(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 788 166 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
23.05.2007 Bulletin 2007/21

(51) Int Cl.:
E04F 15/024 *(2006.01)*

(21) Application number: **06380306.8**

(22) Date of filing: **22.11.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **22.11.2005 ES 200502858**
09.06.2006 ES 200601555

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(54) **Inspectable technical floor**

(57) It relates to a floor with a base structure formed from a cross-linking of horizontal profiles (1 and 2) which support a set of tiles (3) that are assembled and removed vertically.

It is characterised in that the base structure comprises certain primary profiles (1) with a cross-section in the form of an inverted "T" and some secondary profiles (2) of the same cross-section, which are coupled via their end sections to pairs of adjacent primary profiles, the tiles (3) being fitted via their narrow lateral faces against the slots of the profiles (1 and 2), at the same time as they rest against at least certain projecting seatings of the cross-members of said primary (1) and secondary (2) profiles.

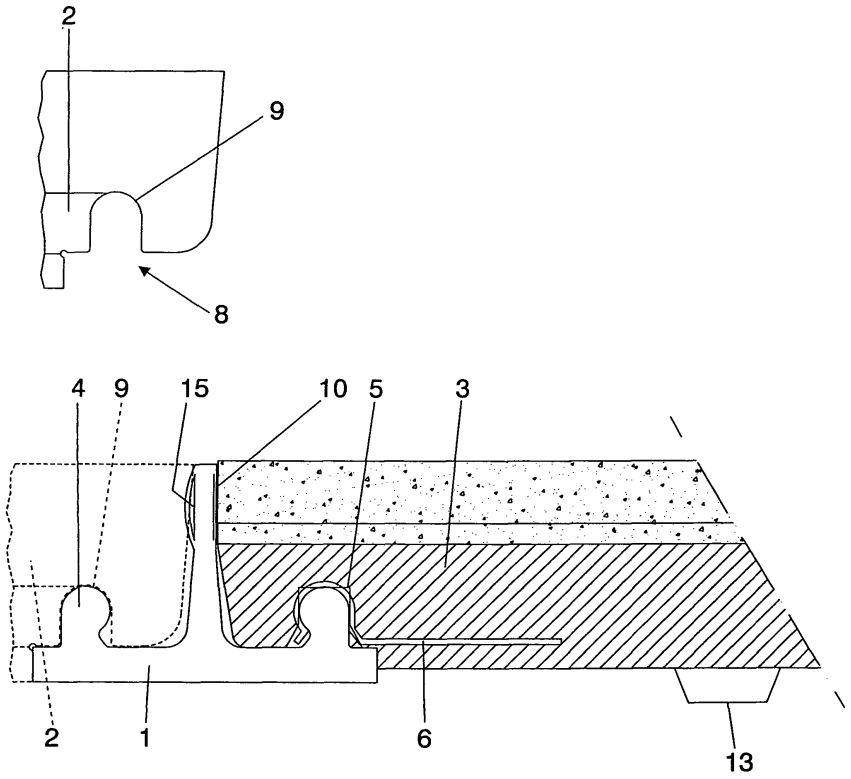

FIG. 3

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Description

OBJECT OF THE INVENTION

[0001] As stated in the title of this specification, the present invention relates to an inspectable technical floor which, apart from comprising an easy to assemble floor structure, also comprises pieces or tiles which can be extracted vertically, which means that it will not be necessary to dismount a complete row of tiles when a single piece needs to be removed owing to any technical need, for example, to conduct inspections, change pieces or tiles, make repairs, etc.

[0002] The floor that is obtained is simpler and has application to spaces with better quality demands in their finishing, mechanical strength and comfort, though their assembly and removal is simple and faster.

PRIOR ART OF THE INVENTION

[0003] Inspectable technical floors and dismountable floors in general are used in constructions of offices, shops, stage scenery, and also in homes.

[0004] These floors comprise a base structure of profiles on which are then coupled the different respective tiles or pieces.

[0005] Among dismountable floors can be mentioned Invention Patent No. P-200502130 wherein there stands out an elevated base structure with certain characteristic means of coupling between the different component profiles of the structure, also standing out being some legs adjustable in height.

DESCRIPTION OF THE INVENTION

[0006] The inspectable technical floor constituting the object of the invention comprises a base structure formed from a cross-linking of horizontal profiles: some primary and others secondary, all of them defining gaps where the tiles will be positioned in a complementary fashion by means of a vertical coupling.

[0007] These profiles present a cross-section in the form of an inverted "T", characterised in that its cross-member includes some longitudinal ribs in its twos sections, which act to ensure the seating and fastening of the tiles that are located vertically, and at the same time as the tiles rest against the vertical slots of the cross-linking of profiles.

[0008] Another characteristic of the invention is that the lower faces of the tiles incorporate some perimetric slots complemented with the longitudinal ribs, and at the same time some pieces of an elastic structure have also been provided in those lower faces with central segments which fit into the slots in order to secure a fastening by elastic connection in the said longitudinal ribs.

[0009] Another characteristic of the invention are some cavities existing in the corners of the lower face of the tile in order to span the cross of the longitudinal ribs.

[0010] Moreover, the secondary profiles arranged perpendicularly between pairs of primary profiles include certain characteristic lower cuts made in the arm and cross-member of said secondary profiles, in order thereby to facilitate the coupling of these on the primaries.

[0011] To achieve this, the end sections of the arms of the secondary profiles include some small notches in order to ensure their engagement in the longitudinal ribs of the primary profiles.

[0012] Other characteristics of the invention refer to some perpendicular ducts located in the lower face of the tiles to permit the passage of cables and pipes and, in general, any other kind of supply. These ducts are complemented with certain facing windows located in the arms of the cross-linking of profiles.

[0013] Another characteristic of the invention is that the vertical arms of the support profiles incorporate certain pressure elements against the side edges of the tiles which reinforce the attachment and immobilisation of them.

[0014] On their lower faces, the tiles incorporate some perimetric steps where the longitudinal slots are to be found for facilitating the assembly and removal of the tiles, in such a way that when the tiles are fitted in the gaps demarcated between the arms of the cross-linking of profiles, the ribs are fitted in a complementary fashion in the said longitudinal slots of the tiles, with their free surface remaining approximately flush with the support surface of the arms of the primary and secondary profiles.

[0015] The corner segments of the tiles where the perimetric steps of the tiles meet via their lower face can incorporate certain sections of longitudinal slots which are a continuation of said slots, thereby achieving greater stability in the seating of the tiles.

[0016] It can also be stated that the central part of the tiles can rest via their lower face directly on the floor, in which case this face is coplanar with the supporting faces of the support profiles, thereby avoiding having to use wedges or supports such as those provided for and cited previously.

[0017] Another feature is that the complementary coupling between ribs and slots can be a pressure-free coupling, which will facilitate the assembly and removal of the tiles.

[0018] Considering this last embodiment, the technical floor is obviously simpler and has application to spaces that are less demanding in terms of finishing, mechanical strength or comfort, though their assembly and removal is simpler and faster, as has been mentioned.

[0019] Below, in order to facilitate a better understanding of this specification and forming an integral part thereof, some figures are attached in which, on an illustrative rather than limiting basis, the object of the invention has been represented.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

Figure 1.- Shows a perspective view of the inspectable technical floor forming the object of the invention. It basically consists of a cross-linking of profiles and some tiles fitting into the gaps defined by those profiles.

Figure 2.- Shows a perspective view of one of the tiles from its lower face.

Figure 3.- Shows a detailed view in cross-section of the coupling between the different component pieces of the inventive floor.

Figure 4.- Shows a perspective view of the inspectable technical floor.

Figure 5.- Shows a front view of that represented in the previous figure.

Figure 6.- Shows a perspective view of a tile forming part of the floor represented in the previous two figures.

Figure 7.- Shows a view in cross-section of a base profile forming part of a cross-linking of profiles which support the tiles of the inventive floor.

DESCRIPTION OF THE PREFERRED MANNER OF EMBODIMENT

[0021] Considering the numbering adopted in figures 1 to 3, the inspectable technical floor is defined on the basis of a horizontal support structure which comprises a cross-linking of primary profiles 1 and other secondary 2 profiles which are fastened via their ends to pairs of adjacent primary profiles.

[0022] This cross-linking of profiles 1 and 2 defines some gaps, in which fit the various tiles 3.

[0023] To achieve this, the support profiles 1 and 2 comprise a cross-section in the form of an inverted "T" where the two sections of its cross-member incorporate some longitudinal ribs 4 complementary with some perimetric slots 5 located in the lower face of the tiles 3 in proximity to its edges, in such a way that the tiles 3 are in principle seated on the ribs 4 via the bottom of said slots 5.

[0024] In turn, the tiles 3 also incorporate some elastic pieces 6 with a segment which fits into the slots 5 in order to secure the fastening of the tiles 3 to the ribs 4 by means of elastic connection.

[0025] Moreover, where the slots 5 of the tiles 3 meet, there exist some corner cavities 7 in order to span the cross of the longitudinal ribs 5 of rounded cross-section.

[0026] The end sections of the secondary profiles 2 contain some cuts 8 which leave free a lower free-edge segment of the arms of the said secondary profiles 2 in order to facilitate their coupling to the primaries. To achieve this, these lower free-edge segments of the arms contain some small notches 9 for engaging and fastening to the ribs 4 of the primary profiles 1.

[0027] The tiles 3 are fitted via their narrow side faces in the gaps demarcated by the arms of the primary 1 and secondary 2 profiles, in such a way that those narrow faces present a gentle convergence downwards in order to obtain a better fit and finish of the tiles 3, so that the said tiles 3 act as a stop via the some upper segments 10 of their narrow lateral faces.

[0028] The tiles 3 incorporate via their lower face some central ducts 11 complementary with passage windows 12 established in the arms of the primary 1 and secondary 2 profiles in order to facilitate the installation of cables and pipes and any other supply. Those passage windows 12 are also made in the longitudinal ribs 4.

[0029] The tiles 3 also incorporate small support wedges 13 emerging from their lower face, these wedges 13 normally being of an elastic material in order to prevent excessive weight on the cross-linking of profiles 1 and 2, above all when larger surface tiles are being laid.

[0030] The ducts 11 can be enclosed by means of pieces in the form of a cross 14 fitted against the lateral faces of those ducts 11.

[0031] Moreover, the tops of the vertical arms of the support profiles 1 and 2 incorporate in their two faces some thin bulging segments 15 against which the lateral edges of the tiles 3 press, said segments 15 becoming deformed when the tiles 3 are laid, the segments remaining flush with the lateral faces of the vertical arms of the support profiles 1 and 2.

[0032] The pressure exerted by the bulging segments provides further reinforcement for the attachment of the tiles 3.

[0033] Turning now to figures 4 to 7, the inventive floor presents a simpler structure with an easier and faster assembly.

[0034] To achieve this, the elastic pieces are done away with and the ribs 4 are coupled directly into the slots 5 without any pressure.

[0035] In this embodiment that we are concerned with, the corners of the tiles also incorporate via their lower face a cavity 7 with some slotted sections 5' which are a continuation of the slots 5 located in correspondence with some perimetric steps 16, these also being defined in the first embodiment shown in figures 1 to 3, though in the latter they are of less height owing to the incorporation of the support wedges 13.

[0036] In the second embodiment described, the coupling between slots and ribs is a pressure-free coupling, which facilitates the vertical assembly and removal of the tiles by means of gravity alone. In turn, the tiles of this second embodiment rest directly on the floor with the exception of the perimetric step 6 where the slots 5 are to be found complemented with the ribs 4, in which case its lower face is coplanar with the supporting faces of the support profiles 1 and 2.

Claims

1. **INSPECTABLE TECHNICAL FLOOR**, which, comprising a base structure in a horizontal plane formed from a cross-linking of horizontal profiles which support a set of tiles, is **characterised in that** the base

structure comprises primary profiles (1) with a cross-section in the form of an inverted "T" and secondary profiles (2) of the same cross-section, which are coupled via their end sections to pairs of adjacent primary profiles (1), the tiles (3) being fitted via their narrow lateral faces against the slots of the profiles (1 and 2), at the same time as they rest against at least elements which project from the cross-members of said primary (1) and secondary (2) profiles.

2. **INSPECTABLE TECHNICAL FLOOR,** according to claim 1, **characterised in that** the cross-members of the profiles (1 and 2) comprise longitudinal ribs (4), at least as means of seating of the tiles (3) via their lower faces.

3. **INSPECTABLE TECHNICAL FLOOR,** according to claim 2, **characterised in that** the lower face of the tiles (3) include some perimetric slots (5), the bottoms of which sit on the longitudinal ribs (4).

4. **INSPECTABLE TECHNICAL FLOOR,** according to claims 2 and 3, **characterised in that** the lower face of the tiles (3) includes some elastic pieces (6) with some segments for fastening to the longitudinal ribs (4) by elastic connection, these segments for fastening lying in the direction of the perimetric slots (5).

5. **INSPECTABLE TECHNICAL FLOOR,** according to claims 2 and 3, **characterised in that** the fit between the ribs (4) and the slots (5) is a pressure-free fit, with assembly of the tiles taking places solely by gravity.

6. **INSPECTABLE TECHNICAL FLOOR,** according to either of claims 3 or 4, **characterised in that** where the perimetric slots (5) meet there exist corner cavities (7) in order to span the cross of the longitudinal ribs (4) of the primary (1) and secondary (2) profiles.

7. **INSPECTABLE TECHNICAL FLOOR,** according to any of the previous claims, **characterised in that** the lower face of the tiles (3) incorporate centred ducts (11) which are complemented with some facing windows (12) made in the arms of the primary (1) and secondary (2) profiles; all this in order to allow the passage of cables, pipes and/or any other kind of supply.

8. **INSPECTABLE TECHNICAL FLOOR,** according to claim 6, **characterised in that** it comprises a piece in the form of a cross (14) which fits in the centred ducts (11) by way of a cover in order to create some enclosed tubular ducts.

9. **INSPECTABLE TECHNICAL FLOOR,** according to any of the above claims, **characterised in that** the secondary profiles (2) comprise some end cuts (8) made in at least the cross-members of those profiles, releasing a lower edge of the arms which comprises a small notch (9) complementary with the longitudinal ribs (4) of the primary profiles (1) in order to facilitate the fastening of the secondary profiles (2) on the primary profiles (1).

10. **INSPECTABLE TECHNICAL FLOOR,** according to any of the previous claims, **characterised in that** the tiles (3) incorporate support wedges (13) in their lower faces which are connected to the floor.

11. **INSPECTABLE TECHNICAL FLOOR,** according to any of claims 1 to 9, **characterised in that** the central part of the tiles (3) rest directly on the floor via their lower face, said central part being coplanar with the lower face of the cross-members of the base profiles (1) and (2).

12. **INSPECTABLE TECHNICAL FLOOR,** according to any of the previous claims, **characterised in that** the free edges of the arms of the profiles (1 and 2) are arranged slightly below the upper surface of the tiles (3).

13. **INSPECTABLE TECHNICAL FLOOR,** according to any of the previous claims, **characterised in** the tiles (3) make contact against the arms of the primary (1) and secondary (2) profiles via an upper segment (10) of their narrow lateral faces.

14. **INSPECTABLE TECHNICAL FLOOR,** according to any of the above claims, **characterised in that** the tops of the vertical arms of the support profiles (1 and 2) incorporate thin deformable bulging segments (15) which press against the lateral edges of the tiles (3).

15. **INSPECTABLE TECHNICAL FLOOR,** according to any of claims 3 to 14, **characterised in that** the tiles (3) incorporate perimetric steps (16) where the slots (5) are found and which are complemented with the cross-members of the primary (1) and secondary (2) profiles.

16. **INSPECTABLE TECHNICAL FLOOR,** according to claim 15, **characterised in that** the perimetric steps (16) possess the same height as the cross-members of the primary (1) and secondary (2) profiles.

17. **INSPECTABLE TECHNICAL FLOOR,** according to claims 9 and 15, **characterised in that** the perimetric steps (16) possess a height lower than the cross-members of the primary (1) and secondary (2) profiles.

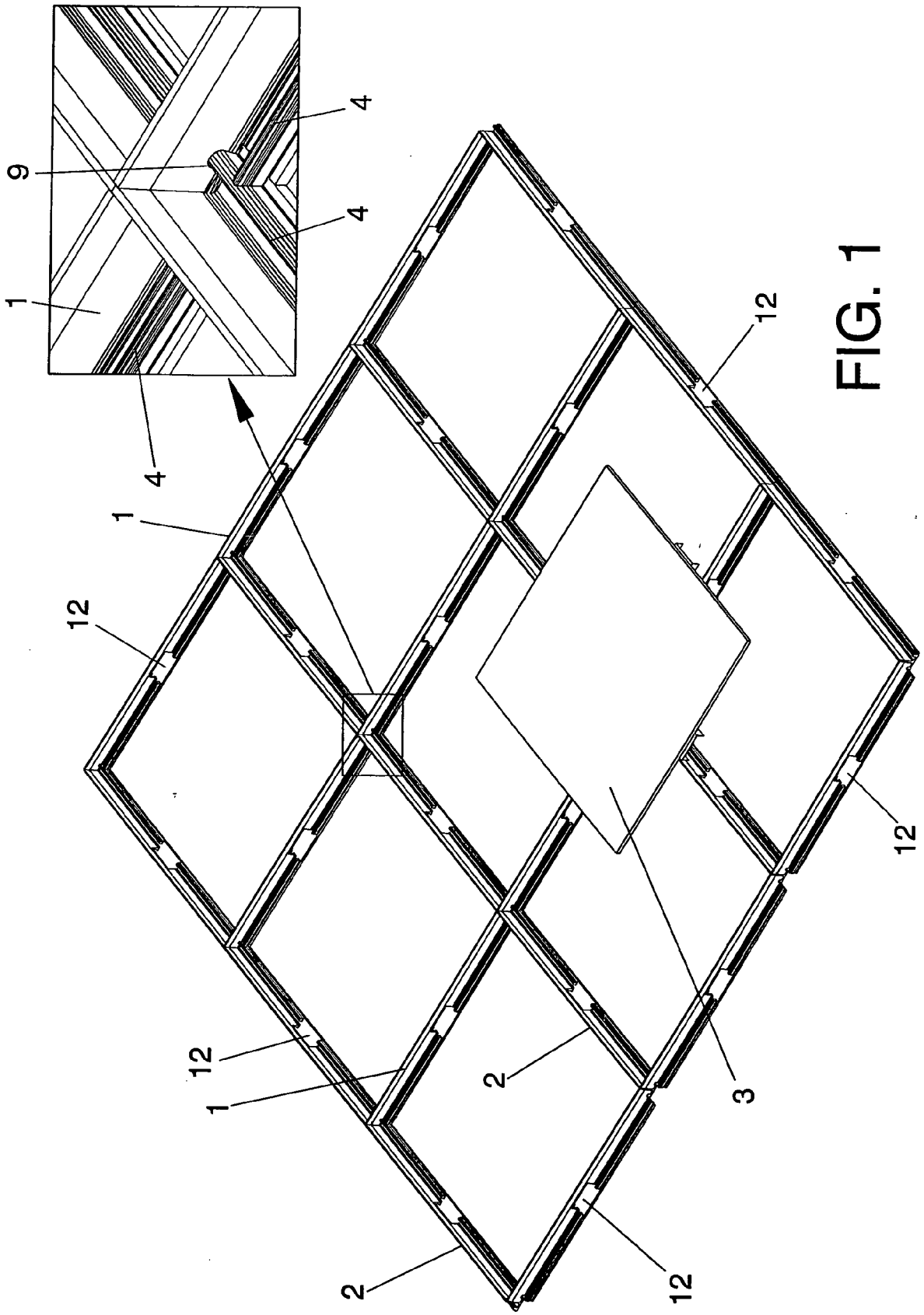

FIG. 1

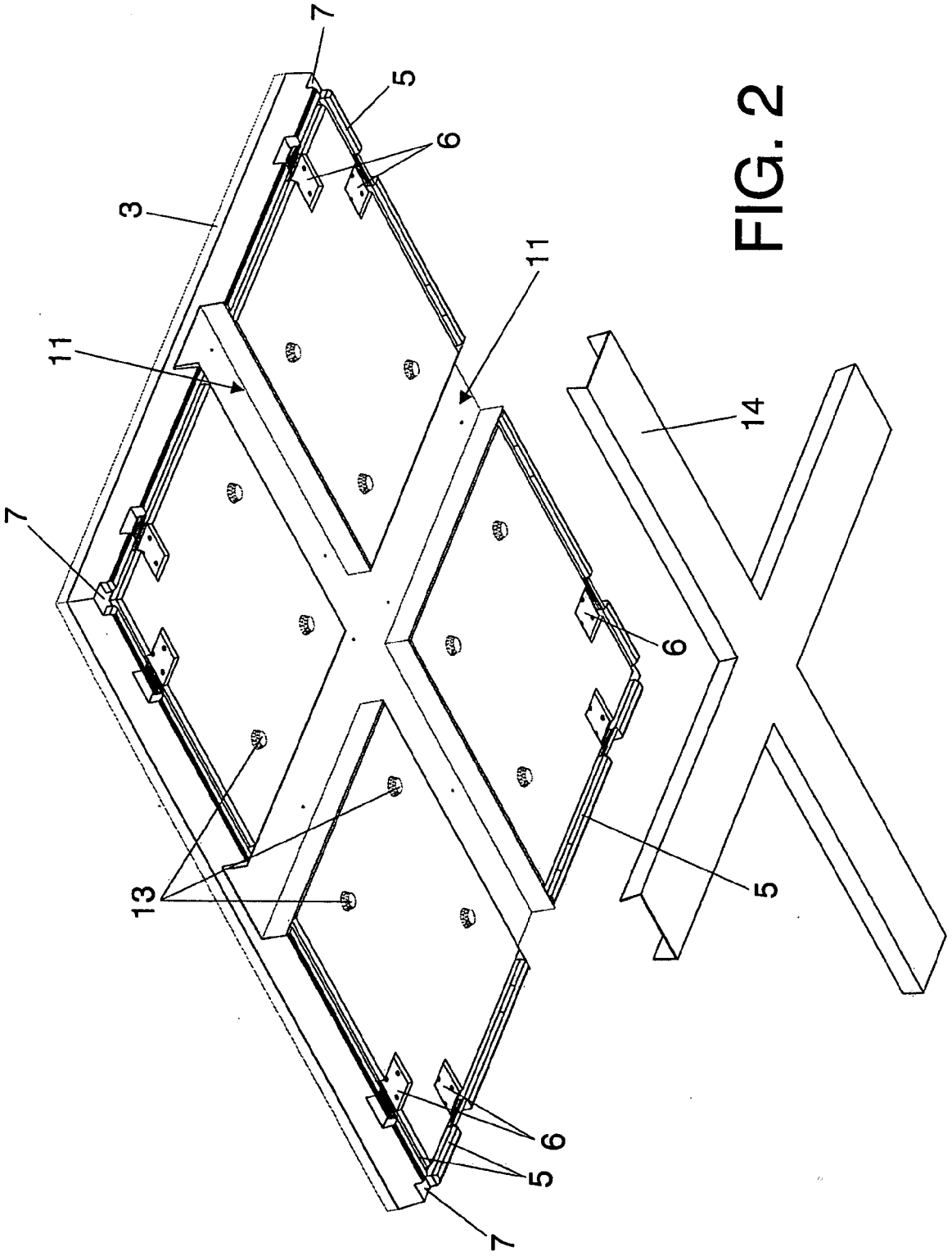

FIG. 2

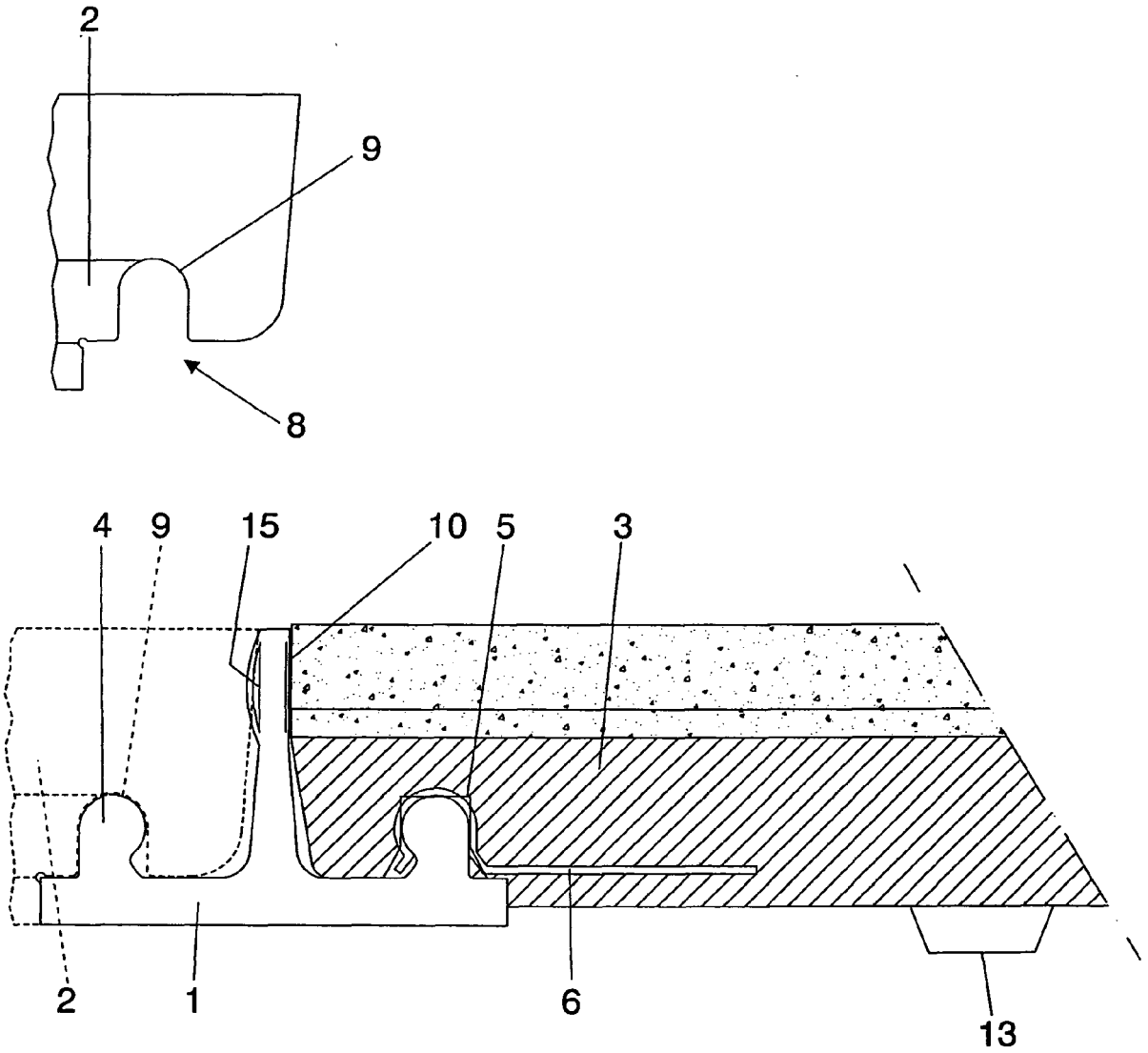

FIG. 3

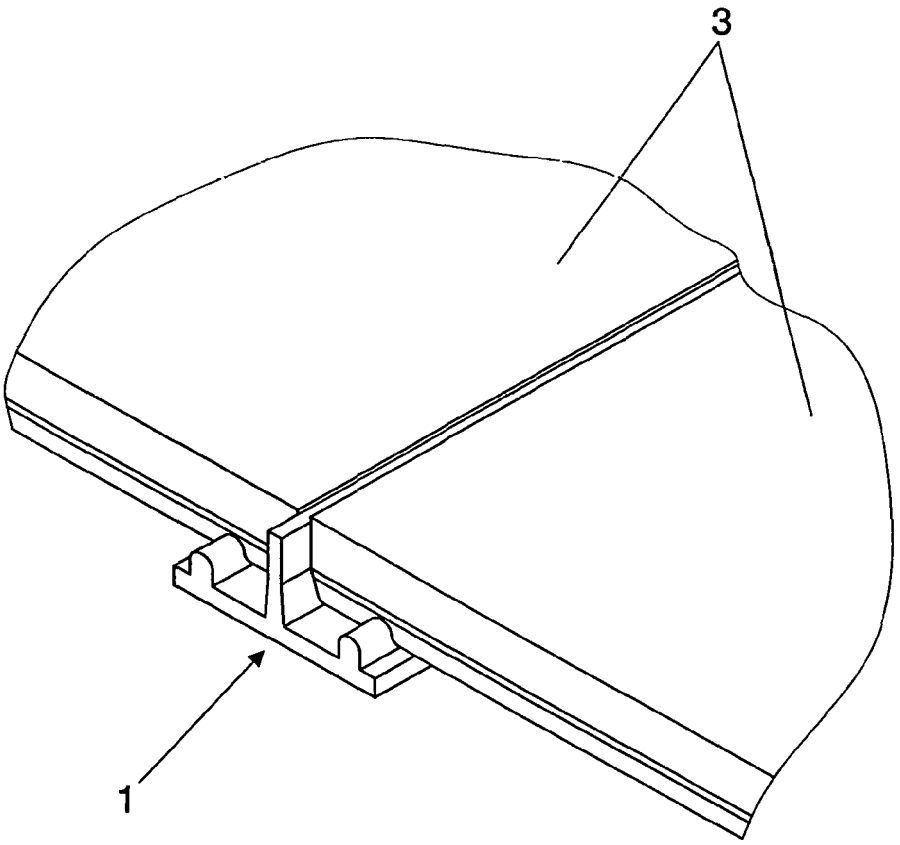

FIG. 4

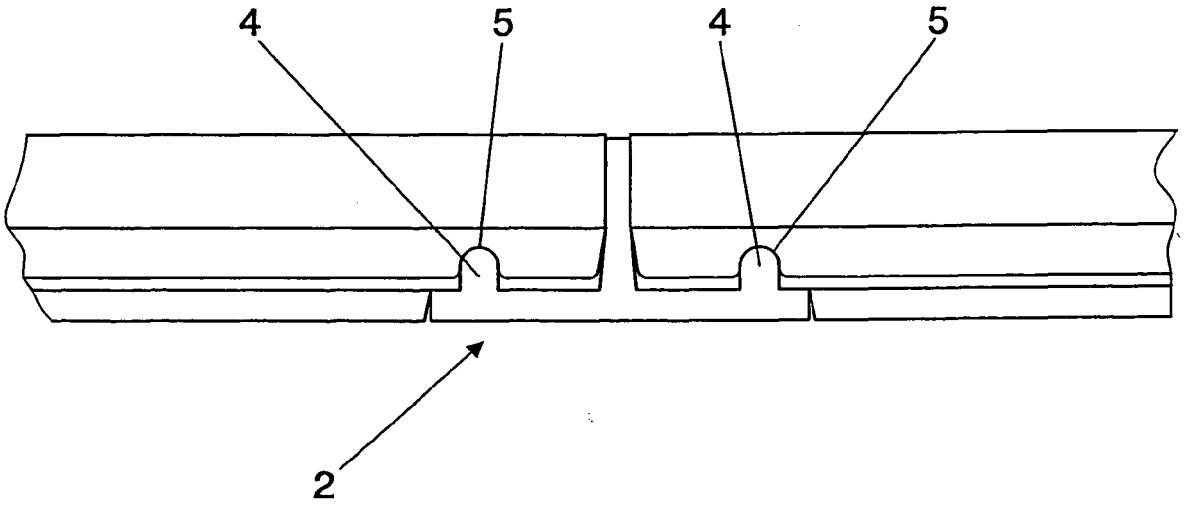

FIG. 5

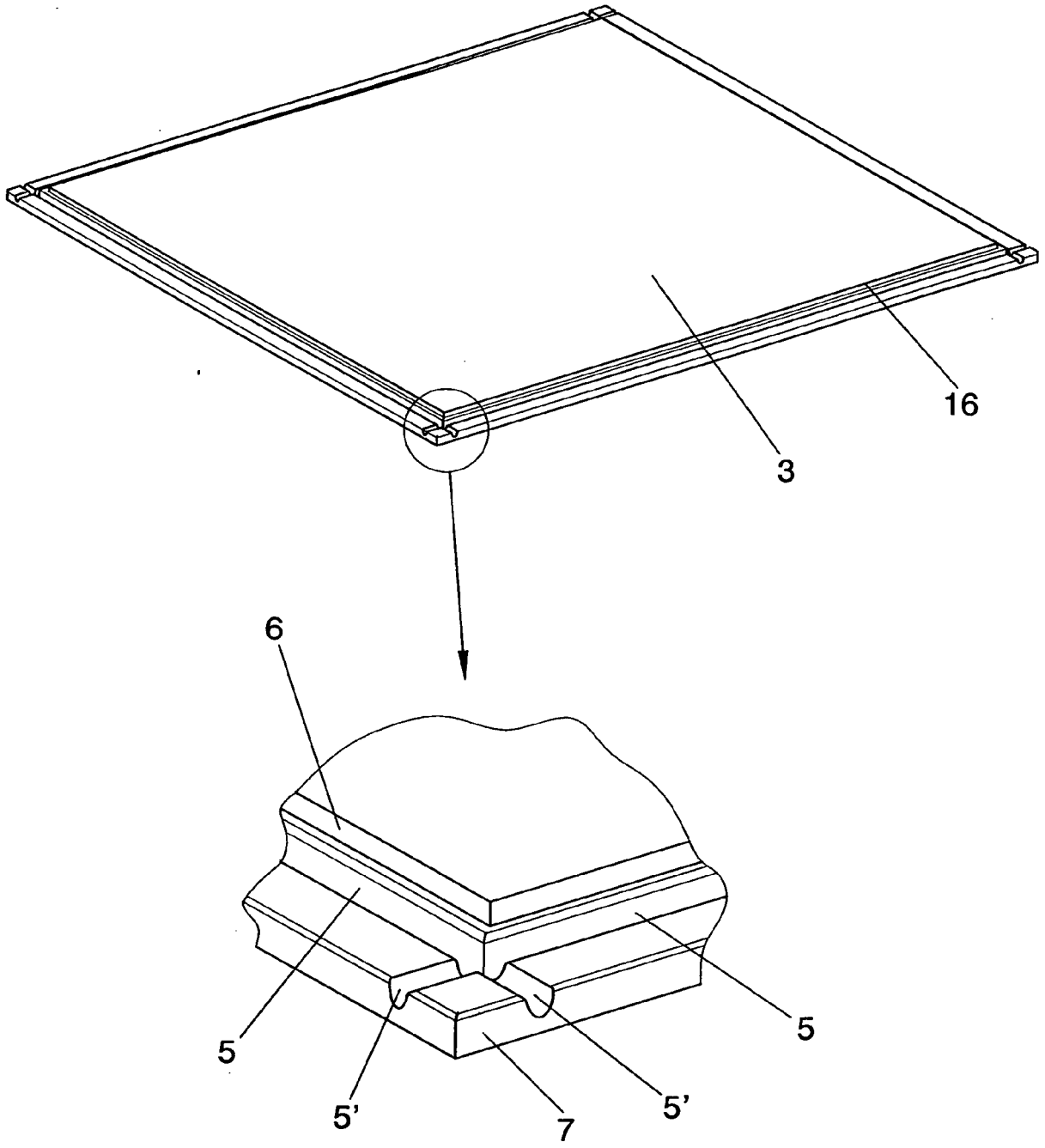

FIG. 6

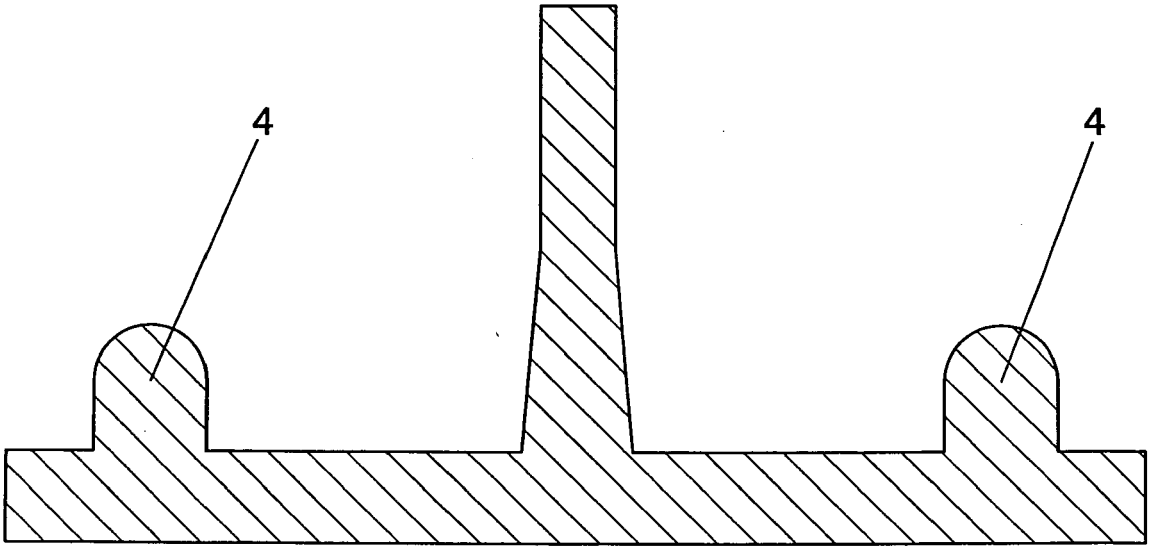

FIG. 7