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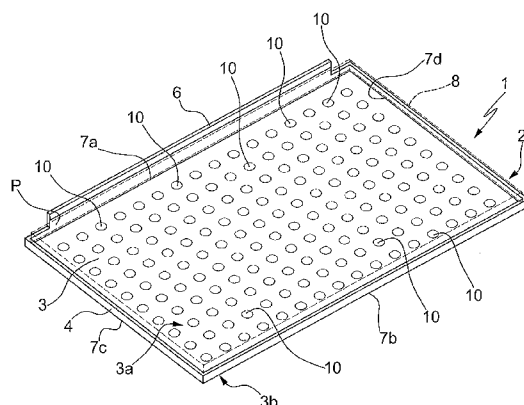


FIG. 5

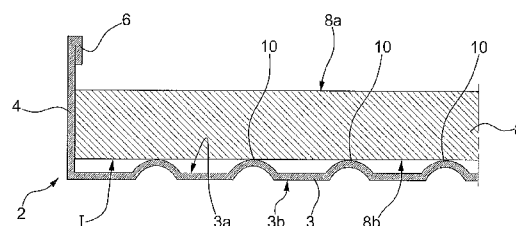


FIG. 6

(57) Abstract: Baking tray, of the kind that can be inserted in a baking oven (F), comprising at least a support (2) made of metal material comprising at least a base (3) that defines a first surface (3a) and a second surface (3b) opposed to each other, and at least a slab (8) made of refractory material that defines an upper face (8a) and a lower face (8b) opposed to each other, the food to be cooked being intended to be placed on said upper face (8a), said lower face (8b) being suitable to be coupled to said first surface (3a) of said base (3), said slab (8) being made of refractory material including cordierite. The support (2) comprises at least a wall (P) for protecting foods, positioned on said upper face (8a), from the heat irradiated by the bottom of the oven.



“BAKING TRAY”.

TECHNICAL FIELD OF THE INVENTION

The present invention concerns a baking tray.

More in detail, the present invention concerns a tray for baking foods in an oven.

5

BACKGROUND ART

Electric ovens are used both in home and professional fields - for example in the restaurant/catering field - in order to quickly, effectively and inexpensively cook specific foods.

With particular but not exclusive reference to the preparation of pizzas and other
10 similar foods, the electric oven is widely used for cooking even two or three foods at a time, in respective separate and stacked baking chambers, or even in a single baking chamber.

Typically, an electric oven for baking pizzas comprises, as stated above, a baking chamber provided at its interior with at least one baking surface on which the
15 foods are set.

In one possible configuration, the oven comprises multiple superimposed and separate chambers, each provided with a respective baking surface.

In another possible configuration, the oven comprises a single chamber, within which multiple superimposed baking surfaces (e.g. two or three) are provided.

20 Each baking surface of the oven is defined by a respective flat slab (or multiple flat slabs side-by-side), made of refractory material.

Also the conventional wood ovens comprise a baking chamber in which a baking surface is provided that is made of refractory material.

During the use of the oven (both of electric type and of wood type), the operator
25 sets the food to be cooked on the baking surface, for example by using a suitable tool, typically a shovel or the like.

At the end of the baking, the operator extracts the food from the oven, lifting it from the surface with the same shovel, and then placing it on a plate, or within another type of container for transport and/or preservation.

In specific situations, this sequence of operations can be particularly inconvenient, complicated and/or tiring, and in addition it can take away precious time, especially when it is necessary to face numerous requests in a short time period (for example during the busiest service times of a restaurant, a take-away pizzeria, or the like).

In addition, one cannot ignore the fact that the use of a shovel for pizza or the like - in order to prevent raw or cooked foods from accidentally falling on the ground - requires a certain training and a certain dexterity, which employees with limited experience may not always have.

OBJECTS OF THE INVENTION

The aim of the present invention is to improve the state of the art.

Within such aim, it is an object of the present invention to facilitate, make safer and more effective the operations of the employee in baking foods using an oven or the like, in particular by simplifying the insertion of the foods within the oven and/or the extraction thereof.

Still another object of the present invention is to make the operations of the employee in baking foods, using an oven or the like, quicker.

A further object of the present invention is to facilitate the operations of transport of the cooked food directly to the table or transfer of the cooked food to a container for transport, preservation, or the like.

Another object of the present invention is to obtain, even with conventional ovens fully constituted by metallic parts, a baking similar to that obtainable with ovens having the baking surface made of refractory material, so as to resemble the way of baking typical of some bakery products, including pizza.

This aim and these objects are achieved by the baking tray according to the attached claim 1.

The baking tray according to the invention, of the type insertable in a baking oven, comprises at least one support made of metallic material comprising at least one base defining a first surface and a second surface that are opposite each other, and at least one slab made of refractory material defining an upper face and a lower

face that are opposite each other.

The foods to be cooked are intended to be positioned on the upper face, while the lower face is adapted for coupling with the first surface of the base.

The slab is made of a refractory material comprising cordierite.

- 5 The support comprises at least one wall for protecting foods, positioned on the first upper face, from the heat irradiated by the bottom of the oven, in order to prevent the foods from being ruined or cooked in a non-uniform manner.

The tray according to the invention can be directly inserted and extracted from the oven with the food to be cooked, or cooked, positioned on the upper surface of the
10 slab made of refractory material.

The same slab can then be used for bringing the food directly to the table, or for transferring it to a container, and the like.

Dependent claims refer to preferred and advantageous embodiments of the invention.

15 BRIEF DESCRIPTION OF THE DRAWINGS

The features of the invention will be better understood by every man skilled in the art from the following description and from the enclosed drawing sheets, given as a non-limiting example, in which:

- figure 1 is an axonometric view of the tray according to the invention;
- 20 figure 2 is an axonometric view of the support of the tray of figure 1;
- figure 3 is a schematic perspective view of an electric oven, housing two trays according to the present invention in its baking chamber;
- figure 4 is an axonometric view of the tray according to another embodiment of the invention, with the slab represented in dashed line for greater clarity;
- 25 figure 5 is an axonometric view of the tray according to a further embodiment of the invention, with the slab represented in dashed line for greater clarity;
- figure 6 is a detail cross-section of the tray of figure 5;
- figure 7 is a detail axonometric view of the tray according to another embodiment of the invention, with the slab represented in dashed line for greater clarity;
- 30 figure 8 is a detail axonometric view of the tray according to another embodiment

- of the invention, with the support represented in dashed line for greater clarity;
figure 9 is a detail cross-section of the tray according to another embodiment of the invention, with the support represented in dashed line for greater clarity;
figure 10 is an axonometric view of the tray according to still another embodiment
5 of the invention, with the support represented in dashed line for greater clarity;
figure 11 is an axonometric view of the tray according to still another embodiment of the invention, with the support represented in dashed line for greater clarity;
figure 12 is a detail cross-section of the tray according to another embodiment of the invention, with the support represented in dashed line for greater clarity;
10 figure 13 is an exploded axonometric view of still another embodiment of the tray according to the invention;
figure 14 is a detail cross-section of the tray of figure 13;
figure 15 is an exploded axonometric view of a further embodiment of the tray according to the invention;
15 figure 16 is a detail cross-section of the tray of figure 15;
figure 17 is an exploded axonometric view of another embodiment of the tray according to the invention;
figure 18 is a detail cross-section of the tray of figure 17;
figure 19 is an axonometric view of another embodiment of the tray according to
20 the invention, with the support represented in dashed line for greater clarity;
figure 20 is an axonometric view of still another embodiment of the tray according to the invention, with the support represented in dashed line for greater clarity;
figure 21 is an axonometric view of another embodiment of the tray according to the invention;
25 figure 22 is an exploded axonometric view of the tray of figure 21;
figure 23 is an axonometric view of still another embodiment of the tray according to the invention;
figure 24 is a further perspective view of the support of the tray according to the invention;
30 figure 25 is a side view of the support of the tray.

EMBODIMENTS OF THE INVENTION

With reference to the enclosed figures, reference number 1 overall indicates a baking tray according to the present invention.

The tray 1 according to the present invention can be used for baking foods inside
5 an oven of any kind.

For example, the tray 1 can be used inside an electric oven, or a wood oven, or an oven of any other kind.

According to an aspect of the invention, the tray 1 comprises at least a support 2.

The support 2 comprises at least a base 3.

10 The base 3 can have flat or substantially flat shape, or it can have a different shape, as better clarified in the following description.

The base 3 of the support 2 comprises a first surface 3a and a second surface 3b, that are opposite each other.

The support 2 also comprises at least a perimeter edge 4.

15 The perimeter edge 4 surrounds the first surface 3a of the base 3, so as to define a seat 5 in the support 2 itself.

The support 2 comprises a grip portion 6; the grip portion 6 is provided along the perimeter edge 4.

The grip portion 6 allows the user to firmly grasp the support 2, in such a way to
20 easily handle the tray 1.

According to an aspect of the invention, the support 2 is made of metallic material.

In one embodiment of the invention, the support 2 is made of steel.

In other embodiments of the invention, the support 2 can be made of a metallic alloy such as an alloy comprising aluminum, or an alloy comprising copper, or an
25 alloy of still another kind.

In one embodiment of the invention, the support 2 is made of sheet steel.

For example, the support 2 can be made of sheet steel having thickness comprised between 0.8 mm and 3.5 mm.

In one embodiment of the invention of particular practical interest, the support 2 is
30 made of sheet steel with 1.0 mm thickness.

In some embodiments of the invention, the support 2 can have quadrangular shape (e.g. square or rectangular); in other embodiments of the invention, the support 2 can have any other shape, as better clarified hereinbelow.

In the specific case in which the support 2 has quadrangular form, it is possible to
5 define a first side 7a, a second side 7b, a third side 7c and a fourth side 7d of the support 2.

In the embodiment shown in the figures, the first and the second side 7a,7b are the long sides of the support 2, opposite each other; the third, fourth side 7c,7d are instead the short sides of the same support 2.

10 The grip portion 6 of the support 2 is for example constituted by a section of the perimeter edge 4 (for example, at the first side 7a) having height greater than the remaining sections of the edge 4 itself.

If the support 2 is made of sheet steel, the perimeter edge 4 is obtained by making, around the base 3, shaped lateral flaps (e.g. via cutting), which can then be folded
15 towards each other at 90°, so as to define the aforesaid seat 5.

The grip portion 6 can have the respective terminal flap folded, so that it can be handled in a more comfortable manner.

In other embodiments of the invention, the support 2 could comprise multiple grip portions 6.

20 For example, for greater ease of use, a respective grip portion 6 could be provided along each of the sides 7a,7b,7c,7d of the support 2.

In other embodiments of the invention, in which the support 2 is not specifically made of sheet steel, the seat 5 could be obtained, for example, via removal of material, or made of a material – such as silicone – that allows obtaining a shell
25 shape.

According to another aspect of the invention, the tray 1 comprises at least a slab 8.

The slab 8 is made of refractory material.

The slab 8 comprises an upper face 8a and a lower face 8b, opposite each other; the foods to be cooked are intended to be positioned on the upper face 8a.

30 The adjectives “upper” and “lower” referred to the faces 8a,8b of the slab 8 merely

refer to the positioning of the latter (horizontal) during use, but they do not have any limiting effect (in substance, they only have the function of distinguishing one face from the other).

The lower face 8b of the slab 8 is instead suitable for coupling with the first surface
5 3a of the base 3 of the support 2.

In other words, the slab 8 is inserted within the seat 5 of the support 2 so as to couple the first surface 3a of the base 3 with the lower face 8b of the slab 8.

The lower face 8b of the slab 8 is coupled to the first surface 3a of the base 3 in a permanent manner.

10 Or, the lower face 8b of the slab 8 can be coupled to the first surface 3a in a semi-permanent, i.e. removable, manner.

More in detail, the perimeter edge 4 of the support 2 retains the slab 8 in position.

A coupling via friction can in fact be obtained between the two parts, in which the internal surfaces of the perimeter edge 4 abut against the perimeter surface of the
15 slab 8.

If it is necessary to remove the slab 8 for maintenance/substitution purposes, it is sufficient to slightly deform the perimeter edge 4 so to be able to extract the slab 8 itself from the seat 5.

In other embodiments of the invention, the support 2 and the slab 8 can be mutually
20 coupled by a different kind of connection means.

For example, in one embodiment of the invention, the aforesaid connection means could comprise removable elements that create an interference which prevents the separation of the slab 8 from the support 2.

In one embodiment of the invention of particular practical interest, the refractory
25 material constituting the slab 8 comprises cordierite, or it is entirely constituted by cordierite.

In detail, and merely by way of a non-limiting example, such material comprises Al_2O_3 in a percentage of 35-36%, and SiO_2 in a percentage of 49-50%.

The features of the material are, always by way of example, the following:

30 - density: 2.02-2.04 Kg/dm³;

- apparent porosity: 18-20%;
- absorbed water: 9-10%;
- tensile strength at 20°C: 16-20 N/mm²;
- thermal expansion 50-1250 °C: $2.6 \times 1/k \times 10^{-6}$;
- 5 - thermal shock resistance: optimal;
- maximum operating temperature: 1230-1250 °C.

The slab 8 of refractory material has thickness that can be comprised between 10 mm and 30 mm.

Preferably, the thickness of the slab 8 can for example be 20 mm.

- 10 According to an aspect of the invention, the perimeter edge 4 of the support has – with respect to the second surface 3b of the base 3 – height lower than the thickness of the slab 8.

In other words, when the support 2 and the slab 8 are assembled, i.e. connected to each other, the slab 8 projects above the perimeter edge 4 so as to maintain the
 15 surface of the upper face 8a, on which the foods to be cooked must be set, completely free and clean.

According to an aspect of the invention, the support 2 comprises at least a wall P for protecting foods, positioned on the first upper face, from the heat irradiated by the bottom of the oven F.

- 20 In this manner, such heat irradiated by the bottom of the oven F is prevented from ruining the foods being baked, or from cooking such foods in a non-uniform manner.

The wall P has height greater than the thickness of the slab 8.

The wall P projects upward from the perimeter edge 4 of the base 3.

- 25 The wall P can be provided at only one of the sides 7a,7b,7c,7d, or also at multiple sides 7a,7b,7c,7d of the perimeter edge 4.

In the embodiments represented in the figures, the grip portion 6 is incorporated in the wall P.

- 30 According to an aspect of the invention the wall P stands, with respect to the upper face 8b of the slab 8, at a height comprised between 30 and 35 mm.

This is clearly visible, for example, in the details of figures 24 and 25.

This is a height that constitutes an optimal compromise between the need to firmly grasp the grip portion 6 (incorporated in the wall P) and the need to correctly protect the foods from the heat irradiated by the oven F.

- 5 Figure 3 schematically shows the baking chamber C of an electric oven F, within which two trays 1 according to the present invention are inserted.

The trays 1 simply rest, at the respective third, fourth sides 7c,7d – i.e. the short sides – on the opposite support guides G provided along the internal lateral walls of the baking chamber C.

- 10 In this specific application, therefore, as can be observed, there is the free circulation of air both above and below the trays 1 inside the baking chamber C.

The trays 1 can be autonomously inserted or removed from the baking chamber C in a simple and safe manner, by using the respective grip portion 6.

- 15 The aforesaid operations can be carried out with the food to be cooked, or already cooked (e.g. a pizza or the like), directly set on the upper face 8a of the slab 8 made of refractory material.

This makes all the operating steps for baking foods particularly practical and fast.

- It must also be observed that, in case of cooked foods constituted by a single substantially compact unit (e.g. a pizza, a focaccia), once the tray 1 is removed
20 from the oven F, the food can be directly transferred into a plate, or into a container for transport or preservation, by making it slide directly from the upper face 8a of the slab 8 (by slightly tilting the tray 1).

- It is possible to easily proceed in the abovementioned manner since, as stated above, the upper face 8a of the slab 8 projects above the perimeter edge 4 of the
25 support 2, which therefore does not create interference for the free movement of the food positioned on the first face 8a itself.

As clarified above, the tray 1 according to the invention can also be used for baking foods inside a wood oven.

- In the latter case, the tray 1 is directly set, with its lower surface 8b, on the baking
30 surface provided inside the baking chamber of the oven itself.

The described solution is extremely simple and inexpensive to make.

When not in use, the tray 1 can be easily put back, e.g. by stacking multiple trays 1: in this case, it has a significantly lower bulk than that of conventional tools (e.g. a shovel).

5 The tray 1 can also be used for directly serving cooked food to the table.

Another embodiment of the tray 1 according to the invention is schematically illustrated in figure 4.

For greater clarity, in figure 4 the slab 8 is represented in dashed line.

This embodiment of the tray 1 differs from the preceding (figures 1-3) due to the
10 fact that the base 3 of the support 2 comprises a distribution of first through holes 9.

The first holes have respective first axes 9a.

There can be any number of first holes 9, and they can be arranged according to any distribution (e.g. matrix, or in mutually offset rows, and still other
15 distributions).

The first holes 9 can also have any diameter.

For example, the diameter of the first holes could be comprised between 5 mm and 12 mm.

The first holes 9 mainly have the function of allowing air to directly lick the lower
20 face 8b of the slab 8, so as to improve the heat exchange during the baking of foods.

In addition, the presence of the first holes 9 allows making the support 2 lighter and hence easier to handle.

Another embodiment of the tray 1 according to the invention is schematically
25 illustrated in figures 5,6.

In particular, for greater clarity, in figure 5 the slab 8 is represented in dashed line.

This embodiment differs from that of figures 1-3 due to the fact that the base 3 of the support 2 comprises a distribution of first reliefs 10, distributed on the first surface 3a.

30 There can be any number of first reliefs 10, and they can be arranged according to

any distribution (e.g. matrix, or in mutually offset rows, and still other distributions).

The first reliefs 10 can also have any diameter.

For example, the diameter of the first reliefs 10 could be comprised between about
5 5 mm and 10 mm.

As schematically shown in the detail of figure 6, the first reliefs 10 can be made via plastic deformation of the base 3 of the support 2 (above all if the support 2 is made of sheet steel).

The first reliefs 10 mainly have the function – as shown in the same figure 6 – of
10 creating an air interspace I between the first surface 3a of the base 3 and the lower face 8b of the slab 8.

In fact, the latter does not rest on the whole first surface 3a, but only on the top of the first reliefs 10.

The aforesaid air interspace I considerably helps improving the heat exchange
15 during baking of foods.

More in detail, the air interspace I helps enhancing the properties of the slab 8, since the interspace I allows obtaining more uniform temperatures on the lower face 8b of the slab.

Another embodiment of the tray 1 according to the invention is schematically
20 shown in figure 7.

For greater clarity, in figure 7 the slab 8 is represented in dashed line.

In this embodiment, the base 3 of the support 2 comprises both a distribution of first through holes 9 and a distribution of first reliefs 10.

For example, the first holes 9 and the first reliefs 10 can be distributed in parallel
25 rows, within which they are alternately arranged.

This solution synergistically combines the solutions that are the object respectively of the embodiment of figure 4 and of the embodiment of figures 5,6.

More in detail, the effect of creating an air interspace (as in the embodiment of figures 5,6) is synergistically combined with the effect of air exchange through the
30 first holes 9, obtained in the solution of figure 4: therefore, an air interspace is

obtained between the support 2 and the slab 8, which is not static but rather is continuously exchanged.

Another embodiment of the tray 1 according to the invention is schematically shown in figure 8.

5 In figure 8, the support 2 is shown in dashed line for greater clarity.

In this embodiment, the slab 8 comprises a distribution of second reliefs 11.

The second reliefs 11 are distributed on the upper face 8a of the slab 8, i.e. that on which the food to be cooked is positioned.

There can be any number of second reliefs 11, and they can be arranged according to any distribution (e.g. matrix, or in mutually offset rows, and still other distributions).

The geometry of the second reliefs 11 can be of any kind.

For example, in the embodiment represented in figure 8, the second reliefs 11 are shaped substantially as spherical caps, but they could have any other shape.

15 For example, the shape of the second reliefs 11 can be determined in relation to the specific kind of food that must be cooked.

The second reliefs 11 provided on the upper surface 8a of the slab 8 can ensure various advantageous effects, for example a certain air circulation between the food and the upper face 8a can be allowed, and/or it is possible to avoid the unwanted adhesion of food on the slab 8.

In one embodiment of the invention, the support 2 schematically illustrated in figure 8 can be of the kind represented in figures 1-3.

In another embodiment, the support 2 schematically illustrated in figure 8 can be of the kind represented in figure 4.

25 In still another embodiment, the support 2 schematically illustrated in figure 8 can be of the kind represented in figure 5.

In another embodiment, the support 2 schematically illustrated in figure 8 can be of the kind represented in figure 7.

Another embodiment of the tray 1 according to the invention is schematically illustrated, and in a detail thereof, in figure 9.

In figure 9, the support 2 is represented in dashed line for greater clarity.

In this embodiment, the slab 8 comprises second reliefs 11 distributed on the upper surface 8a, and third reliefs 12 distributed on the lower surface 8b.

5 The second reliefs 11 can be of the type described regarding the embodiment of figure 8.

The third reliefs 12 can have distribution and/or geometry identical to that of the second reliefs 11, or even different (e.g. they can have smaller or larger size).

The third reliefs 12 can allow creating an air interspace I between the first surface 3a of the base 3 and the lower face 8b of the slab 8.

10 In one embodiment, the support 2 schematically illustrated in figure 9 can be of the kind represented in figures 1-3.

In another embodiment, the support 2 schematically illustrated in figure 9 can be of the kind represented in figure 4.

15 In still another embodiment, the support 2 schematically illustrated in figure 9 can be of the kind represented in figure 5.

In another embodiment, the support 2 schematically illustrated in figure 9 can be of the kind represented in figure 7.

Another embodiment of the tray 1 according to the invention is schematically shown in figure 10.

20 In figure 10, the support 2 is represented in dashed line for greater clarity.

In this embodiment, the upper face 8a of the slab 8 is affected by a plurality of first grooves 13.

The first grooves 13 are parallel to the first and to the second side 7a,7b of the support 2.

25 There can be any number of first grooves 13, and they can be arranged on the upper face 8a in any way, in relation to specific application needs.

The first grooves 13 can also have any geometry.

For example, the first grooves 13 can have cross-section shaped as a circular sector, or another shape.

30 The first grooves 13 on the upper face 8a of the slab 8 allow obtaining a

considerable air circulation between the food and the slab 8 itself; in addition, they help preventing the unwanted adhesion of food on the slab 8.

In one embodiment, the support 2 schematically illustrated in figure 10 can be of the kind represented in figures 1-3.

- 5 In another embodiment, the support 2 schematically illustrated in figure 10 can be of the kind represented in figure 4.

In still another embodiment, the support 2 schematically illustrated in figure 10 can be of the kind represented in figure 5.

- 10 In another embodiment, the support 2 schematically illustrated in figure 10 can be of the kind represented in figure 7.

Another embodiment of the tray 1 according to the invention is schematically shown in figures 11,12.

In figures 11,12, the support 2 is represented in dashed line, for greater clarity.

- 15 This embodiment differs from that of figure 10 due to the fact that the slab 8 comprises, along the lower face 8b, second grooves 14, in addition to the first grooves 13 on the upper face 8a.

As shown in figure 12, the second grooves 14 can be made so as to be offset with respect to the first grooves 13 along a direction perpendicular to the first and second side 7a,7b of the support 2.

- 20 The geometry of the second grooves 14 can be identical to that of the first grooves 13, or it can also be different.

The second grooves 14 allow making air interspaces between the first surface 3a of the base 3 and the lower face 8b of the slab 8.

- 25 In one embodiment, the support 2 schematically illustrated in figures 11,12 can be of the kind represented in figures 1-3.

In another embodiment, the support 2 schematically illustrated in figures 11,12 can be of the kind represented in figure 4.

In still another embodiment, the support 2 schematically illustrated in figures 11,12 can be of the kind represented in figure 5.

- 30 In another embodiment, the support 2 schematically illustrated in figures 11,12 can

be of the kind represented in figure 7.

Another embodiment of the tray 1 according to the invention is shown in figures 13,14.

In this embodiment, the support 2 is of the kind illustrated in figure 4.

- 5 The base 3 of the support 2, therefore, comprises a plurality of first through holes 9, which have respective first axes 9a.

In addition, in this embodiment the slab 8 comprises a plurality of second through holes 15.

The second holes 15 have respective second axes 15a.

- 10 The second holes 15 can be identical - regarding number, size and distribution - to the first holes 9 provided in the base 3 of the support 2, as shown in the figures.

In other versions of the invention, the second holes 15 could be different – regarding number, size and distribution – from the first holes 9.

- 15 According to an aspect of the invention, the second axes 15a of the second holes 15 coincide with the first axes 9a of the first holes 9.

This allows opening numerous passageways through the tray 1, which can help making the heat exchange more effective and/or increasing the exchange surface area.

- 20 In addition, such passageways can allow the evacuation, via dropping/gravity, of excess liquids possibly present on the upper face 8a of the slab 8 during the baking of the food.

Another embodiment of the tray 1 according to the invention is shown in figures 15,16.

- 25 This embodiment differs from that of the preceding figures 13,14, in particular, at least for the distribution mode of the first, second holes 9,15 respectively provided in the support 2 and in the slab 8.

More in detail, in this embodiment, the second holes 15 of the slab 8 have the respective second axes 15a not coinciding with the first axes 9a of the first holes 9 of the support 2.

- 30 In order to achieve this particular distribution mode of the first, second holes 9,15

respectively in the support 2 and in the slab 8, there can be a lower number of the holes 9,15 themselves with respect to the holes 9,15 provided in the embodiment of figures 13,14.

5 This particular solution can allow making the heat exchange during the baking more effective (in particular, by increasing the exchange surface areas of the single components of the tray 1), at the same time however preventing liquids or food portions from falling from the upper face 8a by crossing the tray 1 itself.

Another embodiment of the invention is shown in figures 17,18.

10 This embodiment differs from that of figures 13,14 due to the fact that the slab 8 further comprises, along the upper face 8a, first grooves 13.

The first grooves 13 are parallel to the first, second side 7a,7b of the support 2.

The first grooves 13 are arranged and distributed so as to intercept the second holes 15 (all or only some of these); in particular, the first grooves 13 intercept the second holes 15 at their respective openings on the upper surface 8a.

15 Due to this particular solution, the air circulation capability is considerably increased; not only can the air cross the tray 1 from one side to the other, but it can also go across the upper surface 8a of the tray 1 itself from one end to the other.

If the first grooves 13 do not intercept all the second holes 15, but only some of the same, it is possible to define preferred discharge zones of excess liquids possibly present on the upper surface 8a; such liquids thus follow the first grooves 13 (possibly made slightly tilted with respect to the plane of the upper surface 8a) and reach the second holes actually intercepted.

20 Another embodiment of the tray 1 according to the invention is illustrated in figure 19.

25 In figure 19, the support 2 is represented in dashed line for greater clarity.

This embodiment is similar to that of figure 10, and it differs from the latter due to the orientation of the first grooves 13.

30 More in detail, in this embodiment the first grooves 13 are oriented parallel to the third, fourth side 7c,7d of the support 2 (hence assuming that the tray 1 has rectangular shape).

In this particular solution, the first grooves 13 are thus oriented – reference is made to the particular case of use in an electric oven F - perpendicular to the back surface of the oven F itself, where normally the air circulation fan is provided: therefore, the air moved by the fan can, in this case, more easily circulate directly along the first grooves 13, whose inlets directly face the fan itself.

In one embodiment, the support 2 schematically illustrated in figure 19 can be of the kind represented in figures 1-3.

In another embodiment, the support 2 schematically illustrated in figure 19 can be of the kind represented in figure 4.

10 In still another embodiment, the support 2 schematically illustrated in figure 19 can be of the kind represented in figure 5.

In another embodiment, the support 2 schematically illustrated in figure 19 can be of the kind represented in figure 7.

15 Still another embodiment of the tray according to the invention is shown in figure 20.

In figure 20, the support 2 is represented in dashed line for greater clarity.

This embodiment differs from that of figure 19 due to the fact that also along the lower surface 8b of the slab 8, second grooves 14 are provided, oriented like the first grooves 13: thus, essentially the same advantages are obtained as mentioned above regarding the embodiment of figure 11 and also those of the embodiment of figure 19.

In one embodiment, the support 2 schematically illustrated in figure 20 can be of the kind represented in figures 1-3.

25 In another embodiment, the support 2 schematically illustrated in figure 20 can be of the kind represented in figure 4.

In still another embodiment, the support 2 schematically illustrated in figure 20 can be of the kind represented in figure 5.

In another embodiment, the support 2 schematically illustrated in figure 20 can be of the kind represented in figure 7.

30 In one embodiment of the invention, the slab 8 could comprise first grooves 13

along the upper surface 8a and second grooves 14 along the lower surface 8b, oriented perpendicular to each other, so as to obtain the synergistic union of the previously-described technical effects.

5 A further embodiment of the tray 1 according to the invention is schematically shown in figures 21,22.

In this embodiment, the support 2 and the slab 8 have circular shape.

Alternatively, the support 2 and the slab 8 could have elliptical shape.

This embodiment is particularly recommended for use inside a wood oven (and not in an electric oven which, as stated above, has lateral support guides hung inside
10 the baking chamber).

Therefore this embodiment of the tray 1 is for example particularly recommended for baking pizza or the like.

Still another embodiment of the tray according to the invention is illustrated in figure 23.

15 This embodiment differs from that of figures 21,22 due to the fact that the upper face 8a of the slab 8 comprises a distribution of first grooves 13.

Given the circular or elliptical shape of the slab 8, the first grooves 13 are also circular (and hence closed), and concentric with each other.

Here too, the advantageous effect of air circulation between the upper face 8a of
20 the slab 8 and the food being baked is obtained; in addition, the unwanted adhesion of the food to the same upper face 8a is limited.

With regard specifically to pizza, these effects can be particularly advantageous in preventing the excess cooking (up to burning) of the bottom of the pizza itself.

In one embodiment of the invention, the support 2 could completely lack the
25 perimeter edge 4, i.e. in substance it could lack specific seats for inserting the slab 8.

It is specified that, in all the embodiments disclosed and/or shown, the support 2 of the tray 1 can be provided with the aforesaid wall P for protecting foods.

Such wall P can have any shape, and it is clearly adapted to the shape of the
30 support 2.

The wall P can be continuous or even discontinuous (composed of different separate sections).

It was thus seen that the invention attains the preset objects.

As seen above, the proposed solution allows completely eliminating the need to use
5 tools for inserting or extracting foods from the oven, since everything can be easily carried out by directly handling the tray.

Once the food is extracted from the oven, the same tray can also be used for serving the cooked food direct to the table, or for transferring it into a container, to a waiting station and/or transport station, or the like.

10 The present invention was described according to preferred embodiments, but equivalent variants can be conceived without departing from the protective scope offered by the following claims.

CLAIMS

1. Baking tray, of the kind that can be inserted in a baking oven (F), comprising at least a support (2) made of metal material comprising at least a base (3) that defines a first surface (3a) and a second surface (3b) opposed to each other,
5 and at least a slab (8) made of refractory material that defines an upper face (8a) and a lower face (8b) opposed to each other, the food to be cooked being intended to be placed on said upper face (8a), said lower face (8b) being suitable to be coupled to said first surface (3a) of said base (3), said slab (8) being made of refractory material including cordierite, **characterized in that** said support (2)
10 comprises at least a wall (P) for protecting foods, positioned on said upper face (8a), from the heat irradiated by the bottom of the oven (F).
2. Baking tray according to claim 1, wherein said support (2) is made of steel sheet.
3. Baking tray according to claim 2, wherein said support (2) comprises at
15 least a perimeter edge (4) surrounding said first surface (3a) and defining a seat (5) for inserting said slab (8), said perimeter edge (4) retaining said slab (8) inside said seat (5).
4. Baking tray according to claim 3, wherein said wall (P) projects upwards from said perimeter edge (4).
- 20 5. Baking tray according to claim 4, wherein said peripheral edge (4) has a height lower than the thickness of said slab (8).
6. Baking tray according to claim 5, wherein said wall (P) has height greater than the thickness of said slab (8).
7. Baking tray according to claim 6, wherein said support (2) comprises a
25 gripping portion (6) for moving and handling the tray even with food placed on the upper face (8a) of said slab (8).
8. Baking tray according to claim 7, wherein said wall (P) includes said gripping portion (P).
9. Baking tray according to one of claims 6-8, wherein said wall (P) stands,
30 with respect to the upper face (8b) of said slab (8), at a height comprised between

30 and 35 mm.

10. Baking tray according to one of the previous claims, wherein said base (3) of said support (2) comprises an array of first through holes (9).

11. Baking tray according to one of the previous claims, wherein said base (3)
5 comprises a distribution of first reliefs (10) arranged on said first surface (3a).

12. Baking tray according to one of the previous claims, wherein said slab (8) comprises a distribution of second through holes (15).

13. Baking tray according to claim 12 when depending on claim 10, wherein said second holes (15) have their respective second axes (15a) coinciding with the
10 first axes (9a) of said first holes (9).

14. Baking tray according to claim 12 when depending on claim 10, wherein said second holes (15) have their respective second axes (15a) not coinciding with the first axes (9a) of said first holes (9).

15. Baking tray according to one of the previous claims, wherein said upper
15 face (8a) of said slab (8) comprises a plurality of first grooves (13) and/or wherein said lower face (8b) of said slab (8) comprises a plurality of second grooves (14).

16. Baking tray according to the previous claim when depending on claim 12, wherein said first grooves (13) intercept at least some of said second holes (15) at the respective openings thereof at the upper face (8a).

20 17. Baking tray according to one of the previous claims, wherein said support (2) and said slab (8) have a shape selected from quadrangular, circular or elliptical.

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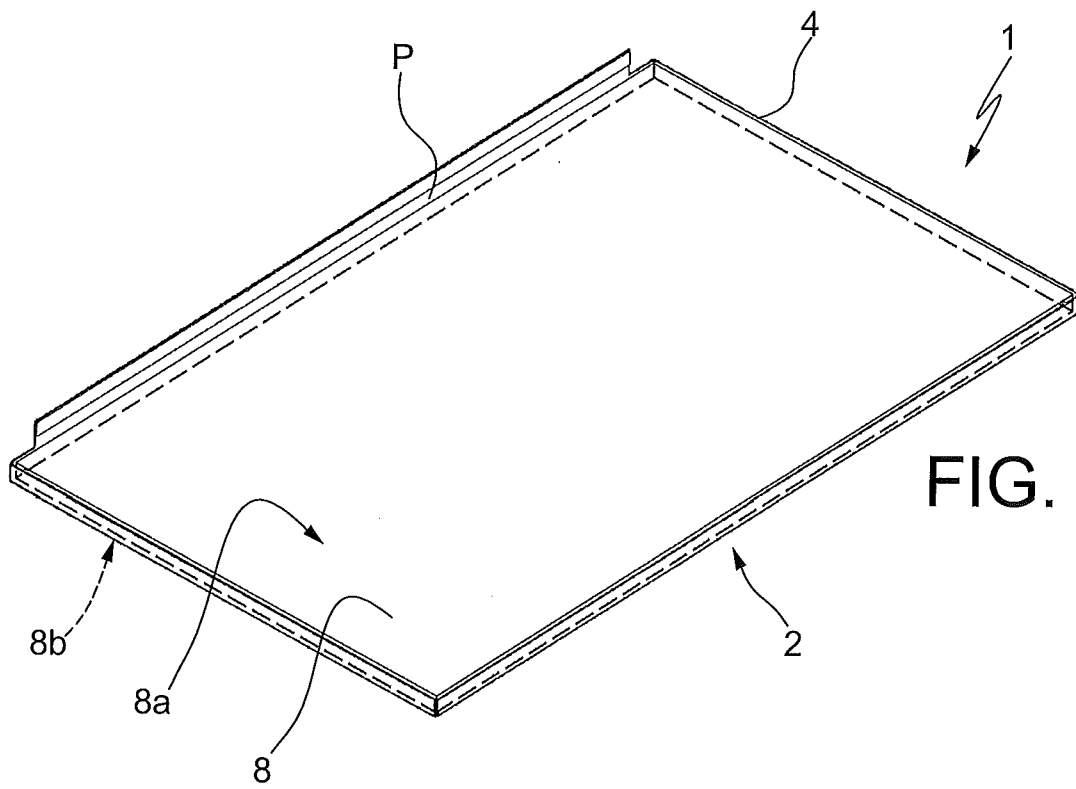


FIG. 1

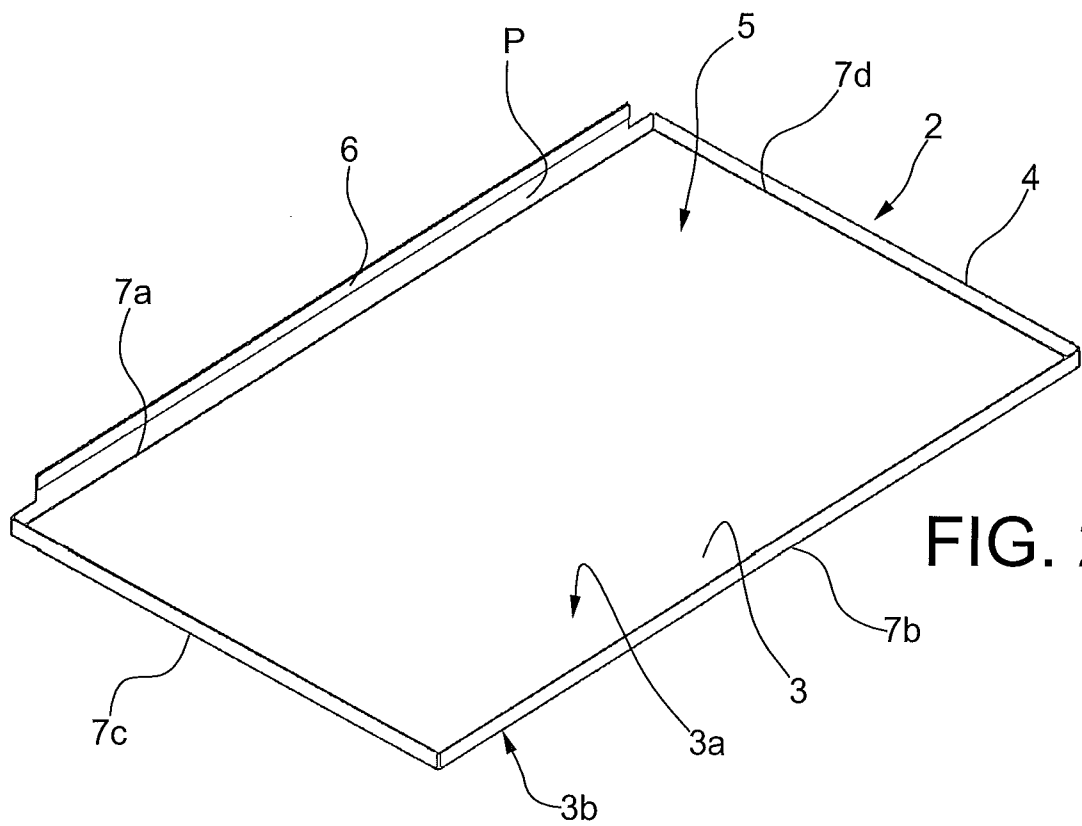
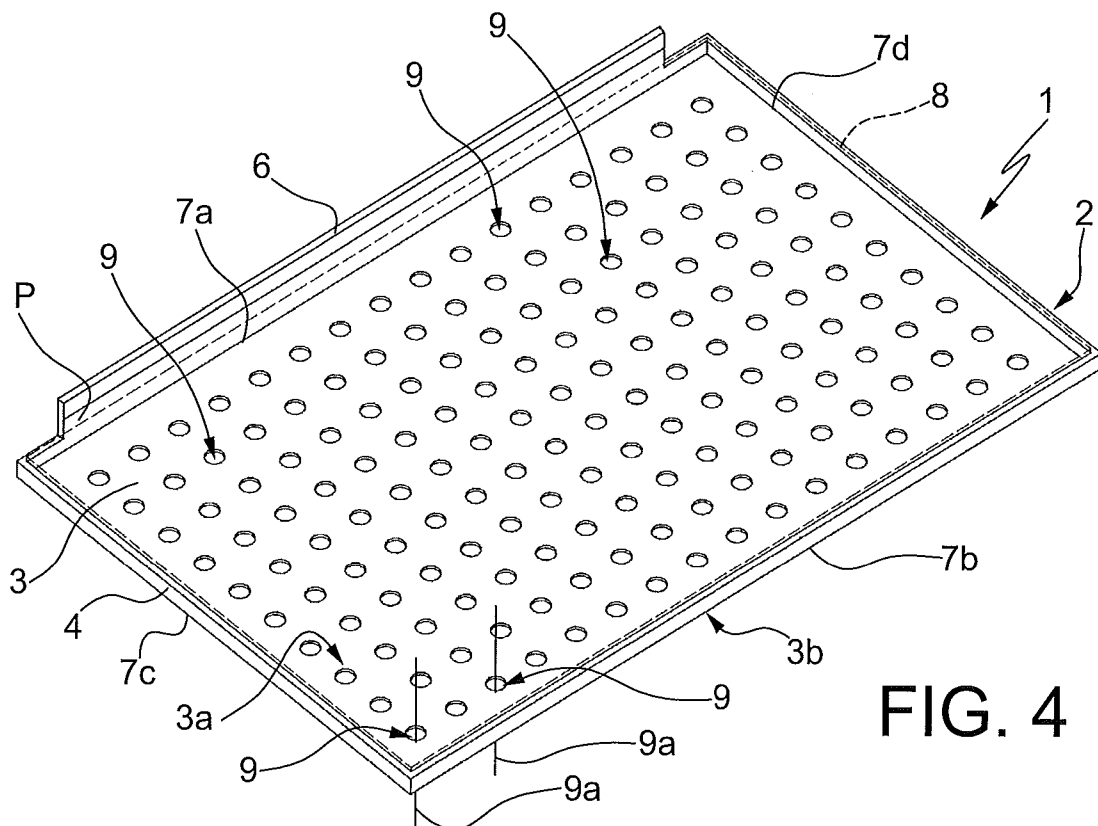
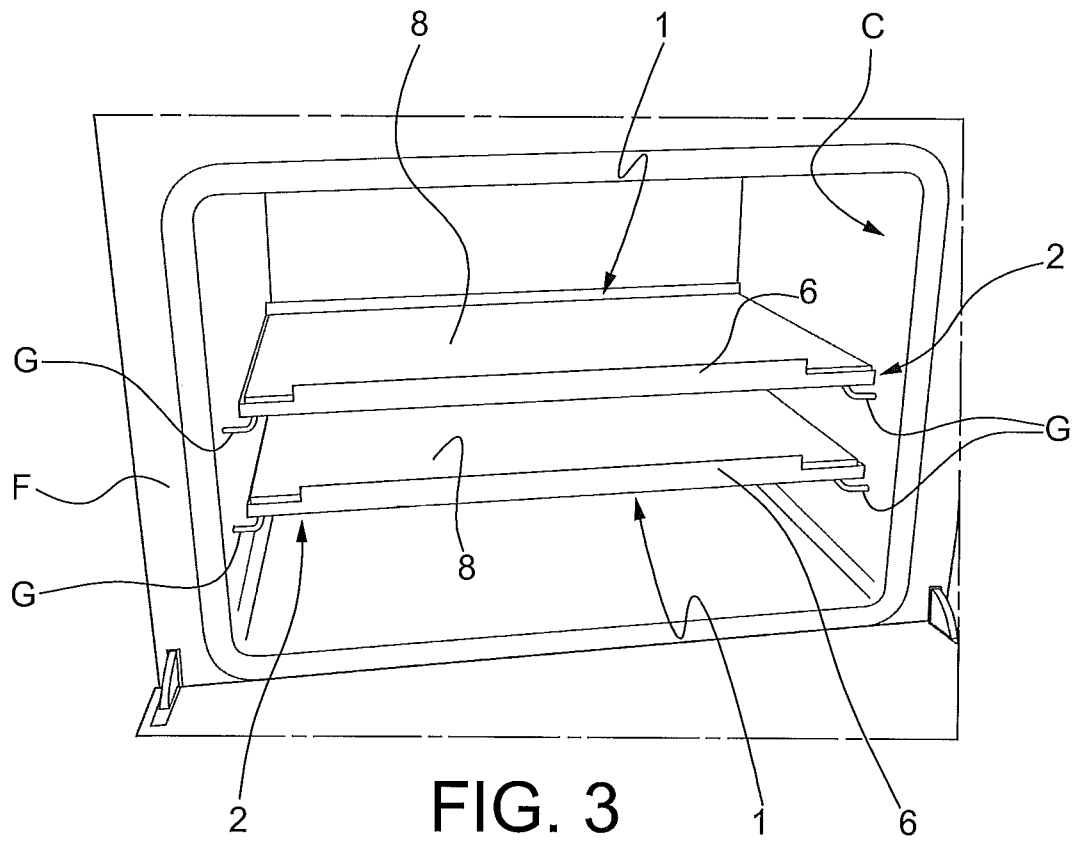


FIG. 2

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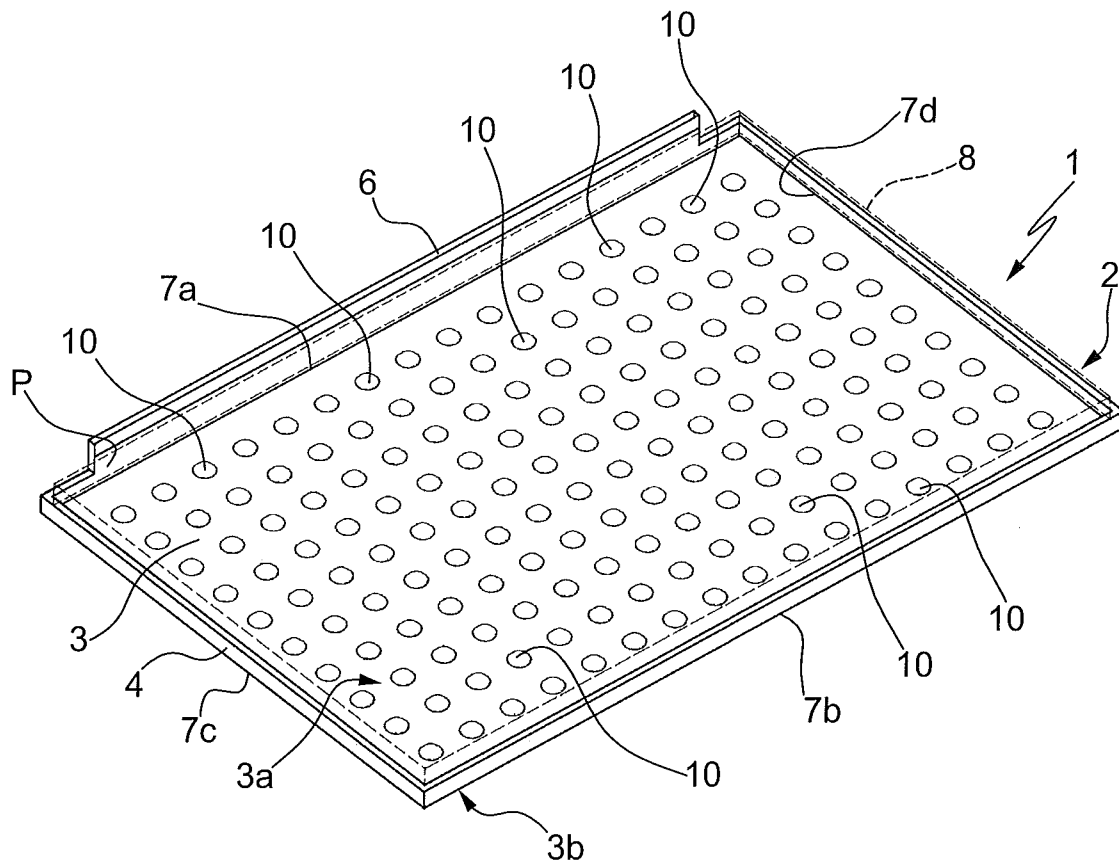


FIG. 5

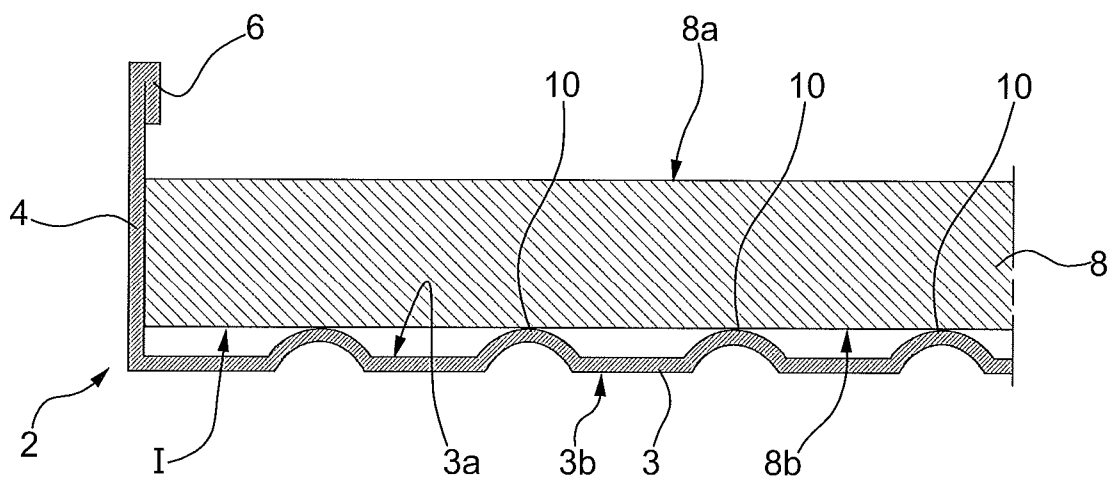
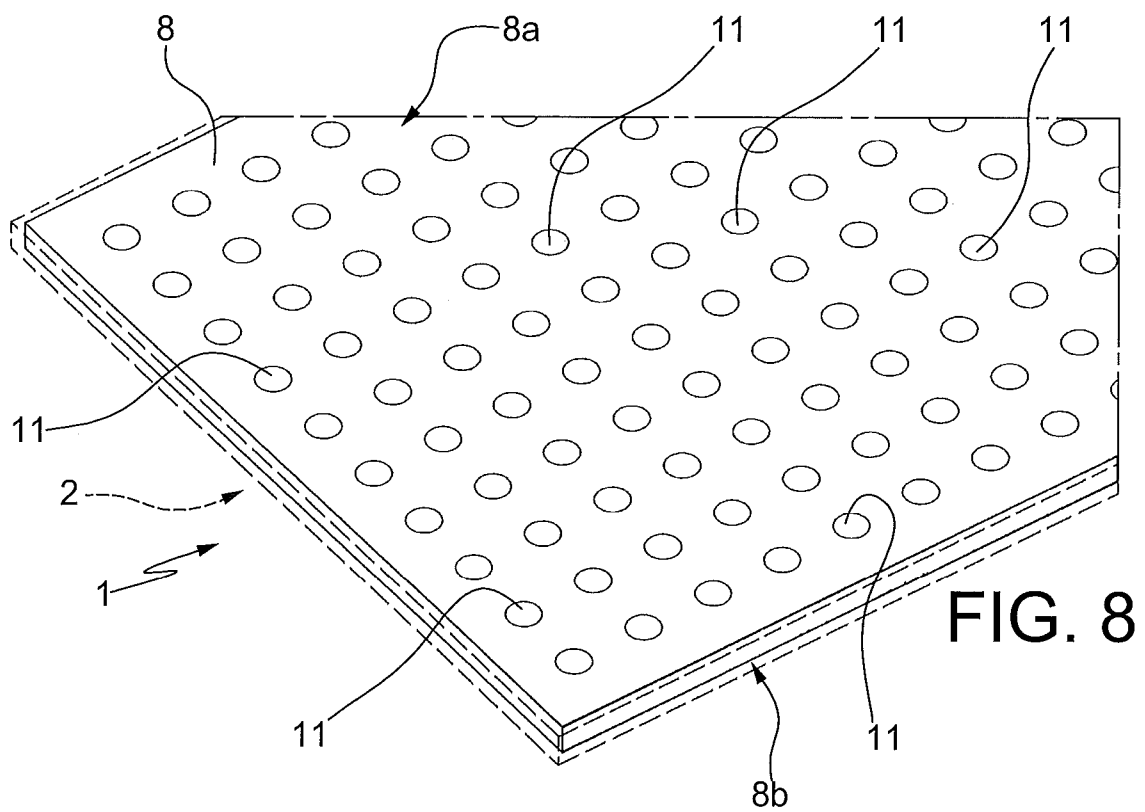
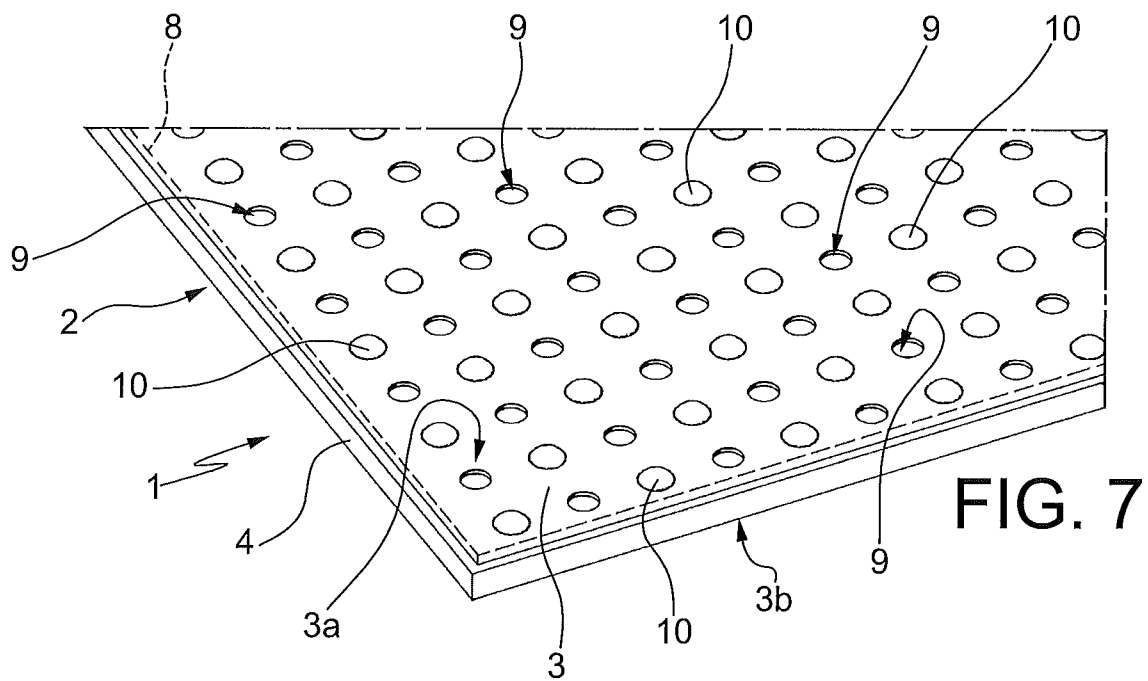


FIG. 6

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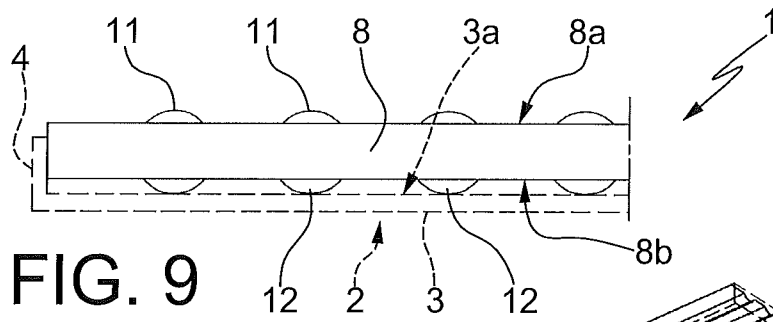


FIG. 9

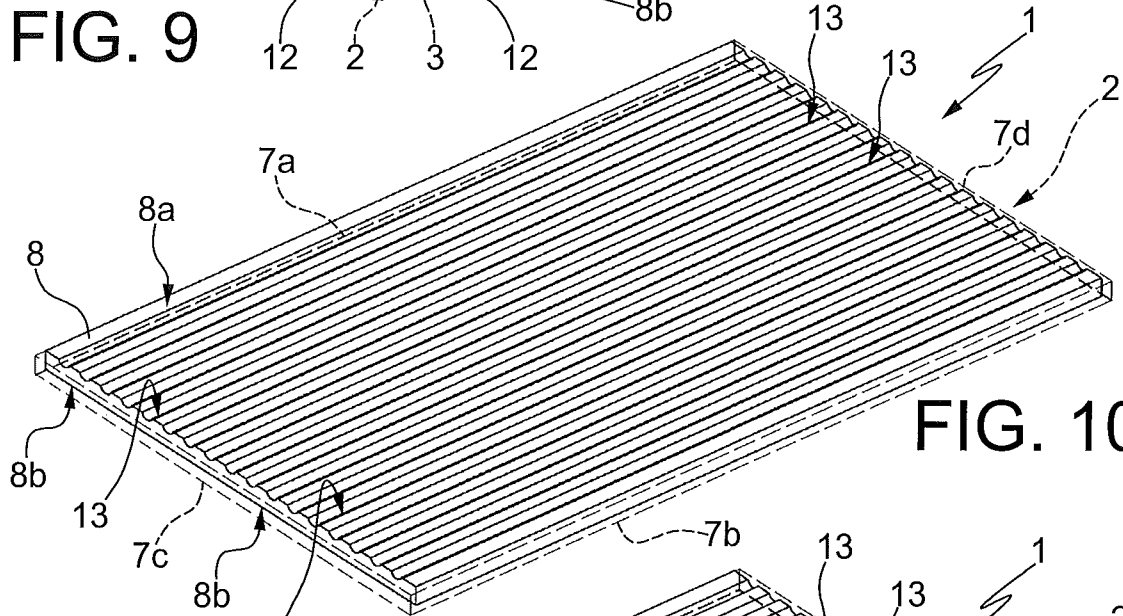


FIG. 10

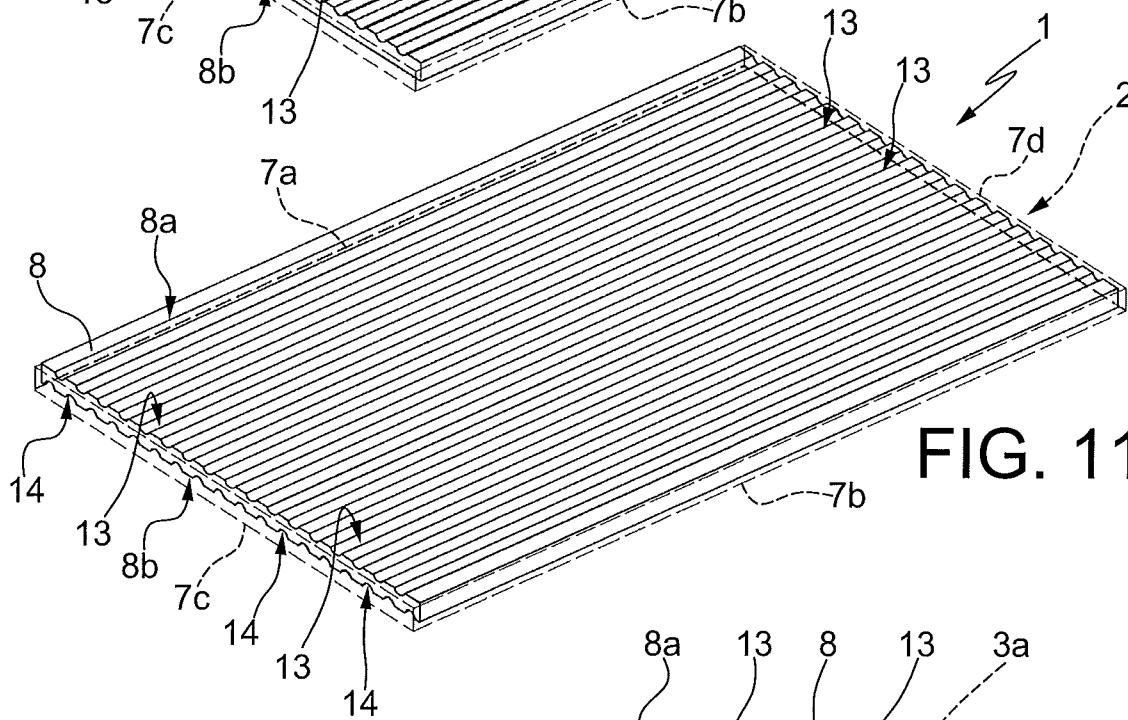
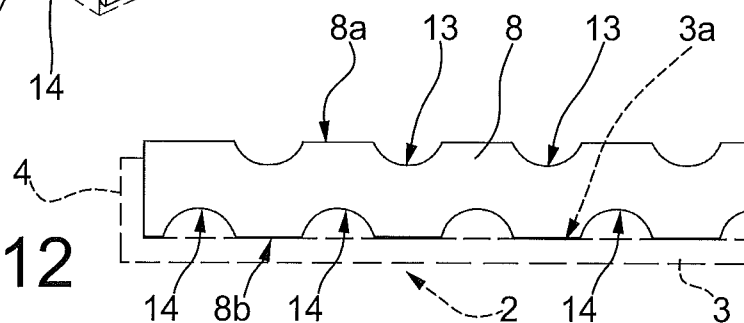


FIG. 11

FIG. 12



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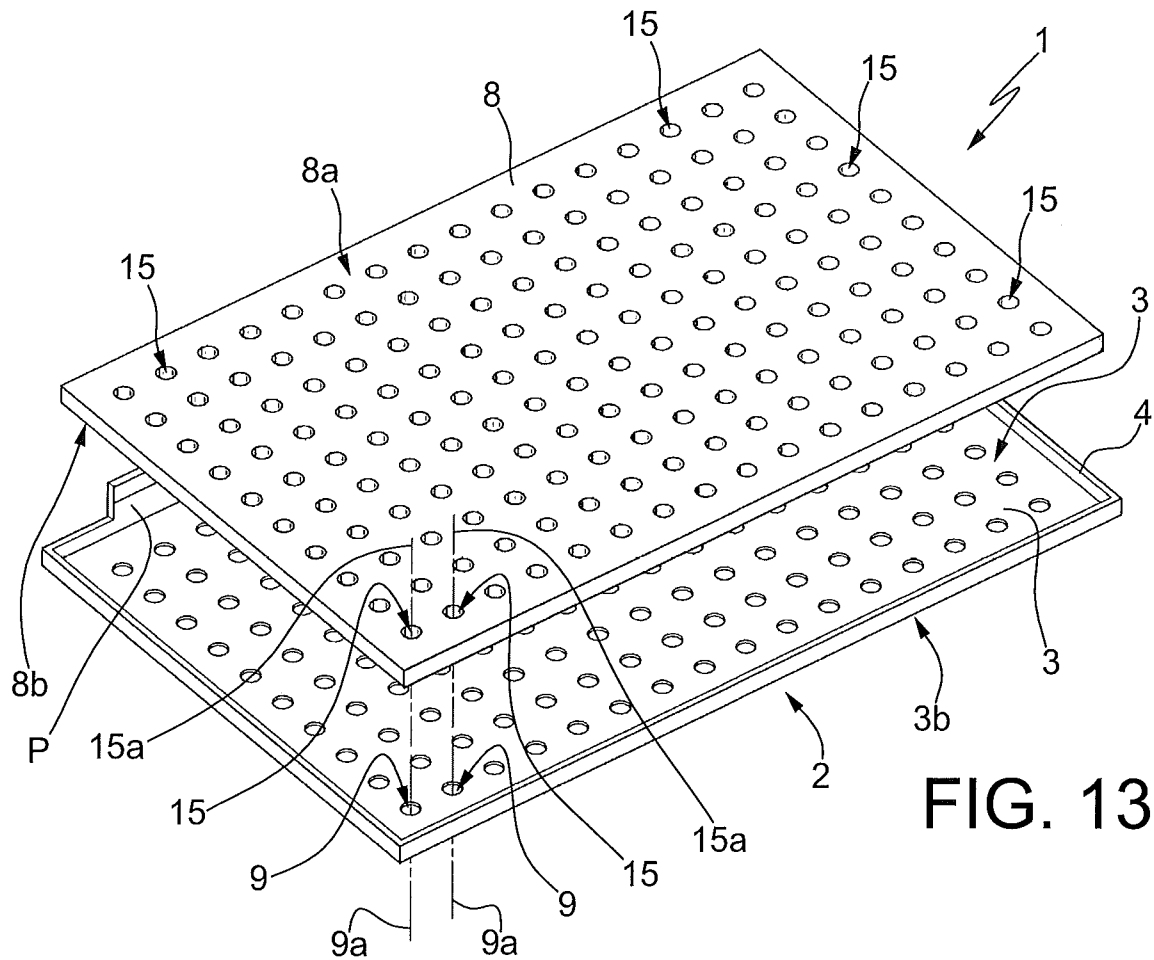


FIG. 13

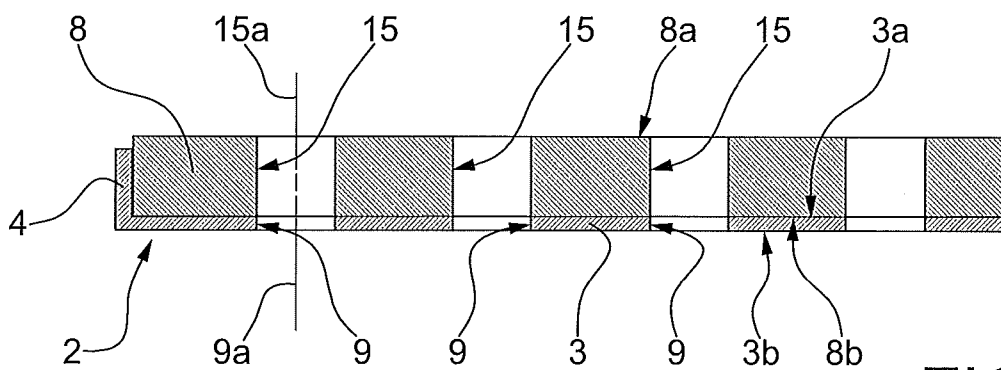


FIG. 14

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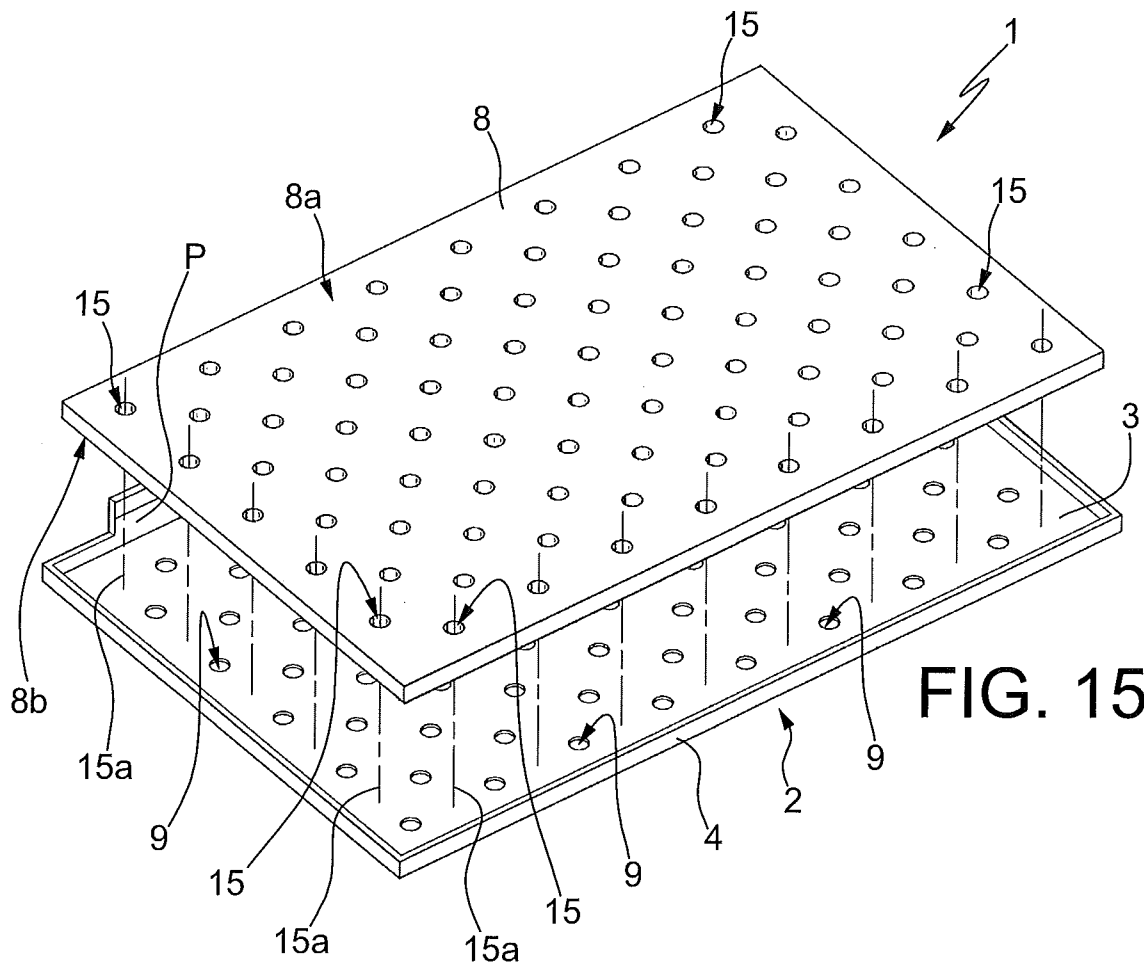


FIG. 15

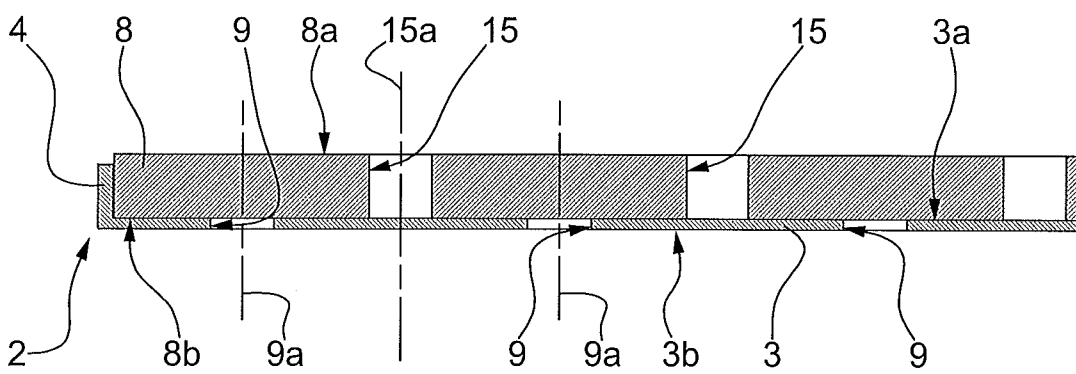


FIG. 16

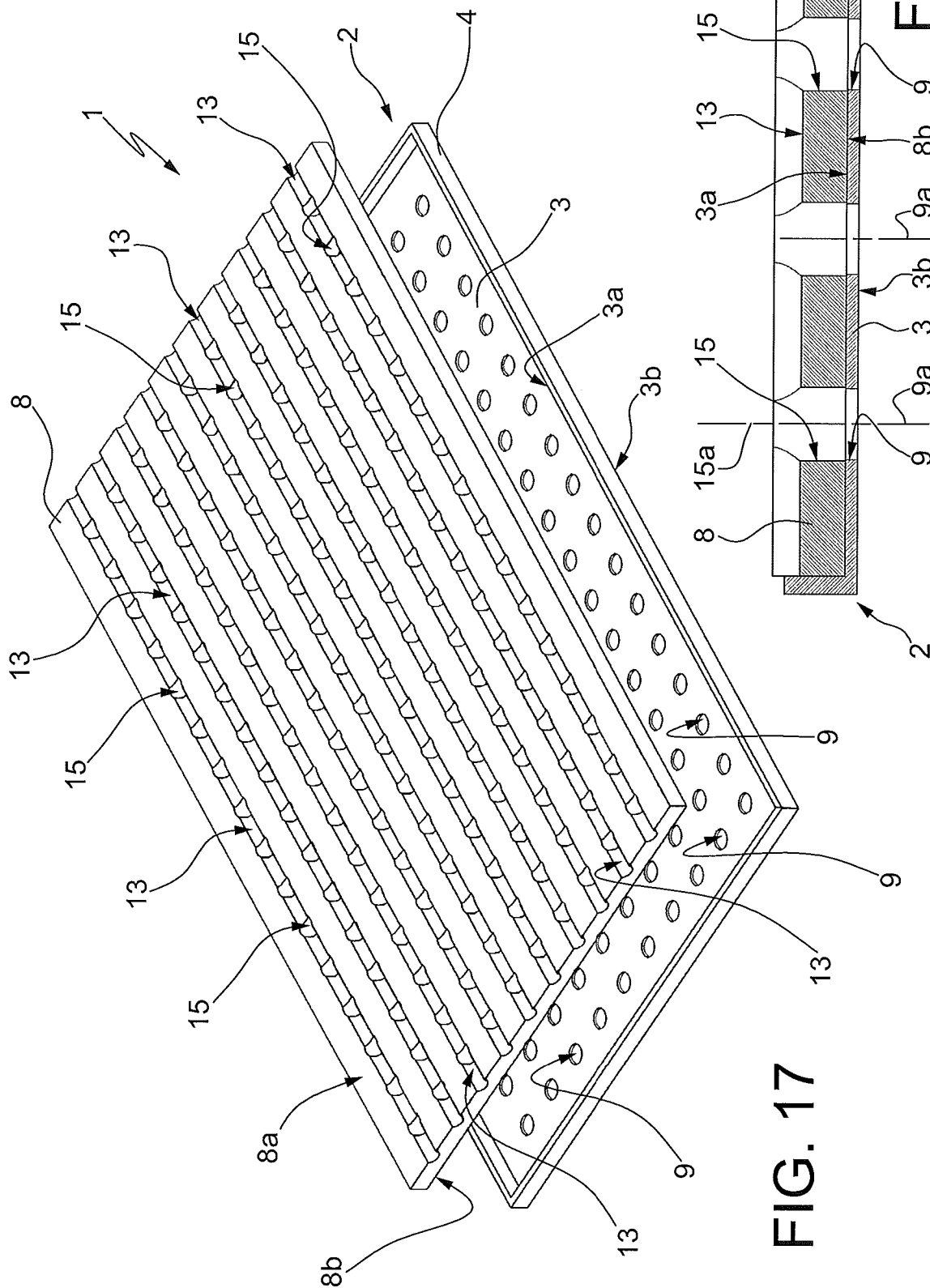


FIG. 17

FIG. 18

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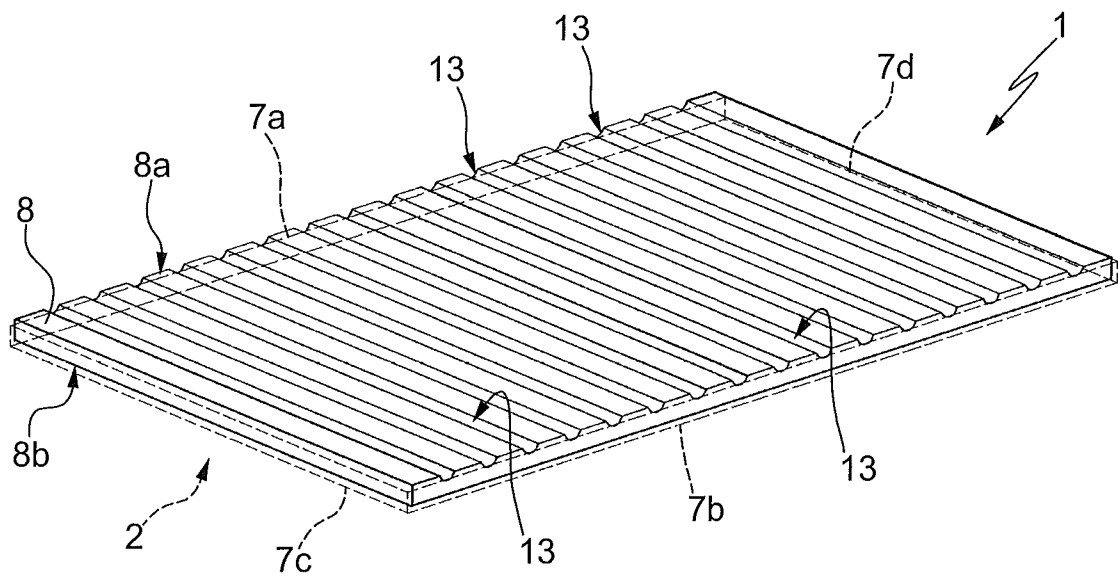


FIG. 19

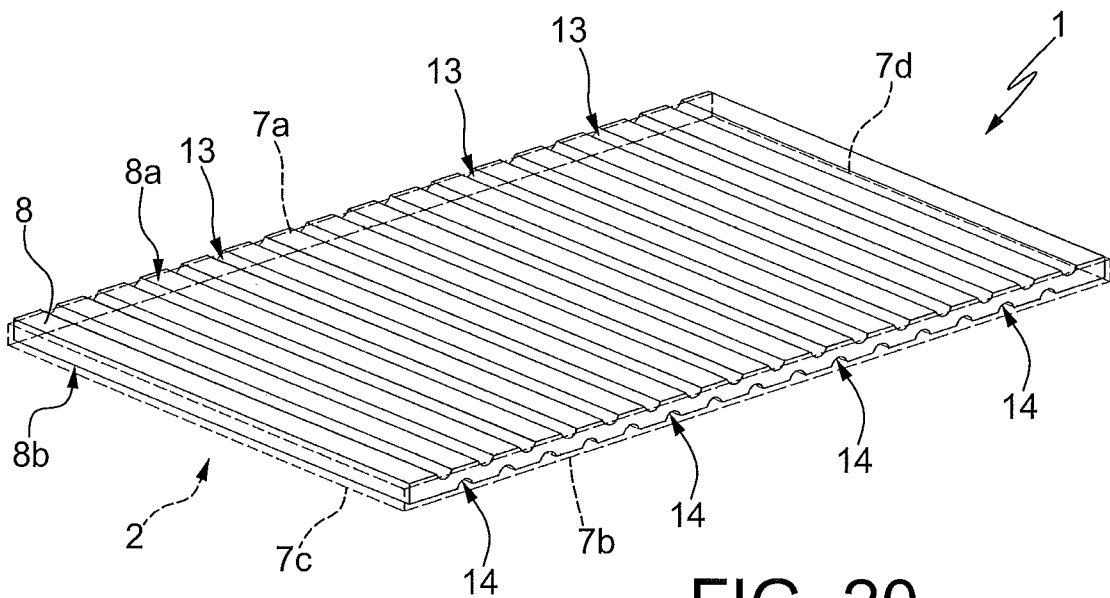
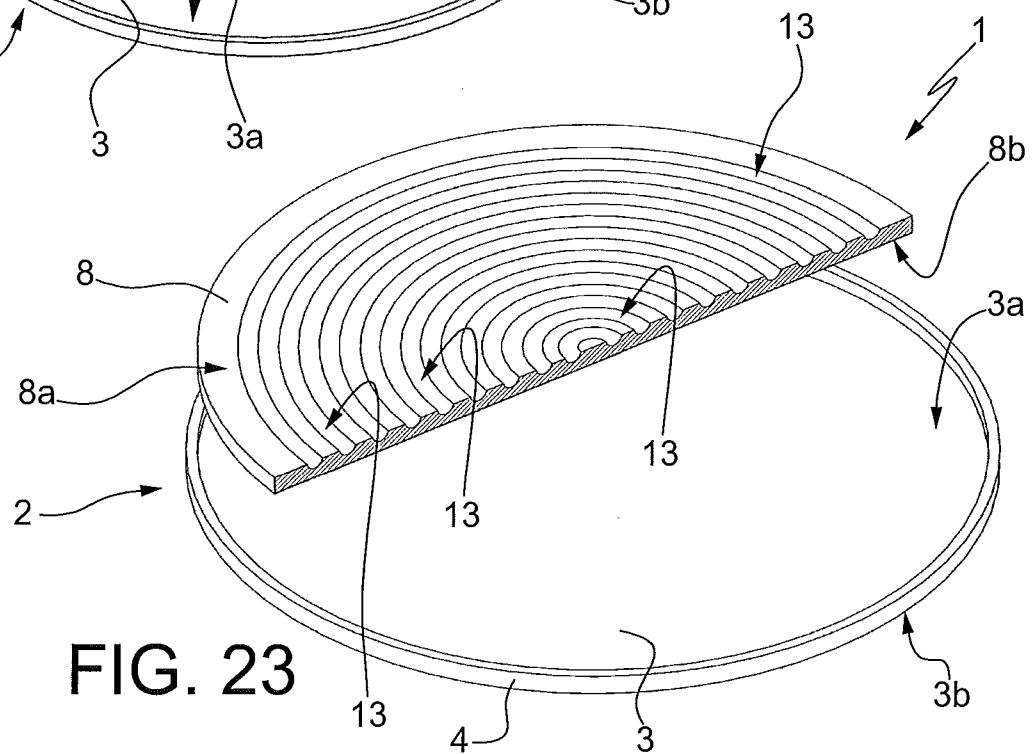
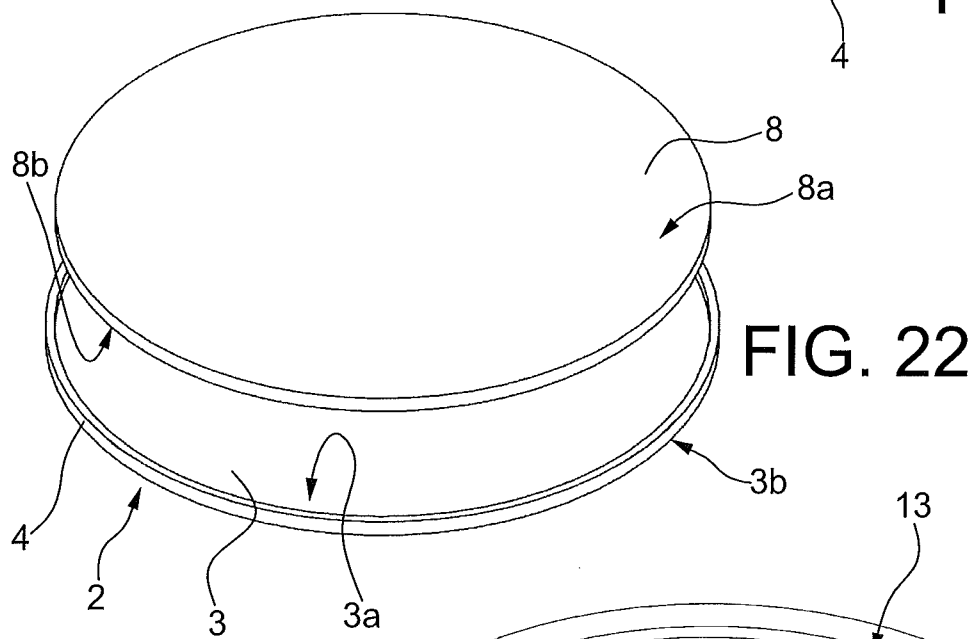
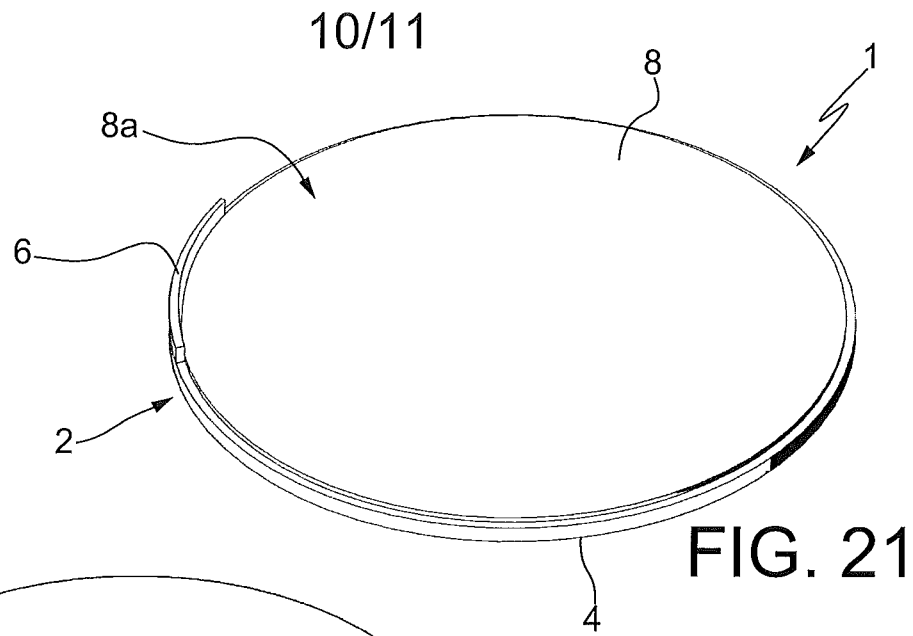


FIG. 20



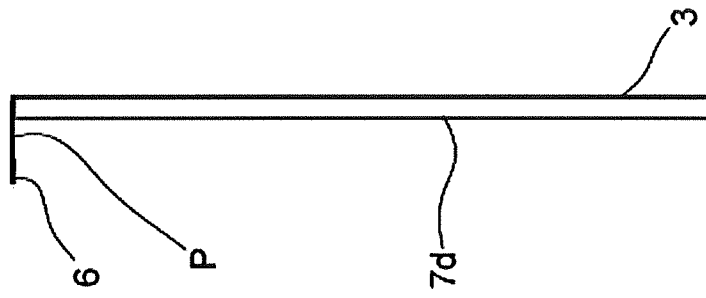


FIG. 25

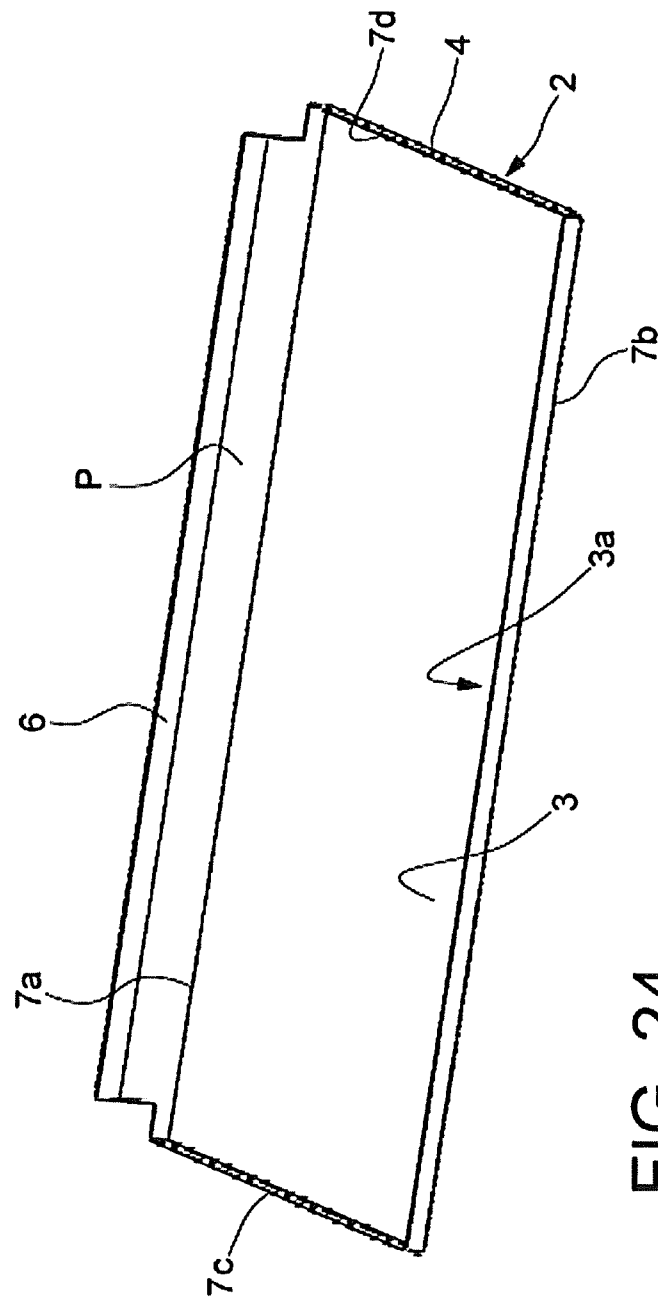


FIG. 24

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2017/052933

A. CLASSIFICATION OF SUBJECT MATTER

INV. A21B3/15 F24C15/16
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A21B F24C A47J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 805 526 A (RIVA TEOBALDO [IT]) 21 February 1989 (1989-02-21) the whole document -----	1-9,17
X A	GB 247 069 A (WILLIAM GUY PELL) 11 February 1926 (1926-02-11) the whole document -----	1,2,10, 12,13,17 14
X A	FR 52 587 E (M. LE MASSON [FR]) 30 April 1945 (1945-04-30) the whole document -----	1-7,9, 12,15,17 16
X	US 5 365 833 A (CHEN MING-JING [TW]) 22 November 1994 (1994-11-22) the whole document ----- -/-	1-3,10, 11,17



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

28 August 2017

Date of mailing of the international search report

01/09/2017

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Authorized officer

Fest, Gilles

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2017/052933

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	EP 1 413 832 A2 (LEVEQUE MAURICE [FR]) 28 April 2004 (2004-04-28) paragraphs [0029], [0038], [0043]; figures 1-3 -----	1,2,17
A	US 2014/026881 A1 (ABRAMS JOHN LUTHER [US] ET AL) 30 January 2014 (2014-01-30) paragraph [0089] -----	1
X	DE 42 37 760 A1 (TREUTLEIN STEFAN [DE]) 11 May 1994 (1994-05-11) the whole document -----	1,2,17

INTERNATIONAL SEARCH REPORT

Information on patent family members

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