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(54) **Sound absorbent panel**

(57) A sound absorbent panel (10) consists of a sheet (12) of wood-based material comprising a core of compressed material (10) and balanced veneers (18,20) on two sides, and at least one sheet (14) of non-woven fabric made of sound absorbent material glued to one side. An improved sound absorbent effect superior to the effect that can be obtained with the two separate elements is achieved.

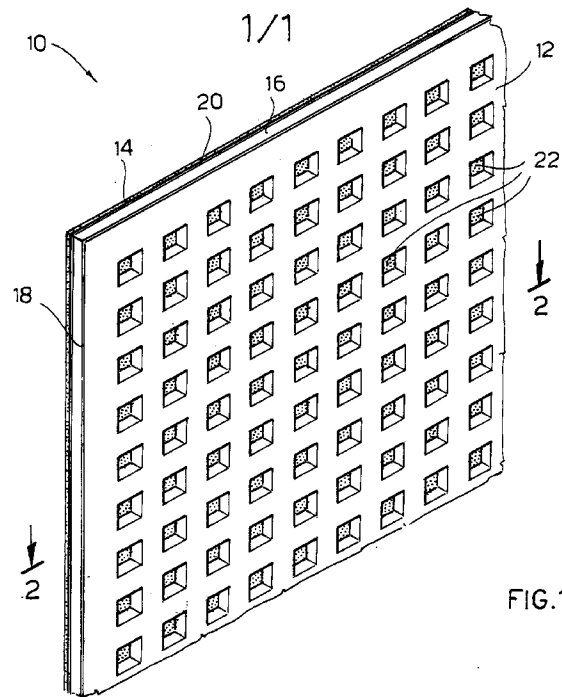


FIG.1

EP 0 846 812 A1

Description

The invention relates to the field of furnishing panels. Known and already used are furnishing panels with through holes consisting of a high or medium density central layer of wood fibre or wood pulp or the like and a veneer on the two larger surfaces. One type of such panels is marketed by Locatelli Laminati SaS di Locatelli Uberto & C. These panels have a thickness of 6 mm or less. They are generally used for decorative purposes, for cupboard doors, room dividers and generally where it is wished to allow a certain passage of light and air and a partial vision.

Also known are sound absorbent materials in sheets, for example non-woven fabrics, foams and the like, whose sound absorbing power, however, is significant above 20 mm.

An object in the building field is to obtain increasingly good sound absorbing effects with a relatively small bulk and low weight.

The invention, as defined in claim 1, solves the problem posed above and provides excellent sound absorption with a little thickness and a good aesthetic appearance.

The new panel comprises a core layer of compressed wood material coated on each side with wood veneer, this layer having through holes, and a layer of sound absorbent material, comprising a sheet of non-woven fabric, glued to a veneered surface. The through holes can be square, rectangular or round in shape, preferably with a void to solid ratio of not less than 15%.

The invention achieves the above mentioned objects.

Exemplary embodiments of the invention will be given below with reference to the appended drawings in which they are illustrated and in which.

Figure 1 is a perspective part broken-away view of a sound absorbent panel according to the invention;

Figure 2 is a sectional view taken along a plane indicated by 2-2 in Figure 1 and enlarged with respect to said figure;

Figure 3 is a sectional view, similar to Figure 2, of a modified embodiment of the panel.

The panel of the invention is indicated as a whole with reference numeral 10. It comprises a layer 12 of wood or wood type material and a layer 14 of sound absorbent material. The layer of wood material 12 comprises a core 16 of sound compact wood fibre or the like, that is to say, with a density from 500 to 1100 kg/m³ and two sheets of veneer on the larger surfaces, indicated respectively with 18 and 20. The layer 12 of wood material has an arrangement of through holes 22, in this case a regular arrangement of square holes with a

void/solid ratio of about 25%. Obviously the shape of the holes can be different, for example round, polygonal, etc. The holes in the layer 12 are covered or closed, on one side of the wood layer, by the sheet of sound absorbent material 14.

The layer of wood is preferably 0.5 to 1 mm thick.

The sound absorbent material 14 can be a commercially available sheet material, for example a non-woven fabric in polyester, and/or cellulose, and/or polypropylene, etc. In addition to the sheet 14, a further sheet or plate 24 of sound absorbent material (Figure 3) can be applied to the panel to improve its performance. The sheet 14 and the sheet 24 can be applied in any known manner, for example by gluing.

It has been found that the sound absorbent panel thus created has particularly high levels of sound absorption, superior to that which might logically be expected from a combination of the two basic elements (panel with holes and sheet) and superior to those that can be obtained with known panels of the same thickness.

Claims

1. A sound-absorbent panel characterized in that it comprises a layer (12) of wood material with through holes (22) and a sheet of sound absorbent material (14) made integral with each other by gluing.
2. A panel according to claim 1 characterized in that the sheet of wood material comprises a compact core (16) of wood fibre or the like, veneered on two sides with sheets of wood (18, 20) and has through holes closed on one side by the sheet of sound absorbent material.
3. A panel according to claim 1, characterized in that it further comprises a layer of foam material (24) applied to the sound absorbent sheet (14).
4. A panel according to claim 1, characterized in that the void/solid ratio in the wood layer of the panel is not less than 15 %.

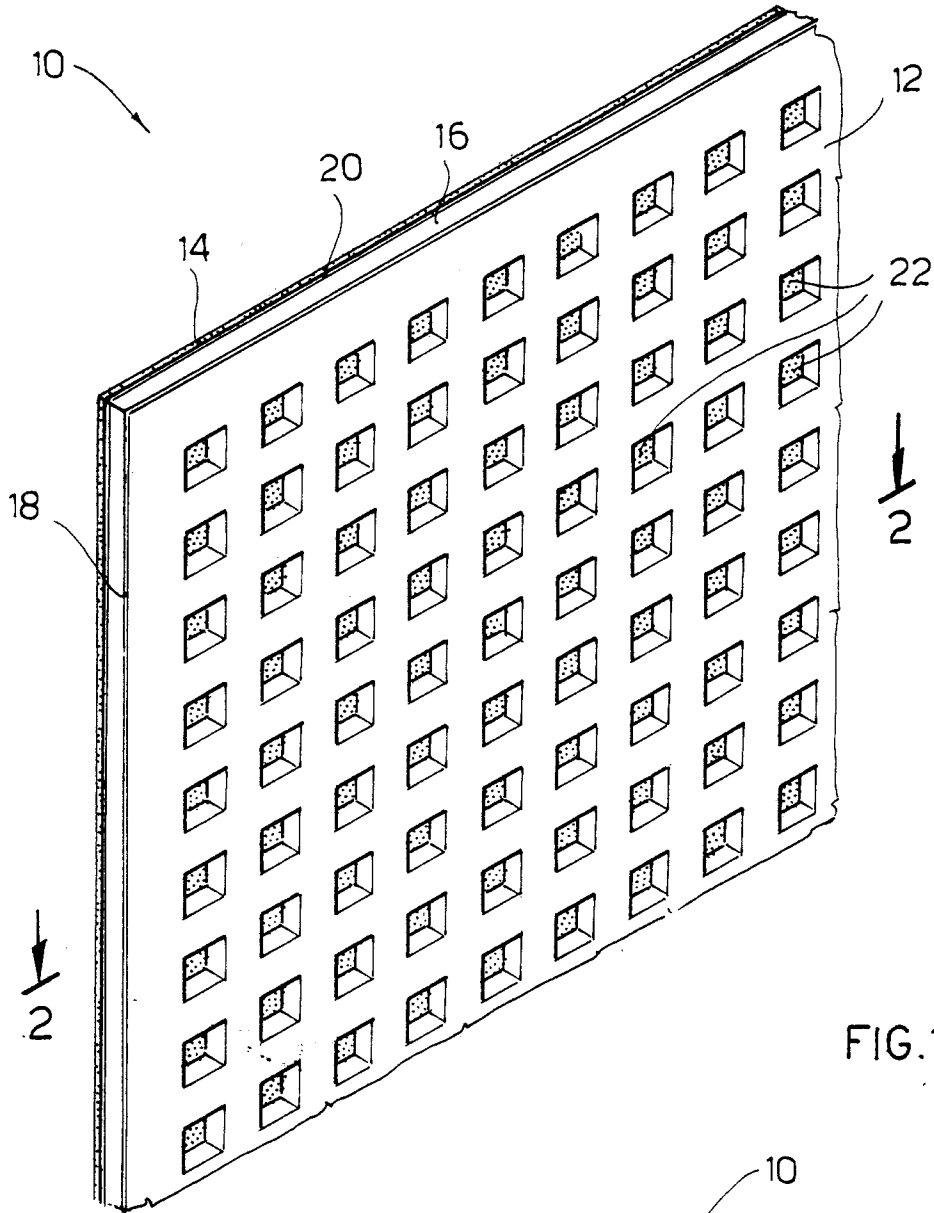


FIG. 1

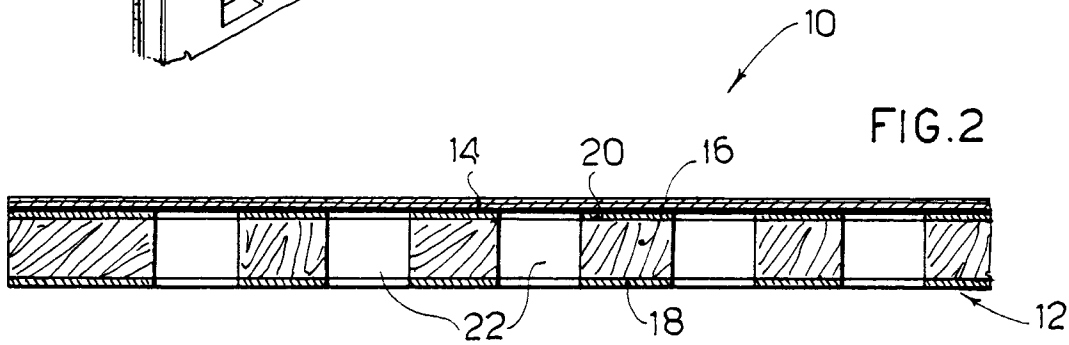


FIG. 2

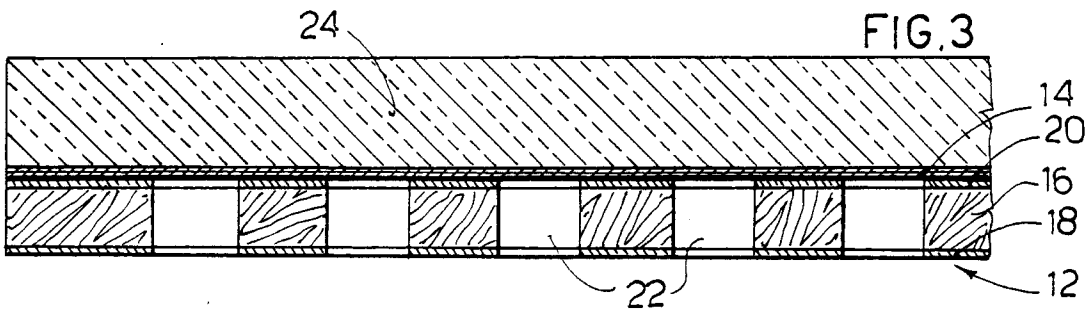


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 97 12 0323

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X Y	US 2 556 884 A (MULLER) * column 2, line 33 - line 60 * * column 3, line 64 - column 4, line 55; figures 1,2,7-9 * ---	1,2 3	E04B1/86
X Y	FR 2 732 381 A (BIGUET GUY) * the whole document * ---	1 4	
Y A	US 5 536 556 A (JURIGA DUANE M) * column 2, line 1 - column 3, line 28 * * column 4, line 22 - column 5, line 60 * * column 6, line 50 - column 8, line 48; figures * ---	3 4	
Y A	GB 1 241 579 A (PRICE BROTHERS & CO LTD) * page 1, line 38 - page 2, line 16 * * page 2, line 81 - line 102; figures * ---	4 3	
A	FR 1 009 074 A (SOCIÉTÉ DE GESTION COMMERCIALE SARL) * the whole document * -----	1,2	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 March 1998	Examiner Porwo11, H
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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