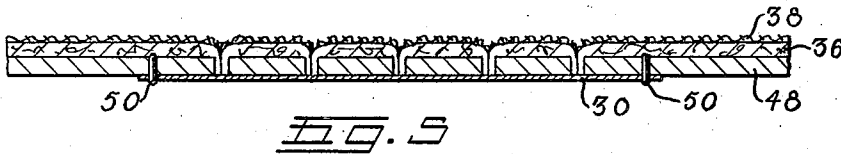
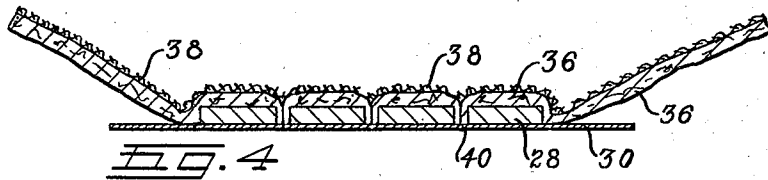
H. J. WOODALL ET AL

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TRIM PANEL ASSEMBLY

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2 Sheets-Sheet 2



INVENTORS.
HERBERT J. WOODALL
CHARLES DAYARD JOHNSON
BY *Parker & Burton*
ATTORNEYS.

UNITED STATES PATENT OFFICE

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TRIM PANEL ASSEMBLY

Herbert J. Woodall and Charles Bayard Johnson,
 Detroit, Mich., assignors to Woodall Industries
 Incorporated, Detroit, Mich., a corporation of
 Michigan

Application December 27, 1938, Serial No. 247,754

2 Claims. (Cl. 154—2)

This invention relates to improvements in embossed trim panels and to an improved method of fabricating an embossed trim panel or to an improved method of fabricating the embossed area of a trim panel.

In trim panels particularly such as are used in the interior of closed automobile bodies, it has been common practice to provide such panels with embossed decorative designs. Various methods have been used to fabricate such panels.

Generally, such a panel comprised a foundation board covered on one side with trim material. This trim material might include wadding overlaid with trim cloth. The trim material, namely, the wadding and trim cloth, was commonly secured to the foundation board by stitching, adhesion, or the like. Such stitching or adhesive might extend through the wadding compressing the same and drawing the trim cloth along such compressed line toward the foundation board providing an embossed design.

Another common practice was to form risers of some suitable material such as felt or the like. These risers were placed upon the foundation board and such panel foundation provided with risers was thereafter covered with trim cloth stitched down to the board about the risers. Thermoplastic material of a resinous or a rubber base has also been used with and underneath the trim cloth and overlying a foundation board and this thermoplastic material has been formed to shape to give the desired embossed design. Another practice has been to employ a foundation board formed of thermoplastic sheet material and to shape such board to the desired embossed configuration.

A particular disadvantage attending the employment of individual risers cut to shape and overlying the foundation board and thereafter covered with wadding and/or cloth, lay in the labor involved and in the necessity for accurate positioning of the risers to form the desired design. Where a plurality of small strip risers were provided, these had to be accurately positioned and secured to the foundation board and thereafter covered with trim material.

This invention relates to an improved method of fabricating an embossed trim panel or the embossed portion of a trim panel involving the use of a novel panel assembly or sub-assembly which exhibits an embossed design and to its method of manufacture.

An object is to provide an improved, simple, inexpensive method of producing an embossed design which involves the employment of riser

elements cut to the desired shape and size and wherein accuracy of outline and accurate spacing of the several riser areas is obtained rapidly and economically. It relates to an improved structure which embodies such features. It relates to an improved trim panel which includes such structure and to the method of its manufacture.

Other objects, advantages, and meritorious features will more fully appear in the following specification, appended claims, and accompanying drawings, wherein:

Figure 1 is an elevation of a trim panel embodying our invention.

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a perspective of the foundation of our improved riser sub-assembly.

Fig. 3a is a section of a fragment of the foundation of our improved riser sub-assembly prior to the formation of the riser area therein.

Fig. 4 is a cross-sectional view through a riser sub-assembly foundation following securement of the trim material thereto.

Fig. 5 is a cross-sectional view through a panel exhibiting this invention along a line such as 2—2 of Fig. 1 but illustrating a modified form of construction as compared with that of Fig. 2.

Fig. 6 is a cross-sectional view taken along a line similar to Fig. 5 but showing a second modified form of panel structure.

Fig. 7 is a cross-sectional view through a panel showing another modification of this invention.

Fig. 8 is a cross-sectional view taken on line 8—8 of Fig. 1, and

Fig. 9 is a cross-sectional view taken on line 9—9 of Fig. 1.

If the panel is to exhibit an embossment having a plurality of riser areas, there is provided a sheet of material from which these riser areas are to be cut. Such material may be a composition fibrous sheet of any suitable character, composition fiber board sold under the trade name of Masonite has been satisfactorily used. To one surface of such sheet a suitable backing layer is secured. Such securement may be by way of adhesion, stapling, stitching, or in any other suitable manner. The riser areas are then cut in the lamination provided for this purpose. A plurality of kerfs may be cut into or entirely through the riser lamination, such kerfs defining the riser areas.

The backing lamination is not cut but serves to hold the formed riser areas which have been cut together. Such backing lamination is of a

character which lends itself to stitching or whatever other means may be employed for holding the trim material down about the riser areas. Heavy woven fabric such as buckram impregnated with asphalt has been employed with satisfaction for such backing lamination.

The trim material which may include wadding and trim cloth, if both are to be used, is then spread over this pre-formed riser laminated foundation assembly and is stitched or otherwise suitably secured in place thereupon. The stitching, if stitching is used, is through the kerfs that have been cut in the riser lamination and which separate the riser areas and through the buckram backing layer securing the trim material to such backing lamination along the line of such kerfs and drawing the trim material down about the riser areas outlined by the kerfs.

This embossed sub-assembly may then be fabricated into a complete panel structure as hereinafter described. It may be mounted upon or so associated with a relatively stiff foundation backing as to provide the character of panel structure desired.

Throughout the specification and claims, the words "risers" has been used to indicate those embossed areas which are generally shown in the drawings in the form of vertically extending risers. Such word risers, however, is not to be limited to a vertically disposed embossment. Any area exhibited as an embossment is intended to be covered by such word risers. The embossment may rise above the surface of the adjacent panel area or it may be within the plane thereof. It may exhibit itself as one or more embossments outlined by or separated from each other by debossed grooves, channels, or areas. In the drawings, different modifications each exhibiting the invention are illustrated.

We propose to prepare a decorative embossment for trim panels which decorative embossment may comprise a part of the panel foundation material itself, which material has been suitably prepared to exhibit such embossment or it may comprise a subassembly structure which has been prepared to exhibit the embossment and which subassembly structure is adapted to be suitably secured to the panel foundation or fabricated thereinto in the fabrication of the panel.

Fig. 1 illustrates a panel embodying this invention, which panel may be fabricated according to the disclosure of Figs. 1 to 4 inclusive, or according to the disclosure of Fig. 5, Fig. 6, or Fig. 7.

This panel comprises an upper bolster area 20, a bottom carpet area 22, and a central area 24, which central area includes an embossed portion indicated generally as 26.

This invention resides in the fabrication of the embossed area section of the panel, the method of its construction and the construction and fabrication of such embossed area into the complete panel.

In the construction illustrated in Figs. 2, 3 and 4 there is provided a riser foundation lamination 28 as shown in Fig. 3a which may be formed of any suitable material such as a fibrous composition material and preferably a material which will not buckle, warp, expand or shrink in response to temperature or moisture changes or under the varying conditions of use and which will permanently retain an embossed configuration given to it. A composition fibrous material sold under the trade name of Masonite has been used and found suitable.

There is secured to one surface which will be the rear face thereof a backing layer 30. This backing layer is of a tough strong durable material such as buckram impregnated with asphalt. This securement may be by way of adhesion, stapling, stitching, or in any other suitable manner. The backing layer extends beyond the edges of the layer 28 on all sides as shown in Fig. 3.

The lamination 28 is then cut to exhibit the desired number and form of risers 32 which provide the foundation for the embossed design. Such structure is shown in Fig. 3. A plurality of parallel risers are there shown. This cutting of the lamination 28 to form the risers may be by way of a sawing operation cutting a plurality of kerfs 34, which kerfs define the risers. These kerfs are cut through or substantially through the lamination 28 but not into the lamination 30. The lamination 30 forms a positioning foundation for the risers 32 when the same are formed.

Trim material which may consist of a layer of wadding 36 and a layer of trim cloth 38 is then spread over the foundation riser laminated structure and the wadding and trim cloth is stitched or otherwise secured to the backing layer 30 through the kerfs 34 drawing the trim material down snugly about the riser lamination 32 all as shown in Fig. 4.

In Fig. 4 this securement is obtained by stitching 40 but it is obvious that it might be obtained by stapling or fastening devices of any character found suitable. The wadding and trim cloth extend beyond the margin of the layer 28 on all sides.

This sub-assembly structure which is illustrated in Fig. 4 may then be fabricated into the trim panel. In the panel shown in Fig. 1 this sub-assembly makes up the embossed section indicated generally as 26 in such figure and it is secured to end portions of the central section as shown in Fig. 2. In Fig. 2 this central section 24 is illustrated as made up of the embossed area 26 and these end portions indicated as 25. In this particular construction the opposite margins of the trim cloth and wadding of section 26 are secured underneath the end portions 25 of the panel foundation layer and the wadding and trim layers 36 and 38 of such end portions are likewise so secured and staples 42 or other fastening devices are passed there-through.

To rigidly secure these three portions, namely the central embossed portion 26 and the two end portions 25 together to form a unitary central section 24 a reinforcing layer 44 is provided. This reinforcing layer may also be formed of Masonite or any other suitable sheet material. Sheet metal may be used if desired for the reinforcing layer. Staples 42 or stitches, if wire stitching is preferred, extend throughout end portions 25, the margins of the trim cloth and wadding thereunderneath, the backing layer 30 and the reinforcing layer 44. The trim cloth and wadding of the end portions are thrown back above the point illustrated in Fig. 2 to permit of this stapling operation. The trim cloth and wadding of these end portions is then drawn outwardly away from the embossed area over the front face of the foundation portions 25 and carried over onto the back thereof and fastened down as at 46 in Fig. 6 which may be by way of adhesion.

In Fig. 2 the trim material which overlies the embossed area 26 is a separate piece from that which overlies the end portions 25. It is therefore possible to use a separate color or quality of trim cloth over this embossed area from that used over the end portions 25.

It is apparent that if desired the trim cloth and the layer of wadding used over the embossed area might also be extended over the end portions 25 as a unitary piece. Such type of construction is shown in Figs. 4 and 5. In either Fig. 4 or 5 the trim cloth and wadding would be cut to sufficient width to extend over the end portions 35.

In Fig. 5 a modified form of construction is employed as compared with that of Fig. 2. In such construction the panel foundation for the entire central section 24 is a unitary blank. This blank is indicated in Fig. 5 as 48. Before the kerfs are cut therein a backing layer 30 is secured to the rear face of the area which is to exhibit the embossment. This backing layer may be of the same character of material as described in connection with the structure of Figs. 2 to 4, inclusive. The securing of the backing layer may be by way of wire stitching or in any other suitable fashion such as shown at 50 in Fig. 5.

Following the application of this backing layer and before the trim material shown in Fig. 5 is applied thereto the kerfs are cut through layer 48 as described in connection with the structure of Fig. 3. Such kerfs may be gang sawed in the layer 48 and extend transversely entirely thereacross. This portion of the structure would resemble the structure shown in Fig. 3. The trim material, wadding and trim cloth is then spread over this entire central section 48 and the trim material and wadding is stitched down to the backing layer 30 through the kerfs as hereinabove set forth.

Such trim material may then be extended outwardly over the end portions beyond the embossed area and the trim cloth may be brought over and adhesively secured to the back of the panel foundation as at 46 in Fig. 6. Such central section so formed may possess sufficient rigidity in the complete panel structure when it is assembled between the rigid bolster section 36 and the carpet section 22 to impart the necessary rigidity to the entire panel. If its rigidity is not sufficient, however, a reinforcing layer such as 44 of Fig. 2 may be employed and fastened to the back of the layer 48 over the kerf cut area.

Fig. 6 exhibits a different type of structure in that an embossed sub-assembly such as shown in Fig. 4 is secured to a panel foundation layer 52 by being superimposed thereupon and stitched or otherwise secured thereto. This panel foundation layer may constitute the complete foundation layer of the central section 26 of the panel. The sub-assembly shown in Fig. 4 may be secured thereto by wire stitches 54. The trim material may then be drawn over the end portions of the central section away from the embossed area and brought over upon the back as at 46 above described. In this structure the embossed area will stand out beyond the normal plane of the remainder of the panel but if desired extra padding might be provided to build up the outer panel area flush with the surface of the embossed area.

Fig. 7 illustrates another modified type of construction. The embossed sub-assembly is indicated generally as 56. It comprises a foundation layer 58 which may be of a material like Masonite hereinabove referred to or sheet metal

or any other suitable material. Screws 60 are passed through this layer 58 with the heads seated therein as shown. A sub-assembly such as shown in Fig. 4 is then built up in the desired configuration and of the desired size. This sub-assembly comprises the backing layer 30, the kerf cut riser foundation layer with the risers 32 covered with wadding 36 and trim cloth 38 held down by stitches 40. As described in connection with the structure of Fig. 2 the stitches extend through the trim material and through the backing layer 30 only. This sub-assembly may then be adhesively secured upon the foundation layer 58 as at 59 over the screws 60 and the trim cloth brought over onto the back of the foundation layer 58 all as shown in Fig. 7.

The trim panel itself has a foundation layer 62 covered by wadding and trim cloth and which foundation layer has been previously cut away to provide a recess of a size to receive the embossed sub-assembly 56 and bridged by reinforcement layer 64 secured to the back by staples 66 and which reinforcement layer is provided with apertures 68 to pass screws 60. The wadding and trim cloth may be passed loosely across this recessed area formed by cutting away the panel foundation 62 and bridging the cut out and the reinforcement 64 as shown in Fig. 7. The trim cloth or the trim material and wadding is of course provided with apertures registering with the apertures 68 through the reinforcement area 64. Screws 60 extend through these apertures and the nuts 72 are used to secure this embossed sub-assembly in place. When the embossed sub-assembly is fastened down it draws the trim cloth which has extended loosely over the recessed area down snugly over the two outer end portions to the center section of the panel.

Figs. 8 and 9 illustrate the method of securing this central section which contains the embossed area between a rigid bolster area and a rigid carpet area. This method of securing is particularly described and forms the subject matter of an application directed to the complete panel assembly filed May 25, 1938, Serial No. 209,997. Briefly, the particular construction here shown is one wherein the trim cloth 38 and wadding 36 of the central area 24 is extended over the rear face of the foundation board 74 of the carpet section 22 as shown in Fig. 8. In this figure the carpet section is not shown as provided with any wadding but is covered with carpet trim 76. The margin of the carpet trim is folded over the margin of the foundation board 74 overlying the trim cloth 38 of the central section and a staple 78 is used to secure such margins in place and to secure the foundation board 74 of the carpet section to the foundation board 24 of the central section by means of a reinforcement bridging strip 80. This bridging strip may be formed of sheet metal. It is attached to the central section foundation board 24 by means of the staples or wire stitches 82 as illustrated in Fig. 8 or in any other suitable manner. The carpet trim is then carried over the lower margin of the carpet foundation board 74 and adhesively secured on the back thereof as at 84.

The arrangement whereby the bolster section is connected to the upper margin of the central section is very similar and is shown in Fig. 9. In this figure the metal reinforcement bridging strip is indicated as 86. The staples or wire stitching which secures this bridging strip to the foundation board of the central section is indicated as 88 and 90 indicates the wire stitching which se-

cures the reinforcement strip to the foundation board 92 of the bolster area 20. This bolster area is shown as provided with wadding 94 and trim cloth 96 the margins of which are secured in place between the reinforcement strip 86 and the foundation board of the bolster area by the wire stitching 90. It is understood that the outer margin of the trim cloth 96 is carried over onto the back of the board 92 and adhesively secured thereon as shown at 84 in Fig. 8 in connection with the carpet trim.

This bolster section and the carpet section possess sufficient rigidity so that normally they will maintain the rigidity of the panel throughout the embossed central area even though such embossed area be constructed as shown in Fig. 5 without reinforcement over the back thereof such as is furnished in Fig. 2 but reinforcements may be employed if desired.

What we claim:

1. That method of fabricating a trim panel exhibiting an embossment on a portion of its front face comprising providing a stiff self-supporting panel foundation lamination, securing a backing lamination to the back of said foundation lamination throughout that portion intended to exhibit the embossment and beyond the boundary of said portion, cutting kerfs through the foundation lamination superposing said back-

ing lamination and outlining the intended embossment, covering the front face of said lamination including said kerfs with a layer of wadding overlaid with a layer of trim material, drawing the wadding and trim material into said kerfs and securing the same therealong to the backing lamination forming the embossment, and securing the wadding and trim material to the foundation lamination beyond the boundary of said embossment.

2. That method of fabricating a trim panel exhibiting an embossment on a portion of its front face comprising providing a riser lamination, securing the riser lamination as a unit to a backing lamination, said backing lamination extending beyond the margin of the riser lamination, cutting kerfs through the riser lamination outlining the intended embossment, covering the riser lamination with trim material, securing the trim material to the backing lamination through the kerfs cut in the riser lamination forming the embossed design, providing a supporting panel foundation lamination, and securing said backing lamination beyond the boundary of the riser lamination to said panel foundation lamination to exhibit the embossed design on the front face of the panel foundation lamination.

HERBERT J. WOODALL.

CHARLES BAYARD JOHNSON