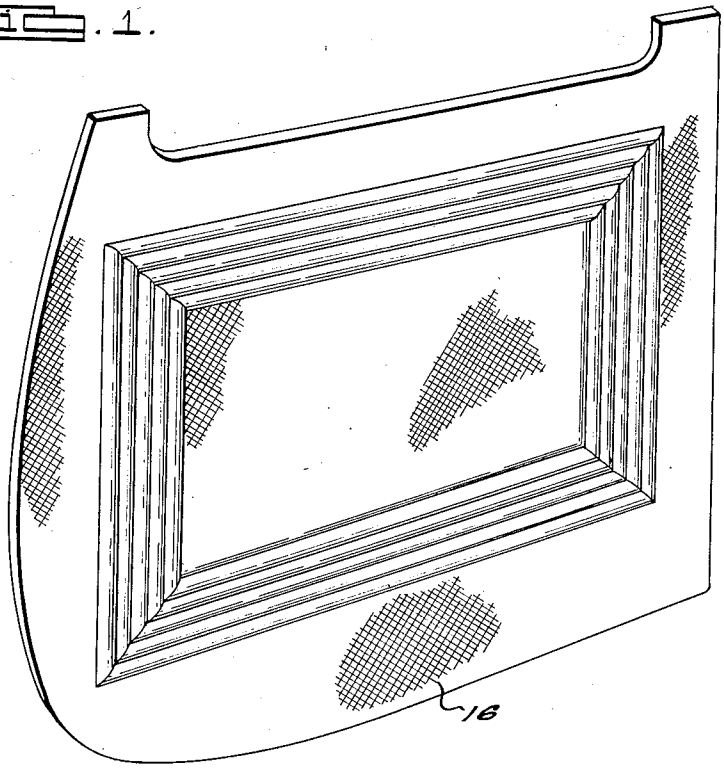
Nov. 8, 1938. A. J. JAROSIK 2,135,578

METHOD OF FORMING TRIM PANELS

Filed Oct. 3, 1936

Fig. 1.



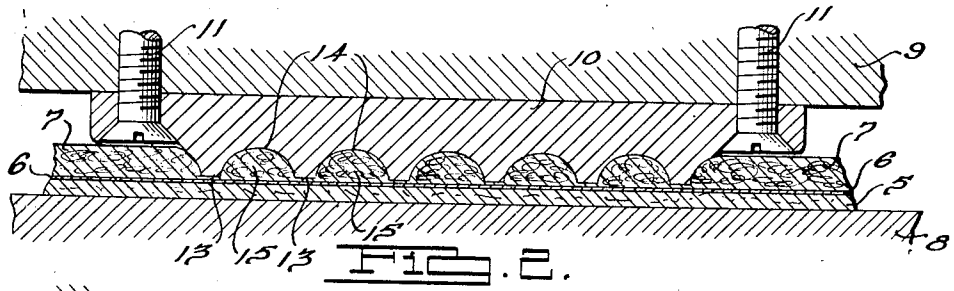


Fig. 2.

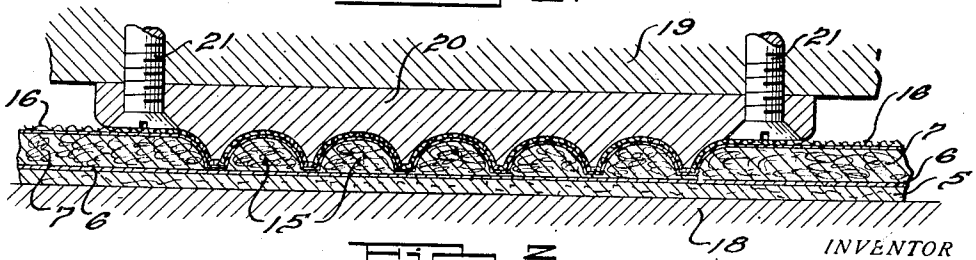


Fig. 3.

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METHOD OF FORMING TRIM PANELS

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Application October 3, 1936, Serial No. 103,846

2 Claims. (Cl. 154—2)

This invention relates to inner trim panels. More particularly it relates to a novel and improved method of forming inner trim panels.

It is a primary object of the present invention to provide a method of manufacturing cheap yet durable and attractive inner trim panels of the type which are conventionally used for covering predetermined portions of the interior of automotive vehicle bodies particularly the inner surface of the doors thereof. The present invention contemplates the provision of an inner trim panel construction in which the surface of the inner trim panel is fabricated to provide a particularly attractive and ornamental appearance.

The present invention contemplates the provision of a method of manufacturing inner trim panels of this generic type which method includes the securement of a relatively loosely felted padding material adhesively to a relatively stiff cardboard backing sheet. The padding material thus secured is then coated throughout a predetermined area with liquid latex which latex is applied to the padding in such a manner that it substantially impregnates the padding material throughout the area to which it is applied. The padding material is then embossed in order that the surface thereof will assume a configuration substantially the same as the surface configuration which it is desired to produce in the resultant trim panel. After the padding material has been thus embossed the latex material is permitted to set in order that the embossment formed on the padding material will be permanently retained. A section of fabric finish material is then stretched over the padded backing sheet and secured thereto at the marginal edge thereof. The fabric finish material is then impressed with a die substantially similar to the die with which the padding material was embossed in order that the fabric finish material will be conformed to the configuration of the embossed padding material, which conformation serves to materially tension the fabric finish material over the padded surface of the backing sheet. This process has been found to produce an inner trim panel which has surface decorations serving materially to enhance the ornamental appearance of the trim panel as a whole.

It is a primary object of the present invention to provide a method of manufacturing inner trim panels which process is relatively simple and cheap to practice and consequently produces extremely attractive ornamental and satisfactory inner trim panels at extremely low cost.

Many other and further objects, advantages and features of the present invention will become more clearly apparent from the following description when considered in connection with the accompanying drawing forming a part thereof.

In the drawing:

Figure 1 is a perspective view of a completed inner trim panel embodying the improvements of the present invention and illustrating one form of surface configuration which has been found extremely satisfactory.

Fig. 2 is an enlarged transverse sectional view illustrating more or less diagrammatically the manner in which the padding material may be embossed after impregnation.

Fig. 3 is a sectional view similar to Fig. 2 illustrating in detail the manner in which the fabric finish material is tensioned over the surface of the embossed padded backing sheet in order that the former will assume the configuration of the latter.

While numerous attempts have heretofore been made to produce a cheap and satisfactory inner trim panel construction having a surface configuration providing decorative effects, the methods utilized for achieving this end as practiced in accordance with the teachings heretofore known have almost uniformly resulted in constructions which were inferior in appearance or prohibitively expensive to manufacture. The products obtained by the method of the present invention result in inner trim panels which are unusually uniformly attractive in appearance and, as will hereinafter be more clearly appreciated, the specific method disclosed is extremely simple and consequently results in a product which may be manufactured at an extremely low cost.

As is conventional in construction of this general character, the inner trim panel includes a backing sheet **5** which may be formed of cardboard or other suitable relatively stiff hard pressed material which will give the panel as a whole the necessary inherent rigidity. This cardboard backing sheet **5** is blanked out to substantially the configuration of the finished inner trim panel which it is desired to produce and it will be understood that the specific panel illustrated in the drawings, while primarily intended for use upon the right hand front door of the vehicle, is merely shown to illustrate one form which the invention may take. Further it will be understood that the trim panels manufactured according to the method of the present invention are

not necessarily limited to use on vehicle doors but may easily be fabricated for the purpose of covering other portions of the vehicle body interior, or any other suitable installation in which they may find practical utility.

After the backing sheet 5 has been blanked out to the desired configuration it is preferably sprayed with a coating of liquid adhesive 6. A section of loosely felted fibrous material 7 is blanked to a configuration substantially congruent to the backing sheet 5 and superimposed thereon and adhesively secured thereto by means of the adhesive 6. This section of padding material is preferably composed of two or more layers of loosely felted fabric material which has been compacted in order to give the padding material as a whole sufficient thickness and body for the purposes desired. Portions of the padding material in which it is desired to produce the desired surface decoration are now treated with liquid latex which may be sprayed, brushed or applied thereon by any suitable means and in such manner that the liquid latex penetrates deeply into the body of the padding material throughout the predetermined areas which are treated.

This liquid latex material dries relatively rapidly and consequently a scum forms upon the surface of the padding material almost immediately. After the padding material has been thus treated the padded backing sheet as a whole is placed on the bed 8 of a press, portions of which are diagrammatically illustrated in Fig. 2. The press includes a ram 9 to which is secured a die 10 by means of suitable screws 11. In the specific form of the invention illustrated in the drawings the base of the die is preformed to provide a plurality of lands 13 forming rounded relatively shallow grooves 14 therebetween. As the ram of the press descends these lands 13 engage the surface of the padding material 7 and serves to preform or emboss the padding material to provide a plurality of ridges arranged in substantially parallel relation. This operation is preferably performed while the latex material is still damp in the body of the material and as the padding material is thus deformed the bonding action of the wet latex in the body of the padding serves to retain the padding material in substantially the condition it is formed by means of the embossing die 10.

In the specific form of the invention as illustrated in the drawing the padding material is stamped to form a plurality of substantially concentric and rectangularly extending ridges which create upon the surface of the trim panel a panelled effect. It will be readily appreciated that this particular form is merely illustrative of one form which the present invention may take and consequently many other and various ornamental surfaces may be provided depending on the particular configuration of the die which is utilized for operation upon the padding material.

After the forming operation of the padding material has been completed the liquid latex is permitted to set in order to permanently retain the embossed effect in the padding material. A section of fabric finish material 17 is then stretched over the embossed surface of the padded backing sheet and the marginal edges of this fabric finish material are adhesively secured to the rear side of the backing sheet in accordance with conventional practice in construction of this general type. After the marginal edges of the fabric finish material have been secured in position over on the backing sheet the covering material is tensioned across the surface of the backing sheet by means of a stamping operation performed by a press having a bed 18, a ram 19 and a die 20 somewhat similar in configuration to the die 10 described in connection with Figure 2. This die serves to engage the surface of the fabric finish material and urge the same down into the grooves between the adjacent ridges, thereby tensioning the fabric finish material as a whole over the surface of the padded backing sheet. Prior to the application of the fabric finish material to the backing sheet the fabric finish material is preferably sprayed on its rear side with liquid adhesive in order that it will become bonded to the surface of the padding of the backing sheet whereby the treatment of the trim panel by means of the die 20 serves to conform the fabric finish material to substantially the shape of the padding material secured to the backing sheet thus reproducing in the fabric finish material the desired surface ornamentation.

The pressing by means of the die 20 not only serves the purpose of conforming the fabric finish material to the configuration of the padding secured to the backing sheet but also serves the purpose of tightly tensioning the padding material over the surface of the padded backing sheet, thus rendering the surface finish of the trim panel particularly attractive.

The above described method and inner trim panel are of course, very illustrative of the generic inventive concept presented in this application. Many other and further modifications thereof falling within the scope of the subjoined claims will become clearly apparent to those skilled in the art.

What is claimed is:

1. The method of preparing inner trim panels which includes adhesively securing a section of loosely felted padding material to a backing sheet, applying liquid latex to portions of said padding, embossing said portions prior to the setting of the latex to provide a decorative surface for said panel and subsequently covering said padded backing sheet with a section of fabric finish material.

2. The method of preparing inner trim panels which includes adhesively securing a section of loosely felted padding material to a backing sheet, applying a liquid bonding agent to a portion of said padding material, embossing a portion of said padding material to which said bonding agent has been applied to conform the same to an ornamental configuration, adhesively securing a section of fabric finish material over said padded backing sheet and conforming said fabric finish material to the configuration of said padded backing sheet to tension the same thereacross.

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