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(54) **Process for forming MDF/chipboard furniture panels provided with embedded handles, and panel obtained by the process**

(57) A process for forming MDF/chipboard furniture panels provided with an embedded handle, characterised by:

- forming in the exposed surface of the panel a substantially parallelepiped first cavity (4) having dimensions greater than the handle dimensions,
- inserting a block (6) into said first cavity (4),
- applying an HDF cover (8) to said surface,

- subjecting the cover and part of the block to pantograph-milling to define a substantially parallelepiped second cavity (10) of smaller dimensions than the first cavity (4),
- applying a cladding sheet (12) of polymer material to the panel surface and to the interior of said second cavity (10) by thermoforming,
- performing a pantograph-milling operation to remove the cladding sheet (12) covering the base and the sides of the cavity to form the handle grips.

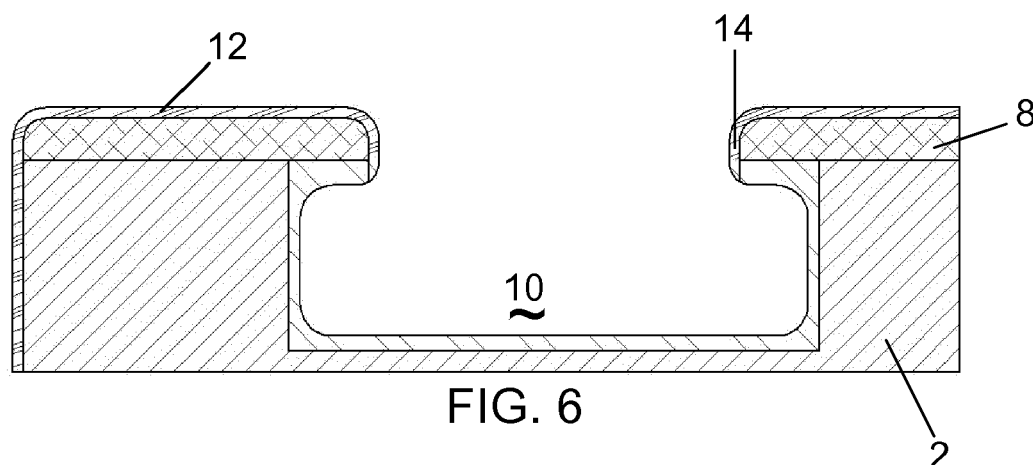


FIG. 6

Description

[0001] The present invention relates to a process for forming MDF/chipboard furniture panels provided with embedded handles, and a panel obtained by the process.

[0002] Furniture panels consisting of an MDF/chipboard substrate faced with polymer material are known, provided in their exposed surface with an embedded handle.

[0003] A first known panel is obtained by forming a "handle grip" in its surface by pantograph-milling and then applying by thermoforming a polymer sheet which clads the surface of the panel and of the "handle grip" seat provided in it.

[0004] These panels, which are of pleasant outer appearance as there are no discontinuity lines on its surface, do not however enable the handle inner walls to be distinguished from the panel exposed surface as both are clad by the same material.

[0005] Another panel type is obtained by forming a substantially parallelepiped seat of the same dimensions as the handle and applying by thermoforming a polymer sheet which clads the panel surface and inner walls of the seat.

[0006] A handle piece of various shapes and materials and having the same dimensions as the seat is then inserted into said seat, and fixed by adhesive and screws.

[0007] In particular, the handle piece can have the same colour as the cladding or be of different colour, with a consequent different aesthetic effect.

[0008] This solution has however the drawback of a demarcation line (recess) between the contacting edges of the panel and embedded handle, resulting in dirt accumulation with time.

[0009] In the case of a panel in which the cladding colour is different from that of the handle there is the further drawback of the impossibility of having a handle with the base colour different from the crosspiece colour, i.e. the handle gripping element.

[0010] The object of the invention is to eliminate all these drawbacks by providing an embedded panel handle having no exposed junction line while at the same time being able to have a base colour different from the panel cladding colour.

[0011] This object is attained by a process for forming MDF/chipboard furniture panels provided with an embedded handle as described in claim 1.

[0012] A preferred embodiment of the present invention is described hereinafter with reference to the accompanying drawings, in which:

Figure 1 shows the step of preparing the handle seat in the panel,

Figure 2 shows the step of inserting the block,

Figure 3 shows the step of gluing an HDF cover to the embedded block,

Figure 4 shows the panel on termination of the pantograph-milling step,

Figure 5 shows the cladding step by thermoforming a polymer sheet,

Figure 6 shows the pantograph-milling step for obtaining the handle grip.

[0013] As can be seen from the figures, the process of the invention comprises an initial step of forming in the MDF/chipboard panel a first cavity 4 having dimensions greater than those of the embedded handle to be formed.

[0014] A block 6 of wood or other material is then inserted into said cavity 4, an HDF cover 8 then being glued to the panel.

[0015] A second cavity 10 is then formed within the block 6 by pantograph-milling, a polymer cladding 12 then being applied to the cover 8 and bonded by thermoforming such as to also clad the walls and the base of the cavity 10 of the block 6. A further pantograph-milling operation is then carried out by which the handle grips 14 are formed, with removal also of that part of the polymer sheet which covered the walls and base of the cavity 10.

[0016] In this manner a handle is obtained with the cavity base of different colour from that of the cladding 12.

[0017] From the foregoing description it is apparent that the process of the invention enables panels to be obtained having a pleasant external appearance, in particular because of:

- the lack of junction lines between different materials,
- the ability to clad with the polymer sheet as far as the junction line of the block,
- the ability to make the base of the handle cavity of different colour from the cladding colour.

Claims

1. A process for forming MDF/chipboard furniture panels provided with an embedded handle, **characterised by:**

- forming in the exposed surface of the panel a substantially parallelepiped first cavity (4) having dimensions greater than the handle dimensions,
- inserting a block (6) into said first cavity (4),
- applying an HDF cover (8) to said surface,
- subjecting the cover and part of the block to pantograph-milling to define a substantially parallelepiped second cavity (10) of smaller dimensions than the first cavity (4),
- applying a cladding sheet (12) of polymer material to the panel surface and to the interior of said second cavity (10) by thermoforming,
- performing a pantograph-milling operation to remove the cladding sheet (12) covering the base and the sides of the cavity to form the handle grips.

2. A process as claimed in claim 1, **characterised by** inserting a wooden block.

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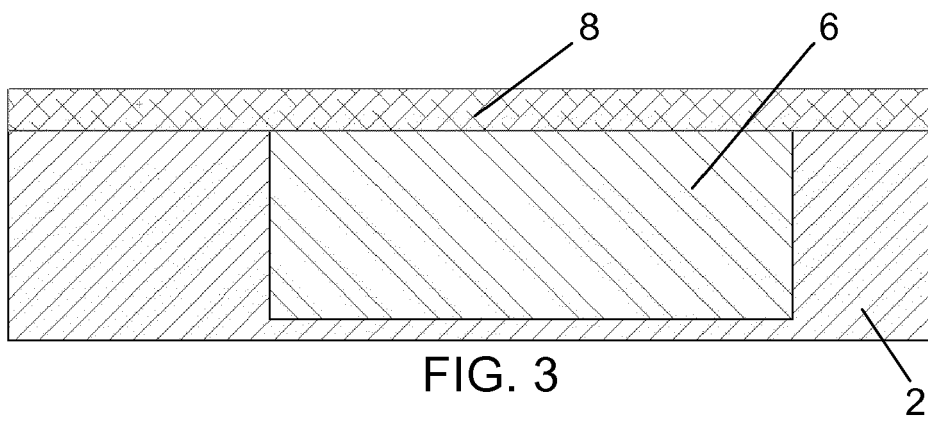
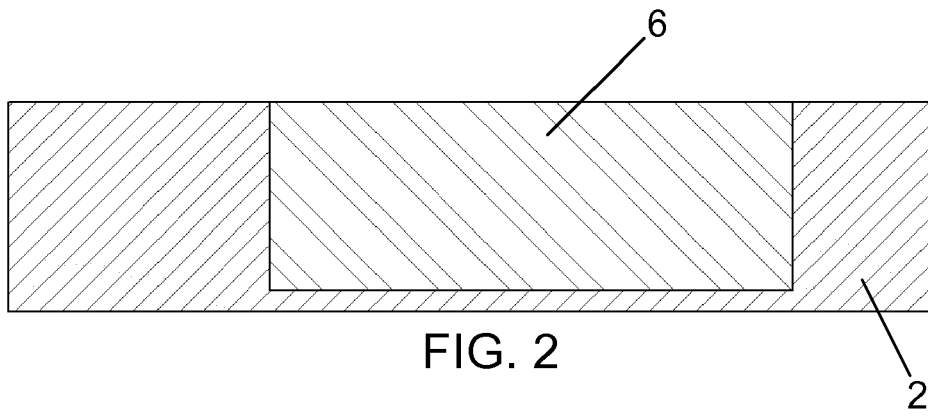
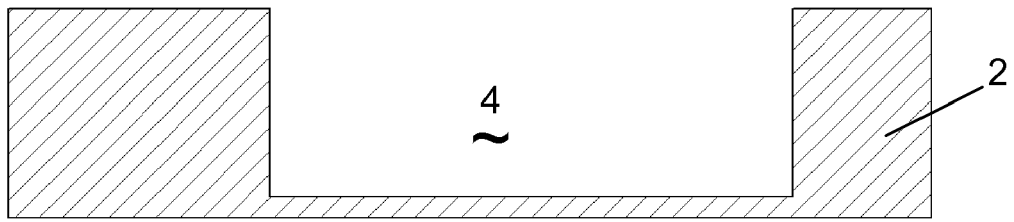
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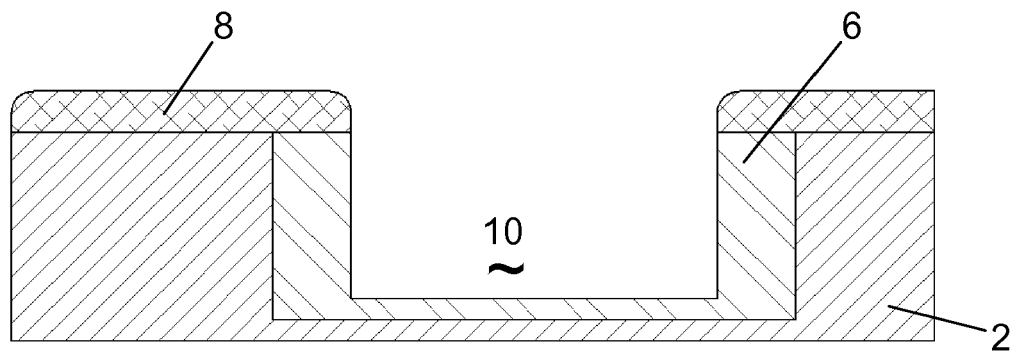


FIG. 4

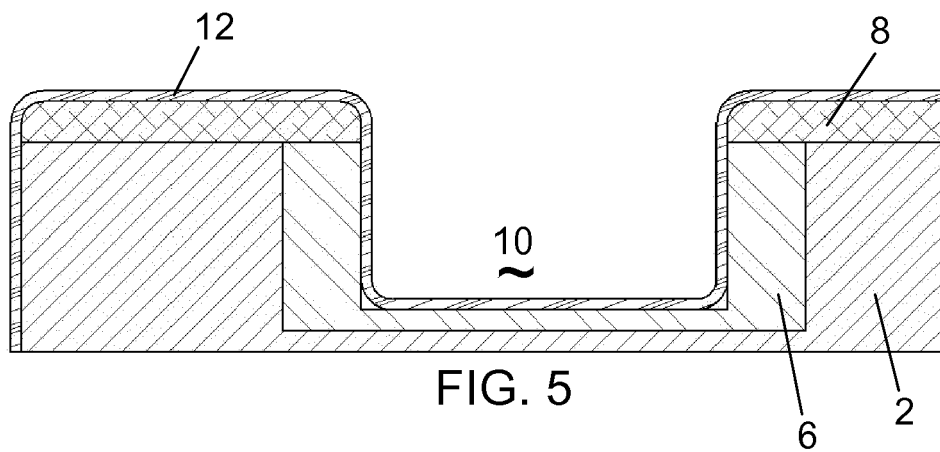


FIG. 5

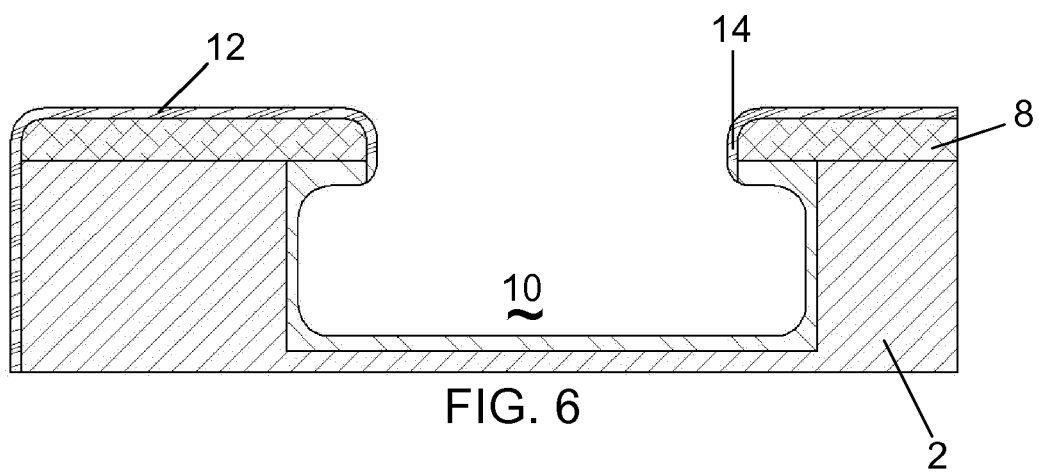


FIG. 6



EUROPEAN SEARCH REPORT

Application Number
EP 12 16 9315

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 August 2012	Examiner Huggins, Jonathan
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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The members are as contained in the European Patent Office EDP file on
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