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(54) **Base of a cooking top of the built-in type, method for making said base, and associated cooking top**

(57) The present invention relates to a base (1) of a cooking top of the built-in type, in particular for household use, said base (1) being of the type that comprises:
- a bottom wall (10), in particular having a quadrilateral shape;
- a plurality of side walls (20) connected to said bottom

wall (10).

The invention is characterised in that each side wall (20) comprises constraining means (30) adapted to effect a joint coupling between a side wall (20) and the adjacent side wall (20).

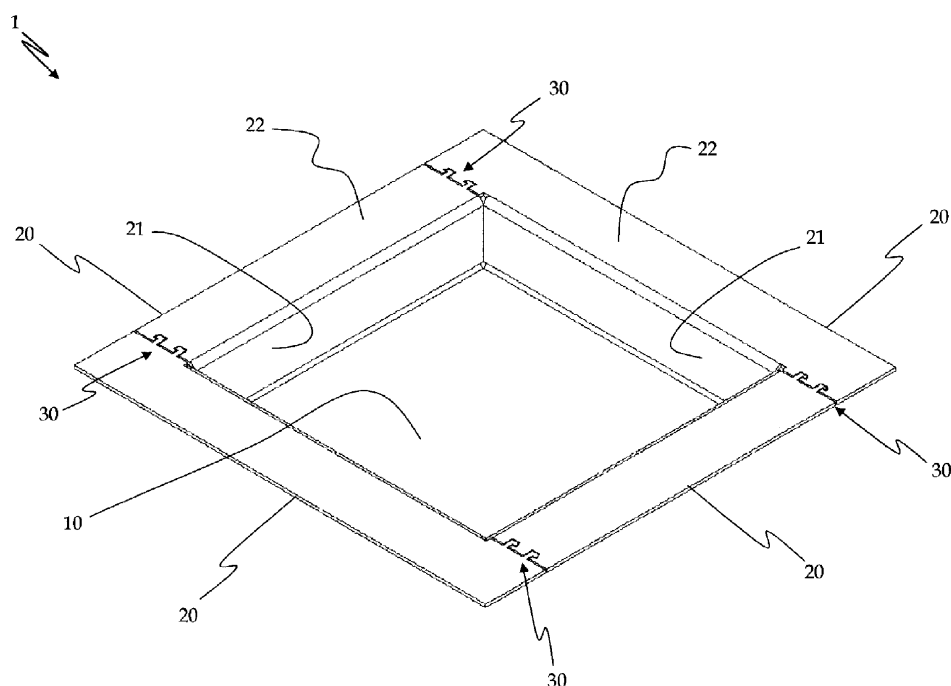


Fig. 1

Description

DESCRIPTION

[0001] The present invention relates to a base of a built-in cooking top, in particular for household use, according to the preamble of claim 1.

[0002] The present invention also relates to a method for making said base and to a cooking top comprising said base.

[0003] Built-in cooking tops known in the art are structured as one piece, and are adapted to be inserted into suitable openings substantially rectangular in shape obtained in kitchen cabinets.

[0004] In general, said cooking tops comprise a base adapted to protect and/or contain their functional elements, i.e. all those elements which are necessary for ensuring the proper operation of the plurality of heating elements of the cooking top, whatever their typology. The base of said cooking tops may then be associated with a cover adapted to house the heating elements.

[0005] The bases of known cooking tops comprise a bottom wall and a plurality of side walls, said side walls being bent in a manner such as to take a position substantially perpendicular to the bottom wall.

[0006] It has however been observed that such a configuration of the bases of known cooking tops implies a number of drawbacks mainly due to the fact that, once the side walls have been bent, the edges of said side walls tend to move apart because of the plastic properties of the material of said bases, said bases being usually made of a metallic material. This inevitably implies considerable difficulties in making the base.

[0007] Moreover, such movements of the base side walls may also make it more difficult to assemble the base in the substantially rectangular opening obtained in the kitchen cabinet. In this frame, it is the main object of the present invention to overcome the above-mentioned drawbacks by providing a base of a built-in cooking top, in particular for household use, which can be manufactured in a simple and effective manner.

[0008] It is a further object of the present invention to provide a base of a built-in cooking top, in particular for household use, which can be easily and comfortably assembled in substantially rectangular openings obtained in kitchen cabinets.

[0009] Said objects are achieved by the present invention through a base of a built-in cooking top, in particular for household use, through a method for making said base, and through a cooking top comprising such a base incorporating the features set out in the appended claims, which are intended as an integral part of the present description.

[0010] Further objects, features and advantages of the present invention will become apparent from the following detailed description and from the annexed drawings, which are supplied by way of non-limiting example, wherein:

- Fig. 1 is a perspective view of a base of a cooking top of the built-in type, in particular for household use, according to the present invention;
- Figs. 2a, 2b, 2c, 2d show schematic perspective views of the various steps of making the base of Fig. 1;
- Fig. 3 shows a variant of the base according to the present invention.

[0011] Said description and said drawings are to be considered as non-limiting examples. Referring now to Fig. 1, reference numeral 1 designates as a whole a base of a cooking top of the built-in type, in particular for household use, according to the present invention.

[0012] Said base 1 is of the type that comprises:

- a bottom wall 10, in particular having a quadrilateral shape;
- a plurality of side walls 20 connected to said bottom wall 10.

[0013] According to the present invention, each side wall 20 comprises constraining means (designated as a whole by reference numeral 30 in Fig. 1), adapted to effect a joint coupling between a side wall 20 and the adjacent side wall 20.

[0014] As can also be seen in Figs. 2a to 2d, said constraining means 30 comprise at least one tooth 31 adapted to effect a joint coupling with a notch 32, the shape of which is complementary to that of said tooth 31.

[0015] Preferably, the shapes of the tooth 31 and of the notch 32, in addition to being complementary to each other, are also irregular; for example, the tooth 31 and the notch 32 may have an L shape (as shown in the annexed drawings), preferably with indented contours.

[0016] The joint coupling between the tooth 31 and the notch 32 is substantially similar to that between the various pieces of a puzzle. In fact, in order to couple a side wall 20 to the adjacent side wall 20, it is necessary to insert each tooth 31 into the corresponding notch 32; a reverse movement must then be made to decouple a side wall 20 from the adjacent side wall 20.

[0017] Said joint coupling is substantially effected by first bringing the tooth 31 near the corresponding notch 32, so that the projections of the profiles of the tooth 31 and notch 32 match together while remaining in different planes, and then by inserting the tooth 31 into said notch 32.

[0018] After said joint coupling has been effected, a side wall 20 cannot be decoupled from the adjacent side wall 20 by means of movements in the same plane as said side walls 20; in fact, in order to decouple the side walls 20 it is necessary to make a movement which is the reverse of the movement made for coupling them. In particular, said decoupling must be effected by disengaging each tooth 31 from the respective notch 32, i.e. by moving the side walls 20 in different planes so that the profile of the tooth 31 abuts again on the profile of

the notch 32, i.e. so that the projection of the profile of the tooth 31 matches the projection of the profile of the notch 32, said profiles lying however in different planes.

[0019] As a result, said coupling between the side walls 20 allows to create the base 1 according to the present invention in a simple and effective manner, while preventing the side walls 20 from moving apart due to the plastic and elastic properties of the material of the base 1.

[0020] This also allows to obtain a base 1 which can be easily and comfortably assembled in the substantially rectangular openings obtained in kitchen cabinets (not shown in the drawings), in that the shapes and dimensions of the base 1 are not susceptible to changes caused by said plastic and elastic properties.

[0021] In addition, such a "puzzle-like" joint coupling prevents any undesired decoupling of the side walls 20 due to the latter moving in the same plane; in fact, the side walls 20 fitted with the constraining means 30 can only be decoupled when moved along different planes of the side walls 20, i.e. through a movement adapted to bring again the tooth 31 against the corresponding notch 32, so that the projections of the profiles of the tooth 31 and of the notch 32 match together while remaining in different planes.

[0022] In a preferred embodiment, each side wall 20 comprises:

- a first portion 21 bent in a manner substantially perpendicular to said bottom wall 10, and
- a second portion 22 bent in a manner substantially perpendicular to said first portion 21 and in such a way as to be substantially parallel to said bottom wall 10. Preferably, said constraining means 30 are provided on said second portion 22 of the side walls 20.

[0023] Furthermore, said second portion 22 may be facing outwards from the base 1, i.e. facing the side opposite to the bottom wall 10. However, said second portion 22 may also be directed towards the inside of the base 1, in particular towards the bottom wall 10. Consequently, when the base 1 is assembled in the opening of a kitchen cabinet, said first portion 21 is positioned substantially parallel to the walls of said opening, while said second portion 22 is substantially parallel to the worktop. Between the second portion 22 and the cover of the cooking top, said cover being that component of the cooking top, usually made of metal sheet or glass or glass-ceramic, which closes the base 1 at the top (said cover and said cooking top are not shown in the annexed drawings), it is then possible to insert a sealing material in order to prevent any liquids from seeping in.

[0024] As can be seen in Figs. 1 to 2d, on each of said second portions 22 there may be, without distinction, teeth 31 and/or notches 32, provided that such elements can be mated with teeth 31 and/or notches 32 present on contiguous second portions 22.

[0025] The following will describe a method for making a base 1 of a cooking top of the built-in type, in particular

for household use, which comprises:

- a bottom wall 10, in particular having a quadrilateral shape;
- a plurality of side walls 20 connected to said bottom wall 10.

[0026] According to the present invention, said method comprises the step of making each side wall 20 in a manner such that it comprises constraining means 30 adapted to effect a joint coupling between a side wall 20 and the adjacent side wall 20.

[0027] In particular, said method for making the base 1 according to the present invention comprises the following steps:

- a) bending the side walls 20 relative to the bottom wall 10;
- b) effecting a joint coupling between a side wall 20 and the adjacent side wall 20 through said constraining means 30, said joint coupling being obtained by coupling at least one tooth 31 provided on a side wall 20 to at least one notch 32 provided on an adjacent side wall 20, said tooth 31 and notch 32 having complementary shapes.

[0028] In particular, said step b) is accomplished by:

- b1) bringing a tooth 31 near a corresponding notch 32 so that the projections of the profiles of the tooth 31 and of the notch 32 are matched together, in particular said tooth 31 and notch 32 being located in different planes,
- b2) inserting the tooth 31 into the notch 32.

[0029] As aforementioned, said joint coupling is similar to that between the various pieces of a puzzle, and the tooth 31 cannot be coupled to or decoupled from the notch 32 by moving the side walls 20 and/or the constraining means 30 in the same plane.

[0030] As can be seen in particular in the assembly sequence shown in Figs. 2a to 2d, said step a) is accomplished by:

- a1) a first bending of the side wall 20, so as to obtain a first portion 21 bent in a manner substantially perpendicular to said bottom wall 10 (see Figs. 2a and 2c);
- a2) a second bending of the side wall 20, so as to obtain a second portion 22 bent in a manner substantially perpendicular to said first portion 21 and in such a way as to be substantially parallel to said bottom wall 10 (see Figs. 2b and 2d).

[0031] Preferably, said second portion 22 is so designed as to include said constraining means 30, in particular said teeth 31 and/or said notches 32; in addition, said second portion 22 may be bent outwards from the

base 1, i.e. away from the bottom wall 10. As an alternative, said second portion 22 may be bent towards the inside of the base 1, i.e. towards the bottom wall 10.

[0032] Step a) is preferably carried out by bending side walls 20 located on opposite sides of said quadrilateral-shaped bottom wall 10 substantially at the same time.

[0033] It should be noted that in each drawing from Fig. 2a to Fig. 2d the bending actions to be exerted on the side walls 20 are indicated by dashed arrows; as to Fig. 2d, the dashed arrow refers to the completion of the base 1 as shown in Fig. 1.

[0034] The features and advantages of the base of a built-in cooking top, in particular for household use, of the related method for making said base, and of the cooking top of the built-in type comprising the base of the present invention are apparent from the above description.

[0035] In particular, the present invention allows said base 1 to be made in a simple and effective manner while preventing the side walls 20 from moving apart during the assembly process due to the plastic and elastic properties of the material (typically sheet metal) of the base 1.

[0036] Furthermore, the base 1 according to the present invention can be easily and comfortably assembled in the substantially rectangular openings obtained in kitchen cabinets, in that the shapes and dimensions of the base 1 are not susceptible to changes due to said plastic and elastic properties.

[0037] Another advantage of the base 1 according to the present invention is that it provides a puzzle-like joint coupling between the side walls 20, said joint coupling being adapted to prevent any undesired decoupling of the side walls 20 due to a movement thereof in the same plane; in fact, the side walls 20 fitted with constraining means 30 can only be decoupled by moving said side walls 20 in a manner such as to position them in different planes, i.e. by disengaging each tooth 31 from the respective notch 32.

[0038] It is however clear that many changes may be made to the base and to the manufacturing method thereof according to the present invention, and that in its practical implementation the various components may have different shapes and arrangements or be replaced with other technically equivalent elements without departing from the novelty spirit of the inventive idea.

[0039] Fig. 3 illustrates one of the many possible variants.

[0040] In this variant, the second portions 22 of the side walls 20 comprise a pair of side segments 22L on which said constraining means 30 are obtained.

[0041] In particular, said pair of side segments 22L are obtained by shaping beforehand a blank sheet, in particular in a manner such that each second portion 22 lacks a central segment 22C.

[0042] As an alternative, said pair of side segments 22L are obtained by removing a central segment 22C (represented by a dashed line in Fig. 3) from each second portion 22. By preliminarily shaping or removing the cen-

tral segment 22C from each second portion 22, it is possible to reduce the weight of the side walls 20 and, as a result, of the whole base 1 according to the present invention.

[0043] It can therefore be easily understood that the present invention is not limited to the above-described base, manufacturing method thereof and cooking top of the built-in type comprising such a base, but may be subject to many modifications, improvements or replacements of equivalent parts and elements without departing from the inventive idea, as clearly specified in the following claims.

15 Claims

1. A base (1) of a cooking top of the built-in type, in particular for household use, said base (1) being of the type that comprises:

- a bottom wall (10), in particular having a quadrilateral shape;
- a plurality of side walls (20) connected to said bottom wall (10),

characterised in that

each side wall (20) comprises constraining means (30) adapted to effect a joint coupling between a side wall (20) and the adjacent side wall (20).

2. A base (1) according to claim 1, **characterised in that** said constraining means (30) comprise at least one tooth (31) adapted to effect a joint coupling with a notch (32), the shape of which is complementary to that of said tooth (31).

3. A base (1) according to claim 1, **characterised in that** each side wall (20) comprises:

- a first portion (21) bent in a manner substantially perpendicular to said bottom wall (10), and
- a second portion (22) bent in a manner substantially perpendicular to said first portion (21) and in such a way as to be substantially parallel to said bottom wall (10).

4. A base (1) according to claim 3, **characterised in that** said constraining means (30) are provided on said second portion (22) of the side walls (20).

5. A base (1) according to claim 3 or 4, **characterised in that** said second portion (22) faces outwards from the base (1), in particular in the direction opposite to the bottom wall (10).

6. A base (1) according to claim 3 or 4, **characterised in that** said second portion (22) is arranged towards the inside of the base (1), in particular towards the

bottom wall (10).

7. A method for making a base (1) of a cooking top of the built-in type, in particular for household use, said base (1) being of the type that comprises:

- a bottom wall (10), in particular having a quadrilateral shape;
- a plurality of side walls (20) connected to said bottom wall (10),

characterised in that

said method comprises the step of making each side wall (20) in a manner such that it comprises constraining means (30) adapted to effect a joint coupling between a side wall (20) and the adjacent side wall (20).

8. A method according to claim 7, **characterised by** comprising the following steps:

- a) bending the side walls (20) relative to the bottom wall (10);
- b) effecting a joint coupling between a side wall (20) and the adjacent side wall (20) through said constraining means (30), said joint coupling being obtained by coupling at least one tooth (31) provided on a side wall (20) to at least one notch (32) provided on an adjacent side wall (20), said tooth (31) and notch (32) having complementary shapes.

9. A method according to claim 8, **characterised in that** said step b) is accomplished by:

- b1) bringing a tooth (31) near a corresponding notch (32) so that the projections of the profiles of the tooth (31) and of the notch (32) are matched together, in particular said tooth (31) and notch (32) being located in different planes,
- b2) inserting the tooth (31) into the notch (32).

10. A method according to claim 8, **characterised in that** said step a) is accomplished by:

- a1) a first bending of the side wall (20), so as to obtain a first portion (21) bent in a manner substantially perpendicular to said bottom wall (10);
- a2) a second bending of the side wall (20), so as to obtain a second portion (22) bent in a manner substantially perpendicular to said first portion (21) and in such a way as to be substantially parallel to said bottom wall (10).

11. A method according to claim 10, **characterised in that** said second portion (22) includes said constraining means (30), in particular said teeth (31) and/or said notches (32).

12. A method according to claim 10 or 11, **characterised in that** said second portion (22) is bent outwards from the base (1), in particular in the direction opposite to the bottom wall (10).

13. A method according to claim 10 or 11, **characterised in that** said second portion (22) is bent towards the inside of the base (1), in particular towards the bottom wall (10).

14. A method according to claim 10, **characterised in that** a blank sheet is shaped beforehand in a manner such that each second portion (22) lacks a central segment (22C), thus obtaining a pair of side segments (22L) that comprise said constraining means (30).

15. A method according to claim 10, **characterised in that** a central segment (22C) is removed from each second portion (22), thus obtaining a pair of side segments (22L) that comprise said constraining means (30).

16. A method according to claim 8, **characterised in that** said step a) is carried out by bending side walls (20) located on opposite sides of said quadrilateral-shaped bottom wall (10) substantially at the same time.

17. A cooking top of the built-in type comprising a base (1) according to one or more of claims 1 to 6 and made in accordance with the method according to one or more of claims 7 to 16.

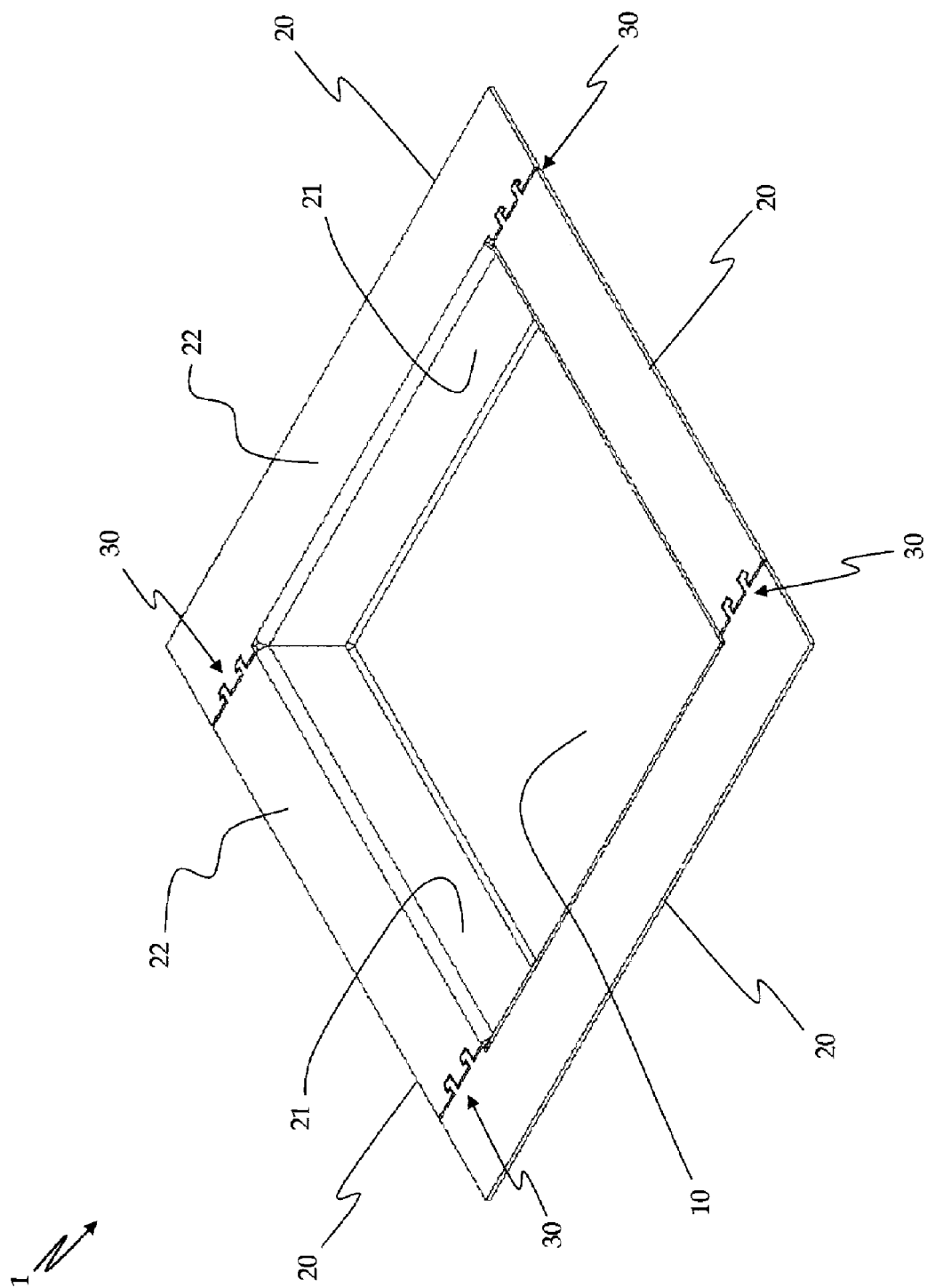


Fig. 1

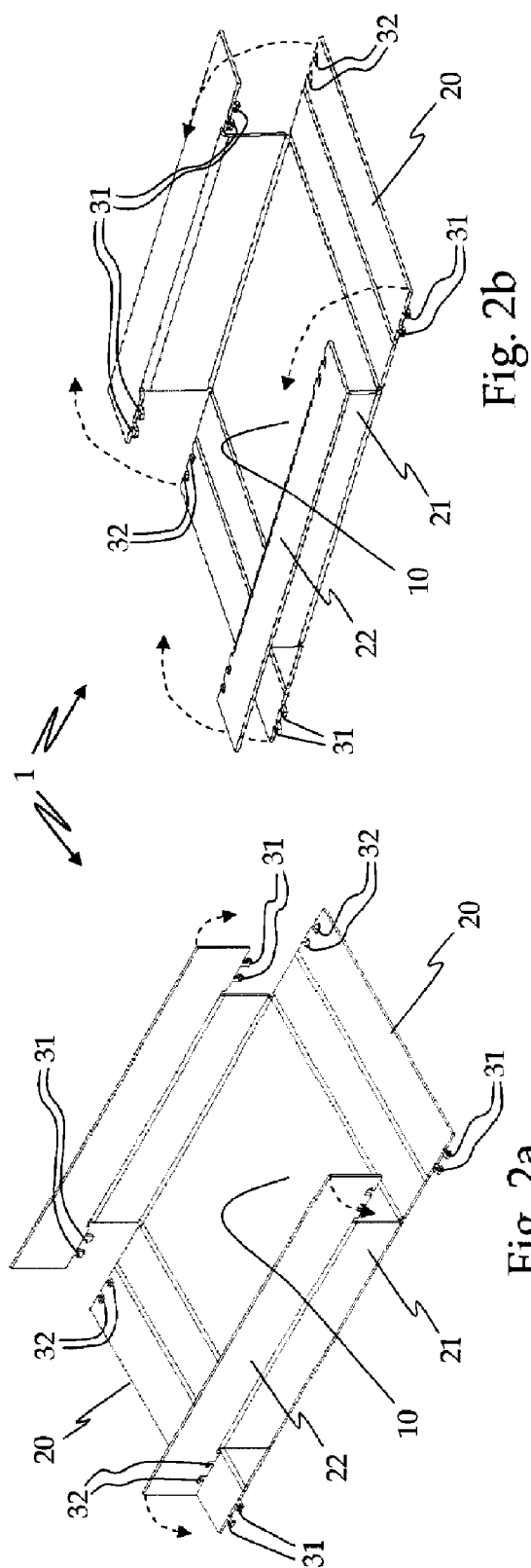


Fig. 2a

Fig. 2b

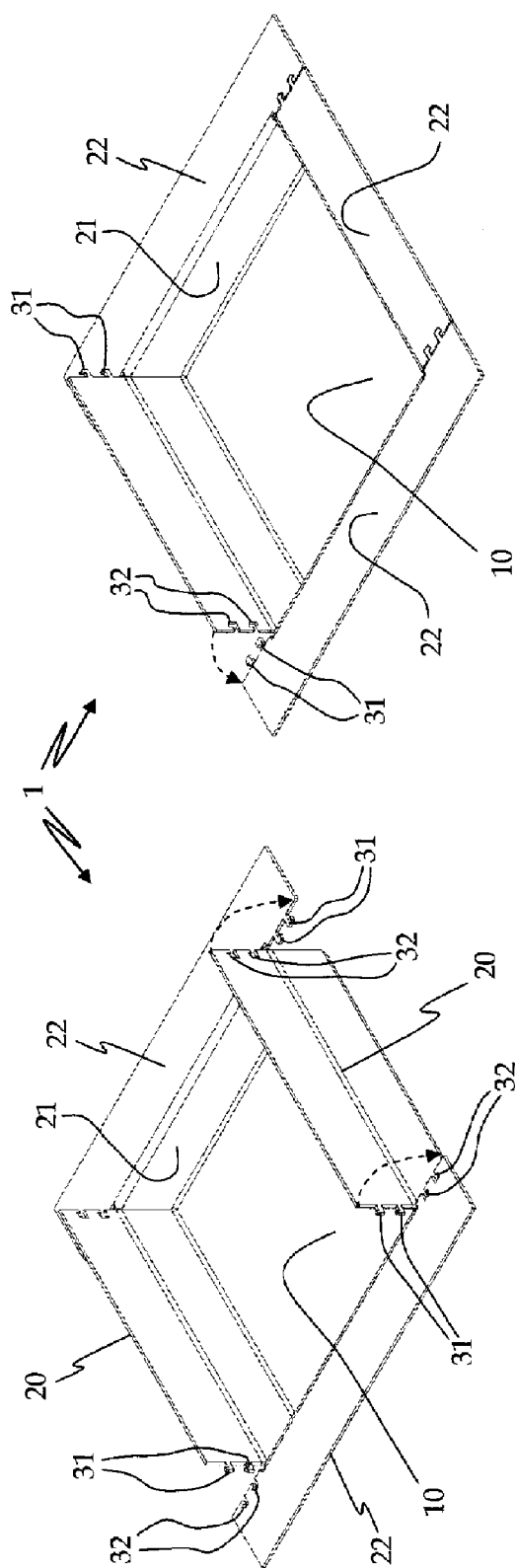


Fig. 2c

Fig. 2d

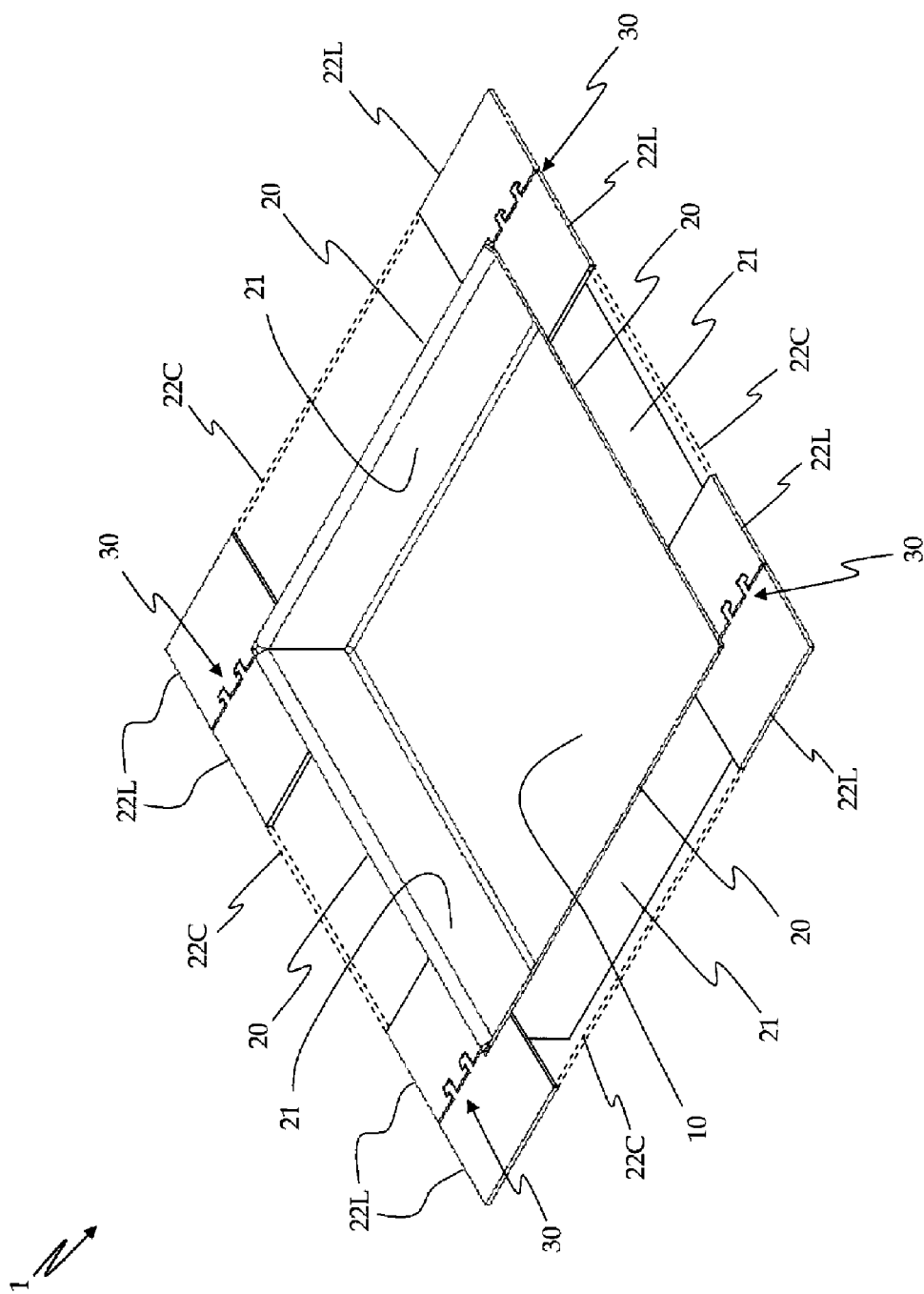


Fig. 3



EUROPEAN SEARCH REPORT

Application Number
EP 11 15 0518

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 12 April 2011	Examiner Moreno Rey, Marcos
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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