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(54) **Elevated tiled floor, method for constructing of same, and support for a tiled floor**

(57) A tiled floor comprises a plurality of tiles and a plurality of supports. At least one of the supports comprises a carrier, which carrier comprises a bearing surface and a delimiting part. The side walls of a tile delimit a tile contour, and one of the corners of the tile rests on the bearing surface. Furthermore, the tile is provided

with a projecting part on its underside. A section of the side wall of this projecting part defines a delimiting surface. At least this section of the side wall lies inside the tile contour. The tile is positioned substantially in the horizontal direction with respect to the support by means of the delimiting part, which for this purpose interacts with the delimiting surface of the tile.

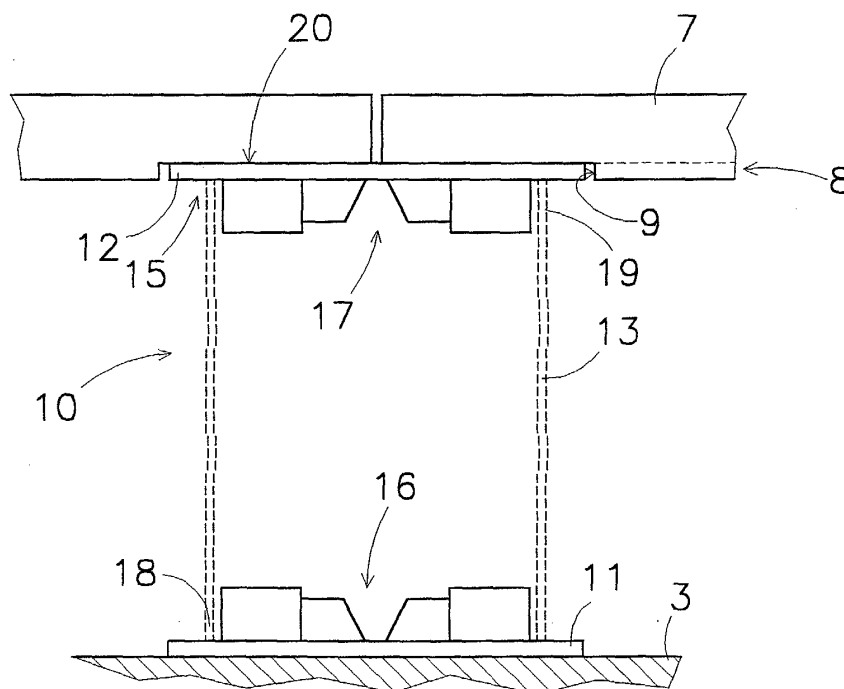


Fig 2

Description

[0001] The present invention relates to an elevated tiled floor in accordance with the preamble of claim 1.

[0002] Furthermore, the present invention relates to a support for an elevated tiled floor and to the fitting of a tiled floor which can be walked upon at a predetermined height with respect to the underlying surface, such as for example habitable roofs, roof gardens, paved areas above underground roofs, roof terraces and the like, and to the optional levelling of the raised tiled floor.

[0003] In practice, it is often the case for example that a door has a high "entry", i.e. there is a considerable difference in level between a pavement and a threshold of this door. A difference in level of this nature may be required in order to obtain a dampproofing action. This situation arises in particular in the case of apartment buildings of the type with walkways, connecting roofs between buildings, for example roofs of underground car parks between buildings with basements, or with large terraces on the roof of apartment buildings, shop or office premises, or school playgrounds. The level of the pavement may in this case be considerably lower than the threshold of the door which provides access to the terrace or walkway. In the case of a walkway, this causes difficulties to the inhabitants, in particular if they have mobility difficulties. To improve the accessibility of the buildings in question without affecting the damp-proof conditions, it is possible to fit an elevated tiled floor.

[0004] An elevated tiled floor in accordance with the preamble of claim 1 is known, for example, from US-A1 2002/0,121,583. This publication describes a support which comprises, inter alia, a cap, pillar and a base. The base can be placed onto a surface which is to be elevated. The pillar connects the base to the cap. The corners of four tiles can be placed onto the top side of the cap. Each tile is in turn supported by four supports. The tiles and the support are positioned with respect to one another in the horizontal direction with the aid of four spacers. These spacers are connected to the top side of the cap and are each located between two tile edges.

[0005] A drawback of the known elevated tiled floor is that the spacers are located between the tiles, where they are visible from above, the side of use. Dirt can visibly accumulate on the spacers. Moreover, spacers of this type do not allow the elevated tiled floor to be fitted without gaps between the tiles.

[0006] It is an object of the present invention to provide an elevated tiled floor which completely or at least partially overcomes the abovementioned drawbacks, or to provide an alternative.

[0007] This object is achieved with the aid of an elevated tiled floor in accordance with claim 1. The tiled floor comprises a plurality of tiles and a plurality of supports. At least one of the supports comprises a carrier, which carrier comprises a bearing surface and a delimiting part.

The side walls of a tile delimit a tile contour, and one of the corners of the tile rests on the bearing surface. Furthermore, on its underside the tile is provided with a projecting part. A section of the side wall of this projecting part defines a delimiting surface. At least this section of the side wall lies inside the tile contour. The tile is positioned substantially in the horizontal direction with respect to the support by means of the delimiting part, which for this purpose interacts with the delimiting surface of the tile.

[0008] The elevated tiled floor according to the invention has the advantage that the delimiting parts on the underside of the tile interact with the delimiting surface. Consequently, the delimiting parts are not visible from above. Also, it is not necessary, but is still possible, to use a gap between the tiles. Therefore, if desired the tiles can simply be placed with their corners abutting one another.

[0009] According to one embodiment, the delimiting part is formed by the side wall of the carrier. This side wall can interact with the delimiting surface and thereby delimits the respective positions in a surprisingly simple way. A further advantage is that there is no need for any projecting and/or raised components, which could be damaged during laying of the tiles or during use.

[0010] In another embodiment, the delimiting part comprises a delimiting element which extends upwards from the bearing surface. This makes it possible to employ a tile whose projecting part is supported on the bearing surface.

[0011] In particular, the delimiting element comprises a positioning rib which extends substantially horizontally and substantially perpendicular to the peripheral edge of the bearing surface. By virtue of the orientation of the positioning rib, it is possible to absorb a relatively great force using a relatively thin rib during positioning of the tile.

[0012] In a variant, the delimiting element comprises a raised edge which extends along substantially the entire peripheral edge of the bearing surface. An edge of this type provides a delimiting effect in a surprisingly simple way. This edge can function independently or may be connected to the optional positioning rib. This reinforces the attachment of the optional positioning rib to the bearing surface and reduces the risk of damage being caused by the tiles.

[0013] Further preferred embodiments are defined in the subclaims.

[0014] The invention also relates to a support for an elevated tiled floor, in accordance with claim 7. The support comprises a flexible pressure-distributing foot and a carrier.

[0015] The support according to the invention can be produced at low cost by plastics injection moulding, for example by injection moulding of polypropylene. This also provides the support with a relatively low weight, so that the total weight which is placed onto the underlying base can be minimized. Moreover, local repairs to the

surface beneath the tiled floor on the supports can easily be carried out, since it is merely necessary to remove a few tiles and possibly a few supports, rather than a large part of the entire structure.

[0016] Designing the pressure-distributing foot to be flexible makes it possible to absorb slight unevenness in the underlying base. Moreover, the pressure-distributing foot can be used without any risk of cutting into any roof covering which may be present.

[0017] In a preferred embodiment, the pressure-distributing foot and the carrier comprise, on their respective sides which face one another, coupling means for coupling to the ends of a supporting part. The coupling means comprise at least a first coupling body, which is raised up from the corresponding surface and has an inner periphery which can adjoin the outer periphery of the supporting part which can be coupled thereto.

[0018] The first coupling body preferably comprises an outer periphery which can adjoin the inner periphery of an alternative, box-like supporting part. This makes it possible to use at least two different supporting parts which each have a different dimension in the peripheral direction.

[0019] In a further embodiment, the coupling means comprise a second coupling body, which is raised up from the corresponding surface and has an outer periphery with a peripheral dimension which is smaller than the peripheral dimension of the inner periphery of the first coupling body. This means that it is even possible to use a third size of supporting part, and that it is also possible to use a supporting part with a relatively thick wall which will fit completely between the two coupling bodies.

[0020] Further embodiments of the support are described in the subclaims.

[0021] The present invention also relates to a method for constructing an elevated tiled floor according to the invention, comprising the steps of: determining supporting positions on a surface; placing a support onto the corresponding supporting positions; and placing tiles onto the supports, wherein the respective corners of the tiles rest on a carrier; and a projecting part which is formed on the underside of the tiles interacts with a delimiting part of the carrier.

[0022] The present invention also relates to a method for levelling a surface which can be walked on, comprising the steps of: determining supporting positions on the surface which can be walked on; creating an optical reference plane using an optical measuring instrument, such as a measuring laser; placing a pressure-distributing foot onto the corresponding supporting positions, and coupling a supporting part to the pressure-distributing foot; marking the level of the optical reference plane on the supporting part; matching the height of the supporting part to the level of the optical reference plane; placing a carrier onto the supporting part, and placing tiles onto the supports, the respective corners of the tiles resting on the carrier; and a projecting part

which is formed on the underside of the tiles bears against a delimiting part of the carrier.

[0023] Characteristic features and advantages of the present invention will be explained in more detail on the basis of the following description of preferred embodiments of a support for a tiled floor according to the invention with reference to the drawing, in which identical reference numerals denote identical or similar components, and in which:

Figure 1 diagrammatically depicts a cross section through a walkway with a tiled floor arranged thereon;

Figure 2 diagrammatically depicts a side view of a support with a bearing disc in accordance with the invention;

Figure 3A diagrammatically depicts a perspective view of a first embodiment of a pressure-distributing foot with coupling means;

Figure 3B diagrammatically depicts a perspective view of the bearing disc with coupling means shown in Figure 2;

Figures 4A-4C diagrammatically depict perspective views of the pressure-distributing foot shown in Figure 3A with various supporting parts coupled thereto;

Figure 5 diagrammatically depicts a side view of a support according to the invention with retaining part;

Figure 6 diagrammatically depicts a perspective view of a retaining part with a regular pattern of coupling pins;

Figure 7 diagrammatically depicts a perspective view of a coupling plate with a regular profile of coupling holes;

Figure 8 diagrammatically depicts a perspective view of a second embodiment of a pressure-distributing foot with coupling means;

Figure 9 diagrammatically depicts a cross section through a support with a bearing dish in accordance with the invention;

Figure 10 shows a view of a part of a tile from below;

Figure 11 diagrammatically depicts a perspective view of the underside of a bearing dish;

Figure 12 diagrammatically depicts a perspective view of the top side of the bearing dish shown in Figure 11.

[0024] Figure 1 shows a diagrammatically depicted walkway 1 and a section of an outer wall 2 of, for example, an apartment building. The walkway 1 has a base 3 which can be walked upon and is substantially planar. A tiled floor 4, formed by separate tiles 5, which in the example shown are placed directly onto the base 3, is arranged on the base 3. These tiles 5 may be standard tiles which are provided on their underside with, for example, recesses allowing rain water to flow away, or tiles which are provided with indentations in the form of quar-

ter-circles at their corners.

[0025] Furthermore, Figure 1 diagrammatically depicts a threshold 6 of an access door, which is not shown for the sake of simplicity of illustration. The difference in height between the top of the threshold 6 and the warping surface of the tiled floor 4 is denoted by the letter H. In practice, this difference in height H may amount to 10 cm or more. Between the tiled floor 4 and the outer wall 2 there is a gap-like space which is denoted by the letter S and is used to drain away rain water along the outer wall 2.

[0026] It should be noted that the invention is not restricted to use on a walkway, but rather is suitable for raising and/or levelling any desired surface, such as for example habitable roofs, roof gardens, paved areas above basement roofs, roof terraces, roof promenades and the like.

[0027] Figure 2 shows a first embodiment of the invention, in the form of a tile 7, together with a support 10 for use in a raising and/or levelling construction for raising and/or levelling a tiled floor, such as for example the tiled floor 4 shown in Figure 1.

[0028] The tile 7 has a projecting part 8 which is formed integrally on the underside of the tile 7, when the tile is in use. A side wall 9 of the projecting part 8 is set back from the contour of the tile 7 and forms a delimiting surface 9. The projecting part 8 is set back in such a manner as to form an indentation in the form of a quarter circle.

[0029] The support 10 comprises a flexible pressure-distributing foot 11 and a rigid carrier, i.e. a carrier which is more rigid than the pressure-distributing foot 11, in the form of a round bearing disc or plate 12 for bearing and supporting at least a corner of the tile 7. A supporting part 13 is positioned between the pressure-distributing foot 11 and the bearing disc 12. In the present illustration, the supporting part 13 is shown in highly diagrammatic form by means of dashed lines.

[0030] During use, the pressure-distributing foot 11 rests on the underlying base 3, and the corners of the tiles 7 rest on the top side 20 of the bearing plate 12. The projecting part 8 of the tile 7 is situated next to the bearing disc 12, i.e. the quarter-circle indentation of the tile 7 rests on the bearing disc 12. The side of the bearing disc 12 functions as a delimiting part and, together with the delimiting surface 9 of the projecting part 8, defines the positioning of the tile 7 and the support 10 with respect to one another.

[0031] The pressure-distributing foot 11 is flexible and preferably has a circular periphery, but may also have any other desired contour. Designing the pressure-distributing foot 11 to be flexible makes it possible to absorb slight unevenness in the underlying base. Moreover, the flat underside of the pressure-distributing foot 11 can be used without any risk of it cutting into or damaging a roof covering which may be present on the base 3. The flexibility of the pressure-distributing foot 11 can advantageously also be employed separately from the remain-

ing aspects of the invention.

[0032] The bearing plate 12 is preferably of relatively rigid design, so that it will not be deformed excessively under the weight of the tiles 7 which are to be positioned thereon.

[0033] The pressure-distributing foot 11 and the bearing disc 12 are provided, at their respective sides 14 and 15, respectively, facing towards one another, with coupling means 16 and 17, respectively, for coupling to the ends 18, 19 of the supporting part 13. The supporting part 13 is, for example, a hollow cylinder or a hollow rectangular or square box section, part of the inner surface of which bears against at least a part of the coupling means 16 and 17.

[0034] The support 10 is preferably produced by plastics injection moulding, for example by injection moulding of polypropylene. This provides the support 10 with a relatively low weight, so that the overall weight which is placed onto the base 3 which can be walked upon can be minimized.

[0035] Figure 3A shows the pressure-distributing foot 11 in perspective, clearly illustrating the coupling means 16.

[0036] The coupling means 16 comprise at least a first coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 21a-21d, and a second coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 23a-23d. The wall elements 21a-21d define a surface 22 which faces radially inwards, substantially towards the centre of the pressure-distributing foot 11. Furthermore, the wall elements 21a-21d define a surface 24 which faces radially outwards.

[0037] These interrupted surfaces 22, 24 form a raised edge having a periphery which can adjoin the outer periphery or the inner periphery, respectively, of a (hollow) supporting part. In the case shown, it is possible for the surface 22 to adjoin the outer periphery of a hollow cylinder (and also a solid cylinder, if the wall elements 23a-23d are omitted), and the surface 24 can adjoin the inner periphery of a hollow box section which has a square periphery. The wall elements 21a-21d therefore have a substantially triangular contour. The wall elements 21a-21d are shown as being solid in the figure, but it is eminently possible for them also to be of thin-walled design, so that less material is required to form the pressure-distributing foot and less shrinkage of the wall elements 21a-21d will occur while they are being injection-moulded.

[0038] The wall elements 23a-23d of the second coupling body are coupled in an analogous way to cylindrical supporting parts of various diameters. It is even possible to use a cylindrical supporting part with a large wall thickness which then fits into the space between the opposite wall elements 21a-23d. For this purpose, the wall elements 21a-21d and 23a-23d are concentric with respect to one another.

[0039] Figure 3B shows a perspective view of the

bearing disc 12, with the coupling means 17. The coupling means 17 comprise at least a first coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 25a-25d, a second coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 26a-26d, and a third coupling body, which is raised up from the corresponding surface and comprises a square retaining edge 27. The retaining edge 27 is provided, on its radially outer side, with reinforcing ribs 28, which both reinforce the attachment of the edge to the surface 15 and increase the rigidity of the bearing disc 12 itself.

[0040] The wall elements 25a-25d define a surface which faces radially inwards, substantially towards the centre of the bearing disc 12, and which can adjoin the outer periphery of a (hollow) supporting part. Furthermore, the wall elements 25a-25d define a radially outwardly facing surface for receiving a square, hollow supporting part. A square, hollow supporting part of this type may also be received from its outer side by the square retaining edge 27. If the wall thickness of the hollow, square supporting part corresponds to the distance between the retaining edge 27 and the elements 25a-25d, it is retained from two sides simultaneously. The wall elements 26a-26d of the second coupling body can be coupled to cylindrical supporting parts of various diameters both via their inwardly facing surface and by means of their outwardly facing surface.

[0041] The supporting part which is to be used preferably has the same cross-sectional and peripheral dimensions over its entire length, and the coupling means 16 on the pressure-distributing foot 11 and the coupling means 17 on the bearing plate 12 are preferably similar. The flexibility of the pressure-distributing foot 11 may advantageously also be employed separately from the other aspects of the invention.

[0042] Figure 4A shows the pressure-distributing foot 11 together with a supporting part 13' coupled to it. The supporting part 13' bears against the radially inwardly facing surface of the wall elements 23a-23d. The supporting part 13' has the smallest diameter which can be coupled to the pressure-distributing foot 11 shown. In this figure, the supporting part 13' is illustrated as a hollow cylinder, but it may, of course, also be a solid cylinder.

[0043] Figure 4B shows the pressure-distributing foot 11 with a supporting part 13" coupled to it. The supporting part 13" bears against the radially inwardly facing surface of the wall elements 21a-21d.

[0044] Figure 4C shows the pressure-distributing foot 11 together with the supporting part 13 from Figure 2 coupled to it. The supporting part 13 is a hollow box section with a cross-bracing 29 provided therein. The inner side of the supporting part 13 bears against the radially outwardly facing surface 24 of the wall elements 21a-21d.

[0045] The tiled floor 4 which is to be elevated may

be retained along its edges with the aid of a retaining part 30. This is shown in Figure 5. The retaining part 30 is substantially L-shaped in cross section, formed by a supporting surface 31 and a supporting edge 32 which extends substantially perpendicular to the supporting surface. The supporting edge 32 is formed as a double-folded edge, with space remaining between the two limbs 32a and 32b in order for at least a section of a shielding partition 33 to be received in this space. The shielding partition 33 is used to shield the space 40 beneath the tiles 5 and closes off access to the space 40. The supporting edge 32 is advantageously provided with a sharp edge 35, which facilitates introduction of the shielding partition 33.

[0046] An alternative way of fitting the shielding partition 33 is, for example, for the shielding partition 33 to be coupled directly to the supporting element 13. This option is not shown in more detail.

[0047] In the case shown, a coupling plate 36 is provided for producing a coupling between the retaining part 30 and the supporting part 13. The coupling plate 36 is provided with coupling means 37 on one side; these coupling means are similar to the coupling means 16 of the pressure-distributing foot 11 and to the coupling means 17 of the bearing disc 12, in order to produce a coupling to the supporting part 13. Furthermore, complementary coupling means which act between the coupling plate 36 and the retaining part are provided. This is shown in more detail with reference to Figures 6 and 7.

[0048] Figure 6 shows the retaining part 30 as seen from its underside 39. Two parallel rows of coupling pins 40, which can be coupled to complementary coupling holes 41 provided in the surface of the coupling plate 36 (cf. Figure 7), are provided in a regular pattern on the underside 39 of the retaining part 30. The coupling holes 41 are likewise arranged in a regular pattern and in two parallel rows.

[0049] The retaining part 30 and the coupling plate 36 are coupled to one another by the coupling pins 40 being inserted into the coupling holes 41. As a result of a plurality of coupling pins 40 and a plurality of coupling holes 41 being provided, it is possible for the retaining part 30 to be placed onto the coupling plate 36 in various positions. This allows the position of the supporting edge 32 (cf. Figure 5) to be matched to the situation as required, for example close to the support 13 or well away from the support 13. A retaining part 30 of this type may advantageously also be used separately from the other aspects of the invention.

[0050] The coupling means 37 comprise at least a first coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 125a-125d, and a second coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 126a-126d.

[0051] The wall elements 125a-125d define a surface which faces radially inwards, substantially towards the

centre of the coupling plate 36, and can adjoin the outer periphery of a (hollow) supporting part, for example the supporting part 13" (Fig. 4b). Furthermore, the wall elements 125a-125d define a radially outwardly facing surface for receiving a square, hollow supporting part, such as the supporting part 13 (Fig. 4c).

[0052] The wall elements 126a-126d of the second coupling body may be coupled to cylindrical supporting parts of various diameters, for example to supporting part 13', both via their inwardly facing surface and by means of their outwardly facing surface.

[0053] The coupling plate 36 and the retaining part 30 preferably have a combined thickness which corresponds to the thickness of the bearing disc 12. This means that the length of the supporting part 13 does not have to be adapted.

[0054] It is advantageous for the regular pattern of coupling holes 41 to be arranged in the pressure-distributing foot 11. The pressure-distributing foot 11 can then be used in two ways: as a pressure-distributing foot and as a coupling plate 36. Moreover, the pressure-distributing foot 11 is already thinner than the bearing disc 12, and consequently it is eminently suitable for this purpose.

[0055] Fig. 8 shows an alternative embodiment of a pressure-distributing foot 211, with coupling means 216. The coupling means 216 comprise at least a first coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 221a-221d, a second coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 223a-223d, and a third coupling body, which is raised up from the corresponding surface and is formed by a substantially square retaining edge 227. The retaining edge 227 is provided on its radially outer side with reinforcing ribs 228, which both reinforce the attachment of the edge and increase the rigidity of the pressure-distributing foot 211. The wall elements 221a-221d define a surface 222 which faces radially inwards, substantially towards the centre of the pressure-distributing foot 211. Furthermore, the wall elements 221a-221d define a radially outwardly facing surface 224.

[0056] These interrupted surfaces 222, 224 form a raised edge with a periphery which can adjoin the outer periphery or inner periphery, respectively, of a (hollow) supporting part. In the situation shown, the surface 222 can adjoin the outer circumference of a hollow cylinder, and the surface 224 can adjoin the inner periphery of a hollow box section with a square periphery.

[0057] The wall elements 223a-223d of the second coupling body are provided with reinforcing ribs 229 for increasing the rigidity of the pressure-distributing foot 211. The wall elements 223a-223d can be coupled to a hollow, cylindrical supporting part by means of their radially outwardly facing surface.

[0058] The retaining edge 227 can be coupled to the outer wall of a square, hollow box section by means of

its radially inwardly facing side walls.

[0059] The present invention also relates to a method for fitting a tiled floor 4, which can be walked upon, onto supports 1 in accordance with the invention. In particular, the invention also relates to a method for elevating and/or levelling a tiled floor 4 of this type using a plurality of supports 1 in accordance with the invention.

[0060] Fig. 9 shows a cross section through an alternative embodiment of the invention on an underlying base 303, in the form of a tile 307, together with a support 310 for elevating or levelling a tiled floor. The tile 307 has a projecting part 308 which is formed integrally on the underside of the tile 307 when the latter is in use. The projecting part 308 is located at each of the corners of the tile 307. This defines a recess between the underside of the tile and the base 303, allowing rain water to drain away.

[0061] The projecting part 308 is delimited on two sides by side walls which follow the contour of the tile 307, and also by a rounded side wall 309 in the form of a quarter circle (Fig. 10) inside the contour of the tile 307. This quarter-circle part 309 of the side wall functions as a delimiting surface 309.

[0062] The support 310 comprises a pressure-distributing foot 311 and a carrier, in the form of a round bearing dish 312 for bearing and supporting at least a corner of the tile 307. A supporting part 313 is positioned between the pressure-distributing foot 311 and the bearing dish 312. In this figure, the supporting part 313 is indicated highly diagrammatically, by means of dashed lines. The pressure-distributing foot 311 and the supporting part 313 may be of a similar design, as shown above.

[0063] The round bearing dish 312 comprises coupling means 317 on its side 315 which faces the pressure-distributing foot 311 and a supporting or bearing surface 320 on its side which faces away from the pressure-distributing foot 311.

[0064] Figure 11 shows a perspective view of the bearing dish 312, together with the coupling means 317. The coupling means 317 comprise at least a first coupling body, which is raised up from the corresponding surface and comprises four separate hollow wall elements 325a-325d, a second coupling body, which is raised up from the corresponding surface and comprises four separate wall elements 326a-326d, and a third coupling body, which is raised up from the corresponding surface and comprises a square retaining edge 327. The coupling bodies can interact with various supporting parts 313 in similar ways to those which have been described above in connection with the other embodiments.

[0065] On its radially outer side, the retaining edge 327 is provided with reinforcing ribs 328. The wall elements 326a-326d are provided with reinforcing ribs 329. The reinforcing ribs 328 and 329 reinforce the attachment of the corresponding coupling bodies to the surface 315 and increase the rigidity of the bearing disc

312.

[0066] Figs. 9 and 12 show that the bearing dish 312 comprises delimiting elements in the form of a raised edge 350 with drainage openings 351 and positioning ribs 352. The raised edge 350 projects upwards from the bearing surface 320 and also extends along the peripheral edge of the bearing surface 320. The positioning ribs 352 extend in the horizontal direction, perpendicular to the peripheral edge, and in the vertical direction perpendicularly from the bearing surface 320. The top of the positioning ribs 352 runs obliquely downwards towards the centre of the bearing surface 320.

[0067] During use, the pressure-distributing foot 311 rests on the base 303, and the corners of the tiles 307, in particular the underside of the projecting parts 308, rest on the bearing surface 320 of the carrier 312. The positioning ribs 312 and the delimiting surface 309 of the projecting part 308 of the tile 307 determine the positioning of the tile 307 and the support 310 with respect to one another.

[0068] The method for elevating a tiled floor 4 comprises the steps of determining various supporting positions on the underlying base 3 (which can be walked upon) onto which the supports 1 are to be placed, so that at least the corners of the tiles 5 are supported. Then, the supports 1 are placed onto the corresponding supporting positions and the tiles 7 are laid onto the supports 1, with the corners of the tiles 7 resting on the corresponding bearing discs 12.

[0069] In this way, a tiled floor 4 which can be walked upon is arranged at a fixed height with respect to an underlying base 3. However, the situation may arise whereby the underlying base 3 is arranged so as to slope, for example in order to facilitate drainage of rainwater. In such a situation, it may be desirable for the tiled floor 4 to be laid level. However, this requires the length of the various supporting parts 13 to be modified.

[0070] A method of this type comprises the steps of determining supporting positions on the base 3, which can be walked upon, and then creating an optical reference plane using an optical measuring instrument, such as a measuring laser. Then, the various pressure-distributing feet 11 with a supporting part coupled thereto are placed onto the corresponding supporting positions. Then, the level of the optical reference plane is marked on the various supporting parts, and the height of the supporting parts in question is matched to the level of the optical reference plane. Last of all, the various bearing discs 12 and, where required, the retaining parts 30 and shielding partitions 33 are fitted and the tiles 7 are placed onto the supports. The methods described for elevating and levelling also apply mutatis mutandis to the tiles and supports of the other embodiments.

[0071] In addition to the embodiments shown, numerous variants are possible within the scope of the invention. For example, the bearing disc does not have to be round, but rather may also be oval, triangular, rectangular, square or polygonal in design. It is also possible to

use carriers which in relative terms are thicker, or shaped differently, than the bearing discs and dishes shown. The same is also true of the pressure-distributing foot.

[0072] It is also possible for the tiles to be of different shapes, such as for example triangular, rectangular or polygonal. The projecting part on the underside of the tile may be either larger or smaller than shown. The shape of the delimiting surface of the projecting part preferably adjoins the delimiting part of the carrier, but it is sufficient just for the delimiting surface and the delimiting part to be able to touch one another at some point and at some time in order to perform their positioning action. This may be both during fitting of the tiles onto the supports and during use of the elevated tiled floor. In this case, there may be so much play between the delimiting surface and the delimiting part for them not to have to come into contact with one another while they are being fitted and used, so that they only perform their positioning action if the tile is, for example, at risk of being laid or pushed too far from the centre of the carrier.

[0073] The positioning ribs do not have to be continuous wall parts, but rather may also, for example, be substantially strut-like elements which extend on an inclined or curved path from the bearing surface towards the raised edge. The raised edge does not have to run continuously all the way around the peripheral edge of the bearing surface, but rather may also be formed by a plurality of elements which are positioned separately from one another around the peripheral edge.

[0074] Furthermore, the elevated tiled floor may be provided on an inclined, sloping base. If the supports do not (fully) compensate for this, the tiled floor will also not be completely horizontal.

Claims

1. Elevated tiled floor, comprising a plurality of tiles (7) and a plurality of supports (10), in which
 - at least one of the supports (10) comprises a carrier (12), which carrier (12) comprises a bearing surface (20) and a delimiting part,
 - at least one of the tiles (7) delimits a tile contour by means of its side walls and rests on the bearing surface (20) by means of one of its corners, and the tile (7) is positioned substantially in the horizontal direction with respect to the support (10) by the delimiting part, **characterized in that**
 - the tile (7) is provided with a projecting part (8) on its underside,
 - a section of the side wall of the projecting part (8) defines a delimiting surface (9) which lies inside the tile contour, and
 - the delimiting part interacts with the delimiting surface (9) in order to effect a substantially horizontal positioning.

2. Elevated tiled floor according to claim 1, in which the delimiting part is formed by the side wall of the carrier (12) and interacts with the delimiting surface (9) of the projecting part (8), which part is located next to the carrier (12). 5
3. Elevated tiled floor according to claim 1, in which the tile (307) rests on the bearing surface (320) by means of the underside of the projecting part (308), and 10

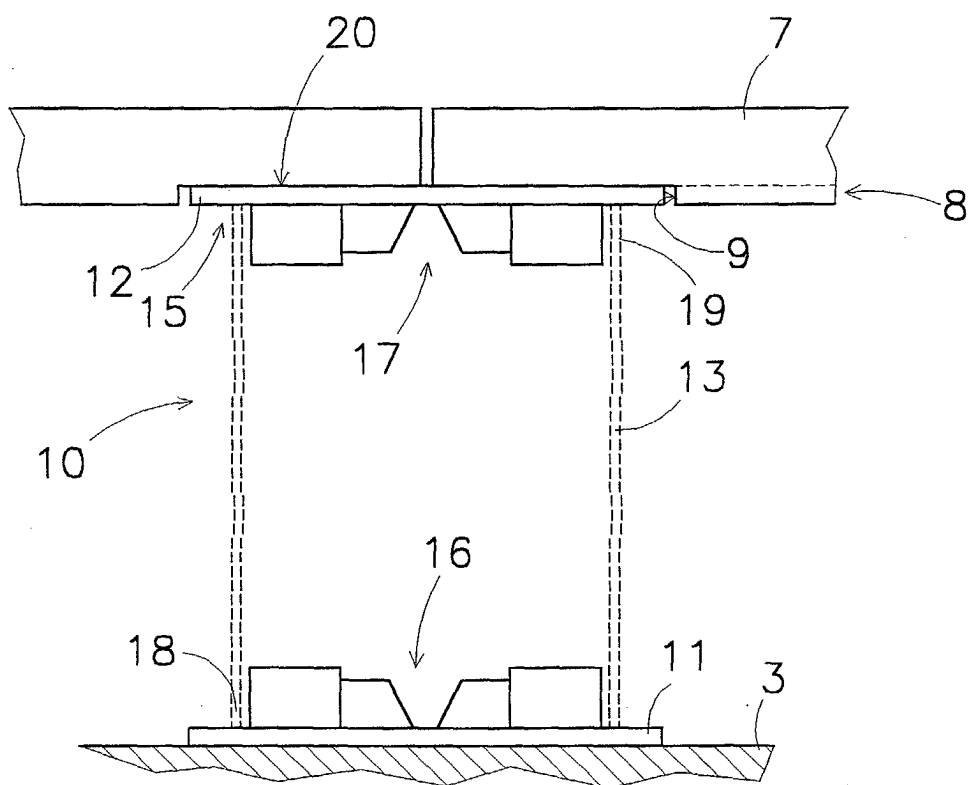
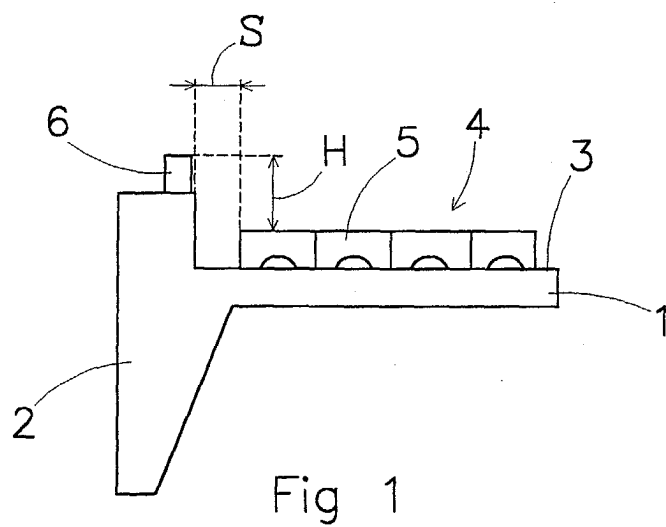
the delimiting part comprises a delimiting element (350, 352) which extends upwards from the bearing surface (20).
4. Elevated tiled floor according to claim 3, in which the delimiting element comprises a positioning rib (352) which extends substantially in the horizontal direction, and substantially perpendicular to the peripheral edge of the bearing surface (320). 15

20
5. Elevated tiled floor according to claim 3 or 4, in which the delimiting element comprises a raised edge (352) which extends along substantially the entire peripheral edge of the bearing surface (320). 25
6. Elevated tiled floor according to one of the preceding claims, in which the carrier (12) comprises a round bearing disc (12).
7. Support for an elevated tiled floor, in particular according to one of the preceding claims, comprising a pressure-distributing foot (11) and a carrier (12), **characterized in that** the pressure-distributing foot (11) is flexible. 30

35
8. Support according to claim 7, in which the pressure-distributing foot (11) and the carrier (12) are provided, on their respective sides which face one another, with coupling means (16, 17) for coupling to the ends of a supporting part (13), 40

the coupling means (16, 17) comprising at least a first coupling body (21a-21d), which is raised up from the associated side and has an inner periphery (22) which adjoins the outer periphery of the supporting part (13) which can be coupled thereto. 45
9. Support according to claim 8, in which the first coupling body (21a-21d) comprises an outer periphery (24) which can adjoin the inner periphery of an alternative, box-like supporting part (13). 50
10. Support according to one of claims 8-9, in which the coupling means (16, 17) comprise a second coupling body (23a-23d), which is raised up from the associated side and has an outer periphery with a peripheral dimension which is smaller than the peripheral dimension of the inner periphery of the first coupling body (21a-21d). 55
11. Support according to one of claims 8-10, in which the outer periphery of the first coupling body (21a-21d) is substantially prism-shaped, preferably square.
12. Support according to one of claims 8-11, in which the first coupling body (21a-21d) and the second coupling body (23a-23d) comprise a plurality of, preferably four, separate wall elements.
13. Support according to one of claims 7-12, in which a retaining part (30) is also provided, for retaining the tiled floor via a side edge (32b), or at least a section thereof, which retaining part (30) is substantially L-shaped in cross section, formed by a supporting surface (31) and a supporting edge (32) which extends substantially perpendicular to the supporting surface, so that the side edge of the tiles (7) can bear against the supporting edge (32).
14. Support according to claim 13, in which a shielding partition (33) is also provided for the purpose of shielding the space beneath the tiled floor, it being possible for the shielding partition (33) to be coupled to the support (10).
15. Support according to claim 14, in which the shielding partition (33) can be coupled to the retaining part (30).
16. Support according to claim 15, in which the supporting edge (32) of the retaining part (30) is bent upwards once out of the supporting surface (31) and is bent back at least once, so that the supporting edge (32) is double-walled, and in which a receiving space, which is accessible from the underside of the retaining part (30) and serves to receive a section of the shielding partition (33), is created between the two walls (32a, 32b) of the supporting edge (32).
17. Support according to one of claims 13-16, in which a coupling plate (36) is provided for producing a coupling between the retaining element (30) and the supporting part (13), for which purpose the coupling plate (36) is provided with coupling means (37) which are comparable to the coupling means (16, 17) of the pressure-distributing foot (11) and/or the bearing disc, and in which complementary coupling means (40, 41), which act between the coupling plate (36) and the retaining part (30), are provided.
18. Support according to claim 17, in which the complementary coupling means comprise coupling holes (41) and coupling pins (40), a regular pattern of the coupling holes (41) being arranged in the surface of the coupling plate (36), which coupling holes (41) are designed to receive the coupling pins (40) arranged on the underside of the retaining part (30).

19. Support according to claim 17 or 18, in which the coupling plate (36) and the retaining part (30) have a combined thickness which corresponds to the thickness of the carrier (12). 5
20. Support according to one of claims 18-19, in which the pressure-distributing foot (11) is provided in its surface with the regular pattern of coupling holes (41) and can also function as a coupling plate (36). 10
21. Support according to one of claims 7-20, in which the coupling means (16, 17) on the pressure-distributing foot (11) and the coupling means (16, 17) on the carrier (12) are identical. 15
22. Method for constructing an elevated tiled floor according to one of claims 1-6, comprising the steps of:
- determining supporting positions on a surface (3); 20
 - placing a support (10) onto the corresponding supporting positions; and
 - placing tiles (7) onto the support (10), wherein 25
 - the respective corners of the tiles (7) rest on a carrier (12); and
 - a projecting part (8) which is formed on the underside of the tiles (7), by means of a delimiting surface (9), interacts with a delimiting part of the carrier (12). 30
23. Method according to claim 22, for levelling a surface (3) which can be walked on, also comprising the step of: 35
- creating an optical reference plane using an optical measuring instrument, such as a measuring laser;
 - wherein the operation of placing a support (10) onto the corresponding supporting positions comprises the following substeps: 40
 - placing a pressure-distributing foot (11) onto the corresponding supporting positions, and coupling a supporting part (13) to the pressure-distributing foot (11); 45
 - marking the level of the optical reference plane on the supporting part (13);
 - matching the height of the supporting part (13) to the level of the optical reference plane; 50
 - placing a carrier (12) onto the supporting part (13). 55



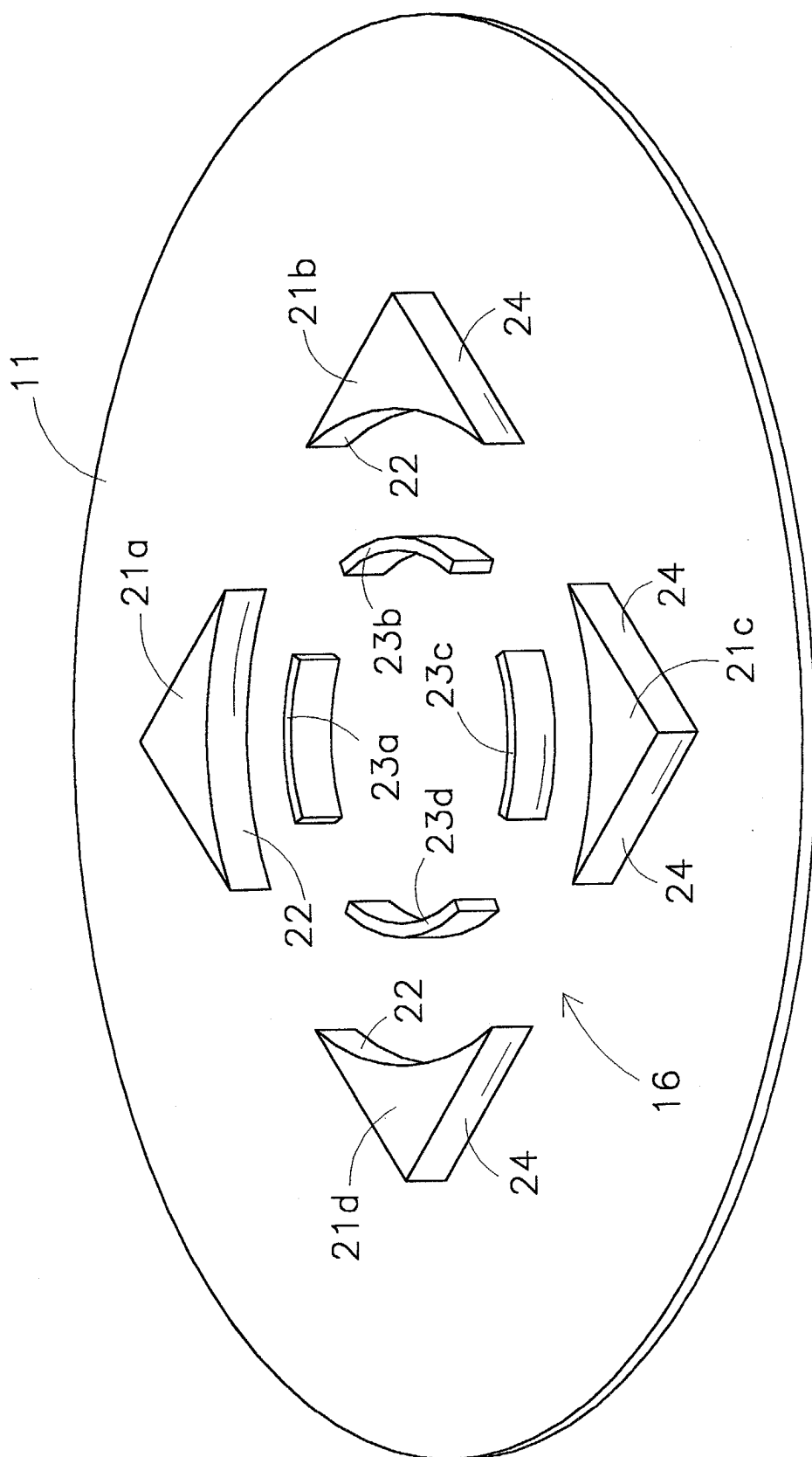


Fig 3a

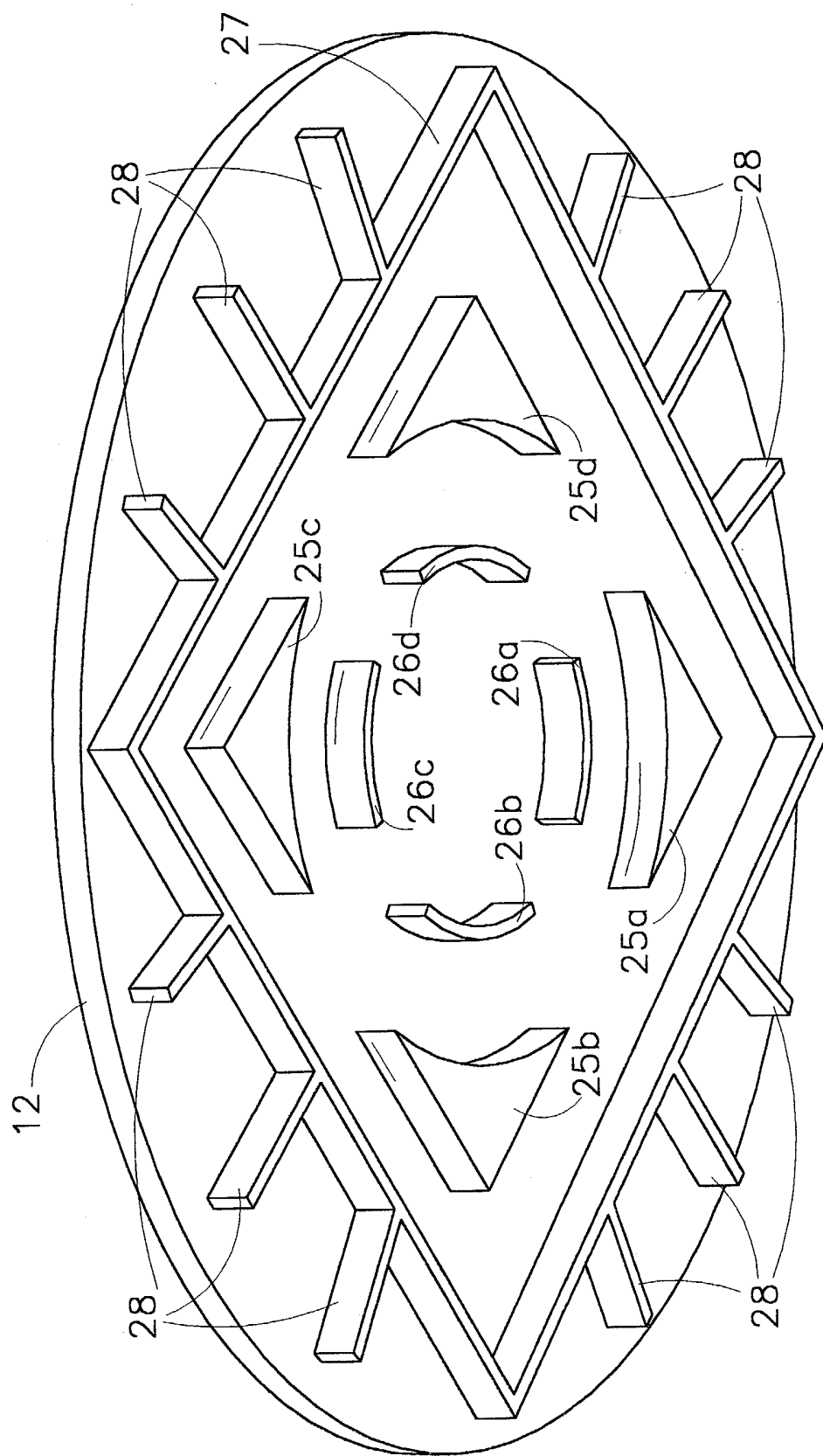


Fig 3b

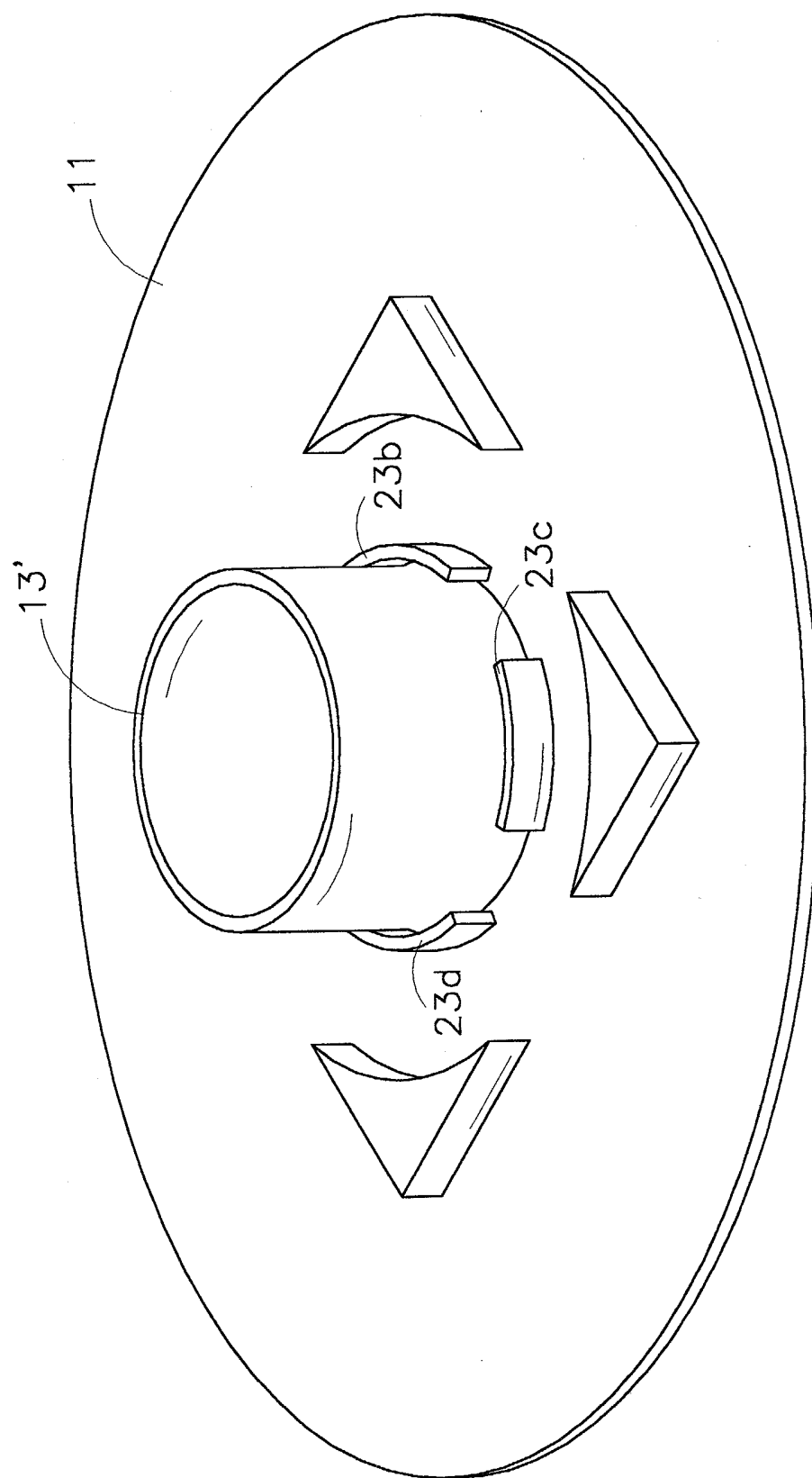


Fig. 4a

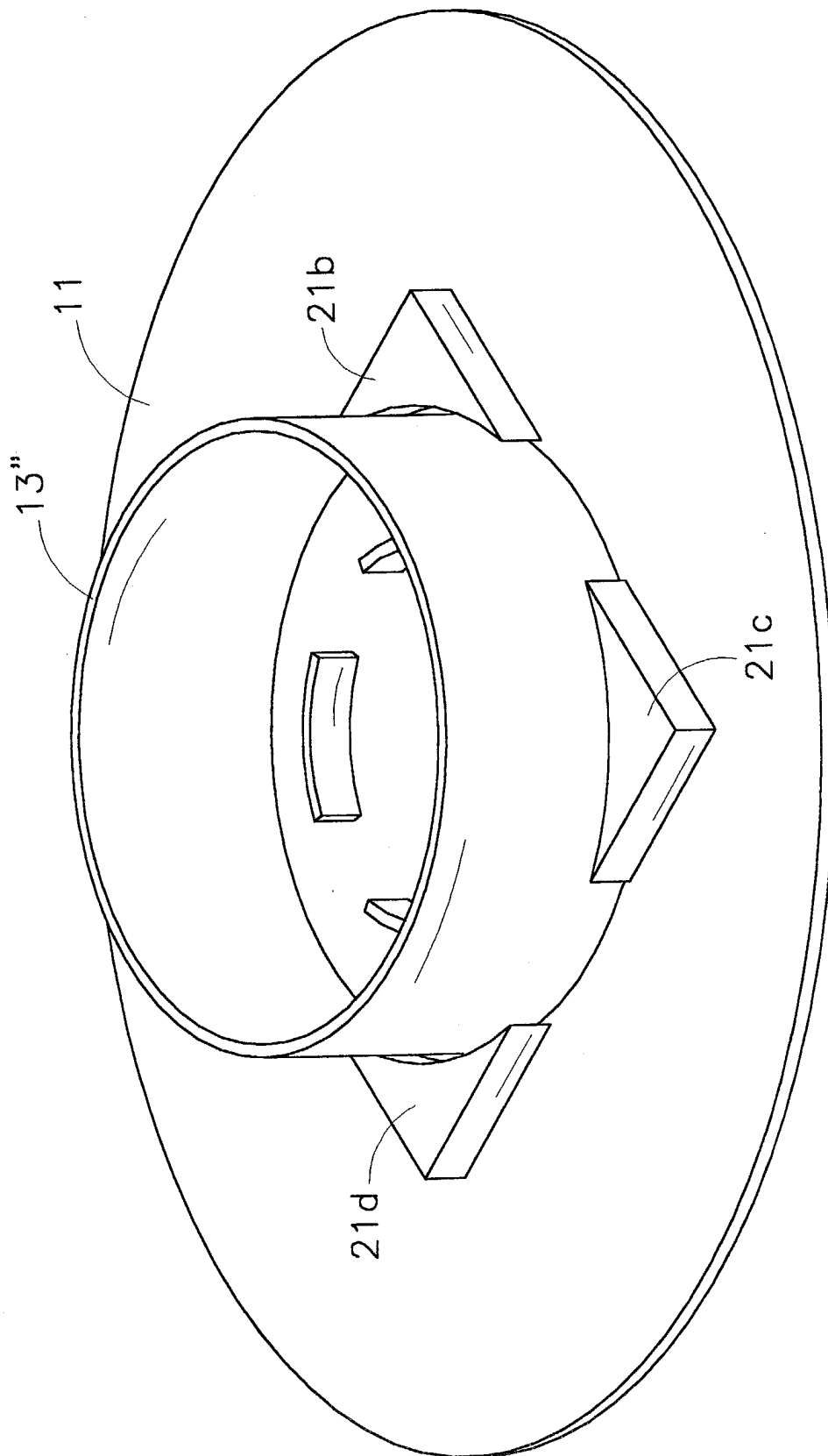


Fig 4b

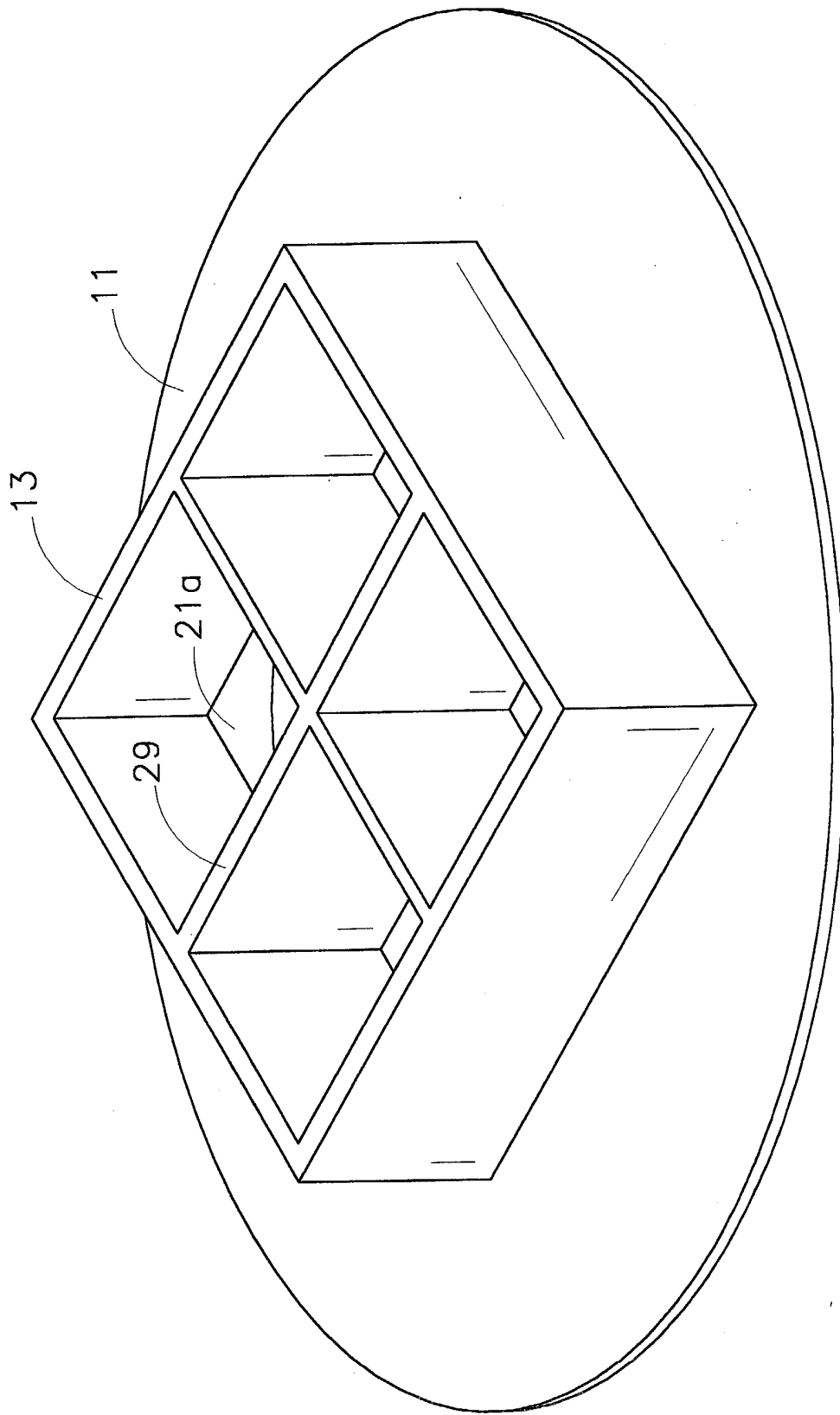


Fig 4c

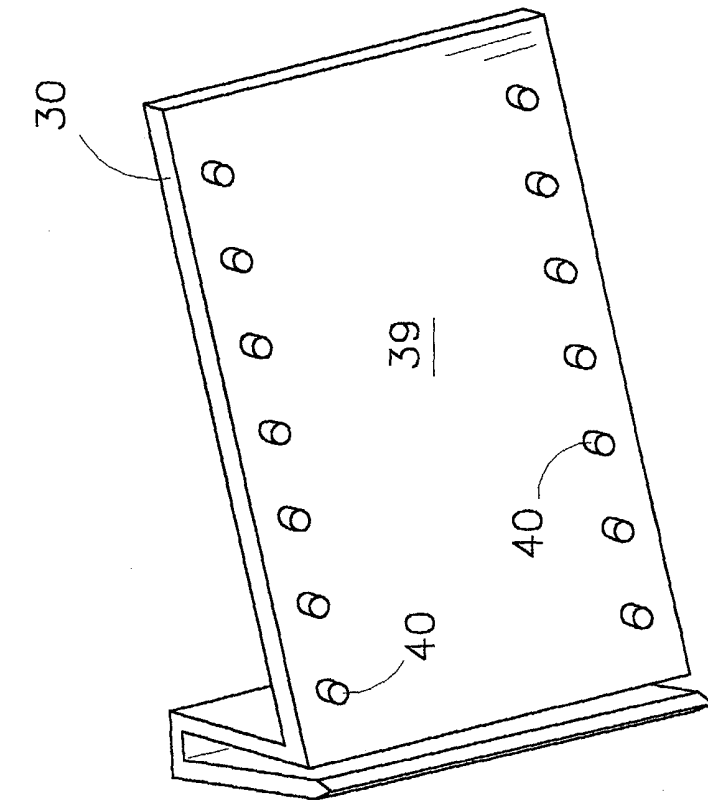


Fig 6

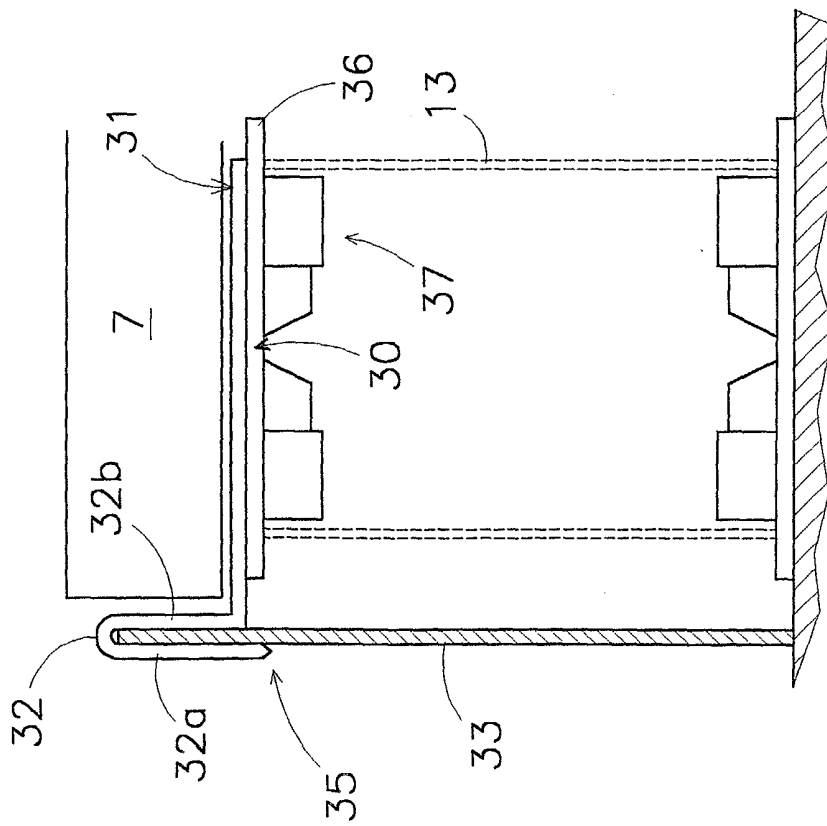


Fig 5

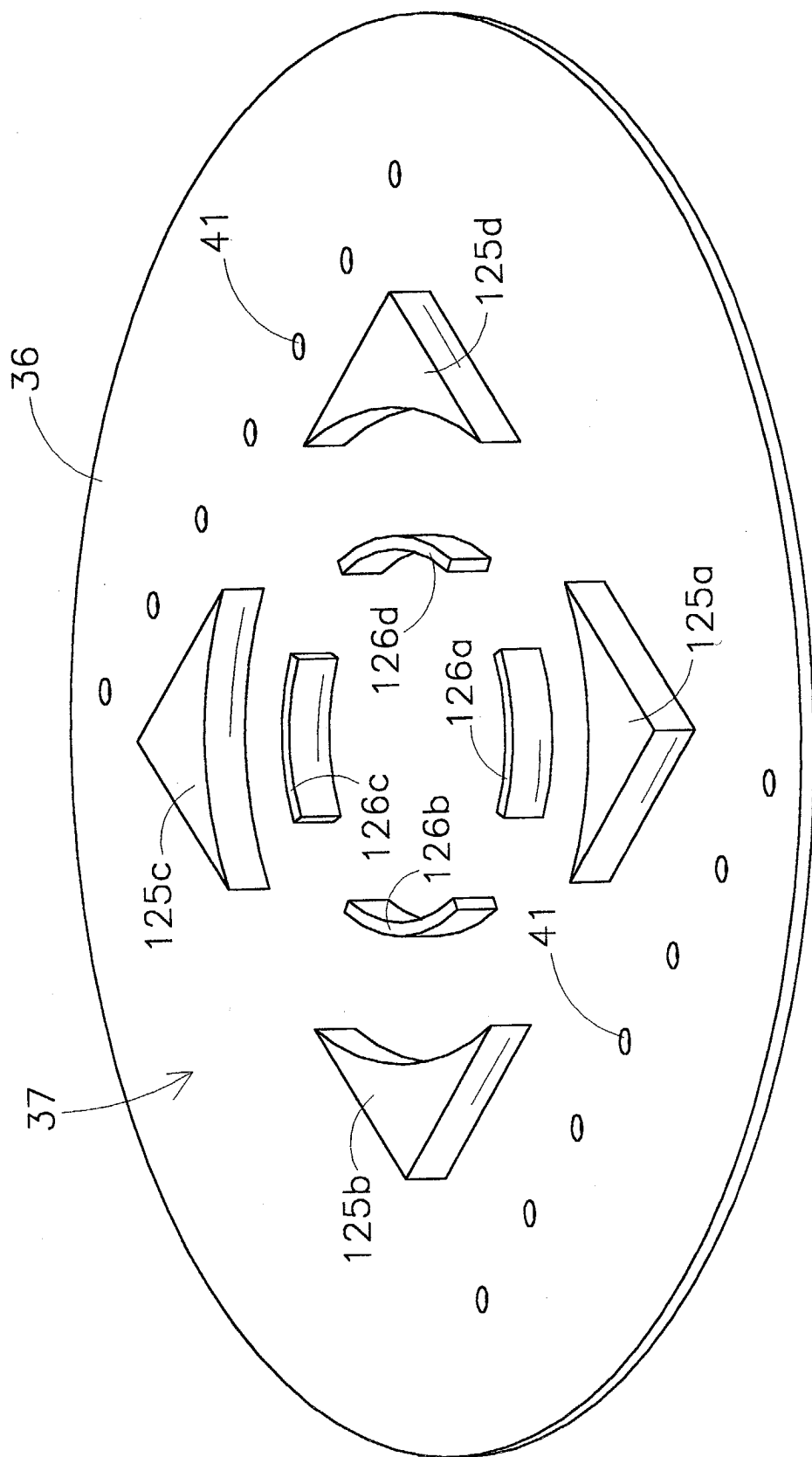


Fig 7

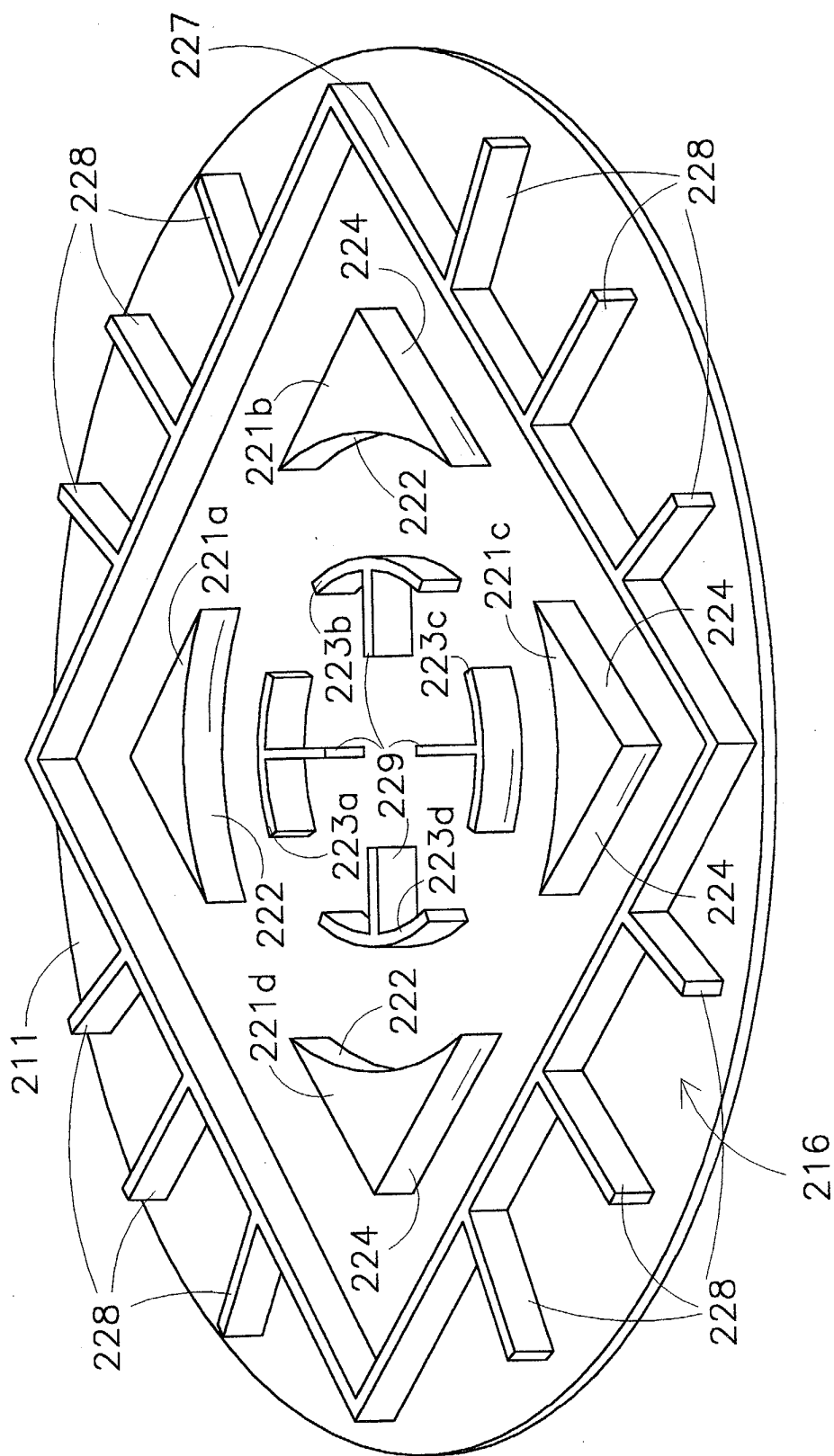


Fig 8

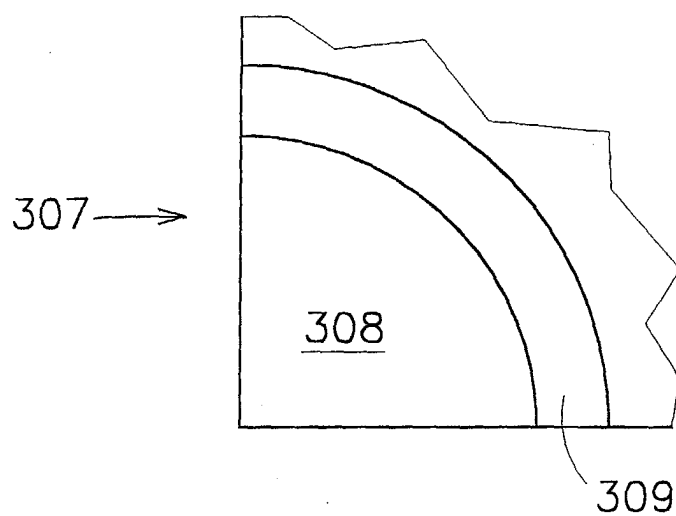


Fig 10

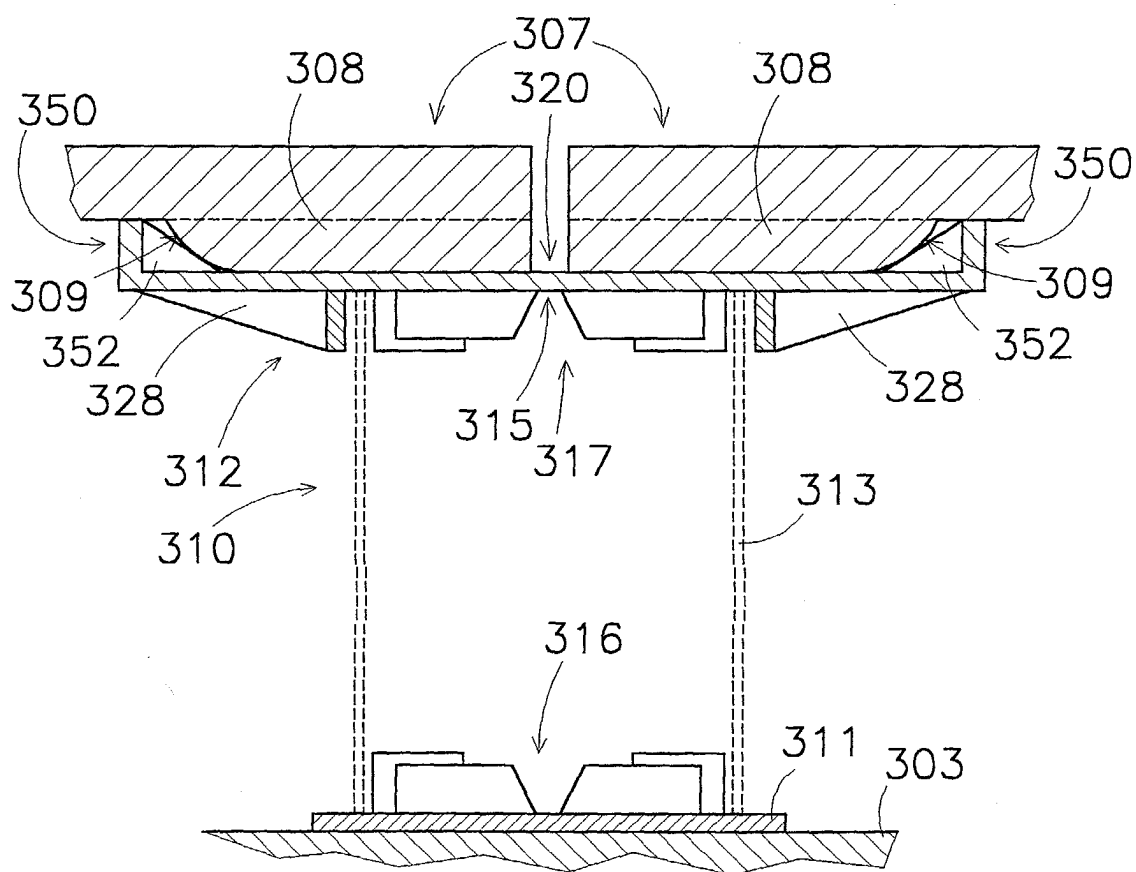


Fig 9

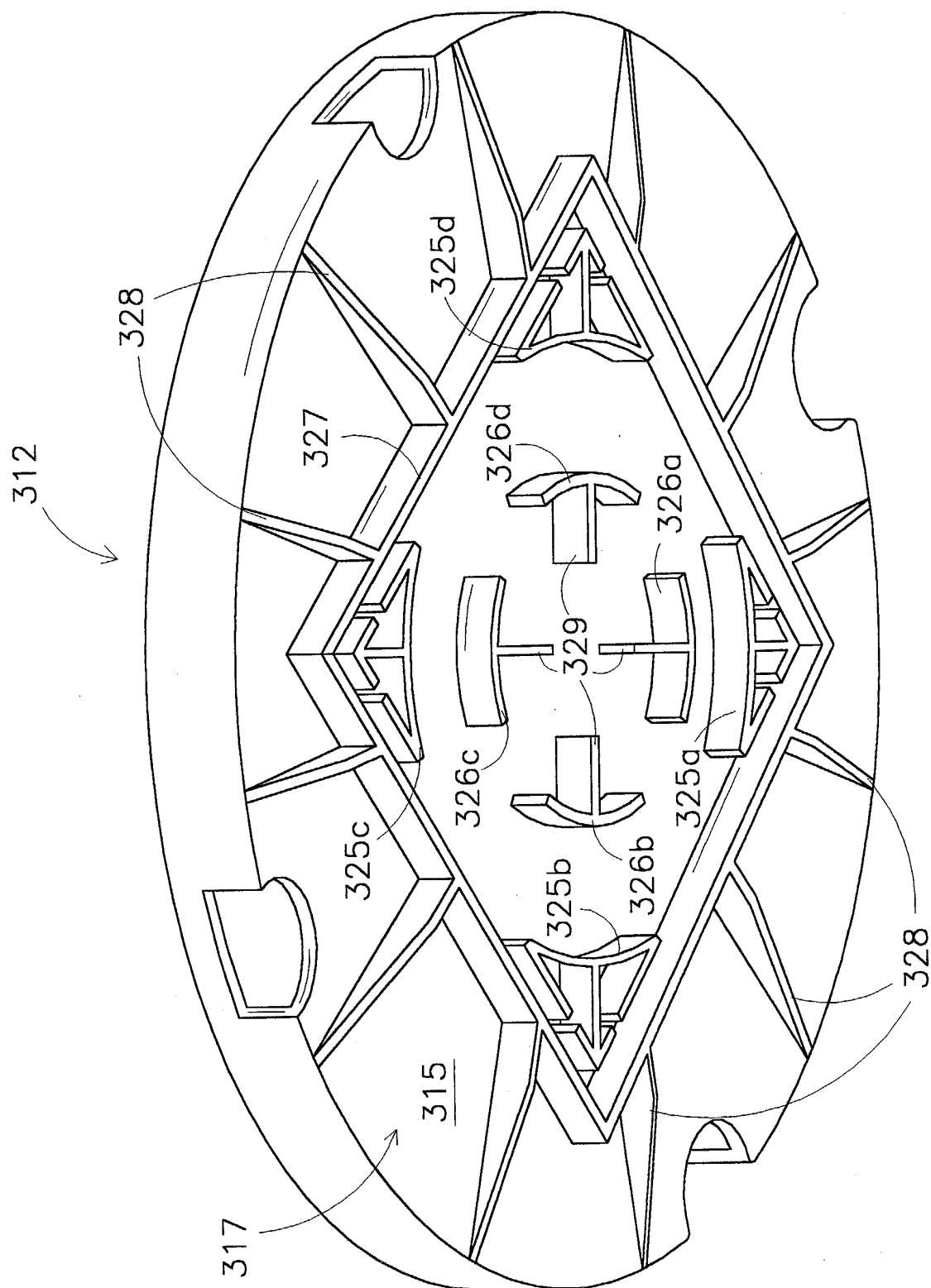


Fig 11

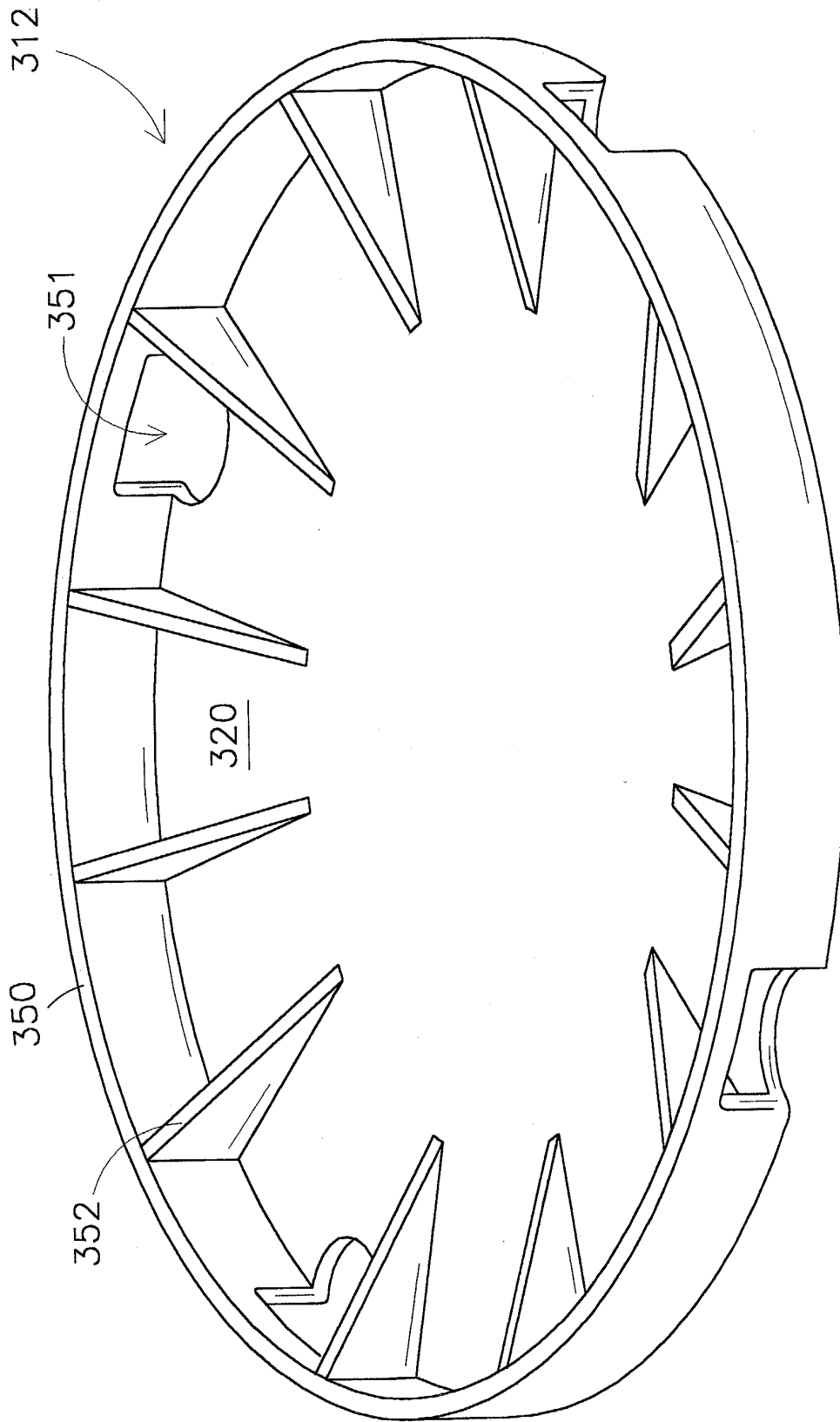


Fig 12