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(54) BRACKET ASSEMBLY IN INDUCTION COOKERS

(57) The invention relates to the induction cooker assembly, which includes brackets that enable the cooker glass to be connected to the bottom tray of the cooker in induction cookers.

The invention relates particularly to the induction cooker assembly, which includes an angled bracket or carrier aluminium sheet that enables the connection of the cooker glass to the cooker bottom tray in induction cookers containing an induction cooker bottom tray and an aluminium intermediate carrier sheet metal part.

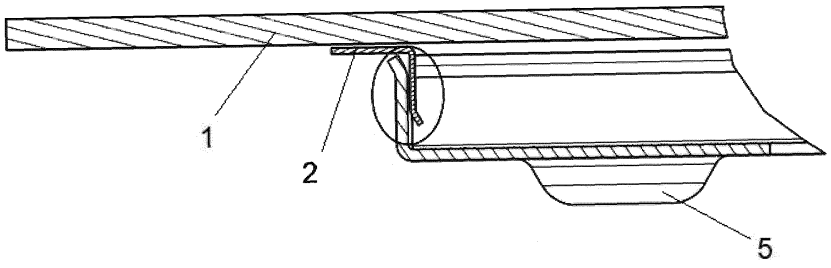

Figure-4

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Description

Technical field of the invention

[0001] The invention relates to the induction cooker assembly, which includes brackets that enable the cooker glass to be connected to the bottom tray of the cooker in induction cookers.

[0002] The invention relates particularly to the induction cooker assembly, which includes an angled bracket or carrier aluminium sheet that enables the connection of the cooker glass to the cooker bottom tray in induction cookers containing an induction cooker bottom tray and an aluminium intermediate carrier sheet metal part.

State of the Art

[0003] Nowadays, built-in products are preferred due to their ease of use and appearance. Built-in products save space because they are integrated into kitchen cabinets or used built-in. The most preferred product group among built-in products is cookers. Induction and vitroceramic cookers, which are in the built-in cookers category, are preferred by users because they have smooth surfaces and can be easily cleaned. Similarly, stovetops are also preferred by users.

[0004] In the current system, in order to place built-in cookers on kitchen countertops, the kitchen countertop is cut to the dimensions of the cooker to be placed. Afterwards, it is placed in this cut part and its assembly is completed. The bracketed connection used here is a common connection type for home appliance manufacturers. It is widely used when connecting the glass to the body in induction cookers, one of the household appliances. However, this connection type varies depending on the connection type, method and structure. The trays currently used and in which the cooker is placed are manufactured by combining more than one piece with fasteners such as screws or by welding more than one piece to one another. Even though there are systems in the state of the art that connect in this way, these systems are not related to the screw connection bracket design used when connecting the upper body of the cooker to the lower body, and the bracket applying outward force by contacting the sheet metal at an angle during assembly.

[0005] In the state of the art, as mentioned above, there are many studies, patents and/or utility model applications to ensure connection, especially in induction cookers. One of these is the patent application numbered "US2022061132A1". Said invention relates to an induction cooker and its production method. It comprises a cover plate having at least one cooking point, a holding plate, at least one inductive heating coil arranged between the cover plate and the holding plate, at least one electronic housing fixed to a side of the retaining plate facing away from at least one inductive heating coil and having electronics for at least one inductive heating coil and a bottom box at one base of the induction cooker that covers the induction cooker. The top and the holding plate are force-transmittingly connected to the bottom box when the induction cooker is installed. Designed as a retaining bracket, the retaining bar can also be screwed, riveted, glued or bonded in a way that transfers force to the rest of the bottom box. Preferably, the retaining protrusions of each side wall are formed as a pair of retaining tabs spaced apart from each other. However, in the invention, there is no mention of any improvement for the problems that may arise during the use of bracket.

[0006] The invention that is the subject of the patent numbered "US9730278B2" in the state of the art relates to an induction heated cooker used in workplaces or standard homes, and more specifically, to the installation configuration of a heating coil in the induction heated cooker. Inside the box body, a plurality of circuit substrates are individually mounted on the substrate bases, devices that configure a drive control circuit to provide a high-frequency current to a heating coil. However, there is no mention here of a development aimed at connecting the windows to the lower body and eliminating the installation problems that arise while connecting, without using extra equipment.

[0007] The invention that is the subject of the patent numbered "TR2016/12584" in the state of the art relates to a fixing bracket connection that allows the parts used in the cookers to be safely mounted to one another with a minimum of fasteners and prevents them from moving out of place during use. The tabs on the surfaces of the connecting arms of the bracket ensure that the back sheet covered on the bracket is held on to the bracket. The bracket consists of a support surface on which the back sheet is placed and resting on the burner plate, and connection arms formed by bending the support surface. The aim of the invention is to realise a fixing bracket connection between two parts using a minimum of connecting elements. Another aim of the invention is to realise a fixing bracket connection that prevents material fatigue caused by the connecting elements.

[0008] As can be seen from the content of the patent and utility model applications, examples of which are given above, there is a problem in induction cookers that it is difficult to assemble the upper body, where the brackets used for assembly purposes are glued to the glass, to the lower body of the cooker. In addition, it is very difficult to remove the upper body assembled on the cooker from the body in case of service-quality problems. In addition, during assembly, there are problems that the control of assembly smoothness is not sufficient for a single operator to complete the assembly due to the narrow transition area of the bracket to the sheet metal.

[0009] Another disadvantage of the current system is that it is difficult to disassemble an assembled induction cooker. Because during production, if any problem is encountered in the assembled product, it is disassembled, subjected to control and reprocessing. Apart from this, the cooker must be disassembled during the service so-

lutions provided at homes. Removing the glass with brackets attached with screws from the aluminium sheet is a very laborious task due to the deformation of the two sheet metal parts due to the force on the screw, and may cause the product to be scrapped. In places with limited space, metal sheets and metal parts connected to one another with screws are subject to deformation due to the force of the screw and their removal becomes difficult. Because, due to the applied screw force and lack of space, it is not possible to separate the upper body from the lower body without the use of extra equipment.

[0010] Another disadvantage of the current system is that the designs are more complex and expensive because screw connections cause difficult production. When screw connections are not sufficient in some cases, more complex bracket designs are used along with snap or nail connections. These designs are also quite costly and expensive.

[0011] Another disadvantage of the current system is that the upper body with brackets attached to the aluminium sheet is difficult to place to align the holes. Because in a narrow space, it is difficult to place the upper body into the sheet in order to align the screw holes used to connect the upper body to the aluminium sheet.

[0012] As a result, due to the negativities explained above and the inadequacy of existing solutions on the subject, there is a need for a new technology that makes it easier to disassemble an assembled induction cooker and that allows easy assembly and disassembly of the induction cooker without any deformation.

Brief Description and Aims of the Invention

[0013] The invention relates to the bracket that meets the above-mentioned requirements, eliminates all disadvantages and brings some additional advantages, enabling the installation of cooker glass in induction cookers.

[0014] The most important aim of the invention is to enable easy assembly and disassembly. By taking advantage of the geometry of the bracket developed with the invention and the fact that the sheet has an angled form of less than 90 degrees in accordance with this geometry, ease of assembly is provided by applying outward force to the sheet while placing it in the aluminium sheet. Said angled form may vary depending on the model of the cooker. It also provides an advantage in the opposite direction of the mentioned force when disassembling the cooker. Due to the geometric suitability of the bracket design in the invention, assembly and disassembly operations can be easily carried out compared to prior art.

[0015] Another aim of the invention is to reduce the production time of the cooker. By means of the structure developed with the invention, production time has been reduced as no additional assembly process is required and the assembly can be carried out by a single person.

Description of Drawings

[0016]

FIGURE-1 is the drawing showing the disassembled view of the induction cooker that is the subject of the invention.

FIGURE-2 is the drawing showing the view of the connection of the induction cooker that is the subject of the invention before assembly.

FIGURE-3 is the drawing showing the view of the connection of the induction cooker that is the subject of the invention during assembly.

FIGURE-4 is the drawing showing the view of the connection of the induction cooker that is the subject of the invention after the assembly is completed.

Definition of Elements/Parts Composing the Invention

[0017] In order to better explain the induction cooker assembly with brackets developed with this invention, the elements in the figures are numbered and the equivalent of each number is given below:

1. Cooker glass
2. Bracket
3. Carrier aluminium sheet
4. Coil
5. Cooker bottom tray

Detailed Description of the Invention

[0018] The invention relates to the assembly of induction cookers, which comprise brackets (2) that enable the cooker glass (1) to be connected to the cooker bottom tray (5). The invention particularly relates to the assembly of induction cookers that comprise a bracket (2), especially in an "L" shape, that is, with an angled end and a carrier aluminium sheet (3), which allow the cooker glass (1) to be connected to the cooker bottom tray (5) in induction cookers comprising induction cooker bottom tray (5), carrier aluminium sheet (3), and cooker glass (1). The part of the bracket (2) positioned between the induction cooker bottom tray (5) and the carrier aluminium sheet (3) facing the bottom tray (5) is bent inwards and has an angled form. The end of the carrier aluminium sheet (3) positioned between the coil (4) and the bottom tray (5) in contact with the bracket (2) is angled outward. By means of said angled forms of the bracket (2) and the carrier aluminium sheet (3), the cooker glass (1) can be easily assembled to the bottom tray (5). Said angled forms vary depending on the model to which the bracket (5) and carrier aluminium sheet (3) will be applied. This angle value is determined by mechanical analyses and

calculations based on the required force.

[0019] The coil (4) is positioned at the top of the bottom tray (5), inside the carrier aluminium sheet (3). In induction cookers, the cooker glass (1) is mounted on the coil (4) positioned inside the carrier aluminium sheet (3), as can be seen in Figure-2. As mentioned above, an angled bracket (2) and aluminium carrier sheet (3) are used when assembling the cooker glass (1) to the bottom body.

[0020] First, the parts of the brackets (2) assembled on the cooker glass (1) approaching the carrier aluminium sheet (3) are bent, and by determining the side wall angle that will oppose this bending in the carrier aluminium sheet (3), the bracket (2) is ensured to apply outward force to the wall of the carrier aluminium sheet (3). The angled form can be only on the bracket (2), only on the carrier aluminium sheet (3), or on both the bracket (2) and the carrier aluminium sheet (3). In this way, the assembly process is completed.

[0021] When there is a situation where the cooker glass (1) on the induction cooker needs to be removed, its removal is facilitated by the angled force provided by the bracket (2) and the carrier aluminium sheet (3). Since there is no need to use any extra fasteners or screws to fix these fasteners at this stage, assembly or disassembly can be easily carried out in places where space is limited.

[0022] By taking advantage of the bracket (2) geometry developed with the invention and the fact that the carrier aluminium sheet (3) is bent less than 90 degrees in accordance with this geometry, ease of installation is achieved by applying outward force to the carrier aluminium sheet (3) during its placement inside the carrier aluminium sheet (3). In this way, an induction cooker that comprises a bracket, by which the cost is reduced in terms of both assembly and disassembly, is obtained.

Claims

1. Assembly element that allows the cooker glass (1) in induction cookers to be fixed to the bottom tray (5), comprising

   • the bracket (2), the end part of the section of which positioned between the induction cooker bottom tray (5) and the coil (4) facing the coil (4) can be angled or straight and thus enables the assembly of the cooker glass (1) with the bottom tray (5), and
   • The carrier aluminium sheet (3), which is positioned between the coil (4) and the bottom tray (5) and enables the assembly of the cooker glass (1) with the bottom tray (5), together with the bracket (2), by means of the angled or flat form of the part in contact with the bracket (2).

2. An assembly element according to Claim 1, comprising the bracket (2), the end part of which contacts the coil (4) is bent at an angle less than 180 degrees to ensure the connection of the cooker glass (1) with the bottom tray (5).

3. An assembly element according to Claim 1, comprising the carrier aluminium sheet (3), the end part of which contacts the bracket (2) is bent at an angle less than 180 degrees to ensure the connection of the cooker glass (1) with the bottom tray (5).

4. An assembly element according to Claim 1, comprising the the carrier aluminium sheet (3) the end part of which contacting the bracket (2) is bent at an angle less than 180 degrees, and the bracket (2) the end part contacting the coil (4) is in flat form, to ensure the connection of the cooker glass (1) with the bottom tray (5).

5. An assembly element according to Claim 1, comprising the bracket (2) the end part of which contacting the coil (4) is bent at an angle less than 180 degrees, and the carrier aluminium sheet (3) the end part of which contacting the bracket (2) is flat, to ensure the connection of the cooker glass (1) with the bottom tray (5).

6. An assembly element according to Claim 1, wherein, to ensure the connection of the cooker glass (1) with the bottom tray (5), the angled bends of the surfaces of the bracket (2) the end part of which contacting the coil (4) is bent at an angle less than 180 degrees, and the carrier aluminium sheet (3) the end part of which contacting the bracket (2) is bent at an angle less than 180 degrees facing each other are in opposite directions on the horizontal plane.

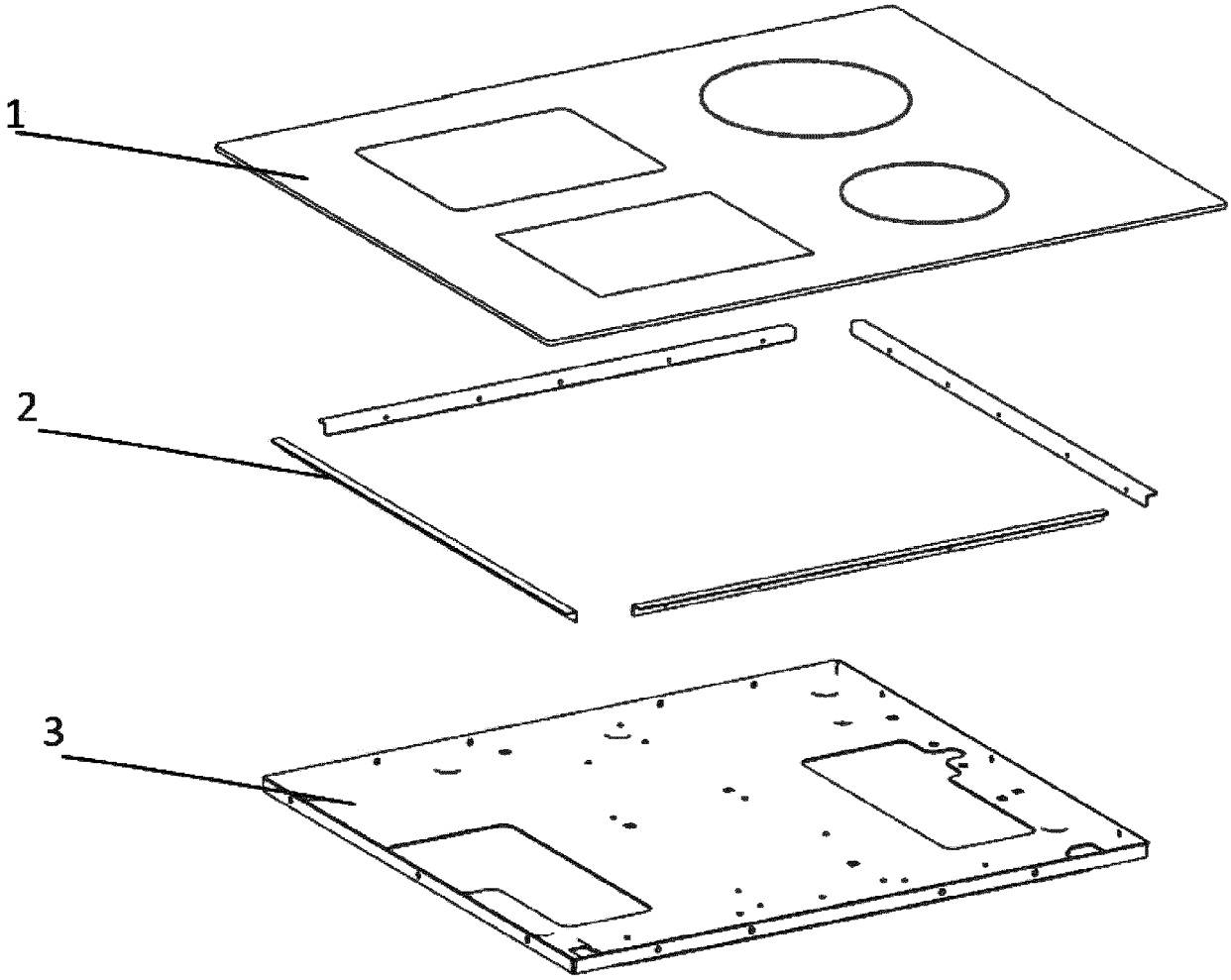

Figure-1

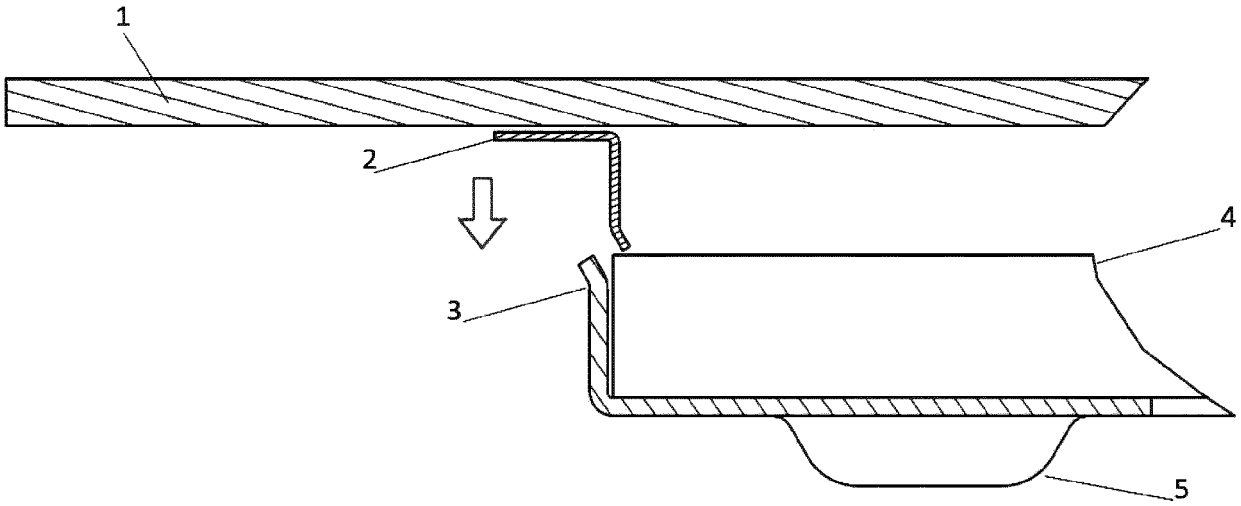

Figure-2

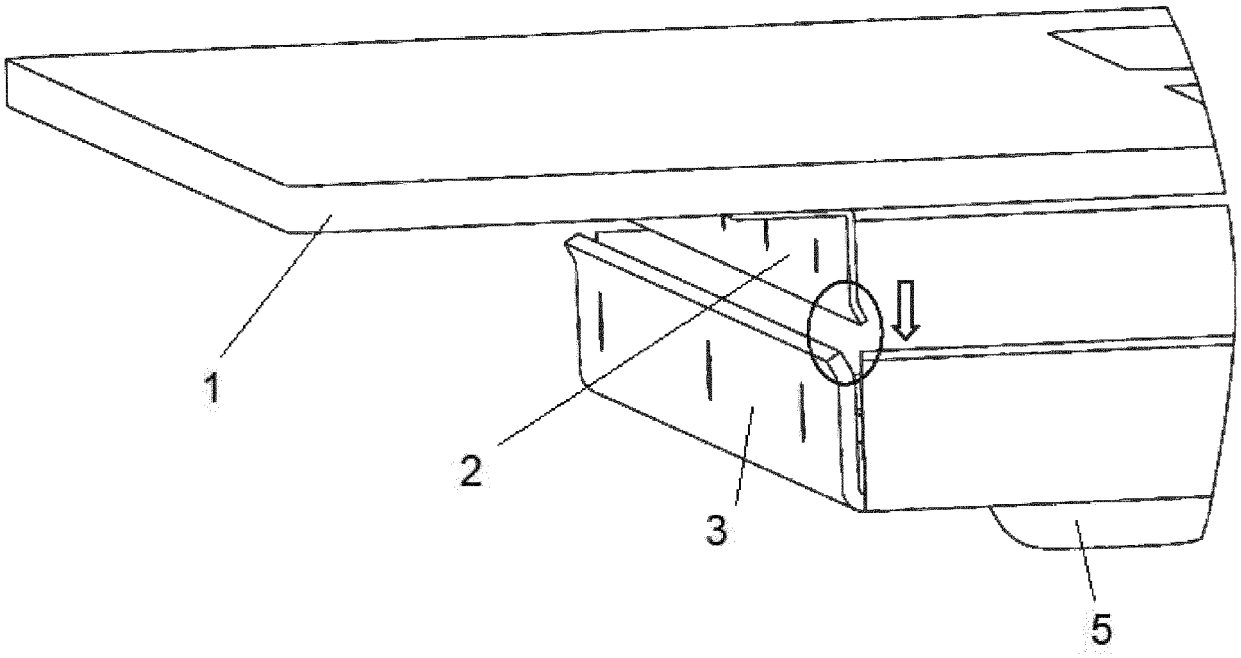

Figure-3

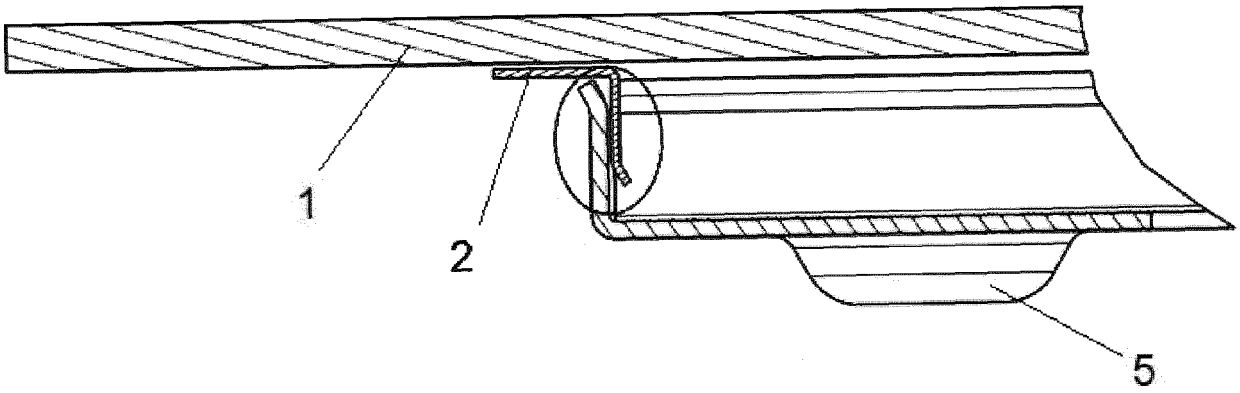

Figure-4

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EUROPEAN SEARCH REPORT

Application Number
EP 24 15 8815

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Y	* paragraph [0001] * * paragraph [0022] - paragraph [0023]; figure 1B *	2,4-6	
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Y	* paragraph [0012] * * paragraph [0036]; figures 5-6 *	2,4-6	

TECHNICAL FIELDS SEARCHED (IPC)

F24C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	29 July 2024	Barzic, Florent

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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