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(54) A panel for furniture, a method for production thereof, and an article of furniture obtained using said panels

(57) Described herein is a panel (1) for furniture, in particular for furnishings for public establishments such as restaurants, hotels, coffee bars, pubs and the like, which comprises a core (2) formed by a plate made of foamed polyvinyl chloride (PVC) coupled to which, at least on one face, is a sheet (3) of laminated plastic. Likewise described are a method of fabrication of said panel and an article of furniture (100) for said establishments obtained using said panels (1).

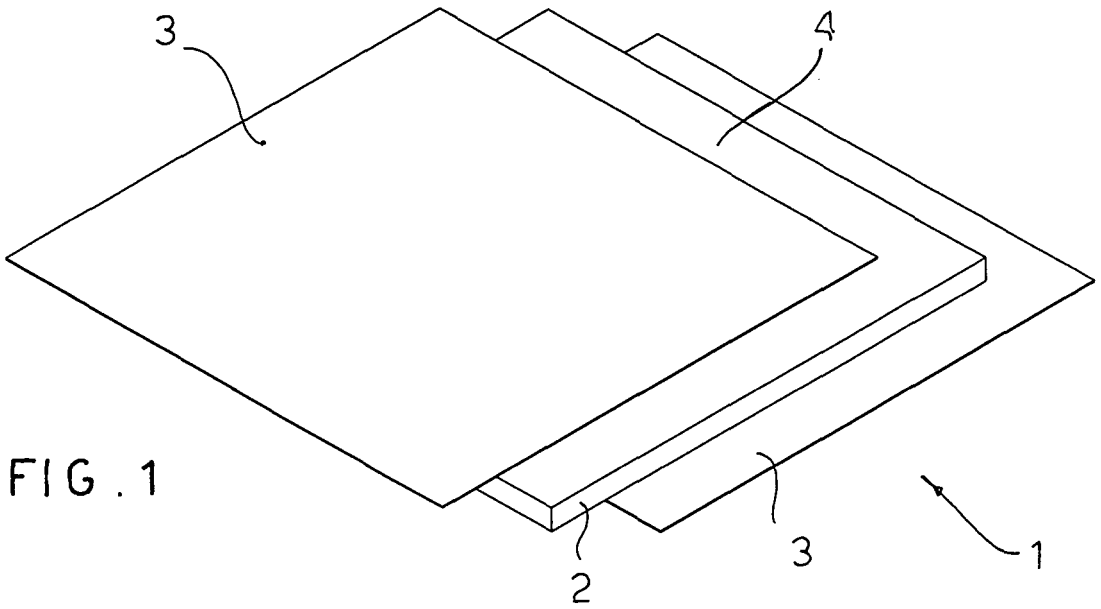


FIG. 1

EP 1 627 580 A1

Description

[0001] The present invention relates to the sector of the furniture industry and in particular to furniture for public establishments such as restaurants, hotels, coffee bars, pubs and the like, for instance, counters and bars for serving customers, etc. It relates in particular to a panel for furniture, to a method of production of said panel and to an article of furniture obtained using said panels.

[0002] As is known, currently widely used in the furnishing sector are panels made of wood, such as for example full wood, laminated wood, MDF and the like. Said types of panels present drawbacks, above all when they are to be used for furnishings for public establishments, for instance, for serving counters, bars, etc.

[0003] In fact, in this case, wooden panels are frequently exposed to direct contact with liquids, and consequently tend to absorb water and moisture in general, which thus leads to swelling and deformation of the panel.

[0004] Furthermore, said panels are subjected to considerable mechanical stresses due to impact with various objects, such as cutlery, crockery and kitchenware in general, with consequent deterioration, dinging, and scratching of the surface.

[0005] Another major drawback of wooden panels is represented by the fact that they can catch fire since they do not meet up to the stringent requirements of safety set by fire-prevention standards for public premises of this sort.

[0006] A purpose of the present invention is to overcome the drawbacks of the known art by providing a panel for furniture that is particularly suited for being used for production of furnishings for public establishments such as restaurants, hotels, coffee bars, and the like.

[0007] Another purpose is to provide a method for production of a panel for making furniture that will be fast, inexpensive and easy to implement.

[0008] Yet a further purpose is to provide an article of furniture for public establishments obtained using said panels.

[0009] The above purposes are achieved according to the invention using the panel, method and article of furniture, the characteristics of which are listed in the annexed independent Claims 1, 8 and 10, respectively.

[0010] Advantageous embodiments of the invention emerge from the dependent claims.

[0011] The panel for furniture, particularly for furniture for public establishments such as restaurants and the like, according to the invention comprises a core formed by a plate made of foamed polyvinyl chloride (PVC), coupled on which, at least on one face, is a sheet of laminated plastic.

[0012] Said panel presents various advantages as compared to the known art. In fact, PVC is a material that is light and at the same time very resistant and is suited for withstanding machining processes such as drilling for receiving screws and bolts for fixing. Furthermore, the PVC support is fire-resistant, parasite-resistant, water-repellent, and is not degradable by atmospheric agents.

[0013] Coating with laminated plastic renders the panel easy to wash, and bestows thereon adequate standards of hygiene and excellent resistance to abrasion.

[0014] On account of the characteristics mentioned above, the aforesaid panel is particularly suited for being used in the field of furnishings for public establishments such as restaurants, hotels, and the like, and above all in the fabrication of bars and counters. In fact, said panels enable maximum weight reduction of the load-bearing structure and ensure adequate modularity and versatility for facilitating erection thereof, limiting considerably the number of panels necessary and in this way reducing the production and warehousing costs.

[0015] Further characteristics of the invention will emerge more clearly from the ensuing detailed description which refers to embodiments thereof provided purely by way of non-limiting example, which are illustrated in the annexed drawings, wherein:

Figure 1 is an exploded perspective view of a panel according to the invention;
Figure 2 is a perspective view of a shelving obtained with the panels according to the invention; and
Figure 3 is a side elevation of an article of furniture for public establishments such as restaurants and the like, obtained with the panels according to the invention.

[0016] There now follows a description of the invention with the aid of the above plate of drawings.

[0017] With initial reference to Figure 1, a panel according to the invention is illustrated, designated as a whole by the reference number 1.

[0018] The panel 1 comprises a supporting core 2 formed by a plate made of foamed polyvinyl chloride (PVC) of the desired thickness according to the final use. Coupled on at least one face of the PVC core 2 is a sheet of laminated plastic 3.

[0019] The above coupling is obtained by gluing, with spreading of a layer of glue 4 between the PVC core 2 and the laminated plastic 3. The glue 4 is preferably a polyurethane (PU)-based bi-component adhesive. For example, it is possible to use a bi-component adhesive comprising a first polyurethane-based component and a second catalyst component to be mixed in a percentage of approximately 25% as compared to the first component.

[0020] Described in what follows is the process for production of the panel 1 according to the invention. The face of the PVC core 2 designed to receive the glue 4 is sized or smoothed using abrasive paper so as to obtain a uniformly planar and adequately porous surface for effective gluing. Next, said face of the PVC core 2 is carefully cleaned to eliminate the residual machining dust.

[0021] Then, the two components of the polyurethane adhesive are mixed together, and a layer of adhesive 4

is spread uniformly over the face of the PVC core 2 using a spatula or roller.

[0022] The sheet of laminated plastic 3 is moistened so as to absorb the adhesive 4 better and is applied on the adhesive layer 4 to obtain a panel 1 formed by a core of foamed PVC 2 coupled to at least one sheet of laminated plastic 3. The panel 1 is subjected to pressure, by means of a press, for approximately eight to ten hours. Then the panel 1 is left to rest for approximately three to four days to enable the adhesive 4 to harden perfectly and to grip the core 2 and the laminated plastic 3.

[0023] Finally, the final machining processes of squaring and drilling are carried out on the panel 1.

[0024] Using the panels 1, a shelving can be made like the one illustrated in Figure 2 and designated by the reference number 10. In this case, for purposes of aesthetic appearance and protection, to prevent the edge of the PVC core 3 from remaining in sight, sectional strips 11 made of metal, preferably stainless steel, having a substantially U-shaped cross section are applied to the front part of the shelving so as to hide and protect the edge of the PVC core 2.

[0025] The metal sectional strips 11 are fixed to the edges of the panels 1 using a specific glue, commonly available on the market, which grips both the metal and the PVC.

[0026] Figure 3 illustrates an article of furniture for public establishments, such as restaurants, hotels and the like, for instance a bar or counter for serving customers, said article of furniture being designated as a whole by the reference number 100 and being made using the panels 1 according to the invention. The article of furniture 100 comprises a load-bearing structure formed by a plurality of shelves, like the shelving illustrated in Figure 2, made with the panels 1 according to the invention.

[0027] Applied on the base of the load-bearing structure of the article of furniture 100 are feet 101 made of stainless steel designed to preserve the structure by raising it from the floor and at the same time to create the space necessary for enabling possible passage of electrical and plumbing connections.

[0028] Anchored and fixed to the feet 101, by means of through bolts, are supporting rods 102 made of stainless steel provided with anti-vibration and sound-deadening rubber gaskets. The rods 102 perform the dual function of supporting a floating platform 103 for stiffening and connection of the bases of the structure.

[0029] The platform 103 is designed so as to eliminate any wooden elements in order to solve any problem of wear and guarantee a good resistance to humidity. Furthermore, it is raised up from the floor to enable possible passage of electrical and plumbing connections without any interruption.

[0030] For this purpose, the floating platform 103 is made using panels of zinc-plated electrostatic grating, which are appropriately cut and connected together, by means of welding, with galvanized plates of sheet metal, glued on which is a non-slip rubber flooring having a thickness of approximately 1 mm. The platform is then completed with a perimetral stainless-steel finishing strip 104.

[0031] Applied by means of glue on the edges in sight of the panels 1 that make up the structure are stainless-steel strips 105, having a U-shaped cross section for anchorage to the edge of the panel 1. In addition to having an aesthetic purpose, the strips 105 also have the purpose of preserving and protecting the structure from wear and that of stiffening the panels 1 that make it up.

[0032] Made in the front part of the article of furniture 100 is a removable facing 106 obtained using a panel according to the invention with PVC core coupled on both of its faces to sheets of laminated plastic. Created behind the facing 106 is a gap 107 for passage of connection systems of an electrical and plumbing nature. It should be noted that in this case the connection systems are housed in conditions of maximum safety provided by the panels according to the invention.

[0033] The possibility of disengagement of the facing 106 affords the dual advantage that said facing can be removed both in the case of operations of maintenance and addition of new electrical or plumbing systems and in the case where it is desired to change the aesthetic appearance of the furnishing, at the same time maintaining the load-bearing structure intact.

[0034] Set on the top horizontal panels of the shelves of the load-bearing structure, at an intermediate height at the front and at the rear with respect to the platform 103, are respective working surfaces 108, 108' made of stainless steel, which have a cross section shaped like an L set upside down. Provided at the front and at the back on the front and rear surfaces 108, 108' are respective tunnels or ducts 109, 109' for the passage of electric wires and plumbing.

[0035] Provided behind the load-bearing structure is a metal upright 110, which extends for the desired height. Resting against the upright 110 is a back panel 112, which terminates at the top with a cantilever covering panel 113 for protection. The back panel 112 and the covering panel 113 are made using panels according to the invention.

[0036] Fixed to the back panel 112 are supporting brackets 114, which extend at the front for supporting the shelves.

[0037] Numerous variations and modifications of particular items, which are within the reach of a person skilled in the art, may be made to the present embodiments of the invention, all of which in any case fall within the scope of the invention as defined by the annexed claims.

Claims

1. A panel (1) for furniture, in particular for furniture for public establishments such as restaurants, hotels, coffee bars and the like, **characterized in that** it comprises a core (2) formed by a plate of foamed

polyvinyl chloride (PVC) coupled on which, at least on one face, is a sheet (3) of laminated plastic.

2. The panel (1) according to Claim 1, **characterized in that** set between said PVC core (2) and said sheet of laminated plastic (3) is a layer of glue (4).

3. The panel (1) according to Claim 2, **characterized in that** said glue (4) comprises a polyurethane (PU)-based adhesive.

4. The panel (1) according to Claim 3, **characterized in that** said glue (4) comprises a bi-component adhesive constituted by a polyurethane adhesive and a catalyst.

5. The panel (1) according to any one of the preceding claims, **characterized in that** applied at least on one edge of said panel (1) is a metal sectional strip (11) having a substantially U-shaped cross section.

6. The panel (1) according to Claim 5, **characterized in that** said metal sectional strip (11) is fixed to the edge of the panel (1) by means of glue.

7. The panel (1) according to Claim 5 or Claim 6, **characterized in that** said metal sectional strip (11) is made of stainless steel.

8. A method of production of a panel (1) for furniture, particularly for furniture for public establishments such as restaurants and the like, **characterized in that** it comprises the following steps:

- sizing of a plate of foamed PVC (2) using abrasive paper in order to obtain a uniform and adequately porous surface;
- cleaning of the sized surface of the PVC plate (2);
- application of an adhesive, by means of a spatula or roller, on said cleaned surface of the PVC plate (2) so as to obtain a uniform adhesive layer (4);
- moistening of a sheet of laminated plastic (3);
- application of the moistened laminated plastic (3) on said adhesive layer (4); and
- application of pressure, by means of a press, between said PVC plate (2) and said laminated plastic (3).

9. The method according to Claim 8, **characterized in that** said step of application of pressure has a duration of approximately 8 to 10 hours.

10. An article of furniture for public establishments (100), in particular a counter or bar, **characterized in that** it comprises a plurality of panels (1) according to any one of Claims 1 to 7.

11. The article of furniture for public establishments (100) according to Claim 10, **characterized in that** it comprises:

- a load-bearing structure constituted by shelves made with said panels (1);
- a platform (103) made of metal material set between said shelving of the load-bearing structure; and
- a plurality of feet (101) made of stainless steel that raise said load-bearing structure and said platform (103) off the floor.

12. The article of furniture for public establishments (100) according to Claim 10 or Claim 11, **characterized in that** it comprises a removable facing (106) made with the panels (1) according to the invention, set at the front so as to form, with the front part of the load-bearing structure, a gap (107) designed to house devices for electrical and plumbing connections.

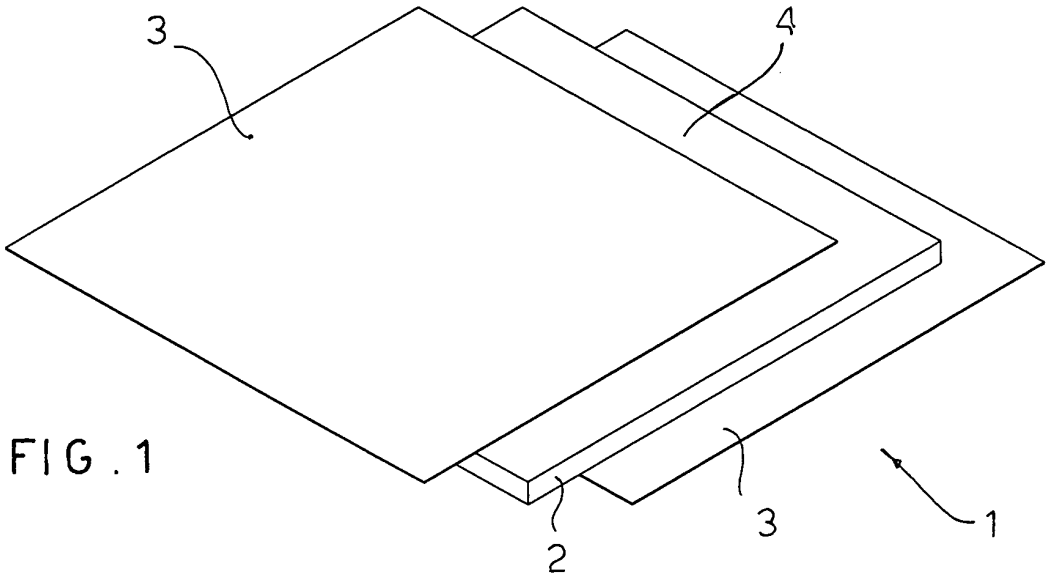


FIG. 1

FIG. 2

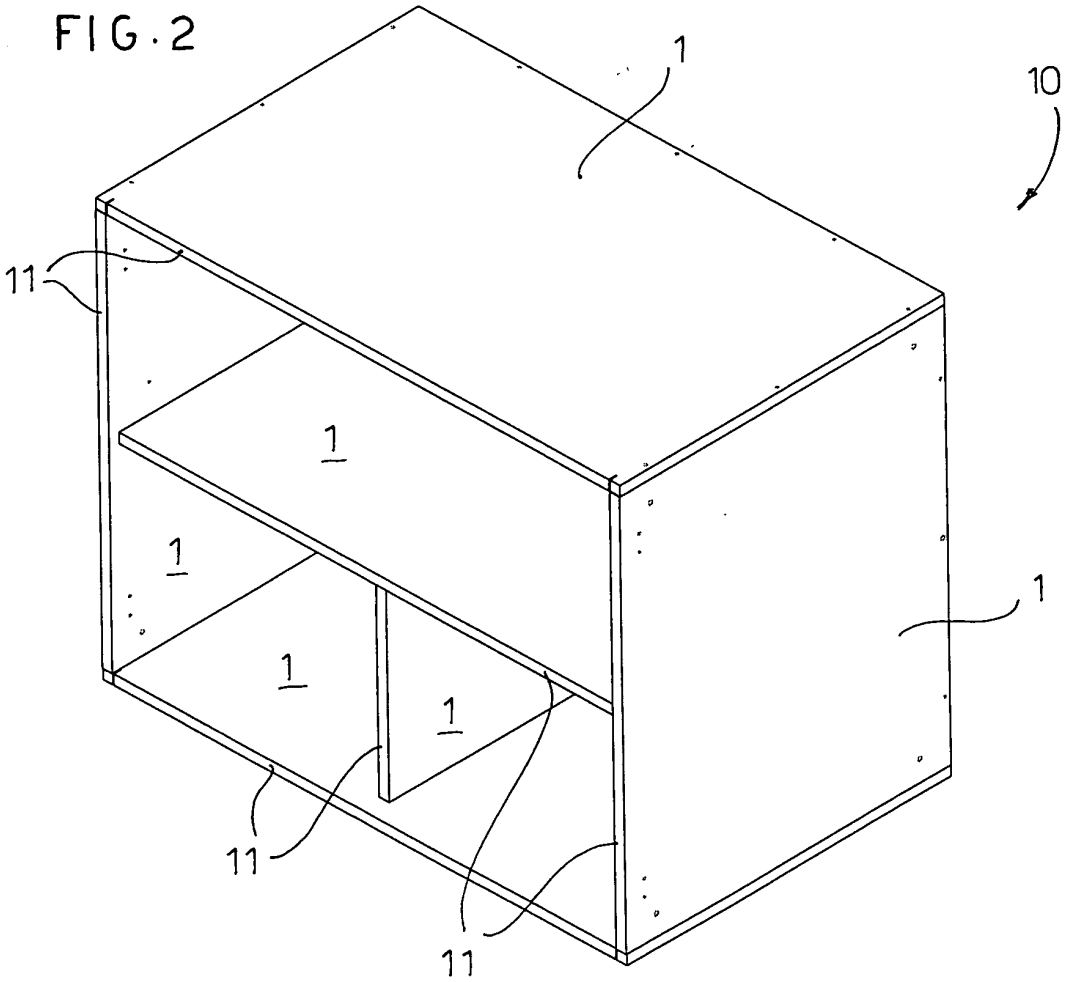
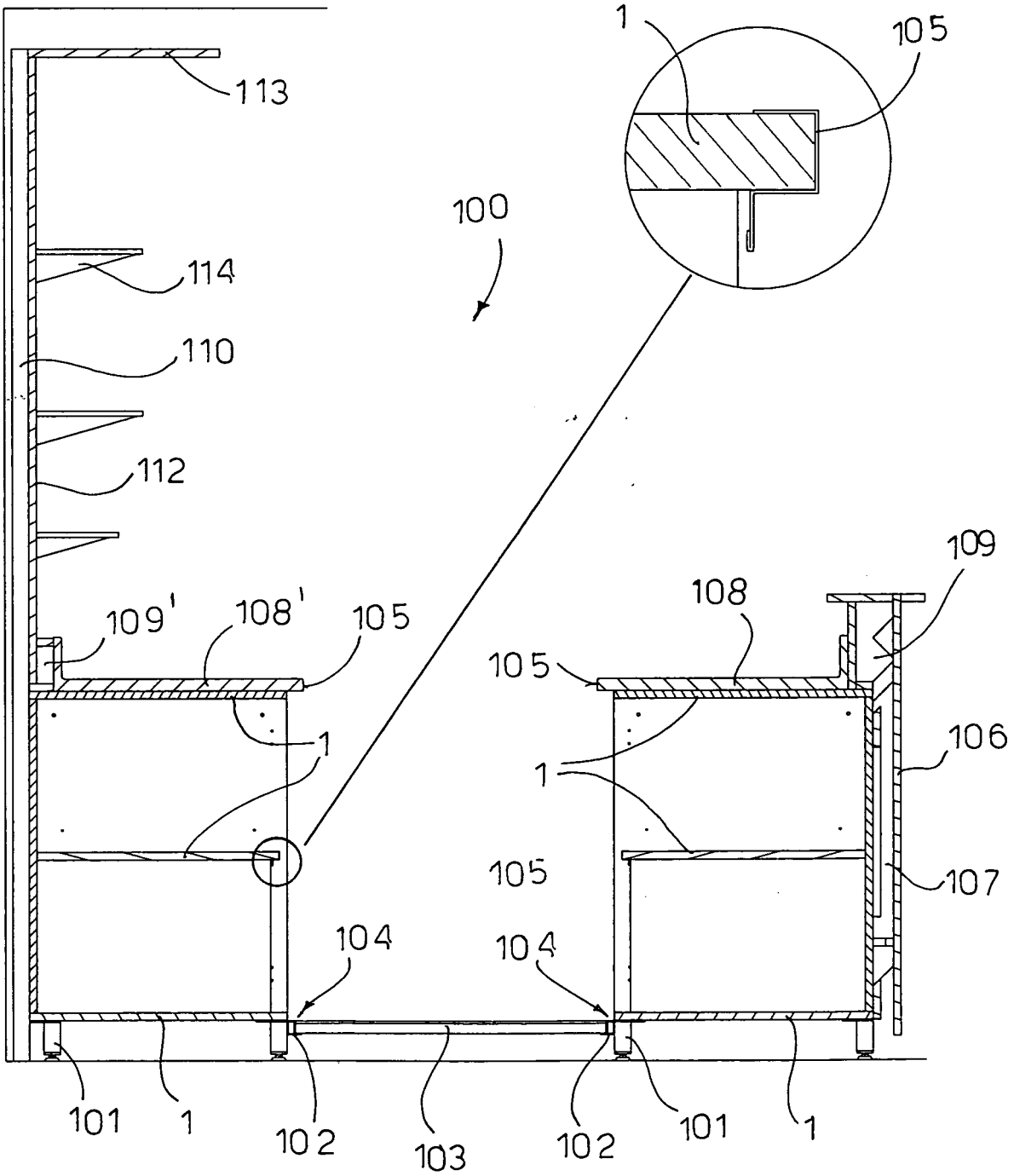


FIG. 3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EUROPEAN SEARCH REPORT

Application Number
EP 05 01 6950

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 0 104 553 A (BASF AKTIENGESELLSCHAFT) 4 April 1984 (1984-04-04) * page 1, line 3, paragraph 11 * * page 1, line 40 - page 2, line 3 * * page 3, line 26 - line 31 * * page 3, line 40 - page 4, line 6 * * page 8, line 1 - line 37 * -----	1-12	A47B96/20 B32B5/18 A47B95/04
A	US 2 884 669 A (HILLSON FRANK) 5 May 1959 (1959-05-05) * column 1, line 15, paragraph 37 * * column 2, line 6 - line 24 * * figures 1-3 * -----	5-7	

TECHNICAL FIELDS SEARCHED (IPC)

A47B
B32B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 December 2005	Ottesen, R

CATEGORY OF CITED DOCUMENTS

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