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(54) PROTECTION SHEET FOR INDUCTION PLATES

(57) A protection sheet (9) for induction plates (1) is placed between the induction plate (1) being protected and the cooking recipient(s), for which purpose the protection sheet comprises means for attaching it to the plate. The sheet is characterised in that it comprises one or more layers of impervious, anti-adhesive, absorbent material that is highly resistant to flameless heat and tear-resistant, and of a material that can be transparent, semi-transparent and/or opaque; said sheet (9) is longitudinally folded in the middle, the total width of the two halves of the sheet being wider than the plate (1), is wound into a roll (6) and cut to the desired measure.

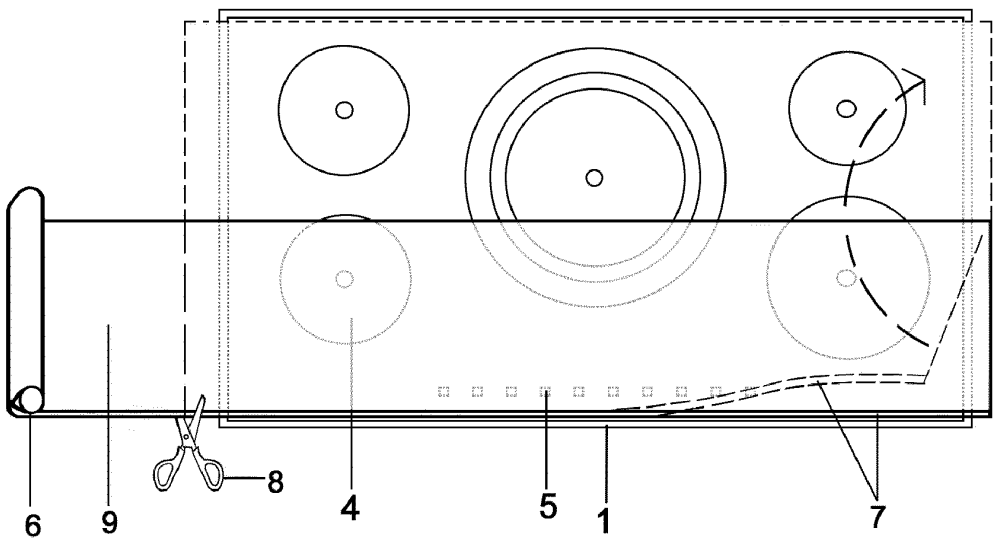

FIG.2

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Description

FIELD OF APPLICATION

[0001] The invention may fall within the technical sector of home services, and more specifically within the sector regarding prevention, care and cleaning of induction plates.

STATE OF THE ART AND OBJECT OF THE INVENTION

[0002] People find food enjoyable, but today, we look for elements that make cooking an easier task. We want appliances that cook by themselves and do not get anything dirty; and, of course, we want to dedicate the minimum amount of time necessary to cleaning. Cooking plates or worktops, of both the conventional vitroceramic and induction variety, are the most sought after on the market; some for their design, others for their quick cooking time, etc., but the feature common to all of them is that they are easy to clean. Within the field of plates and worktops, the invention relates solely and exclusively to induction plates, in such a way that it makes the same even easier to clean and extends the service life thereof.

[0003] Splashes and liquid spills, etc. cannot be prevented when cooking. This dirt, which falls on the plate when cooking, may damage the plate and has to be cleaned later. Rather than the plate itself being heated, it is the recipient that is heated on the induction plates, which reaches a maximum temperature of the residual heat produced by the recipient. This makes it easier for a material placed between the surface of the induction plate and the cooking recipient to be made of much simpler materials than in vitroceramic hobs. The invention provides a sheet that is placed between the recipient and the induction plate, in such a way that it facilitates the cleaning thereof. No product referring to this invention has been found for sale on the market, and although there are several utility models with the same purpose, these differ significantly from that proposed herein.

[0004] In order to remedy this problem, the use of protection sheets for induction plates is known, which comprise means for attaching it to the plate, as described in patent document WO2011144780. The invention constitutes an improvement in which the sheet may be made up of several layers and which is provided in a double width roll that is cut to the required measure in order to protect the plate.

DESCRIPTION OF THE INVENTION

[0005] As indicated in the previous section, it is desirable to be able to cook without having to worry about cleaning what has dirtied the plate afterwards, despite the fact that this is impossible. However, if we take the following saying as an example: "Cleaner is not he who cleans more, but he who dirties less", and if we take note, we will cook in such a way that we produce very little or no dirt at all, at the lowest cost possible. In addition to requiring time and effort, cleaning the plates constitutes a cost in products needed to keep it in perfect condition and these products are not exactly cheap. To this end, the present invention focuses on not getting the plate dirty, in order to not have to clean too much, by means of easily acquiring a simple solution, not made up of a large amount of bulky apparatus.

[0006] The present invention relates to a sheet that is placed between the induction plate and the cooking recipient(s), which collects the product splashed or spilt whilst cooking. To this end, means for attaching it onto the induction plate are included on the sheet.

[0007] The sheet comprises at least one layer of impervious, anti-adhesive, absorbent material, which is highly resistant to flameless heat and may change colour with the cooking heat but will not ignite, is tear-resistant, and made of a material that may be transparent, semi-transparent opaque or a combination of said transparent, semi-transparent and/or opaque materials. The sheet comprises a longitudinal fold in the middle, thus forming a double width, the total width of the two halves of the sheet being wider than the plate, is wound into a roll and cut to the desired measure.

[0008] The transparent and/or semi-transparent materials do not usually have absorption properties and the sheet must be able to absorb the products splashed and spilt onto it from the cooking recipient.

[0009] To this end, in one embodiment of the invention, it is provided that the at least layer comprises different areas, with different transparencies, in such a way that each one of said areas is made of a material selected from transparent, semi-transparent and opaque, forming a combination of areas with different degrees of transparency and absorption capacities, which are designed to serve a dual function: enable the products that come out of the recipient whilst cooking to be absorbed and enable at least one area of the induction plate to be viewed, for example the tactile controls of the plate and/or the marking areas of the heating hobs, such that this configuration enables splashes and spills resulting from cooking to be absorbed, whilst also enabling the user to use the plate correctly, upon enabling them to see and handle the controls and position the recipients such that they correspond to the location of the hobs.

[0010] Some induction plates take advantage of the entire surface area, in order to carry out the heating, these areas not being limited by circles that indicate the areas in which to place the recipients, it being possible to place the recipients anywhere on the plate. In this case, only the area of the sheet situated such that it corresponds to the controls must be transparent enough for the user to be able to use it normally.

[0011] In another embodiment of the invention, the sheet comprises two layers. In this case, the at least layer is made of a transparent or semi-transparent material and the second layer is included upon the same, stuck

to the former. Said second layer is made up of different areas of normally opaque, absorbent material, in such a way that this configuration makes it possible to maintain the absorption properties and one or more visible areas on the plate, in order to facilitate the normal use thereof.

[0012] In any of the embodiments, it is provided that the areas of absorbent material are made of paper, but they may obviously be of any other material that enables this function to be carried out.

[0013] The different areas of absorbent material have a configuration that may be regular or irregular, such that they may form longitudinal and/or transversal strips, or form a grid mesh, for example.

[0014] In any of the embodiments, the sheet is made of recyclable material.

[0015] Regarding the means for attaching the sheet to the induction plate, they may be:

- at least one adhesive strip situated in an area of the sheet, for example the upper end, lower end, or both;
- ferromagnetic elements, which enable the sheet to be stuck to the plate, and;
- magnetisable elements included in the sheet which, as the induction plate is put into operation, magnetise and adhere to the plate.

[0016] As noted above, the sheet is made of a highly heat- resistant material, preferably a polymer, and more specifically a transparent or semi-transparent polymer, such as a thermoplastic polymer or an elastomer.

[0017] The thermoplastic polymer may be a polyamide, polyphenylsulfone, polysulfone, fluorocarbonate polymer or a combination of the above.

[0018] In any of the embodiments, the joining of the materials of the different areas of the layers selected from the at least layer and the second layer is carried out via an element preferably selected from welding and adhesive resistant to high temperatures, although any other method suitable for joining these materials may be used.

[0019] Once cooking has finished, the sheet is removed, leaving the plate ready for future use. If for any reason the dirt that has fallen on the sheet is excessive, some small marks may remain on the plate when it is removed, which may be easily cleaned with a cloth, without needing to use cleaning products.

[0020] The sheet may preferably be single use only, or if it is not used a lot ,may continue to be used.

[0021] The dimensions of the sheet are: in width, slightly larger than the standard for plates, depending on the model of the induction plate. As noted above, it is presented for marketing folded longitudinally in half, forming a double width and is wound into a roll, in such a way that it is cut at the desired length and its total width is obtained by unfolding, so that it is easier to transport and store it at home, and of course, place it on the plate.

[0022] Naturally, the sheet may include a plurality of layers in order to achieve the features described above.

[0023] The invention provides the possibility of marking elements that are stuck to the sheet being included, either on the upper or lower face thereof, but which may also be stuck to the induction plate. These marking elements consist of small, geometric figures (such as crosses, small triangles, etc.) or other drawings or representations, made of the same material as the protection sheet, or of another material that is considered appropriate, but with the same features and of any colour and size, so that the user of the sheet of the invention may, optionally if they desire or as required, place the marking elements between the plate and the sheet or between the sheet and the cooking recipient. This marking element, for example, is useful in the event of the hobs of the plate not being clearly visible through the protection sheet, or in the event of the plate having already been damaged, or of the plate model having heating hobs represented with such faint lines that the heating hobs need to be marked more clearly, etc. Therefore, the position of the hobs of the plate may be identified more clearly with these elements, once the sheet of the invention has been mounted.

[0024] A set of figures is included below wherein, by way of illustrative and non-limiting examples, the object of the invention has been represented.

BRIEF DESCRIPTION OF THE FIGURES

[0025]

Figure 1. Shows a conventional induction plate for which protection is sought, where the width and length of the plate are specified, as well as the elements it is made up of.

Figure 2. Shows the placement of the sheet on the plate, attaching it with the adhesive strip and cutting it depending on the size.

Figure 3 Shows a sheet attached to the plate. The induction plate is now protected and prepared for use, with an opacity due to the protection sheet, but with sufficient transparency so as to be able to see the drawings of the hobs and controls.

Figure 4. Is an exploded view of the sheet on the induction plate, to aid the understanding of the position thereof upon said induction plate.

Figure 5. Shows another exemplary embodiment of the sheet attached to the induction plate, wherein said sheet comprises one or two layers that establish a combination of areas by way of strips with different transparencies, in which transparent areas alternate with opaque areas, in order to enable the necessary areas of the plate to be visible, so that the user may use it normally, such as the controls of the plate and the marking areas of the heating hobs for example.

Figure 6. Shows another exemplary embodiment of the sheet, wherein it comprises one or two layers that establish a combination of areas by way of a mesh with different transparency, in which transparent areas alternate with opaque areas, in order to

enable the necessary areas of the plate (not shown) to be viewed, so that the user may use it normally, such as the controls of the plate and the marking areas of the heating hobs, for example.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0026] An exemplary embodiment of the invention is described below with the aid of the aforementioned figures.

[0027] In the exemplary embodiment of the invention, an induction plate (1) with the following measurements is provided: 90 cm long (2) and 60 cm wide (3).

[0028] The invention consists of a sheet (9) made up of one or more layers supplied in a roll (6) 31 cm wide when folded (62 cm unfolded), which may have a variety of different lengths in meters: 20, 30, etc. The sheet (9) from the roll (6) is then placed on the plate (1) such that it covers the same and is attached with a number of adhesive strips (7) on the lower portion of the plate (1) until the desired length. The desired length is cut with scissors (8) and the sheet (9) that has been cut is unfolded in order to attach it onto the portion of the plate (1) that still needs to be covered. The roll (6) is stored away and the cooking recipients are placed on the plate (1), thus meaning one or more areas of the sheet must be transparent or semi-transparent, such that they enable the plate (1) to be at least partially visible, to enable the cooking hobs (4) and the controls (5) to be completely or partially visible, in such a way that the user may use the plate (1) normally. Once cooking has finished, the sheet (9) is removed and thrown away to be recycled.

[0029] The sheet (1) comprises one or more layers of impervious, anti-adhesive, absorbent material, that is highly resistant to flameless heat and tear-resistant, and is made of a transparent, semi-transparent and/or opaque material.

[0030] The transparent or semi-transparent areas do not normally have absorption properties, thus meaning that in one embodiment of the invention, the sheet (1) comprises a layer equipped with different areas (10 and 11) made of different materials, forming a combination of areas with different degrees of transparency and absorption, to enable the controls of the plate and/or the marking areas of the heating hobs (4) to be visible, thus enabling the user to use the induction plate (1) normally, whilst at the same time enabling splashes and/or spills resulting from cooking to be absorbed. Examples of this embodiment are shown in figure 5 and 6, in which transparent areas (10) are alternated with opaque areas (11). In figure 5, the different areas (10 and 11) form longitudinal strips, and in figure 6 they form a mesh grid.

[0031] In another embodiment, the sheet comprises two layers (10a and 11 a), one being continuous and made of a transparent or semi-transparent material (10a), upon which a second layer (11 a) made up of different areas of absorbent material (11 a), normally opaque, is stuck, such that through the areas of the second layer (11 a) in which there is no opaque absorbent material (11 a), the transparent or semi-transparent areas (10a) areas of the first layer may be viewed, thus facilitating visualisation of the controls (5) and the heating hobs (4) of the plate (1). Figures 5 and 6 may also constitute exemplary embodiments of the sheet with two layers (10a, 11 a) in which, rather than comprising a layer with transparent (10) and opaque (11) areas, these area are arranged in two layers (10a, 11 a), where the first layer (10a) is made of transparent material and the second layer (11 a) is made of absorbent material.

[0032] In the exemplary embodiments, the opaque absorbent material (11, 11 a) is paper, and forms longitudinal strips (11, 11 a), as shown in figure 5, or any configuration such as transversal, longitudinal and transversal strips for example, or a mesh grid (10, 10a, 11, 11b), as shown in figure 6, in which the transparent (10b) and opaque (11b) areas have not been specified, since they may adopt any combination of grids with transparent (10, 10a) and opaque (11, 11 a) areas, which are arranged according to the configuration of the plate (1), in order to enable it to be used conventionally by the user.

[0033] The sheet (9) is made of recyclable material and the material that is highly resistant to heat is a transparent or semi-transparent polymer, such as an elastomer or thermoplastic, such as: a polyamide, polyphenylsulfone, polysulfone, fluorocarbonate polymer or a combination of the above.

[0034] The joining of the materials in each area, both for the sheet with one or two layers, is carried out via a welding or adhesive element resistant to high temperatures, although any other method suitable for joining these materials may be used.

Claims

1. A protection sheet (9) for induction plates (1), which is placed between the induction plate (1) to be protected and the cooking recipient(s), for which purpose it comprises means for attaching it to the plate; **characterised in that** it further comprises at least one layer of impervious, anti-adhesive, absorbent material that is highly resistant to flameless heat and is tear-resistant, made of a material selected from transparent, semi-transparent, opaque and a combination of the above; where said sheet (9) comprises a longitudinal fold in the middle, the total width of the two halves of the sheet being wider than the plate (1), which is wound into a roll (6) and cut to the desired measure.

2. The protection sheet (9) for induction plates (1) according to claim 1, **characterised in that** the at least layer comprises different areas, each one of which is made of a material selected from transparent, semi-transparent and opaque, forming a combination of areas with different degrees of transparency

and absorption capacities, in order to enable splashes produced by cooking to be absorbed and at least one area of the induction plate (1) to be visible, selected from the controls (5) of the plate, the marking areas of the heating hobs (4) and a combination of both.

3. The protection sheet (9) for induction plates (1) according to claim 1, **characterised in that** the at least layer is made of a material selected from transparent and semi-transparent; upon which it comprises a second layer stuck to the same, made up of different areas of absorbent material, in order to facilitate the absorption of splashes produced whilst cooking and the visualisation of at least one area of the induction plate (1), selected from the controls (5) of the plate (1), the marking areas of the heating hobs (4) and a combination of both.

4. The protection sheet (9) for induction plates (1) according to claims 2 or 3, **characterised in that** the areas of absorbent material are made of paper.

5. The protection sheet (9) for induction plates (1) according to claims 2 or 3, **characterised in that** the different areas of absorbent material have a configuration selected from regular and irregular.

6. The protection sheet (9) for induction plates (1) according to claims 2 or 3, **characterised in that** the different areas of absorbent material form strips selected from longitudinal, transversal and a combination of the above.

7. The protection sheet (9) for induction plates (1) according to claims 2 or 3, **characterised in that** the different areas of absorbent material form a mesh grid.

8. The protection sheet (9) for induction plates (1) according to preceding claims, **characterised in that** it is made of a recyclable material and is for single use only.

9. The protection sheet (9) for induction plates (1) according to claim 1, **characterised in that** the means for attaching it to the plate (1) are selected from:

- at least one adhesive strip (7) situated in an area of the sheet (9) selected from the upper end, lower end, and a combination of both;
- ferromagnetic elements;
- magnetisable elements included in the sheet (9), in order to attach it the sheet by means of magnetisation, upon the very operation of the plate (1) itself, upon being connected.

10. The protection sheet (9) for induction plates (1) according to claim 1, **characterised in that** the material that is highly resistant to heat is a polymer.

11. The protection sheet (9) for induction plates (1) according to claim 10, **characterised in that** the polymer is selected from a transparent and semi-transparent polymer which, in turn, is selected from a thermoplastic polymer and an elastomer.

12. The protection sheet (9) for induction plates (1) according to claim 11, **characterised in that** the thermoplastic polymer is selected from a polyamide, polyphenylsulfone, polysulfone, fluorocarbonate polymer and a combination of the above.

13. The protection sheet (9) for induction plates (1) according to claims 2 or 3, **characterised in that** the joining of the materials of the different areas of the layers selected from between the at least layer and the second layer is carried out via an element selected from welding and adhesive resistant to high temperatures.

14. The protection sheet (9) for induction plates (1) according to claims 2 or 3, **characterised in that** it comprises marking elements for marking the location of the heating hobs (4), which are stuck to the surface selected from one of the upper and lower faces of the sheet and the surface of the induction plate; where said marking elements comprise a drawing placed such that they correspond to the position of the heating hobs (4) on the plate (1), once the sheet (9) has been arranged on said plate (1).

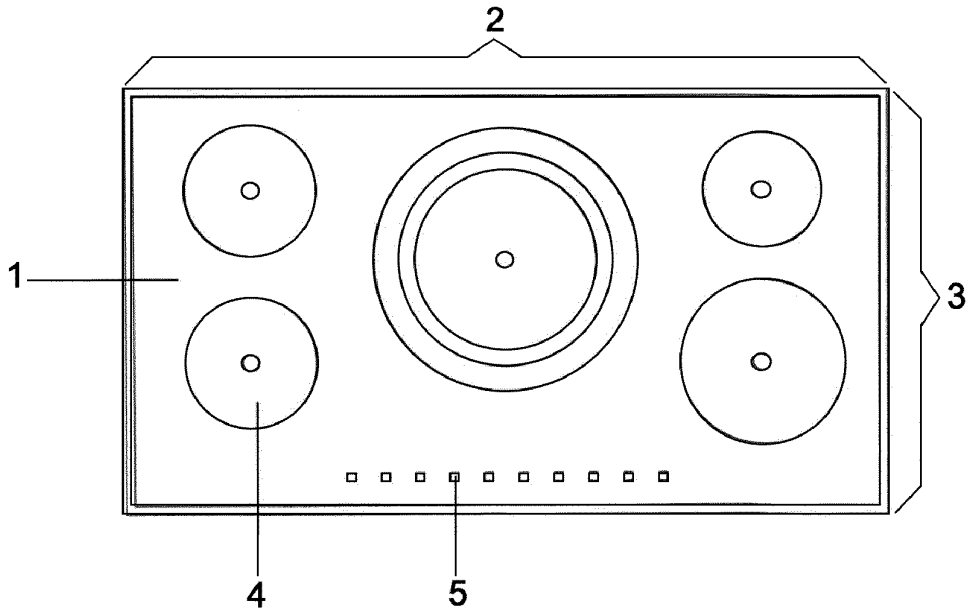

FIG.1

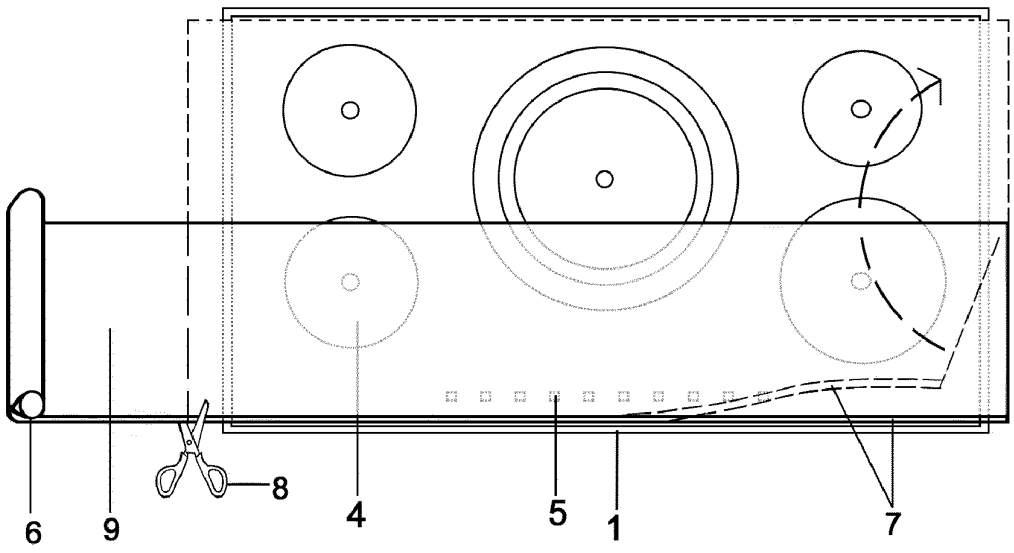

FIG.2

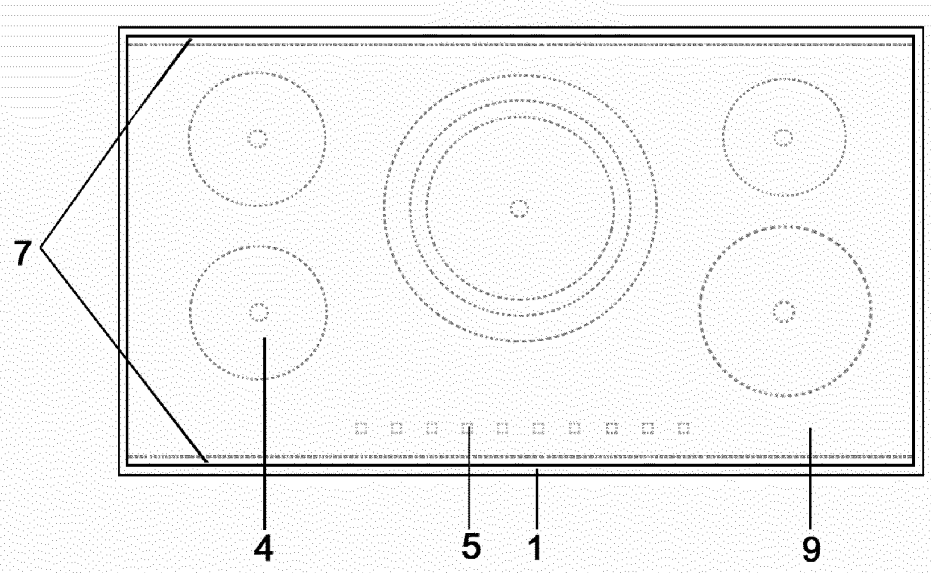

FIG. 3

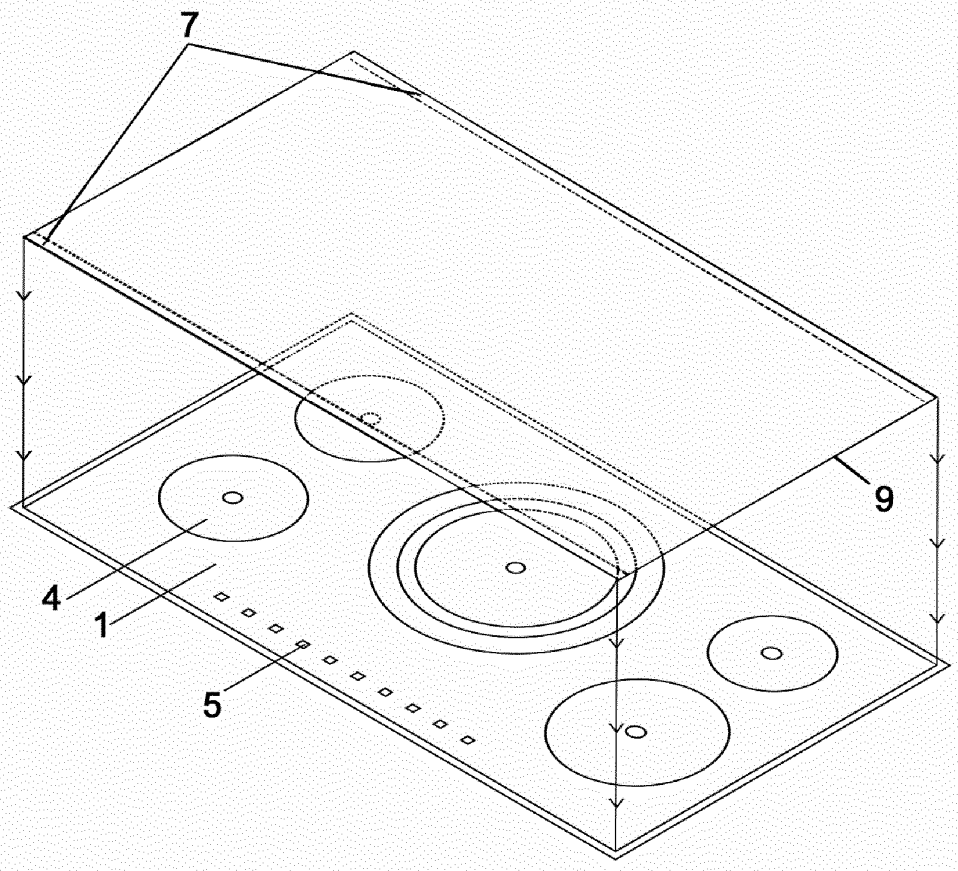

FIG. 4

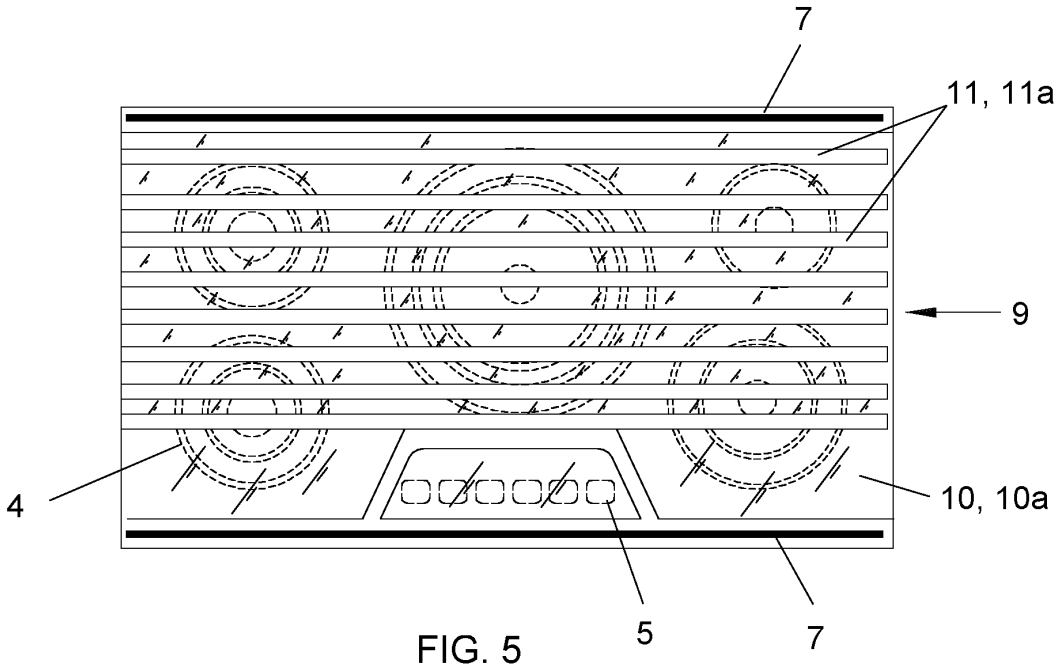

FIG. 5

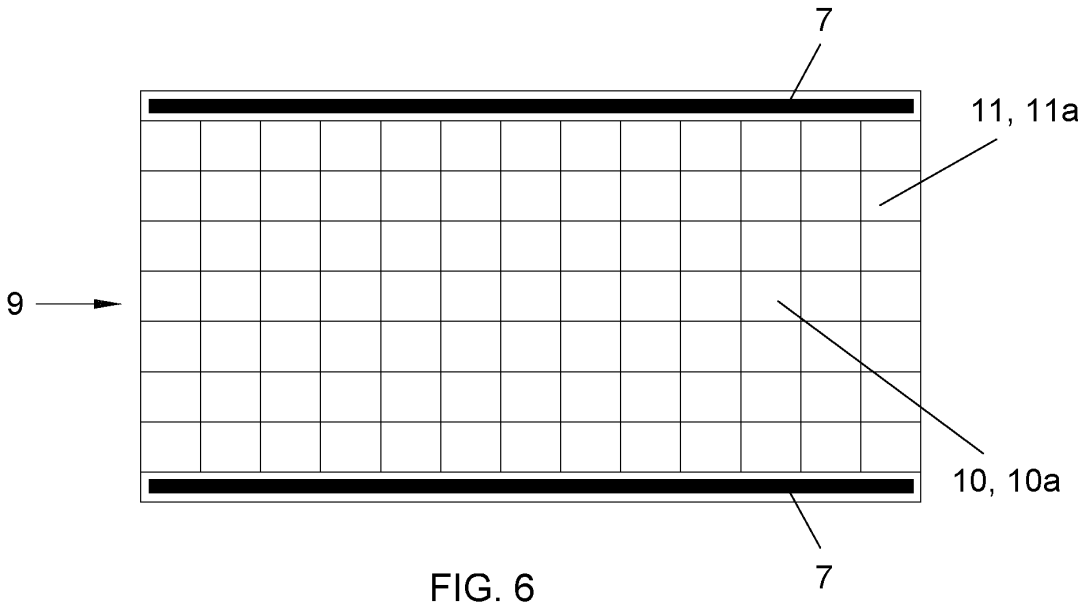

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2013/070558

A. CLASSIFICATION OF SUBJECT MATTER

H05B6/12 (2006.01)
F24C15/12 (2006.01)
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)
H05B, F24C

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)

EPODOC, INVENES, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 202006014738U U1 (DITTMAR DANIEL) 14/12/2006, figure 1, paragraphs [7 - 17].	1
X	DE 19902551 A1 (LUENSTROTH HEIKO) 17/08/2000, column 1, figures 1 - 4, claim 2.	1, 10-12
Y		9
Y	ES 2217939 A1 (LOPEZ CABRERA VALENTIN JESUS ET AL.) 01/11/2004, columnas 1 - 2; figure 9.	9
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A	ES 442907 A1 (KALKOWSKI KURT ULRICH) 01/04/1977, figures 1 - 7.	1, 8

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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"P" document published prior to the international filing date but later than the priority date claimed

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
05/12/2013	**(11/12/2013)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer P. Sarasola Rubio Telephone No. 91 3495549

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ES2013/070558

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REFERENCES CITED IN THE DESCRIPTION

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