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(54) **Floor**

Boden

Plancher

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Description

Technical Field

[0001] This invention relates to a floor of the kind disclosed in the introductory part of claim 1.

Background Art

[0002] US Patent Specification No. US-B1-6802159 discloses a floor constructed from a plurality of interacting floor panels, wherein each floor panel is provided with panel portions in two abutting edge areas. Said portions project slightly out of the main shape of the floor panel. The bottommost portion of each floor panel is provided with a plurality of projections in the two edge areas slightly projecting out of the main shape of the panel. Said projections extend upwards from the floor panel and are provided with locking holes for receiving locking projections extending down-wards from the bottom side of adjacent floor panels. The panels of this floor will have a tendency to loosen from each other if the amount of fluid present in the area of the projections is too big; the fluid will work like a sort of lubrication between the panels which is not satisfactory.

[0003] The US Patent Specification No 3694983 relates to "Pile or plastic tiles (panels) for flooring and like applications." Here the bottommost portion of each floor panel is provided with two upwardly extending projections. Between a vertical wall on said panel and one projection of said two projections, and between said two projections, two corresponding downwardly extending projections of a neighboring floor panel may extend. Such a "grip" between two sets of projections is not disclosed in connection with the present invention.

Disclosure of Invention

[0004] The object' of the invention is to provide a floor of the type mentioned above and which provides a considerably improved cohesion when subjected to forces in the floor's own plane, and which is relatively lighter.

[0005] The floor according to the invention is defined in claim 1.

[0006] Thus, a considerably improved cohesion is obtained when the floor is subjected to forces, in particular forces in the floor's own plane. This is especially because of the transverse middle grooves as liquid runs away; add to this that the inventive floor is relatively lighter (less massive) than the known floors..

[0007] Further according to the invention, each floor panel may comprise an arrangement for further draining off liquid by means of an auxiliary wall system at least in the regions abutting said projections provided with holes, said auxiliary wall system preferably comprising walls arranged like "squares", where each square is provided with at least one opening, preferably several openings, to adjacent squares, and where at least one, optionally two crescent-shaped wall portions are arranged around the centre of each square, the centres of curvature of said crescent-shaped wall portions preferably being the same as the centre of the corresponding square. This allows for an effective draining off of water which may have collected underneath the floor panels, since the water can run off through said openings.

[0008] According to the invention, the bottom side of each floor panel may be adapted so as to fasten so-called "pads" in order to support the floor panel, if an underlying floor on which the inventive floor is laid, slopes or is uneven. In this way the floor may be levelled in a comparatively simple manner, if the underlying floor turns out to have an oblique portion.

[0009] Further and according to the invention, the floor panels may be of different sizes, however built from the same basic module (a), where each floor panel has a width or length which is n times the width or length of the basic module, wherein $n \geq 1$. In practise, this has been shown to be suitable for the manufacture of the floor according to the invention.

[0010] Finally according to the invention, the floor panels may be laid on the underlying floor without the use of glue, the layers of each floor panel being made of cork, sisal, natural fibres, textiles, plastics, polypropylene, wood or wood veneer. Thus, the finished floor may be provided with a suitable appearance or a suitable walking surface in a simple manner.

Brief Description of the Drawings

[0011] The invention is explained in detail below with reference to the drawings, in which

Fig. 1 is a top view at an angle of a floor panel for a floor according to the invention,

Fig. 2 shows a portion of a floor consisting of floor panels of the type illustrated in Fig. 1, said floor being laid on top of an underlying floor,

Fig. 3 is a bottom view at an angle of the floor panel illustrated in Fig. 1, and

Fig. 4 shows a portion of a floor consisting of rectangular floor panels with dimensions based on a module a.

Best Modes for Carrying out the Invention

[0012] The floor panel 1 illustrated in Fig. 1, which together with a plurality of corresponding floor panels can form a floor 2, as illustrated in Fig. 2, consists of a top layer 5 and a bottom layer 6. The floor panels are laid on top of an underlying floor 40, cf. Fig. 2. Along two abutting edge areas 12 and 13 (cf. Fig. 1) each floor panel 1 is provided with panel portions 14 slightly projecting out of the main shape of the floor panel. The bottommost part

of each floor panel 1, preferably the bottom layer 6, is provided with a plurality of projections 17 at the two edge areas 12, 13 slightly projecting out of the main shape of the floor panel, said projections extending upwards from the floor panel. These projections 17 are provided with locking throughholes 19 - optionally only locking indentations - said locking holes having the function to receive locking projections (i. e. locking projections corresponding to locking projections 21) extending downwards from the bottom side of adjacent floor panels (not shown); Fig. 1 shows, how the locking projections 21 of the floor panel 1 are arranged. In other words, the locking projections 21 of an adjacent floor panel (not shown) may interact with the locking holes 19 of the floor panel 1, as illustrated in Fig. 1. With respect to the floor panel 1, it should be noted that the design of the projections 17 on the panel portions 14 corresponds to several not visible projections of the panel portions 14 behind the rear edge area 13 (on top in Fig, 1). Correspondingly, the non-visible edge area on the far left-hand side of Fig. 1 (the edge area is parallel to edge area 12) is designed in the same way as shown for an edge region 11 in Fig. 1.

[0013] Each locking hole 19 or indentation of each floor panel 1 may be elongated. It has a length 1 of 8-12 times the width b of the locking hole 19 or indentation.

[0014] The height h of each projection 17 corresponds to approximately 0,5 times the thickness t_1 of the bottom layer 6 of the floor panel. As illustrated in Fig. 1, a transverse groove 22 is provided in the middle of each locking projection 21 for draining off liquid. Such a groove 22 may also be provided in each projection 17.

[0015] Each locking projection consists of two walls 21a and 21b arranged in parallel, as illustrated in Fig. 3. Each wall has a thickness t_2 of 0,75-1,5 mm and a height k of 2,9-3,1 mm. The mutual distance z between the walls 21a and 21b is 1,4-1,8 mm.

[0016] As is apparent from Fig. 3, the regions of each floor panel abutting said projections provided with locking holes 19 may comprise an arrangement for draining off liquid in the form of an auxiliary wall system. Preferably, it consists of walls 30, 31, 32, 33 arranged in "squares" or "rectangles", where each "square" or "rectangle" is provided with at least one opening 35, preferably several openings 35, 36, to adjacent squares or rectangles. Not all openings 35, 36 are shown. This is done to maintain the clarity of the figure. At least two crescent-shaped wall portions 37a, 37b, 37a', 37b' may be arranged around the centre C of each square or rectangle. Preferably, the centres of curvature of these crescent-shaped wall portions are identical with the centre C of the corresponding square or rectangle. It should be noted that only very few rectangles (or squares) are illustrated in Fig. 3. In practice, a square floor panel may, for example, have 112 complete or half "squares".

[0017] It has been shown that the floor panel is particularly suitable for engaging so-called "pads" (i. e. pieces of filling material) placed between itself and an underlying floor 40 whereon the floor according to the invention is to be laid, if each floor panel is provided with a bottom side corresponding to the one illustrated in Fig. 3. If the underlying floor 40 slopes or is uneven and said "pads" are not used, there is a risk that the finished floor will slope or be uneven.

[0018] As illustrated in Fig. 4 the floor panels 1' may have different sizes, but may still be constructed from a basic module a. In this case, each floor panel 1' has a width a and a length of, for example, three times a; in general, it can be said that each floor panel has a dimension (length and/or width) of n times a, where $n \geq 1$.

[0019] The floor panels may be laid on the underlying floor 40 without the use of glue. The top layer 5 of each floor panel 1, 1' may be of cork, sisal, natural fibres, textiles, plastics, wood or wood veneer. The top layer 5 and the bottom layer 6 of each floor panel 1, 1' are of the same material.

[0020] In Figs. 2 and 4, the edge portions of each floor panel are designed as in Figs. 1 or 3, but for the sake of clarity of Figs. 2 and 4 said edge portions are not shown therein.

Claims

1. A floor (2) constructed from a plurality of interacting floor panels (1, 1'), each floor panel being provided with panel portions (14) in two abutting edge areas (12, 13), said panel portions (14) slightly projecting out of the main shape of the floor panel, the bottommost portion of each panel being provided with a plurality of projections (17) in said panel portions (14), said projections (17) extending upwards from the floor panel and being provided with locking holes (19) or indentations for receiving locking projections (21) extending downwards from the bottom side of adjacent floor panels, each locking projection (21) consisting of two walls (21a, 21b) arranged in parallel , each locking hole (19) or indentation of each floor panel being elongated, **characterized in that** each floor panel (1, 1') comprises a top layer (5) and a bottom layer (6), and **in that** each locking hole (19) has a length (1) of 8-12 times the width (b) of said hole (19), and **in that** the height (h) of each projection (17) corresponds to approximately 0,5 times the thickness (t_1) of said bottom layer (6), and **in that** the centre of each locking projection wall (21a, 21b) is provided with a transverse groove (22) for draining off possible liquid, and **in that** each of said walls (21a, 21b) has a thickness (t_2) of 0,75-1,5 mm and a height (k) of 2,9-3,1 mm, the mutual distance (z) between said walls (21a, 21b) being 1,4-1,8 mm, and **in that** the top layer (5) and the bottom layer (6) of each floor panel (1,1') are of the same material.

2. A floor as claimed in claim 1, **characterized in that** each floor panel (1) comprises an arrangement for

further draining off liquid by means of an auxiliary wall system at least in the regions abutting said projections provided with locking holes (19), said auxiliary wall system preferably comprising walls (30-35) arranged like "squares", each square having at least one opening (35, 36), preferably several openings, to adjacent squares, and where at least one, optionally two, crescent-shaped wall portions (37a, 37b) are arranged around the centre (C) of each square, the centre(s) of curvature of said crescent-shaped wall portions preferably being the same as the centre of the corresponding square.

3. A floor as claimed in claims 1 or 2, **characterized in that** the bottom side of each floor panel (1, 1') is adapted so as to fasten so-called "pads" in order to support the floor panel (1, 1'), if an underlying floor (40) on which the floor is laid, slopes or is uneven.

4. A floor as claimed in one or more of claims 1-3, **characterized in that** the floor panels (1, 1') are of different sizes, however built from the same basic module (a), where each floor panel has a width or length which is n times the width or length respectively of the basic module, wherein $n \geq 1$.

5. A floor as claimed in one or more of claims 1-4, **characterized in that** the floor panels (1, 1') are laid on the underlying floor (40) without the use of glue, and that the top layer (5) and the bottom layer (6) of each floor panel are made of cork, sisal, natural fibres, textiles, plastics, polypropylene, wood or wood veneer.

Patentansprüche

1. Ein aus einer Vielzahl von interagierenden Bodenpaneelen (1, 1') aufgebauter Boden (2), wobei jedes Bodenpaneel mit Paneelabschnitten (14) in zwei anliegenden Kantengebieten (12, 13) versehen ist, die Paneelabschnitte (14) leicht aus der Hauptgestalt des Bodenpaneels hervorstehen, der unterste Abschnitt jedes Paneels mit einer Vielzahl von Vorsprüngen (17) in den Paneelabschnitten (14) versehen ist, die Vorsprünge (17) sich vom Bodenpaneel nach oben erstrecken und mit Verriegelungslöchern (19) oder Einkerbungen zum Empfangen von sich von der untersten Seite der benachbarten Bodenpaneele nach unten erstreckenden Verriegelungsvorsprüngen (21) versehen sind, jeder Verriegelungsvorsprung (21) zwei parallel angeordnete Wände (21a, 21b) aufweist, jedes Verriegelungsloch (19) oder jede Einkerbung jedes Bodenpaneels länglich ist,
dadurch gekennzeichnet, dass
jedes Bodenpaneel (1, 1') eine oberste Lage (5) und eine unterste Lage (6) umfasst, und **dadurch**, dass jedes Verriegelungsloch (19) eine Länge (1) von 8-12 mal der Breite (b) des Lochs (19) aufweist, und **dadurch**, dass die Höhe (h) jedes Vorsprungs (17) ungefähr 0,5 mal der Dicke (t_1) der untersten Lage (6) entspricht, und **dadurch**, dass die Mitte jeder Verriegelungsvorsprungswand (21a, 21b) mit einer Quernut (22) zum Ableiten möglicher Flüssigkeit versehen ist, und **dadurch**, dass jede der Wände (21a, 21b) eine Dicke (t_2) von 0,75-1,5 mm und eine Höhe (k) von 2,9-3,1 mm aufweist, wobei der gegenseitige Abstand (z) zwischen den Wänden (21a, 21b) 1,4-1,8 mm ist, und **dadurch**, dass die oberste Lage (5) und die unterste Lage (6) jedes Bodenpaneels (1, 1') aus dem gleichen Material bestehen.

2. Boden gemäß Anspruch 1, **dadurch gekennzeichnet, dass** jedes Bodenpaneel (1) eine Anordnung aufweist, um mittels eines Hilfswandsystems zumindest in den an den mit Verriegelungslöchern (19) versehenen Vorsprüngen anliegenden Regionen eine Flüssigkeit weiter abzuleiten, wobei das Hilfswandsystem vorzugsweise wie "Karos" angeordnete Wände (30-35) umfasst, wobei jedes Karo zumindest eine Öffnung (35, 36), vorzugsweise mehrere Öffnungen, zu den benachbarten Karos aufweist, und wo zumindest ein, optional zwei, sichelförmige Wandabschnitt(e) (37a, 37b) um die Mitte (C) jedes Karo angeordnet ist/ sind, wobei die Mitte(n) der Krümmung der sichelförmigen Wandabschnitte vorzugsweise die gleichen wie die Mitte des entsprechenden Karos sind.

3. Boden gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die unterste Seite jedes Bodenpaneels (1, 1') sogenannte "Pads" fixieren kann, um das Bodenpaneel (1, 1') zu stützen, falls ein unterliegender Boden (40), auf den der Boden gelegt wird, wellig oder uneben ist.

4. Boden gemäß einem oder mehreren der Ansprüche 1-3,
dadurch gekennzeichnet, dass die Bodenpaneele (1, 1') unterschiedlich groß sind, jedoch aus dem gleichen Basismodul (a) hergestellt sind, wobei jedes Bodenpaneel eine Breite oder Länge aufweist, die n-mal der Breite oder Länge entsprechend des Basismoduls ist, wobei $n \geq 1$ ist.

5. Boden gemäß einem oder mehreren der Ansprüche 1-4,
dadurch gekennzeichnet, dass die Bodenpaneele (1, 1') ohne Verwendung von Kleber auf den unterliegenden Boden (40) gelegt werden, und **dadurch**, dass die oberste Lage (5) und die unterste Lage (6) jedes Bodenpaneels aus Kork, Sisal, Naturfasern, Textilien, Kunststoffen, Polypropylen, Holz oder Holzfurnier hergestellt sind.

Revendications

1. Plancher (2) construit à partir d'une pluralité de panneaux de plancher interagissant (1, 1'), chaque panneau de plancher étant pourvu de parties de panneau (14) dans deux zones de bord (12, 13) venant en butée l'une avec l'autre, lesdites parties de panneau (14) faisant légèrement saillie hors de la forme principale du panneau de plancher, la partie la plus basse de chaque panneau étant pourvue d'une pluralité de saillies (17) dans lesdites parties de panneau (14), lesdites saillies (17) s'étendant vers le haut depuis le panneau de plancher et étant pourvues de trous de blocage (19) ou d'indentations pour recevoir des saillies de blocage (21) s'étendant vers le bas depuis le côté inférieur des panneaux de plancher adjacents, chaque saillie de blocage (21) consistant en deux parois (21a, 21b) agencées en parallèle, chaque trou de blocage (19) ou indentation de chaque panneau de plancher étant allongé, **caractérisé en ce que** chaque panneau de plancher (1, 1') comprend une couche supérieure (5) et une couche Inférieure (6), et **en ce que** chaque trou de blocage (19) a une longueur (1) de 8-12 fois la largeur (b) dudit trou (19), et **en ce que** la hauteur (h) de chaque saillie (17) correspond à approximativement 0,5 fois l'épaisseur (t_1) de ladite couche inférieure (6), et **en ce que** le centre de chaque paroi saillante de blocage (21a, 21b) est pourvue d'une rainure transversale (22) pour drainer éventuellement du liquide, et **en ce que** chacune desdites parois (21a, 21b) a une épaisseur (t_2) de 0,75-1,5 mm et une hauteur (k) de 2,9-3,1 mm, la distance mutuelle (z) entre lesdites parois (21a, 21b) étant de 1,4-1,8 mm, et **en ce que** la couche supérieure (5) et la couche inférieure (6) de chaque panneau de plancher (1, 1') sont faites du même matériau.

2. Plancher selon la revendication 1, **caractérisé en ce que** chaque panneau de plancher (1) comprend un agencement pour drainer encore du liquide au moyen d'un système de paroi auxiliaire au moins dans les régions venant en butée sur lesdits saillies pourvues de trous de blocage (19), ledit système de paroi auxiliaire comprenant de préférence des parois (30-35) agencées comme des "carrés", chaque carré ayant au moins une ouverture (35, 36), de préférence plusieurs ouvertures, vers des carrés adjacents, et où au moins une, en option deux, parties de parois (37a, 37b) en forme de croissant sont agencées autour du centre (C) de chaque carré, le (s) centre(s) de courbure desdites parties de paroi en forme de croissant étant préférablement le(s) même(s) que le centre du carré correspondant.

3. Plancher selon la revendication 1 ou 2, **caractérisé en ce que** le côté inférieur de chaque panneau de plancher (1, 1') est adapté de façon à fixer des dits "patins" afin de supporter le panneau de plancher (1, 1'), si un plancher de support (40) sur lequel le plancher repose, est en pente ou inégal.

4. Plancher selon une ou plus des revendications 1-3, **caractérisé en ce que** les panneaux de plancher (1, 1') sont de tailles différentes, bien qu'étant construits à partir du même module de base (a), où chaque panneau de plancher a une largeur ou une longueur qui est n fois respectivement la largeur ou la longueur du module de base, dans lequel $n \geq 1$.

5. Plancher selon une ou plus des revendications 1-4, **caractérisé en ce que** les panneaux de plancher (1, 1') reposent sur le plancher de support (40) sans utilisation de colle, et **en ce que** la couche supérieure (5) et la couche inférieure (6) de chaque panneau de plancher sont fait de liège, de sisal, de fibres naturelles, de textiles, de plastiques, de polypropylène, de bois ou de placage de bois.

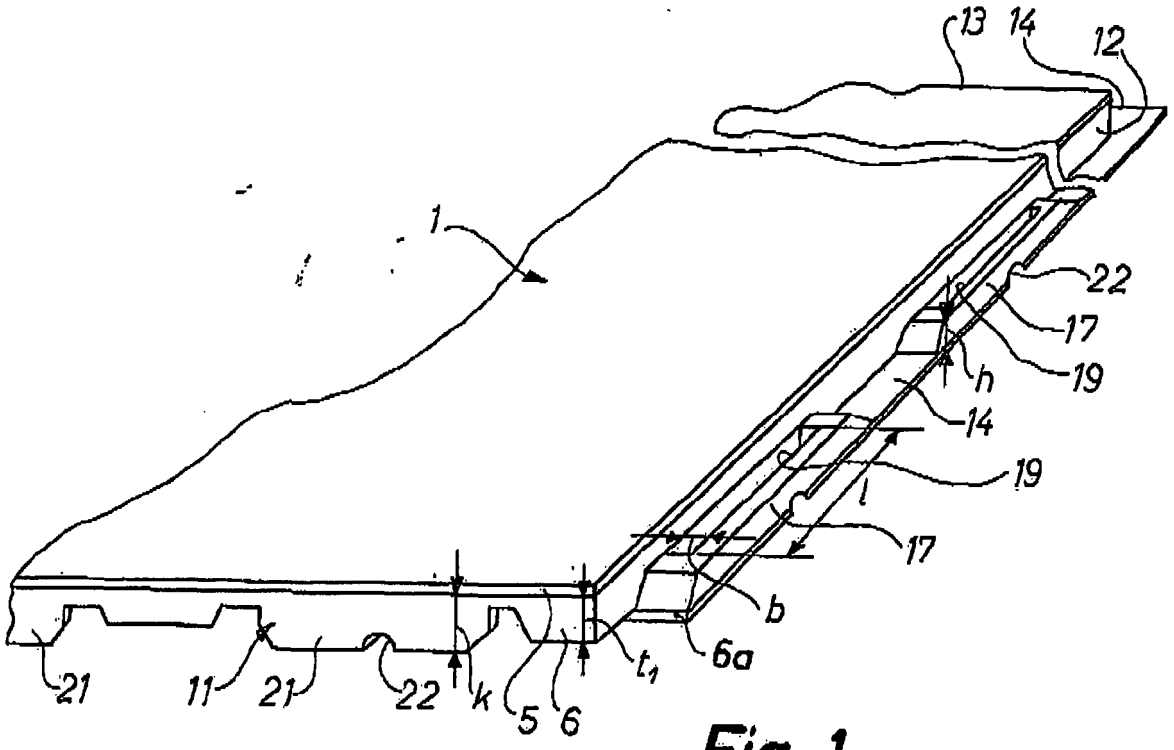


Fig. 1

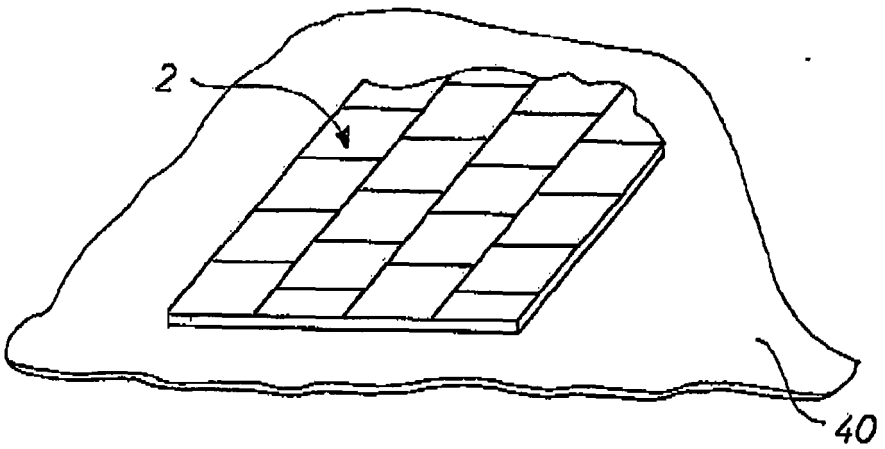


Fig. 2

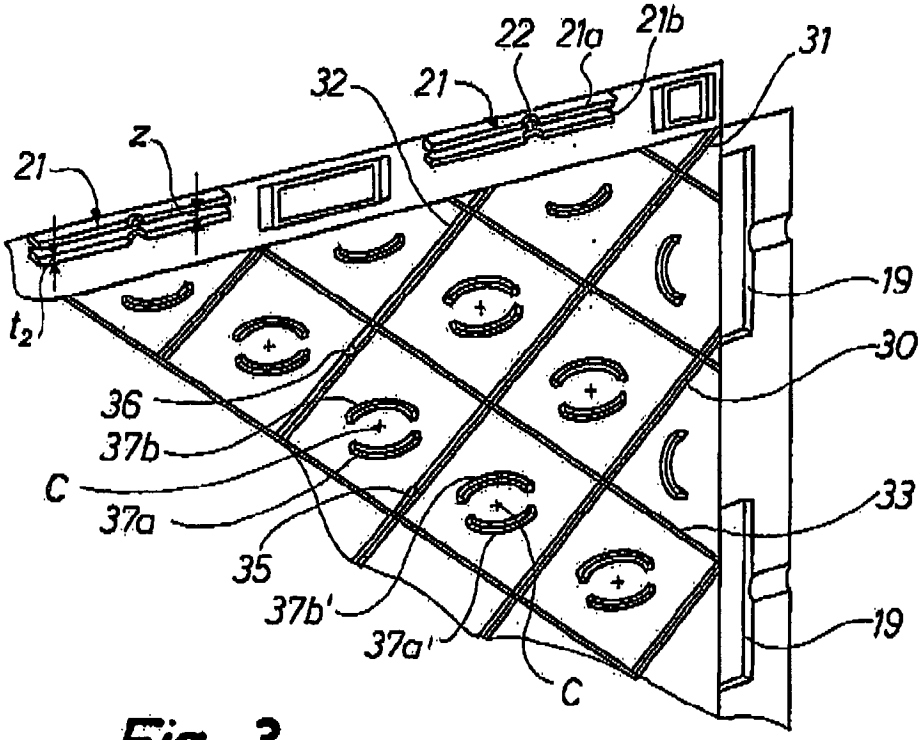

22
21a
21b
31
32
21
z
21
19
t_2
30
36
37b
C
37a
33
35
37b'
37a'
19
C

Fig. 3

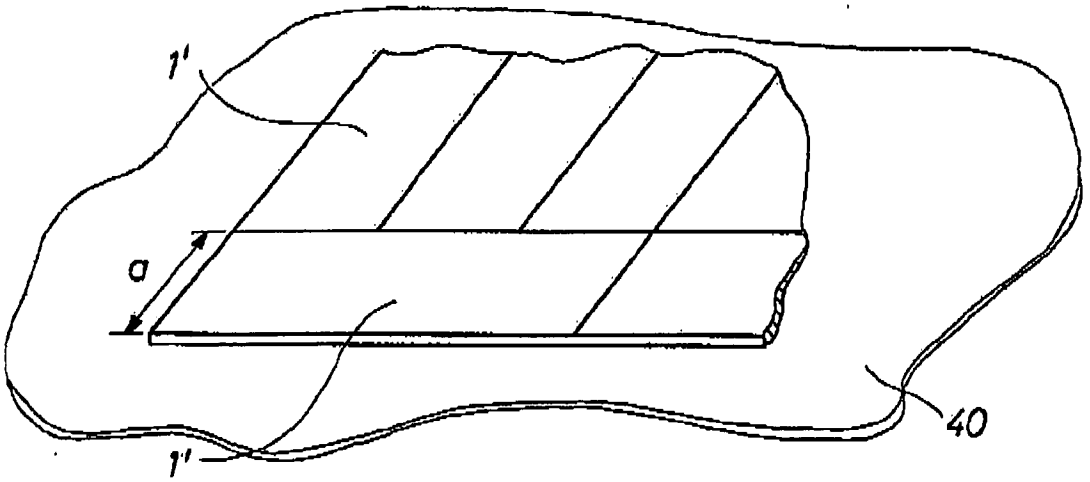

1'
a
40
1'

Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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