Nov. 25, 1969 O. P. BURCH 3,480,501

METHOD OF MANUFACTURING PATTERNED PANEL

Filed March 26, 1965

FIG. 1

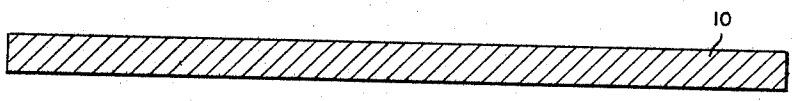


FIG. 2

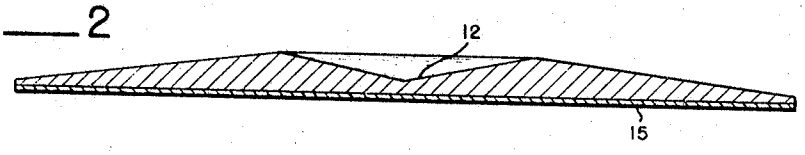


FIG. 3

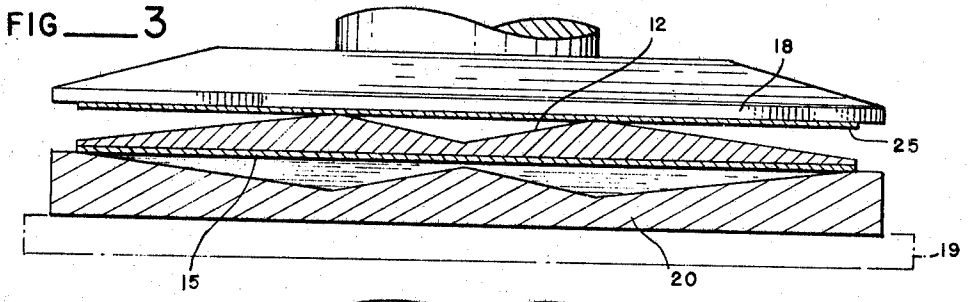


FIG. 4

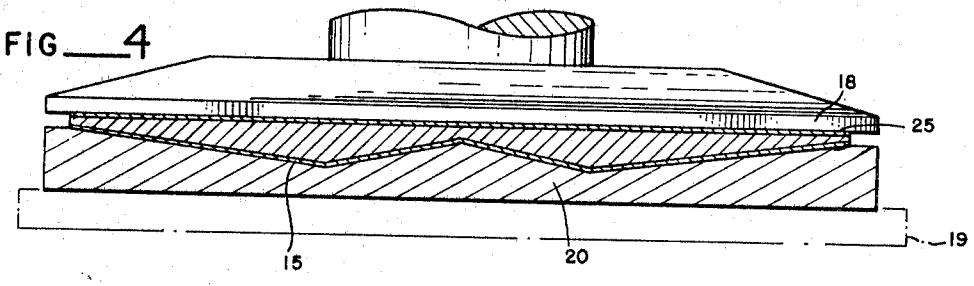
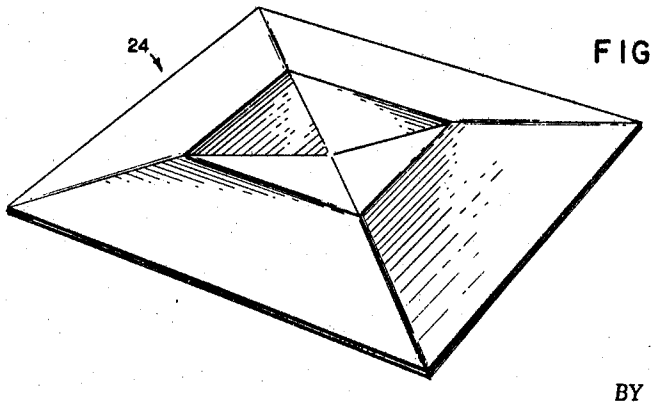


FIG. 5



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METHOD OF MANUFACTURING PATTERNED PANEL

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ABSTRACT OF THE DISCLOSURE

This invention relates to "contoured paneling" and the method of forming the panels wherein the face of the panel is an ornamental design in relief and the method includes the contouring of the back surface of the core panel and then pressing the core panel and a veneer in a die to reshape the core panel to produce the desired decorative surface and to bond the veneer to the reshaped, contoured surface.

The primary object of the present invention resides in the provision of a novel and expeditious method for the manufacture of the present panels each with a core or body portion composed of a conformable material such as plywood, fiberboard, chip board or the like, which, in the present manufacture, has its bottom surface formed with a selected design, preferably in relief, and its top surface overlaid with a selected veneer, or metal foil; the core then being subjected to design forming pressure between platens of a hot press whereby its veneer covered top surface is molded against a forming die whereby that face is caused to be given a design which is the counterpart of the design applied to the bottom surface of the core.

Further objects of the invention reside in the sequence of the various steps of the present panel manufacture, including, first, the formation of the selected design on one face of the core; then the applying of the selected veneer to the opposite surface of the core; the preparation of the selected design in the forming die and finally the subjecting of the prepared core piece, as registered on the die, to the required heat and pressure of the press whereby its flat veneer covered surface is caused to be pressed into conformity with the design embodied in the forming die, and that face of the block which has the original design, as applied in relief thereto, is caused to be flattened in the press to serve as the bottom surface of the finished panel.

In accomplishing the above mentioned and other objects of the invention, I have provided the improved means for and method of panel manufacture as disclosed in the accompanying drawings, wherein—

FIG. 1 is a cross-sectional view of a plywood panel of the required size for shaping the body or core portion of a door or wall panel in accordance with the present invention.

FIG. 2 is a cross-sectional view of the core piece shown in FIG. 1, after it has been given the selected design on one surface and a selected veneer has been applied to its opposite surface.

FIG. 3 is a view showing the core or body piece of FIG. 2 and a patterned die as assembled and applied between the platens of a hot press preparatory to shaping the core to the counterpart pattern of the die.

FIG. 4 is a view similar to that of FIG. 3, but showing the tile as formed between the platens of a hot press.

FIG. 5 is a perspective view of a finished panel.

It is to be understood that the present contoured panel anticipates that the core or body portion thereof may be cut or formed from panels of conformative materials such as fiber board, plywood, fir or other suitable woods. Therefore, the present disclosure, featuring the use of plywood, preferably fir or similar soft woods, does not preclude the use of other types of panels or boards, suitable for use. The words "conformative" is herein used to designate a material of suitable moisture content that may be shaped or molded under application of heat and pressure as herein explained.

Referring more in detail to the drawings:

Each panel of this invention comprises a core or body portion as designated in its entirety in FIG. 1, by reference numeral **10**. The cores used in the manufacture of the present panels are preferably cut from "plywood" or "chip boards." When made of plywood, the panels **10** are usually cut from five ply fir panels, but these may be of various numbers of plies. If cut from "chip board" or a similar material, the thickness of the cores would correspond to cores made from plywood. However, it is not the intent that this invention shall be restricted to the kinds of core material used but it is believed that fir plywood is presently the most satisfactory from the economical standpoint. After the body or cores **10** have been cut to the desired size, a selected design is formed on one face of each core, as has been shown as applied to the top surface in the core **10** seen in FIG. 2; the design therein shown giving the surface a slightly pyramidal form with a central inverted pyramidal depression **12**.

The flat bottom surface of the core or body is then overlaid with a selected wood veneer **15**, as shown in FIG. 2. In lieu of a selected wood veneer, the flat surface may likewise be given a thin ply or sheet of a metal foil such as aluminum.

With the core piece **10** formed with the top surface design and the veneer sheet **15** applied to its flat bottom surface as in FIG. 2, the core is then placed between the upper and lower platens **18–19** of a hot press, with its veneer covered surface resting upon a forming die **20** which has a top design which is the reverse counterpart of the design applied to the top surface of the core of body **10**. The relative positions of the core **10** and die **20** as placed in the press for final shaping of the core are as shown in FIG. 3. Then the required heat and pressure are applied thereagainst by the press, to compress the core into conformity with the design in the die. When this has been accomplished, the panel design and its veneer covered surface will be shaped to the die surface design and its bottom surface engaged by platen **18** will be flattened. The finished panel conforms to the article **24** illustrated in FIG. 5.

Decorative panels of the kind herein shown may be made in desired dimensions, and with innumerable designs, to suit the desires and requirements of the ordinary uses of such paneling.

Should it be desirable to provide the panels with balanced and effective moisture resistance, an additional ply of selected wood or other veneer may be applied over what will ultimately be the flattened bottom surface of the core **10**. Such a ply **25** has been shown as applied on the core **10** as placed, in FIG. 3, for pressing it into conformity with the patterned bottom die **20**. When the pressing is completed, in FIG. 4, the panel has its patterned surface covered by the ply **15** and its bottom surface covered by the ply **25**. This will overcome any tendency of the panel to warp by reason of moisture absorption.

In this description of the formed panel, that patterned

surface of the panel which in FIG. 2 is covered by the veneer sheet **15** is designated the "top" surface or top side and that surface to which the ply **25** is applied in FIG. 4 is the "bottom" surface of the panel.

What I claim as new is:

1. The method of producing a decorative, patterned panel comprising:

(A) placing a moldably deformable core, having a flat surface and a contoured surface, between the platens of a press, the upper platen being flat and the lower platen being contoured in the same design as the contoured surface of the core, the core being oriented so that the flat surface faces the contoured platen and the contoured surface faces the flat platen.

(B) placing a layer of veneer between the flat surface of the core and the contoured platen,

(C) applying pressure to both reshape the core such that the said flat surface is deformed to the configuration of the lower platen and the said contoured surface is deformed to a planar configuration and to bond said veneer to the reshaped contoured surface of the core, and

(D) removing the finished decorative, patterned panel from said press.

2. A method according to claim **1** including also the application of balancing layers of selected veneer to both

the contoured and flat face surfaces of the panel prior to subjecting it to pressure in the press.

3. A method according to claim **1** wherein the deformable core comprises a panel of plywood and its flat face surface, is overlaid with a sheet of metal foil.

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U.S. Cl. X.R.

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