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(54) **Insulation panel for attachment of tiles**

Wärmegedämmte Platte zur Befestigung von Dachziegeln

Panneau d'isolation thermique pour la pose de tuiles

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(73) Proprietor: **Poliglas, S.A.**
08210 Barbera del Valles, Barcelona (ES)

(72) Inventor: **Bonet, Josep Sole**
08210 Barbera del Valles, Barcelona (ES)

(74) Representative:
Esteban Perez-Serrano, Maria Isabel
UDAPI & Asociados
Patentes y Marcas
Explanada, 8
28040 Madrid (ES)

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Description

PURPOSE OF THE INVENTION

[0001] The present invention refers to an insulation panel conceived for use on tilings or roofs as an attachment base intented to receive and couple tiles with undulated or mixed (flat-undulated) configuration, of ceramic, concrete or other material, with or without spigots and with different possible modulations,

[0002] It is an object of the invention, that one same insulation panel permits the reception of tiles with various dimensions to be placed in different positions, as well as presenting optimum ventilation conditions which affect all the surface of the tile. The same panel shall permit the placement of tiles of any module (without spigots), by means of mortar or of tiles with different modules (with spigots), by means of nailing or dry method.

[0003] It is likewise an object of the invention, that the panel be included with bottom small sized grooves, which are used for the equilibration of stresses and to facilitate, when the panel is fixed on the roof with mortars or adhesives, the adherence between the panel and the support forging.

BACKGROUND OF THE INVENTION

[0004] Various buildings exist which include on their roof or tiling, insulation plates which cover the insulating function, in order to decrease heat loss, as much as possible.

[0005] These plates optionally present a double purpose, since they are not only used as thermal insulating means but may also be employed as base for the attachment of the tiles on the roof.

[0006] In some cases, the actual plate is provided with a series of ribs, recessed or projecting which contribute to facilitate the positioning and coupling of the tiles in their place on the plate, this solution however, resulting on occasions to be expensive due to the type of machinary and procedure which is to be conducted in order to produce said ribs.

[0007] Another type of insulation plates covered by this double purpose, consists of plates which include parallel tie-down grooves onto which, one of the edges of the tile is coupled, and of ventilation grooves, perpendicular to the former, the central point to central point distance of said adjacent grooves corresponding to the distance between the central points of the raised adjacent portions of the tiles.

[0008] This type of plates presents limitations belonging to the same, which cause the existance of fixed distances between grooves, since they are only valid for one type of tile with specific dimensions.

[0009] Likewise, it must also be pointed out that with this type of tile, the ideal ventilation conditions are not obtained, since the existance of ventilation grooves are only limited to the curved zone of the tile.

[0010] On the other hand, the incorporation of these horizontal and vertical groovings on one single face, determine an asymmetry of the plate, which shall be the cause of the generation of a series of strain stresses on the plate which have a detrimental influence on its application and conservation.

[0011] It is known in the state of the art an insulation panel for the attachment of tiles such as the one disclosed in the DE 3030841 patent. This panel presents some drawbacks related to the ventilation properties as it lacks of a set of vertical parallel ventilation grooves parallel to the vertical tie-down grooves, it also lacks of a set of horizontal parallel ventilation grooves, which both in combination would conform a lattice work, uniformly distributed below the location of the tiles, and would constitute locations for the attachment of the mortar for the tiles. So the main aim of this invention is to obtain an improved insulation panel for the attachment of tiles, which additionally to the vertical and horizontal main tie-down grooves for the supporting of the tiles, has a set of vertical and horizontal parallel grooves distributed between those tie-down grooves configuring a lattice work uniformly distributed below the tiles and constituting locations for the attachment of mortar for the tiles, which are adjustable by these means.

DESCRIPTION OF THE INVENTION

[0012] The insulation panel for attachment of tiles, proposed by this invention, solves in a satisfactory manner, the previously expressed problem, by means of adopting a series of characteristics related to the configuration which fosters greater versatility of application for the tiles with different shapes and/or dimensions, a greater ventilation of the tiles and strain stress relief, as well as providing optimum conditions for establishing the attachment of the panel on the roof.

[0013] The insulation panel presented by this invention parts from the incorporation of a series of parallel, equidistant, horizontal tie-down grooves, conceived for facilitating the coupling of tiles with spigots with two different formats or of any format without spigots, placed with mortar.

[0014] The panel likewise offers a series of vertical tie-down grooves, perpendicular to said indicated horizontal grooves with different separation to the one corresponding to the vertical grooves, which is similarly intended for the incorporation of tiles which are provided with another module different to the one corresponding to the tile introduced into the horizontal grooves,

[0015] In this manner, a great versatility of application is achieved for one single panel, since by varying the position of the same, vertical grooves or else, horizontal grooves, may be used for the placement of different types of tiles.

[0016] Likewise, the panel stands out because, between the parallel horizontal and vertical tie-down

grooves, a series of horizontal and vertical ventilation grooves are defined, with little depth and width, which are to be found uniformly distributed below the tile, with the purpose of providing a uniform ventilation of said tile.

[0017] This latter series of grooves, permits the correct tie-down of tiles when they are attached by means of mortar.

[0018] As opposed to existing plates, the ventilation grooves of this panel are distributed throughout all the surface and in two directions, horizontal and vertical, due to which, a much more uniform distribution of the grooves below the tile is obtained, since the grooves not only coincide with the highest part of the tile, but are also distributed below the flat zones of the tile, where the risk of condensations, is greater.

[0019] On the other hand,it is contemplated to provide the panels on the lower side, opposed to the side on which said tie-down and ventilation grooves are performed, with lower grooves of reduced size which facilitate the introduction of mortars or adhesive, improving the adherence of the panel to the roof, as well as contributing to equilibrate the stresses generated by the grooving on the upper side.

DESCRIPTION OF THE DRAWINGS

[0020] In order to complement the description being made, and with the object of helping to a better understanding of the characteristics of the invention, the present Specification is enclosed, as integral part of the same, with a set of drawings in which, with illustrative and non limitative character, the following has been represented:

Figure 1 shows a plan view of the insulation panel for attachment of tiles.
Figure 2 shows a front view of the insulation panel.
Figure 3 shows a side view of the insulation panel.
Figure 4 shows a front and side view of the insulation panel with a type of tile, placed with mortar.
Figure 5 shows a front and side view of the insulation panel with a type of spigot module tile.
Figure 6 shows a front and side view of the insulation panel with a type of tile of another module with spigots.

PREFERRED EMBODIMENT OF THE INVENTION

[0021] In view of the figures, a preferred embodiment of the insulation panel for attachment of tiles proposed by this invention is herewith described, of the type which is coupled onto the tiling roof (1) and which is configured by a body which conventionally includes horizontal parallel grooves (3) and equidistant, intended to receive and couple tiles (4), and smaller ventilation grooves.

[0022] As from this basic constitution, the insulation panel for attachment of tiles, stands out mainly because the body which constitutes the panel, includes vertical tie-down grooves (2) and horizontal tie-down grooves (3) arranged parallel to the eave line of the roof, on which the tiles are tied-down when mechanically attached or are placed by means of a dry method, and of narrow grooves, horizontal (6) and vertical (7), on which the mortar is attached when the tiles are placed in this manner.

[0023] Likewise, the panel stands out because it includes between the horizontal grooves (3) (for tiles with a module) and the vertical grooves (2) for tie-down (for tiles with another module), a lattice-work (5) of horizontal parallel ventilation grooves (6) and vertical parallel ventilation grooves (7), uniformly distributed below the location of the tiles (4).

[0024] On the other hand, the panel covers the arrangement on its lower side, opposite to the side on which said tie-down grooves (2, 3) and ventilation grooves (6, 7) are defined, of lower grooves (8) of reduced size which contribute to the equilibration of stresses and facilitate the introduction of mortars or adhesives for the adherence of the panel to the roof (1).

[0025] It is not considered necessary to make this description more extensive, in order that any expert in the Art may understand the scope of the invention and the advantages derived from the same.

[0026] The materials, shape, size and arrangement of the elements shall be capable of variation provided it does not depart from the scope of the claims.

Claims

1. Insulation panel for the attachment of tiles (4) of the type which are coupled to the tiling roof (1), wherein the panel is configured by a body which conventionally includes:

1) horizontal parallel tie-down grooves (3) for the tiles (4), with a module, equidistant and intended to receive and couple the tiles (4);
2) parallel vertical tie-down grooves (2) for tiles (4), of another module, which are perpendicular to the horizontal tie-down grooves (3), having an equidistant arrangement and being placed at different distances to the corresponding ones between the horizontal grooves (3) and
3) vertical parallel ventilation grooves (7), **characterized in that** the vertical parallel ventilation grooves (7) are smaller than the horizontal parallel tie-down grooves (3) and the parallel vertical tie-down grooves (2); **in that** the smaller vertical parallel ventilation grooves (7) form a lattice work (5) together with horizontal parallel ventilation grooves (6) wherein the lattice work (5) is included between the horizontal tie-down grooves (3) and the vertical tie-down grooves (2) and **in that** the horizontal parallel ventilation grooves (6) and vertical parallel ventilation

grooves (7) are uniformly distributed below the location of the tiles (4) and constitute locations for the attachment of mortar for the tiles (4) which are adjustable by this means.

2. Insulation panel for the attachment of tiles according to claim 1, **characterized in that** it is provided on its lower side, opposite to the side on which said tie-down grooves (2,3) and ventilation grooves (6,7) are defined, of lower grooves (8) with reduced size, which contribute to the equilibration of the stresses and facilitate the introduction of mortars or adhesive for the adherence of the panel to the roof (1).

Patentansprüche

1. Dämmplatte zur Anbringung von Ziegeln (4) der Art, die auf ein Ziegeldach (1) angebracht werden, wobei die Platte aus einem Körper besteht, der üblicherweise Folgendes umfasst:

   1) waagerechte, parallele Abspannungsrillen (3) für die Ziegeln (4) mit einem Modul in gleichmässigem Abstand und dazu gedacht, Ziegel (4) aufzunehmen und zu befestigen;
   2) parallele, senkrechte Abspannungsrillen (2) für Ziegel (4) eines anderen Modulen, die sich senkrecht zu den senkrechten Abspannungsrillen (3) befinden; wobei sie in gleichen Abständen angeordnet sind und in unterschiedlichen Abständen angebracht sind zu dennen, die zwischen den waagerechten Rillen (3) angeordnet sind und
   3) senkrechte parallele Rillen (7), **dadurch gekennzeichnet, dass** die senkrechten, parallelen Belüftungsrillen (7) kleiner sind als die waagerechten, parallelen Abspannungsrillen (3) und die parallelen, senkrechten Abspannungsrillen (2); dass die kleineren, senkrechten, parallelen Belüftungsrillen (7) ein Gitter (5) zusammen mit den waagereichten, parallelen Belüftungsrillen (6) bilden, wobei das Gitter (5) zwischen den waagerechten Abspannungsrillen (3) und den senkrechten Abspannungsrillen (2) liegt, und dass die waagerechten, parallelen Belüftungsrillen (6) und die senkrechten, parallelen Belüftungsrillen (7) gleichmässig unter den Ziegeln (4) verteilt sind und zur Befestigung des Mörtels für die Ziegel (4) dienen, die zu diesem Zweck angepasst werden können.

2. Dämmplatte zur Anbringung von Ziegeln, gemäss Anspruch 1, **dadurch gekennzeichnet, dass** sie auf der niedrigeren Seite, die der Seite gegenüberliegt, auf der die besagten Abspannungsrillen (2, 3) und Belüftungsrillen (6, 7) ausgebildet sind, Über flachere, kleinere Rillen (8) verfügt, die zur Verteilung der Belastungen beitragen und die Aufnahme des Mörtels oder der Haftmittel zur Befestigung der Platte auf dem Dach (1) erleichtern.

Revendications

1. Panneau isolant pour la fixation de tuiles (4) du type qui sont accouplées au toit de tuiles (1), le panneau étant configuré par un corps qui inclut conventionnellement :

   1) des rainures de fixation parallèles horizontales (3) pour les tuiles (4), avec un module, équidistantes et destinées à recevoir et accoupler les tuiles (4) ;
   2) des rainures de fixation parallèles verticales (2) pour les tuiles (4), avec un autre module, qui sont perpendiculaires aux rainures de fixation horizontales (3), qui ont une disposition équidistante et qui sont mise en place à différentes distances des correspondantes entre les rainures horizontales (3) et
   3) des rainures de ventilation parallèles verticales (7), **caractérisé en ce que** les rainures de ventilation parallèles verticales (7) sont plus petites que les rainures de fixation parallèles horizontales (3) et les rainures de fixation verticales parallèles (2) ; **en ce que** les rainures de ventilation parallèles verticales plus petites (7) forment un treillis (5) avec les rainures de ventilation parallèles horizontales (6) où le treillis (5) est inclus entre les rainures de fixation horizontales (3) et les rainures de fixation verticales (2) et **en ce que** les rainures de ventilation parallèles horizontales (6) et les rainures de ventilation parallèles verticales (7) sont uniformément distribuées sous l'emplacement des tuiles (4) et elles constituent les emplacements pour la fixation du mortier pour les tuiles (4) qui peuvent être ajustées de la sorte.

2. Panneau isolant pour la fixation de tuiles selon la revendication 1, **caractérisé en ce qu'**il est pourvu sur son côté inférieur, opposé au côté sur lequel sont définies des rainures de fixation (2, 3) et des rainures de ventilation (6, 7), de rainures inférieures (8) avec des dimensions réduites, qui contribuent à l'équilibration des sollicitations y qui facilitent l'introduction de mortiers ou d'adhésifs pour l'adhérence du panneau au toit (1).

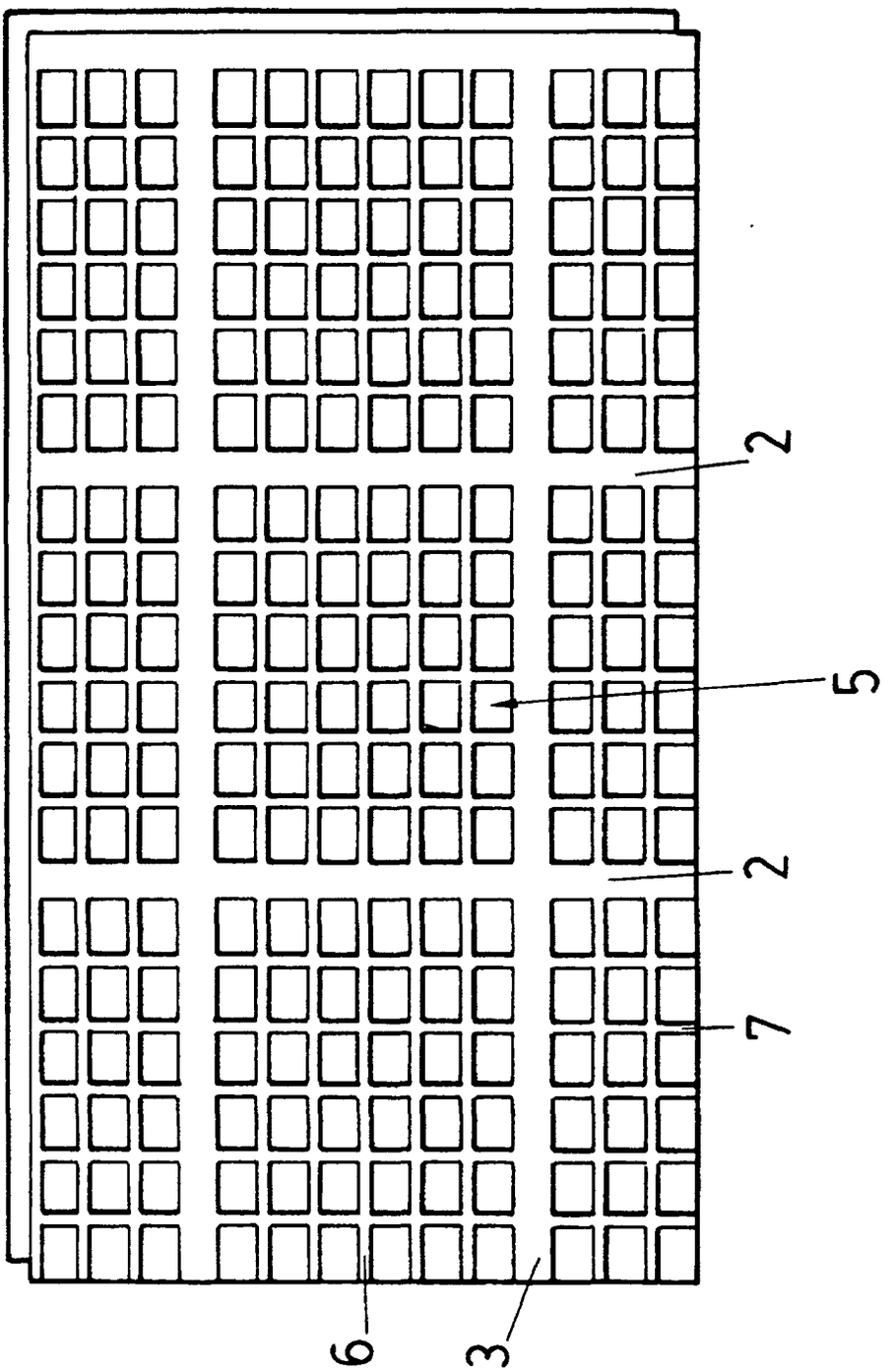


FIG. 1

FIG. 2

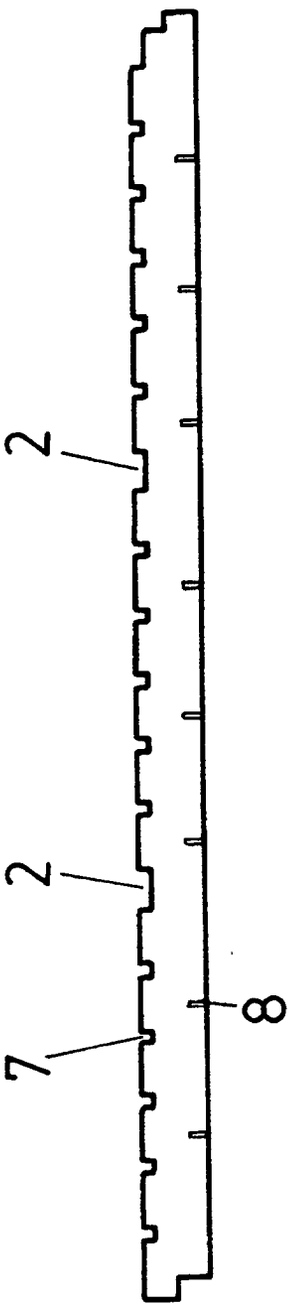


FIG. 3

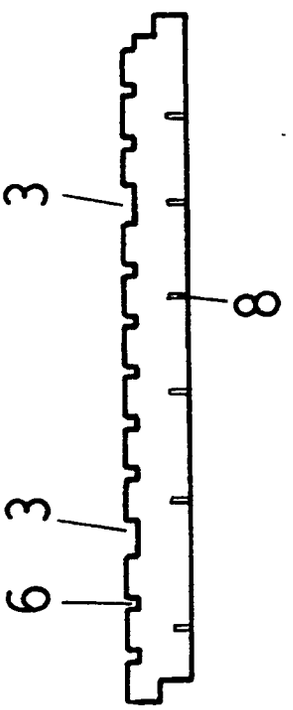
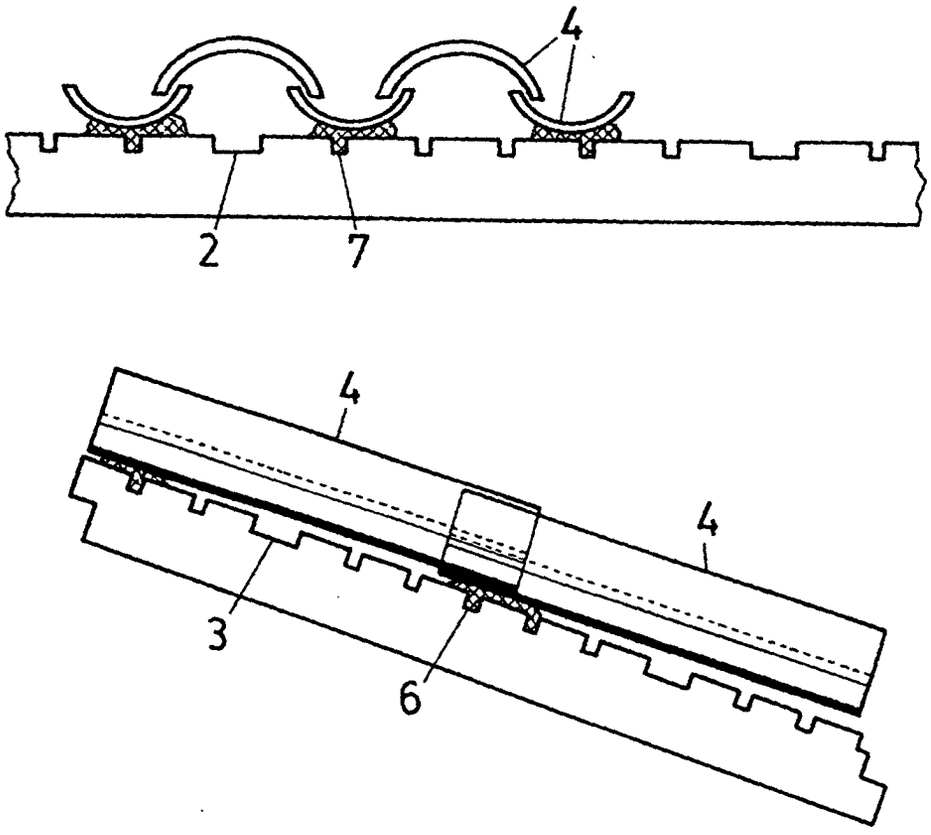


FIG. 4



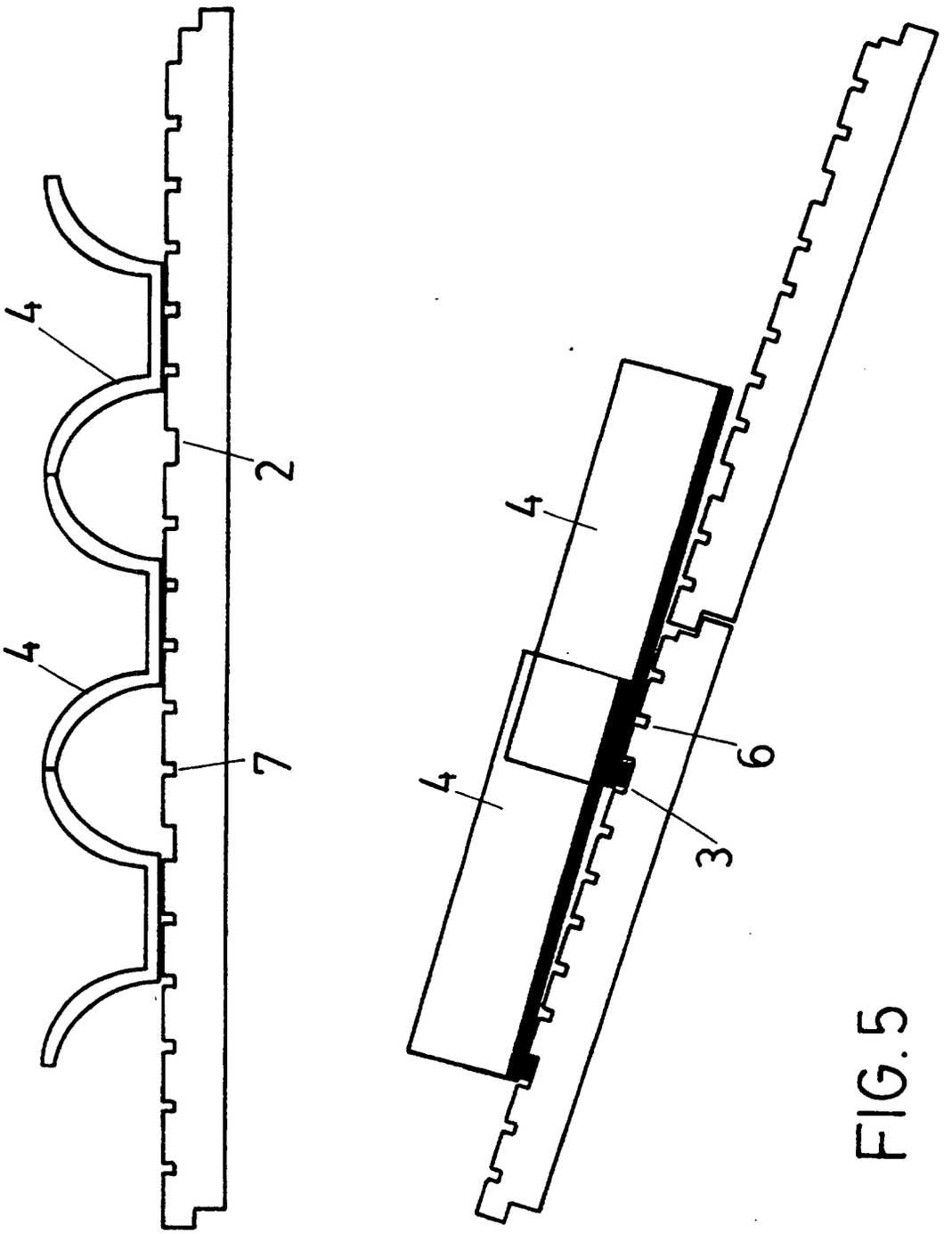


FIG.5

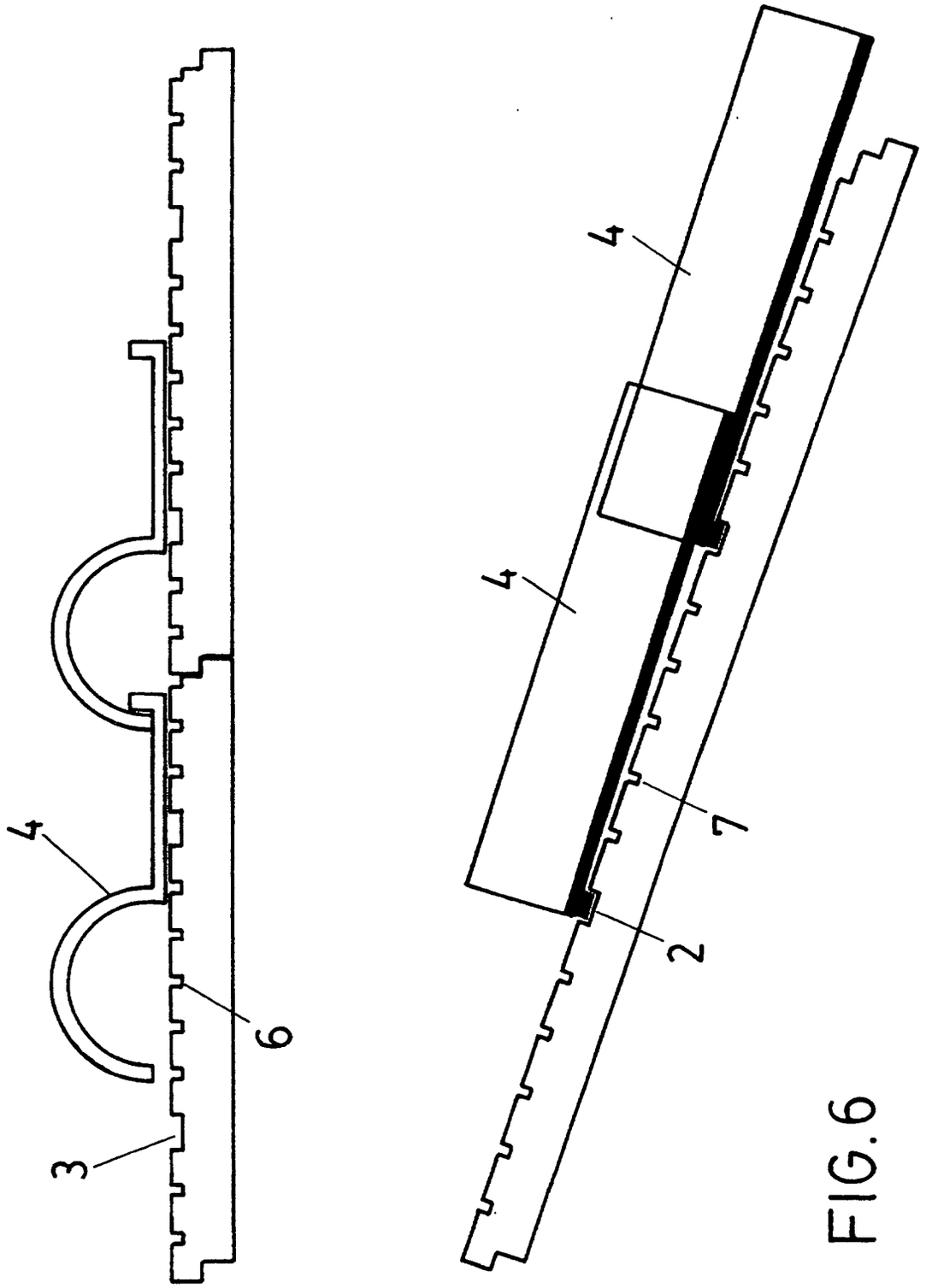


FIG.6