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(54) **Dismountable floor**

(57) It comprises a cross-linking of profiles (1) defining a horizontal structure, along with legs (2) adjustable in height supporting said horizontal structure, on which are arranged some tiles (10) or any other flat element constituting the actual floor.

The horizontal profiles (1) are fastened and attached by their end sections to the legs (2) at the points of intersection of said horizontal profiles (1), by means of some complementary slots (9 and 9') in the vertical direction and which are established in certain upper pieces (8) of the tubular columns forming part of the support legs (2)

and in the end sections of the horizontal profiles (1), respectively.

Another characteristic is the inclusion of some joints (23-23') for seating and separation of the tiles (10), these joints having an inverted "T" configuration. These joints (23 and 23') are coupled along the horizontal profiles (1) in such a way that the tiles (10) will rest via their lower faces on the transverse sections of those joints (23 and 23'), while the central or vertical arm of those joints will, in each case, constitute the separation element of the tiles (10).

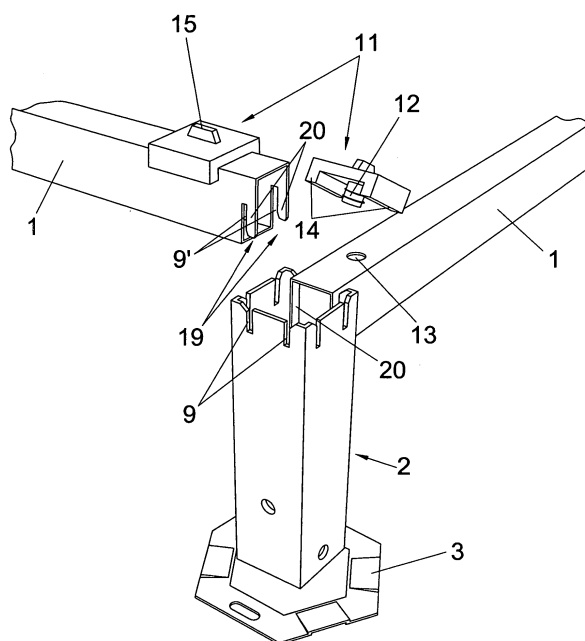


FIG. 2

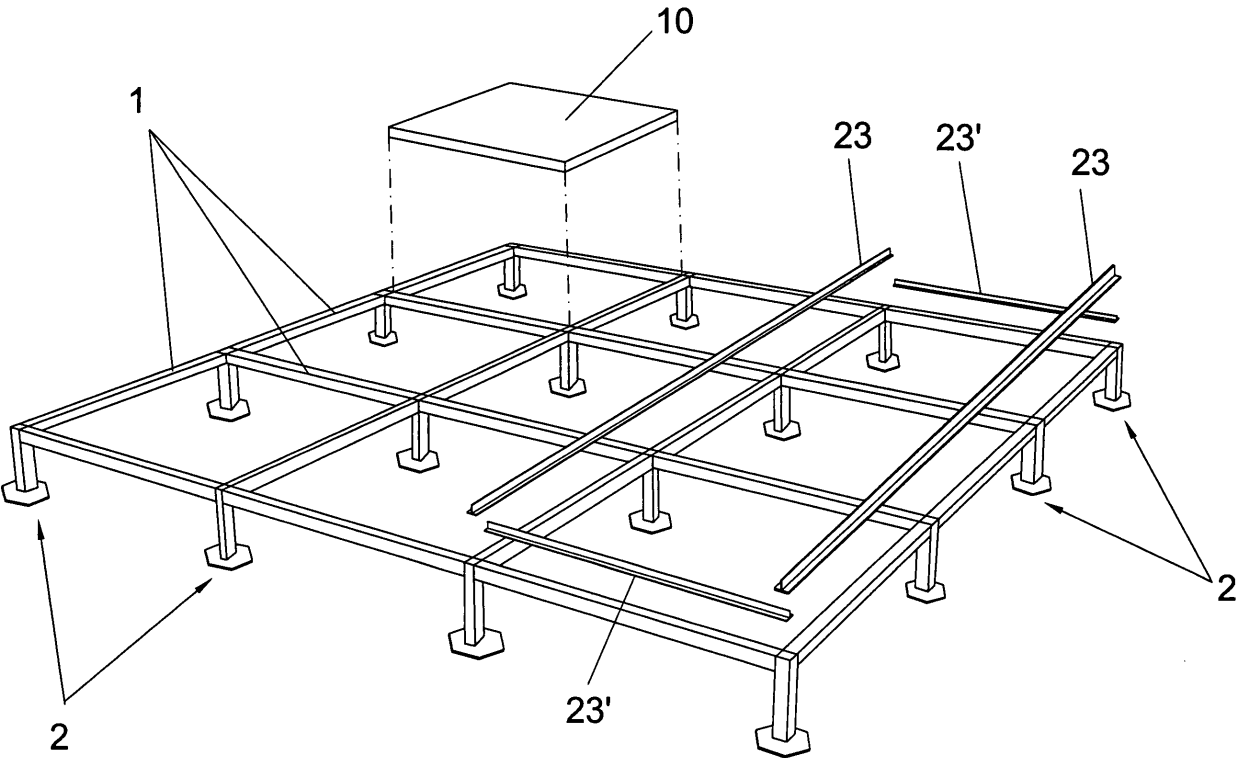


FIG. 7

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a dismountable floor, the objective of which is an easy regulation in height in order to obtain a floor that is totally coplanar and with simple assembly, offering certain better technical qualities than current systems.

[0002] Another objective is to provide greater stability on the basis of the incorporation of some joints which are positioned in the narrow spaces or gaps associated with the separation between adjacent tiles, which makes it unnecessary to cover the edge of the tiles, and to achieve greater stability for the floor as a whole.

[0003] The floor is of the raised type and permits the housing of any technical infrastructure, such as water pipes, electricity lines, etc.

PRIOR ART OF THE INVENTION

[0004] The use of dismountable floors is currently becoming introduced in a major way, not just in special constructions such as stands, offices, shops, stage scenery, etc., but even in homes.

[0005] The raised inspectable paving consists of a modular floor made of panels supported on a metallic structure adjustable in height, in such a way that between the base floor and the lower surface of the raised floor a technical space is created for the housing of any technical infrastructure.

[0006] Due to the panels or tiles being identical, this facilitates their exchange, guaranteeing both accessibility to any point of the installation, and flexibility, permitting other modifications to the installations and structures.

DESCRIPTION OF THE INVENTION

[0007] The dismountable floor constituting the object of the invention is defined on the basis of a structure formed by a cross-linking of tubular profiles arranged in the same horizontal plane, the structure being supported by a set of strategically distributed legs.

[0008] In turn, the corresponding tiles constituting the actual floor will be arranged on said horizontal structure itself.

[0009] For their part, the legs, provided with means of height adjustment, incorporate: a tubular vertical leg with a seating basis, and a short tubular column with height adjustment, this adjustment being carried out by means of a threaded male element which is accessible from the upper end of said tubular column arranged coaxially around the vertical leg, in such a way that when the male element is rotated in one direction the column is raised while when it is rotated in the opposite direction the column descends.

[0010] Another characteristic of the invention corresponds to the means for the fastening and attachment

of the horizontal profiles to the tubular columns. To achieve this, the upper edges of those columns, or pieces forming the upper part thereof, possess some narrow cuts or slots complementary to others made in the ends of the horizontal profiles.

[0011] A further characteristic of the invention is that the upper pieces of the tubular columns incorporate some facing cuts that are larger and deeper in order to permit the passage of a horizontal profile through a zone different from its ends, said horizontal profile then resting on that zone, and being able likewise to be supported via more intermediate zones on other legs.

[0012] So, the legs would be arranged in the points of intersection of the cross-linkage of horizontal profiles, though they could also be arranged in other intermediate points of the said profiles, as has been mentioned above.

[0013] Another characteristic of the invention are some stabilisation stops coupled to the horizontal profiles and on which the tiles are directly seated.

[0014] Also provided as a novelty is the incorporation of some sliding supports which are coupled around the horizontal profiles and embracing them, at the same time as those supports are provided with means of connection like those of the vertical columns in order to permit the coupling and fastening of other floating horizontal profiles via their ends, thus obtaining a cross-linkage of horizontal profiles that is finer and denser where necessary.

[0015] Starting from that structure of a perimetric frame, with a quadrangular or rectangular shape corresponding to, for example, the perimeter of a room, the inventive floor permits us to provide a central cross-linkage with variation in the alignments of that cross-linkage by zones, with the possibility also existing of providing just horizontal profiles parallel to two of the opposing profiles of that frame in the space limited by that perimetric frame.

[0016] Another novel characteristic of the floor consists of the possibility of incorporating some separation joints on which the tiles are in turn seated, thus obtaining an optimum fit between those tiles without any need to cover the lateral edges of them, permitting raised paving of greater stability to be obtained.

[0017] Said separation joints and seating of the tiles are constituted by elements or profiles in the form of an inverted "T", the transverse arm of which incorporates underneath a centred duct where an upper portion of the horizontal profiles fits in a complementary fashion, that centred duct in turn limiting two end portions which are complemented with some angular recesses established in the free edges of the tubular columns of the legs.

[0018] So, the pairs of sections corresponding to the transverse arm of the joints constitute the perimetric seating of the tiles via their lower face, while the main or vertical arm of those joints constitute the element of separation and fit between adjacent tiles.

[0019] Moreover, the incorporation of the separation joints permits tiles of different thickness to be laid, for which said tiles can incorporate a perimetric groove in

their lower face, with a predetermined height for adapting the thickness of the tile to the arms of the said joints.

[0020] The joints that are mentioned are of two types, some of greater length than others and in greater number, which are perpendicularly linked to the pairs of joints of greater length, adjacent and arranged in parallel.

[0021] In this respect, the joints of lesser length comprise some end recesses with affect at least the transverse arm of said joints in the form of an inverted "T".

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] In order to complement the description that is going to be made forthwith and with the aim of aiding a better understanding of the characteristics of the invention, this specification is accompanied by a set of drawings on the basis of which the innovations and advantages of the dismountable floor forming the object of the invention will be more easily understood.

Figure 1.- Shows a perspective view of the dismountable floor forming the object of the invention, basically consisting of a horizontal structure of profiles supported by legs that are adjustable in height.

Figure 2.- Shows a perspective view corresponding to a detail of the fastening of the horizontal profiles to the legs.

Figure 3.- Shows another view in detail where the linkage of the horizontal profiles to a leg is shown in another different embodiment.

Figure 4.- Shows a perspective view where a sliding support can be seen associated with the horizontal profiles and on which support other floating horizontal profiles are fastened via their ends.

Figure 5.- Shows a cross-section view of a leg with the means of height adjustment.

Figure 6.- Shows a detail of the stabiliser stops where the tiles of the inventive floor are directly supported.

Figure 7.- Shows a perspective view like that of figure 1, incorporating the separation joints and adjustment of the tiles.

Figure 8.- Shows a cross-section view of the assembly corresponding to a joint on the respective leg of the floor, said joint remaining between two contiguous or adjacent tiles.

Figure 9.- Shows a plan view of the node forming the intersection of four horizontal profiles of the floor on the corresponding leg.

DESCRIPTION OF THE PREFERRED MANNER OF EMBODIMENT

[0023] Considering the numbering adopted in the figures, the dismountable floor is defined on the basis of a horizontal cross-linkage of tubular profiles 1 of quadrangular and/or rectangular cross-section, via the end sections of which they are fastened to some support legs 2, adjustable in height.

[0024] Each of those legs 2 comprises a foot defined by a seating base 3 and a vertical tubular portion 4 aligned with another upper tubular portion 5, internally threaded, to which a threaded male element 6 is coupled, which is retained axially to the vertical portion 4 of the foot of the leg 2 via its interior.

[0025] The upper tubular portion 5 is joined to a coaxial tube 7 and the latter to a tubular column formed by the upper pieces 8 of quadrangular cross-section, the upper edges of which contain some narrow cuts or slots 9 complementary to other cuts or slots 9' made in the end sections of the horizontal profiles 1, in order to permit the assembly of the horizontal structure which will support the tiles 10 constituting the floor itself, with the interposition of some stabilisation stops 11 coupled to the horizontal profiles 1.

[0026] The vertical lower portion 4 of the foot of the legs 2 comprises a longitudinal slot 21 where the coaxial tube 7 is guided by the mediation of a small projection 22 fitting into said longitudinal slot 21.

[0027] The stabilisation stops 11 possess some lower lugs 12 which fit into holes 13 of the horizontal profiles 1, and at the same time they possess some lateral bends 14 in order to better ensure their stable position. Some of these stops 11 comprise at least one rib 15 corresponding to the separation gap between tiles 10, in such a way that when the stop 11 coincides with the intersection of two gaps, it will incorporate two ribs 15 which cross each other.

[0028] The upper piece 8 of some of the tubular columns of the legs comprises in its upper edges a pair of broad facing cuts 16 which coincide with the cross-section of the horizontal profiles 1, permitting them to pass. In this way it is possible to place the legs 2 in intermediate zones of the horizontal profiles 1 when necessary.

[0029] Moreover, the ribs 15 present their longitudinal lateral faces converging upwards in order to be adapted to the planes inclined and converging upwards of the lateral edges of the tiles 10.

[0030] There also exist some sliding supports 17 via which pass the horizontal profiles 1, at the same time as they possess means of connection like those of the upper pieces 8 of the vertical columns in order to permit the coupling and fastening of other floating horizontal profiles via their ends, thus obtaining a cross-linkage of horizontal profiles that is finer and denser when necessary.

[0031] These sliding supports 17 comprise a tubular structure with quadrangular cross-section, two of which opposing walls present facing windows 18 corresponding to the cross-section of the horizontal profiles 1, while the other walls comprise the cuts or slots 9 for permitting the fastening of the floating horizontal profiles via their ends.

[0032] The start of the cuts 9 of the vertical columns, in other words, the upper pieces 8 of said vertical columns, along with the sliding supports 17, and the cuts 9' of the horizontal profiles 1, contain bevels 19 which facilitate the assembly and fastening between the different pieces of the dismountable floor.

[0033] The horizontal profiles 1 terminate via their ends in some parallel and vertical wings 20 which incorporate the cuts or slots 9' for being fastened in the tubular columns or upper pieces 8 thereof and sliding supports 17, in correspondence with the complementary slots or cuts 9.

[0034] The described floor is complemented with some joints 23 and 23', constituted by profiles with an inverted "T" configuration, the joints 23 being of greater length than the joints 23', the latter being arranged perpendicularly between parts of adjacent and parallel joints 23.

[0035] Seated on the lower or transverse sections of the profiles corresponding to those joints 23 and 23' are the tiles 10, while the central arm of those joints constitutes the separation element between adjacent tiles 10.

[0036] The transverse arms of the joints 23 and 23' in turn incorporate a centred lower duct 24 where an upper portion of the horizontal profiles 1 fit in a complementary fashion, that duct 24 limiting end portions 25 which are complemented with angular recesses established in the free edges of the upper pieces 8 corresponding to the tubular columns of the legs 2.

[0037] The tiles 10 are able to incorporate in their lower face a perimetric groove 26 with a predetermined height so that the outer surface of the tiles 10 remain approximately flush with the free edge of the vertical arms of the corresponding joints 23 and 23'.

[0038] By virtue of the said perimetric groove 26 tiles 10 of different thickness can be laid without it being necessary to change any other element of the dismantlable floor assembly.

[0039] Moreover, the tiles 10 are fitted against the faces of the respective vertical arms of the joints 23, 23', via an upper narrow zone.

[0040] The joints of smaller length 23' incorporate some end recesses 27 in their transverse arm, thereby achieving a correct fit where they meet with the pairs of adjacent and parallel joints 23.

Claims

1. **DISMOUNTABLE FLOOR**, which, comprising a cross-linking of profiles defining a horizontal structure, along with legs adjustable in height supporting said horizontal structure, on which are arranged some tiles constituting the actual floor, is **characterised in that** the horizontal profiles (1) are fastened and attached by their end sections to the legs (2) at the points of intersection of said horizontal profiles (1), by means of some complementary slots (9 and 9') in the vertical direction and which are established in upper pieces (8) of the tubular columns forming part of the support legs (2) and in the end sections of the horizontal profiles (1), respectively.
2. **DISMOUNTABLE FLOOR**, according to claim 1, **characterised in that** the end sections of the hori-

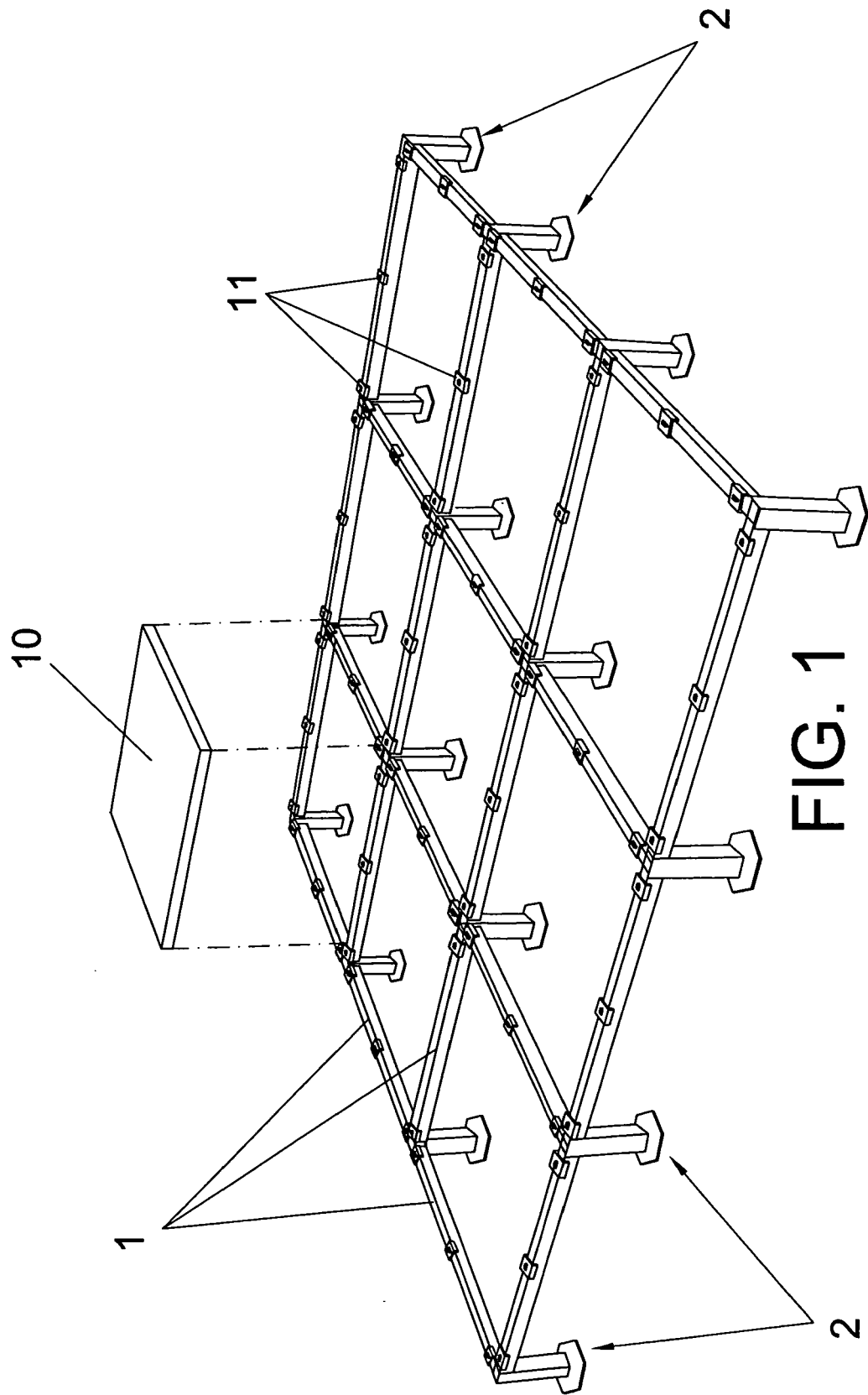
zontal profiles (1) incorporate pairs of parallel wings (20) in vertical planes, defined by the complementary fastening slots (9') of the fastening slots (9) located in the lateral walls of the upper pieces (8) of the tubular columns of the legs (2).

3. **DISMOUNTABLE FLOOR**, according to either of the above claims, **characterised in that** the start of the fastening slots (9 and 9') presents some bevels (19), defined by at least one inclined plane converging towards the respective slot (9 or 9').
4. **DISMOUNTABLE FLOOR**, according to any of the above claims, **characterised in that** it comprising sliding supports (17) coupled in pairs of horizontal and parallel profiles (1), where other floating horizontal profiles are fastened by means of the corresponding complementary slots.
5. **DISMOUNTABLE FLOOR**, according to claim 4, **characterised in that** the sliding supports (17) contain a tubular structure containing two facing passage windows (18), where the cross-section of the respective horizontal profile (1) fits, the upper edges of those sliding supports (17) comprising the corresponding slots (9) which are complemented with the slots (9') of the end sections belonging to the floating horizontal profiles.
6. **DISMOUNTABLE FLOOR**, according to any of the above claims, **characterised in that** it comprising small stabilisation stops (11) coupled at the top to the horizontal surfaces (1) on which stops the tiles (10) are seated.
7. **DISMOUNTABLE FLOOR**, according to claim 6, **characterised in that** the stabilisation stops (11) incorporate some lower lugs (12) for fitting into holes (13) of the horizontal profiles (1), and also lateral bends (14) which make contact with lateral portions of those horizontal profiles, furthermore comprising at least one upper rib (15) corresponding to the separation gap between the tiles (10).
8. **DISMOUNTABLE FLOOR**, according to claim 7, **characterised in that** the ribs (15) present inclined longitudinal lateral faces converging upwards, which correspond with the inclination, also converging upwards, of the lateral edges of the tiles (10).
9. **DISMOUNTABLE FLOOR**, according to claim 2, **characterised in that** the upper pieces (8) of the tubular columns corresponding to the legs (2) incorporate facing cuts (16) adapted to the cross-section of the horizontal profiles (1), the latter being supported by an intermediate zone in the base of said facing cuts (16).

- 10. DISMOUNTABLE FLOOR**, according to any of the above claims, **characterised in that** each of the legs (2) comprises of a foot defined by a seating base (3) and a lower tubular and vertical portion (4), where a threaded male element (6) is coupled with axial retention, said element being associated with the upper piece (8) in order to regulate its height when said male element (6) is rotated. 5
- 11. DISMOUNTABLE FLOOR**, according to claim 10, **characterised in that** the threaded male element (6) is coupled to an upper tubular portion (5) integral with the upper tubular piece (8) by the mediation of an intermediate coaxial tube (7), the latter and the lower portion (4) of the foot comprising a vertical guide defined by a slot (21) and a projection (22) fitted in said slot (21), all this in order that, when the male element (6) is rotated, the upper piece (8) is displaced by the mediation of the upper portion (5) and coaxial tube (7). 10 15 20
- 12. DISMOUNTABLE FLOOR**, according to any of the above claims, **characterised in that** it comprises joints (23, 23') for seating and separation of the tiles (10), with a configuration in the form of an inverted "T", said joints (23, 23') being coupled along the horizontal profiles (1), all this in order that the tiles (10) can rest perimetrically via their lower faces on pairs of sections of the profiles constituted by said joints (23, 23'), while the lateral edges of the tiles (10) fit against the faces of the vertical slots of those same joints (23, 23'). 25 30
- 13. DISMOUNTABLE FLOOR**, according to claim 12, **characterised in that** the joints (23, 23') incorporate in the lower face of their transverse section a longitudinal centred duct (24) where fits an upper portion of the horizontal profiles (1), that duct (24) limiting end portions (25) which are complemented with some angular recesses of the upper pieces (8) corresponding to the tubular columns of the legs (2). 35 40
- 14. DISMOUNTABLE FLOOR**, according to claims 12 or 13, **characterised in that** the tiles (10) incorporate via their lower faces a perimetric groove (26) provided for adapting the thickness of the actual tiles (10) to the height of the vertical slots of the joints (23, 23') when necessary. 45

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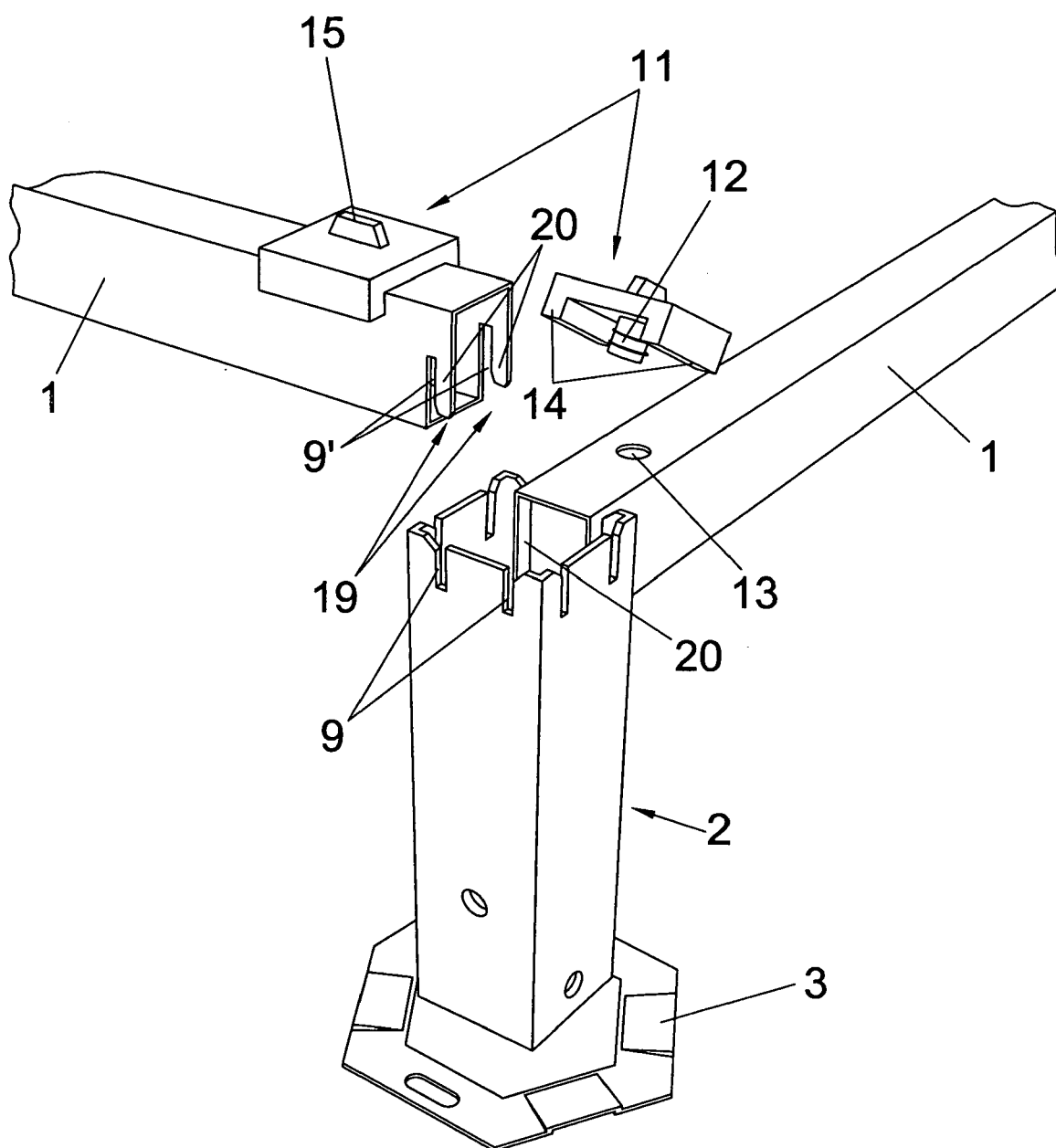


FIG. 2

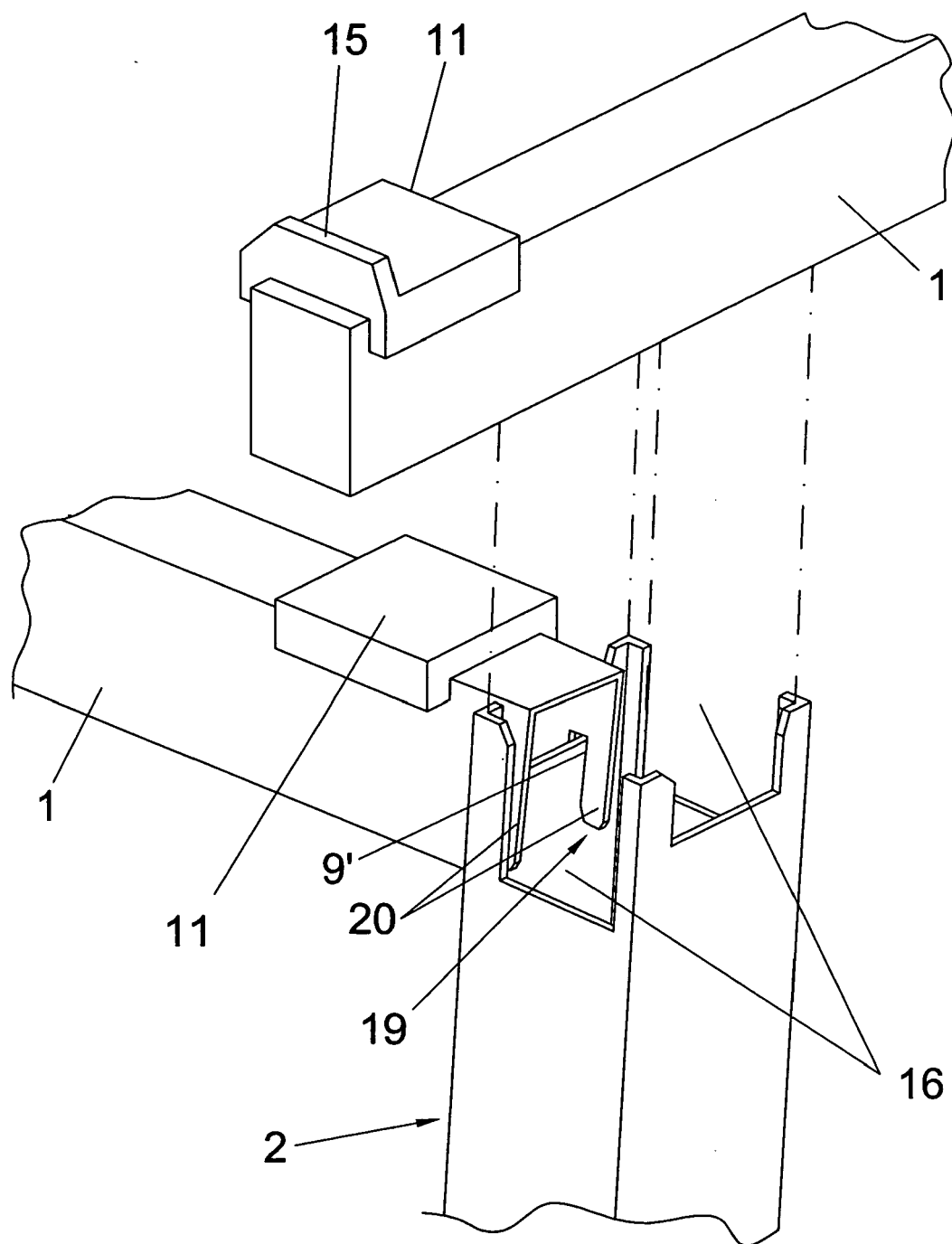


FIG. 3

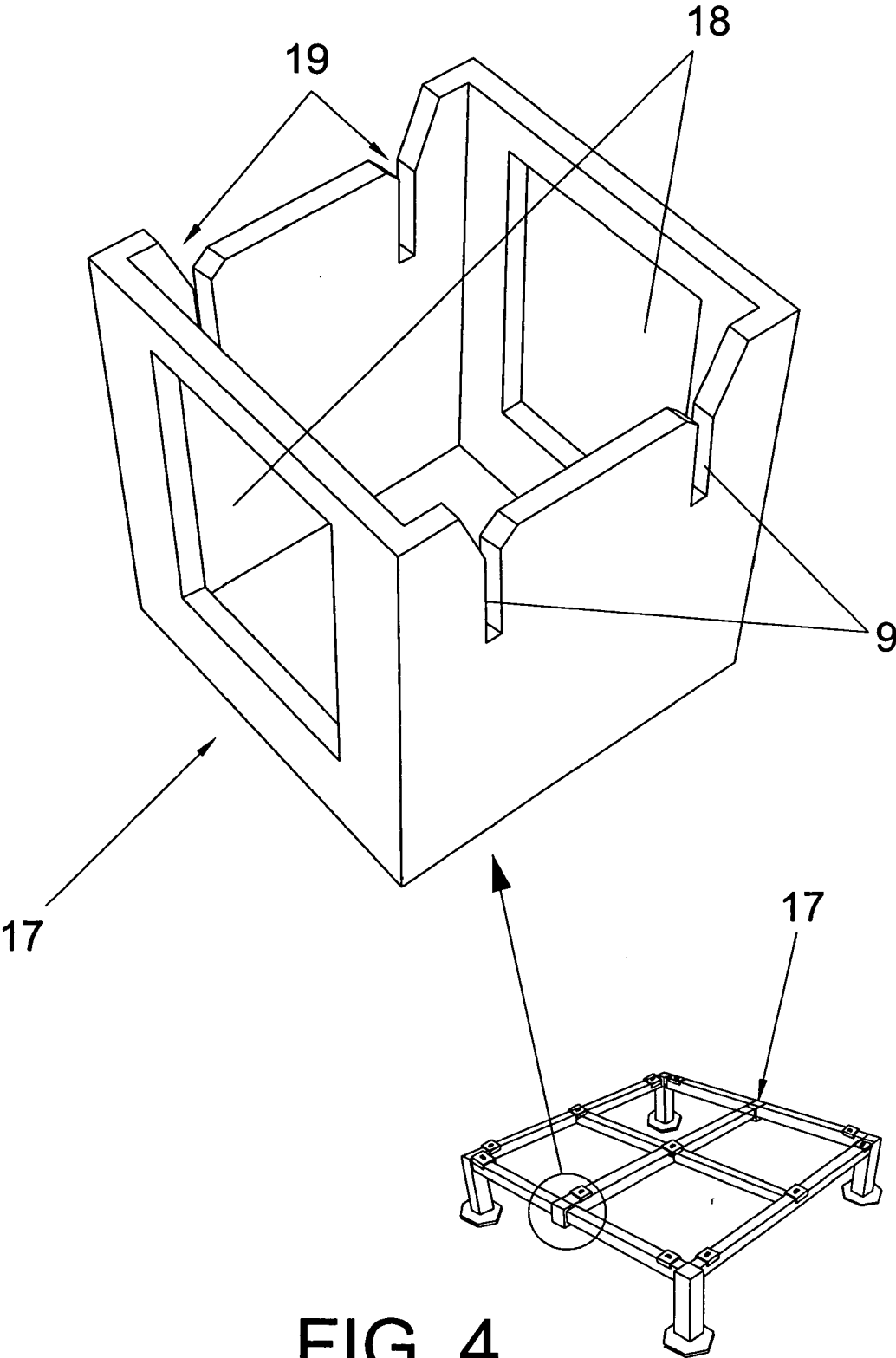


FIG. 4

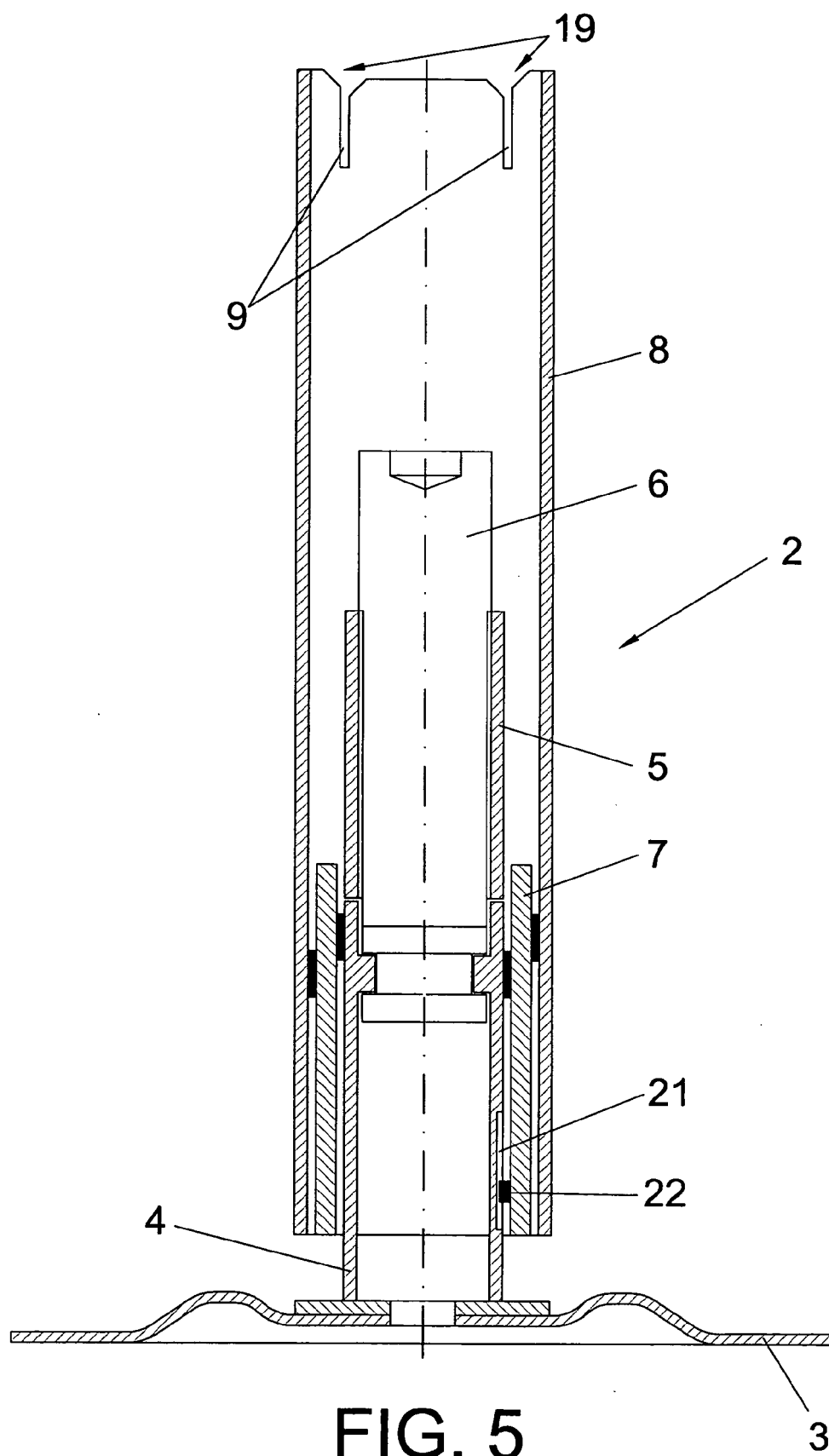


FIG. 5

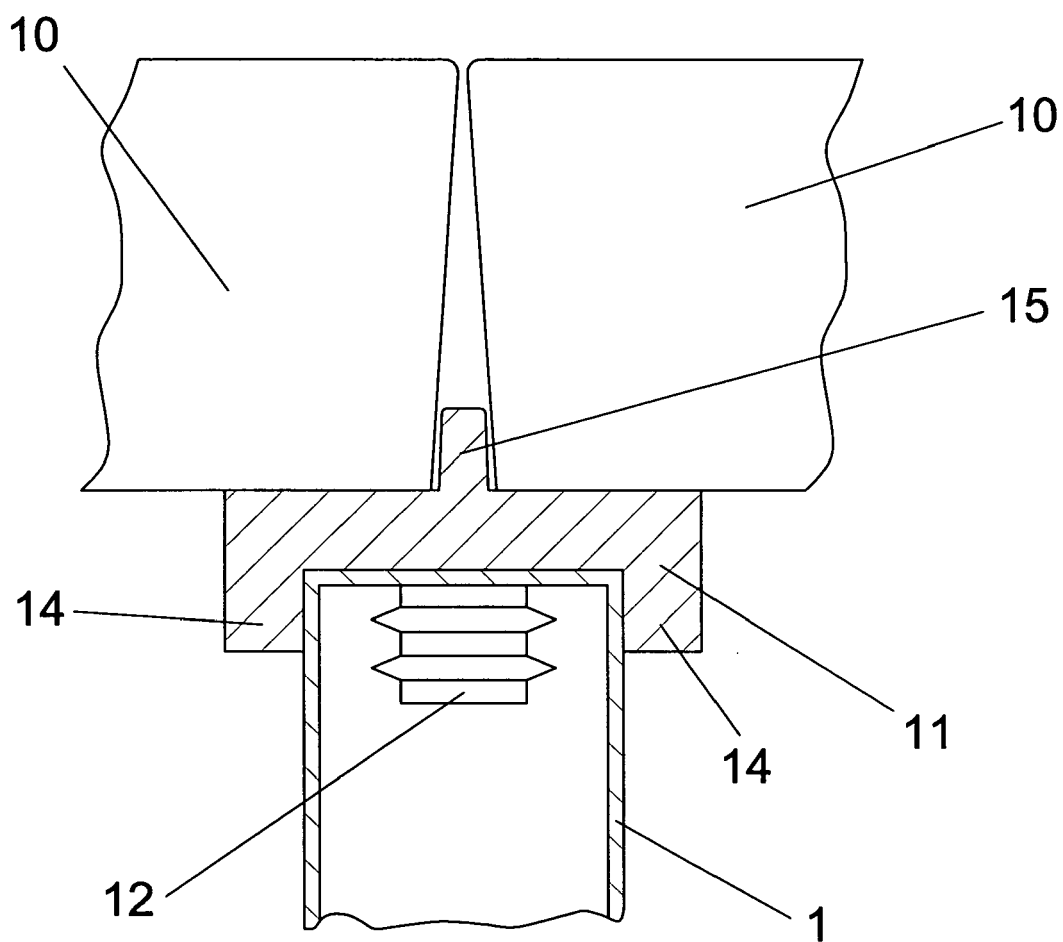


FIG. 6

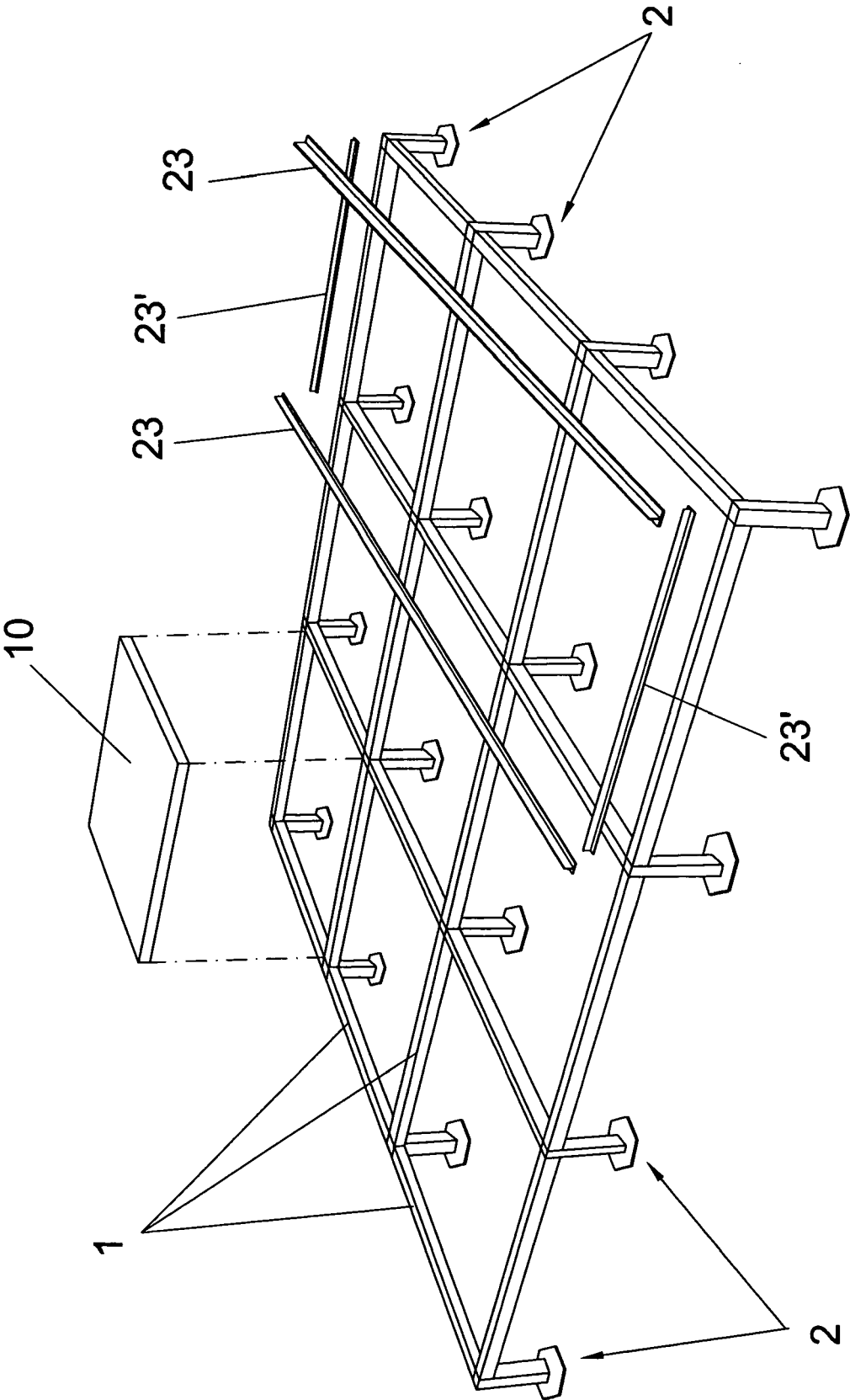


FIG. 7

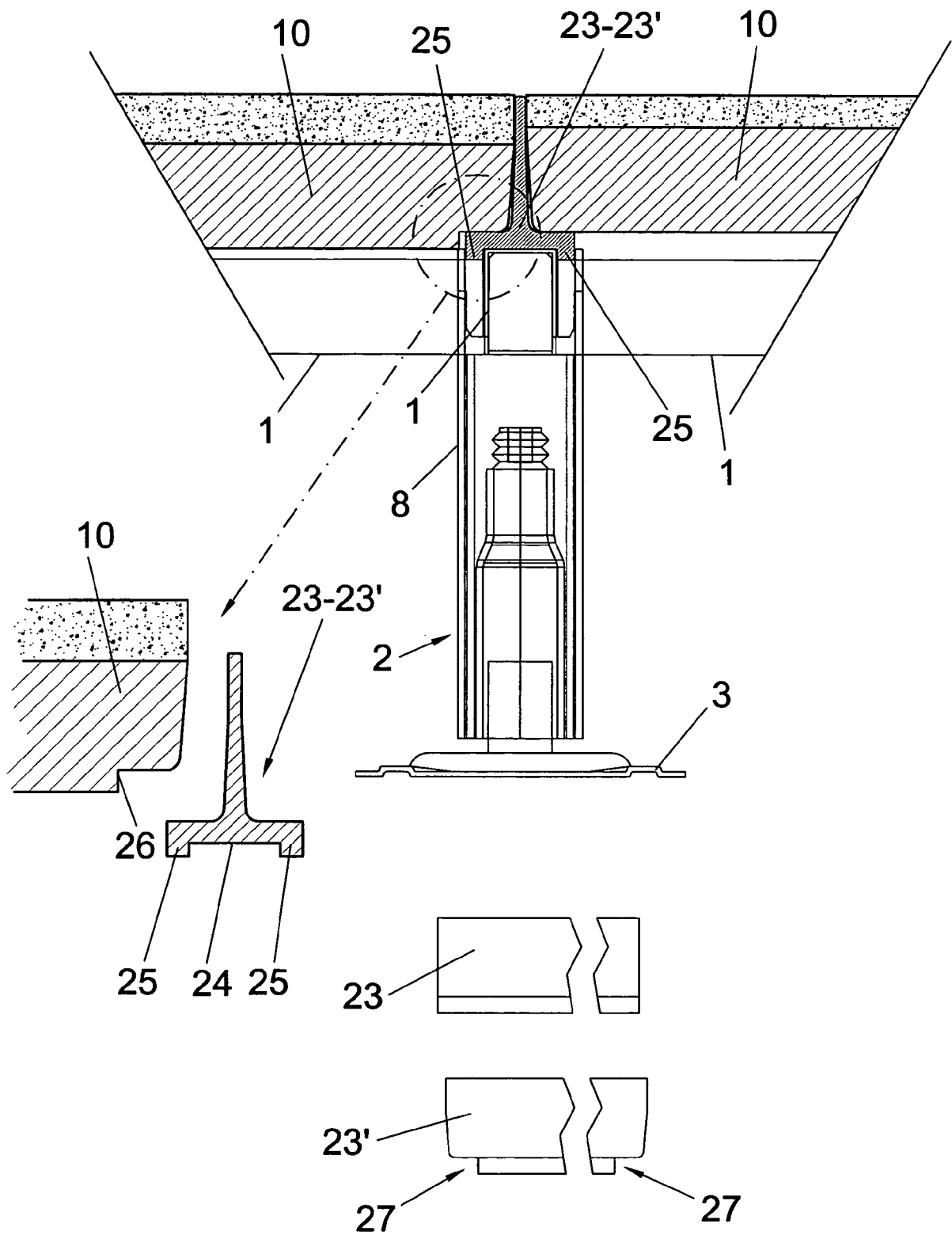


FIG. 8

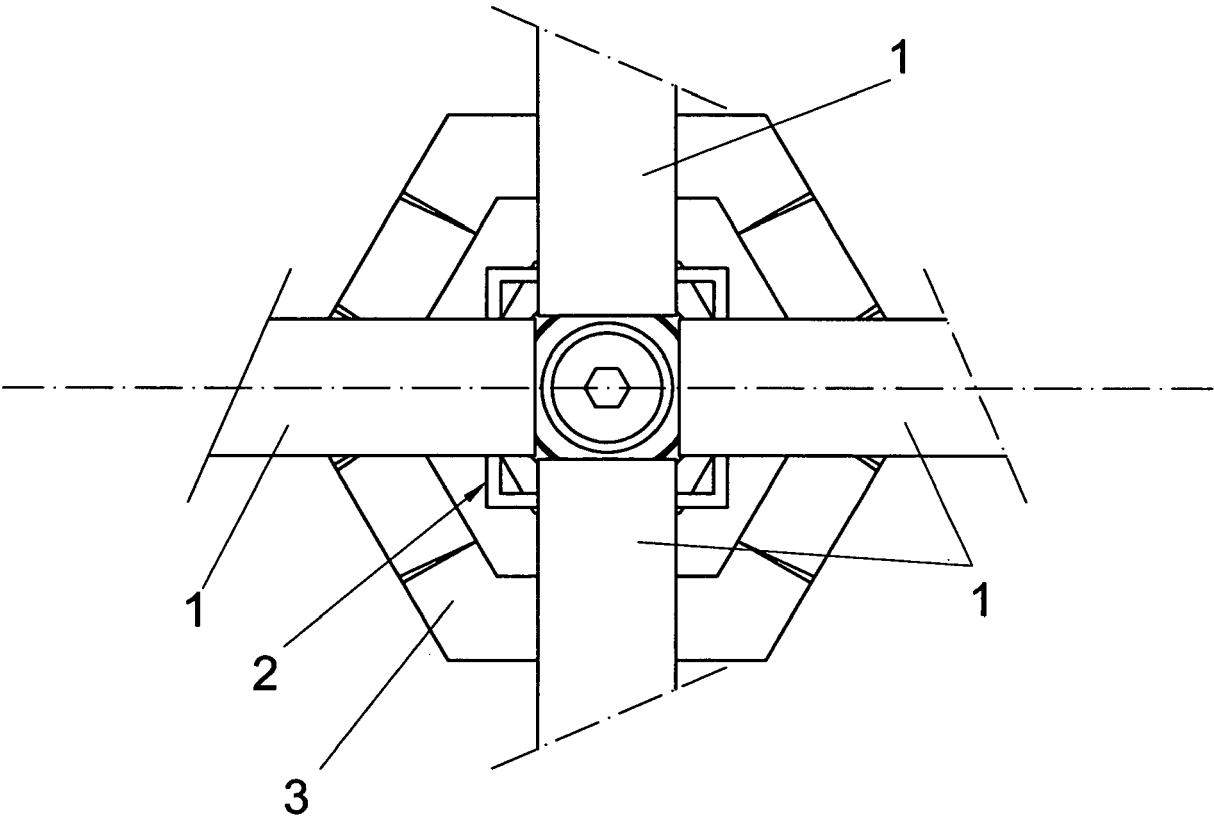


FIG. 9