(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 848 867 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
06.09.2017 Bulletin 2017/36

(51) Int Cl.:
F24C 15/10 *(2006.01)* ***H05B 3/74*** *(2006.01)*

(21) Application number: **13183862.5**

(22) Date of filing: **11.09.2013**

(54) **Kitchen hob and methods for assembling and disassembling the kitchen hob**

Kochfeld und Verfahren zur Montage und Demontage des Kochfelds

Plaque de cuisson et procédés d'assemblage et de désassemblage de la plaque de cuisson

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(43) Date of publication of application:
18.03.2015 Bulletin 2015/12

(73) Proprietor: **Electrolux Appliances Aktiebolag**
105 45 Stockholm (SE)

(72) Inventors:
- **Bayerlein, Stefan**
  91541 Rothenburg ob der Tauber (DE)
- **Neukamm, Alwin**
  91541 Rothenburg ob der Tauber (DE)
- **Hauschildt, Heino**
  91541 Rothenburg ob der Tauber (DE)

(74) Representative: **Electrolux Group Patents**
AB Electrolux
Group Patents
105 45 Stockholm (SE)

(56) References cited:
EP-A1- 1 616 991 **EP-A2- 0 108 916**
EP-A2- 2 602 556 **AT-B- 371 911**

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 848 867 B1

Description

[0001] Modern household appliances, in particular those that are used in a kitchen environment, often need to be compliant with the design of the total kitchen furniture. Another issue is that such devices that are built into worktops or workplates need to be able to be smoothly integrated. This means that in particular e.g. kitchen hobs need to be built in such manner that their top surface forms a smooth continuous plane together with a remaining workplate. On the other hand, cooking and frying and the use of fluids combined with higher temperatures often leads to spillage across the border of a kitchen hob and onto an adjoining workplate. It is thus a prerogative that the borders between a kitchen hob and an adjoining workplate need to be sealed with a seal that also withstands high temperatures. As a consequence, glue-bonding or silicon-based seals are often used to form the connection between a kitchen hob surface and an adjoining workplate.

[0002] In view of this situation, certain procedures, devices and assembly methods have been established in the prior art to provide kitchen hobs built into a workplate. Aggravatingly, with electric household appliances, certain regularities have to be maintained in order to get approval to use the household appliance in an environment where fluids can be spilled.

[0003] German utility model DE 8119275 U discusses a glass ceramic hob which is inserted from above into housing and fixed by a snap connection. To provide a seal, it is glued on top of a workplate. Further, it has a mechanical limiter in the form of a metal band or an angled arm that limits its initial movement for removal to perform maintenance. This mechanical limiter just allows accessing a screw that after being unscrewed allows the device to be taken out of the cutout in the workplate.

[0004] European patent application EP 2110607 A1 discloses a cooking hob with one-piece fastening elements and a one-piece fastening element for a cooking hob. There, the cooking hob is inserted from above into a workplate and maintained there by at least two opposing fixing elements that are spring-loaded. The respective fixing elements also allow the support of the kitchen hob in an associated lower part. To perform this action, a lug element is engaged with a recess of a latch element.

EP 2 602 556 A1 describes a kitchen hob that comprises a first and a second subassembly. The first subassembly comprises a frame that may be inserted into a cutout of a work plate. A protective cover may be fixed to the frame in particular by means of an adhesive. A second subassembly may be fixed to the first subassembly by means of support structures that are adapted to engage each other.

AT 371 911 describes another kitchen hob that comprises two subassemblies. The first subassembly comprises a frame carrying a protective cover. The second subassembly carries heating elements. The first and the second subassembly are connected to each other by means of a hinge that is not accessible from below the workplate. It is a problem with these prior art devices, that once a service to the electrical components of the kitchen hob is required, the kitchen hob needs to be cut out from the workplate meaning separating the glue connection in order to access the part to be serviced at the kitchen hob. Moreover, generally with glued devices electrical connections are difficult to see. This entails a service operation in order to re-establish the sealing after the kitchen appliance has been prepared.

[0005] It is an object of the present invention to address the above problems and to improve the assembly and serviceability of kitchen hob, in particular kitchen appliances that are built into a workplate.

[0006] This object is solved by a kitchen hob according to claim 1, a method for assembling a kitchen hob according to claim 7 and a method for disassembling a kitchen hob according to claim 8.

[0007] Advantageous further developments of the invention are given in the dependent claims.

[0008] Advantageously, a kitchen hob according to the present invention conceived as a two-part unit comprising an upper part and a lower part in the form of two subassemblies allows the assembly of the two subassemblies while a protective cover of the functional parts is in place as a consequence of correspondingly designed first and second support structures that form parts respectively of the first and of the second subassembly.

[0009] Further advantageously, this design also allows it to fasten a first support structure at a workplate independently from the rest of the first subassembly, thus further facilitating the complete assembly of the household appliance, as in a first step small and non-complicated structures in the form of a support structure only need to be fixed to the workplate.

[0010] According to the present invention, the first support structure has the form of a hook, while the second support structure has the form of an opening respectively cut-out in the frame of the first subassembly, thus providing easy to manufacture support structures that are flexible in their use and do not require exact positioning during assembly.

The first and the second support structure of the kitchen hob according to the present invention allow for a hinge operation and relative movement to each other, thus giving more flexibility during the assembly of the kitchen appliance, and in particular supporting the second subassembly when it is moved upwards into the cutout of the workplate from underneath.

[0011] Beneficially, the first support structure may be fixed to the workplate, this allowing an easier assembly of the household appliance as well as the use of different first support structures depending on the workplate, mechanical properties and dimensions while at the same time allowing to use the same frame in the presence of mechanically and dimensionally different workplates. The protective cover according to the present invention

can be fixed to the frame without the kitchen hob of the present invention being prevented from assembly or disassembly in this state, thus facilitating maintenance and support works. The frame is adapted to be inserted into a cut-out of a workplate being able to be dimensionally and geometrically aligned to be properly positioned within the cutout, while at the same time providing respective overlap to be seamlessly integrated into the workplate.

Beneficially, according to a further development of an embodiment of the kitchen hob according to the present invention, the first subassembly comprises a third support structure and the second subassembly comprises a fourth support structure that can be mutually engaged during an assembly of the household appliance. This beneficially allows a two-step operation first engaging one of the two pairs of two support structures 1 and 2 respectively 3 and 4 and then the other one 3 and 4 respectively 1 and 2 depending on which pair is engaged first in the sequence. This facilitates the handling of heavy kitchen hobs and allows further additional fastening steps like e.g. screwing to be performed while the two pairs of support structures are already mutually engaged.

[0012] Further advantageously, according to another development of an embodiment of the present invention, the third support structure is presented in the form of a hook respectively resilient element, while the fourth support structure is realized in form of a cut-out respectively opening in the frame preferably opposing the first and second support structures. Such structures are easy to manufacture and provide for facilitating the assembly and disassembly of the household appliance.

[0013] Favorably, according to a further development of an embodiment of the kitchen hob according to the present invention, the second subassembly comprises at least a heating element, thus allowing the easy assembly of a kitchen hob into a workplate.

[0014] Advantageously, a further development of the kitchen hob according to an embodiment of the present invention comprises a fixing element to fix the first subassembly against the second subassembly in a final assembly state. This provides additional security in avoiding tampering with the household appliance while at the same time allowing to secure the first subassembly and the second subassembly against each other in a case where the first and second support structures are disengaged as a consequence of lateral movement against each other to lift the second subassembly further up in order to fit it into the workplate. Such a technical solution provides even further facilitated assembly, because it allows it to position the second subassembly underneath the workplate into the first support structure in a stage where both support structures are still visible and later on lifting it up to arrive at a final assembly stage where both pairs of support structures are engaged.

[0015] Beneficially, according to a further development of the present invention, the fixing element is comprised of a screw hole in the first support structure cooperating with a screw fixed through the second subassembly against the first support structure.

[0016] Advantageously, the method for the assembly of a kitchen hob according to the present invention provides an easy step by step operation to assemble the kitchen hob from underneath a workplate. This has the great advantage that the glued connection for protective covers that are similarly used by the prior art have not to be cut and broken and subsequently re-applied by a service technician as they can be left intact due to the fact that assembly and disassembly take place from underneath the workplate.

[0017] Advantageously, a method for the disassembly of the kitchen hob according to the present invention relies on the fact of a certain dimensional relationship between a hook as a third support structure and a cut-out as a fourth support structure, which can be disengaged due to a movement of the second subassembly in a lateral direction moving the hook outside of the opening and thus allowing subsequent disengagement of the first and second support structure to remove the second subassembly out of the cut-out in the workplate.

[0018] Subsequently, further developments of the invention will be explained further on the basis of examples given in drawings wherein:

Fig. 1 shows a first assembly stage of a kitchen hob;
Fig. 2 shows a second assembly stage of the kitchen hob;
Fig. 3 shows a third assembly stage of the kitchen hob; and
Fig. 4 shows the kitchen hob inserted into a workplate.

[0019] As Fig. 1 shows giving an example of a preferred embodiment, there is a household appliance 100 in the form of a kitchen hob. The shown embodiment of the kitchen hob 100 is represented in a first subassembly, preferably consisting in a frame 105 and a second subassembly 104 being equipped with functional components here in the form of heating elements 103. Further shown are enlarged representations 130 of first and second support structures and 120 of third and fourth support structures. Also a protective cover 140 can be seen, and lashes being equipped with through-holes for fixing screws 108. Further, the protective cover 140 is e.g. transparent in this case and may be fixed to the frame 105. The first subassembly has an upright border 102, and the second subassembly 104 has an upright border 110. In the enlarged detailed view 130 of the first and second support structure, the upright border 110 of the second support structure can be identified, which has a cut-out or opening with an upper limiting edge 160 and a lower limiting edge 170. This represents the second support structure of this embodiment. Further, a first support structure 150 can be identified, which is shown in the drawing to take the shape of a hook 150. Further, a through-hole 155 is depicted to fix screws through it other known fixing elements may be used according to individual and technical preferences.

[0020] For further facilitating the assembly, the first support structure 150 can be separately fixed to a workplate 400 shown in Fig. 4. Then, the frame 105 of first subassembly can be inserted independently into a cutout of the workplate 400. This facilitates the assembly of the household appliance in that the first step of providing a support structure only requires the positioning and fixing of the first support structure in a location at the cutout of the workplate and subsequently inserting frame 105 with a protective cover 140.

[0021] In a second enlarged view 120, a fourth support structure being preferably part of the vertical border 110 of the second subassembly is shown as a hook or resilient element 115. In an initial stage where the frame 105 and the second subassembly 104 do not overlap at their vertical borders, the fourth support structure 115 does not engage the third support structure presented in this example as a cutout or opening 185 in the vertical border 102 of the frame 105. Here it can be seen that the first and the second subassembly in a first assembly step form an angle with each other. That means that the first support structure 150 and the second support structure engage where in this case the upper edge 160 of the opening or cutout in the vertical border 110 engage each other and allow relative movement of the first and second subassembly against each other, while allowing a hinged positioning of the first subassembly and the second subassembly moving them relatively to each other.

[0022] Fig. 2 shows a further stage of an assembly method according to the present invention. In this drawing, for better visibility, not all of the reference signs used in Fig. 1 are shown. As this Fig. 2, however, only shows the first subassembly and the second subassembly in a different positional relationship, the same reference signs apply and can be easily allocated by co-referencing Fig. 1.

[0023] The household appliance 100 is now shown in a stage where the angle between the first subassembly and the second subassembly has been closed. In this case, the vertical border 110 of the second subassembly 104 and the vertical border 102 of the first subassembly overlap. This is shown in detail in the enlarged view 120 showing the vertical border 110 of the second subassembly and the vertical border 102 of the first subassembly in the same drawing as a layered structure behind and close to each other. Here it is also shown that the fourth support structure 115 in the form of a hook or a resilient element penetrates a cutout 195 in the vertical border 102 of the first subassembly. This means that the second subassembly resting in a hinged position and supported by the first and the second support structure 150 and the upper edge 160 of the opening in the vertical border 110 is now supported by the third and fourth support structure against gravity force to fall out of its engagement by the hook 115.

[0024] Starting from the angled position of the first and second subassemblies in Fig. 1, the angle is step by step closed whereby the upper edge 160 of the opening building the second support structure moves against the first support structure 150, until the fourth support structure 115 engages the cutout 185 in the vertical border 102 of the first support structure securing vertical movement at a location substantially opposite of the first and second support structures.

[0025] Further, it can be seen in Fig. 2 that a lower rear edge 210 of the frame and a lower rear edge 200 of the second subassembly are still vertically displaced.

[0026] Directing the attention now to Fig. 3, this shows a further stage of the assembly of the household appliance 100 according to an embodiment of the present invention. A transition from the positional relationship of the first subassembly and a second subassembly depicted in Fig. 2 to the positional relationship of the two subassemblies depicted in Fig. 3 can be contemplated as follows.

[0027] Resting on the third 185 and fourth 115 support structures in a further hinge supported movement, the displacement between the lower rear edge of the second subassembly 200 and the lower rear edge 210 of the frame 105 of the first subassembly is closed by pushing the rear part of the second subassembly upward in a direction of the protective cover 140. A corresponding vertical movement is allowed by the dimensioning of the cutout and the distance between the upper edge of the cutout 160 and the lower edge of the cutout 170 which allows for a displacement distance 190. The e.g. hook 115 of the fourth support structure rests in this case against the cutout respectively opening 185 in the vertical border 102 of the first subassembly and works as a hinge for the displacement movement of the rear edge 200 of the second subassembly.

[0028] Once the vertical upward movement of the second subassembly has reached a stop, a screw 165 may be entered into the screw hole 155 to fix the first subassembly and the second subassemblies against each other in a state where the lower rear edge 210 of e.g. the frame 105 and the lower rear edge 200 of the second subassembly conform to each other. Beneficially due to the to pairs of support structures keeping the second subassembly in place this fixing can be performed single handed. In this state, the assembly of the household appliance 100 is finished.

[0029] In case that it is desired or required to perform maintenance or service at a functional part of the second subassembly 104, a horizontal displacement of the first subassembly and the second subassembly against each other can be performed once the screw 165 has been unscrewed.

[0030] There should preferably be at least so much space to perform a horizontal displacement of the first and the second subassembly against each other to be able to disengage the fourth and third support structures 115 and 185, meaning to displace the hook 115 out of the cutout/opening 185 to allow the second subassembly to go downward still held by the first and second support structures, while then performing an inverse movement

as described in the transition from the positional relationship shown in Fig. 1 to the positional relationship shown in Fig. 2 of the first and second subassemblies.

[0031] In a further step provided that all electrical connections are disconnected, e.g. connectors being disconnected, the second subassembly 104 can be unhinged from the first and second support structure and be taken out to perform repair activities or upgrades. Advantageously, the protective cover 140 remains in place, and the seal between the protective cover 140 and the workplate needs not to be destroyed and subsequently being replaced by a service technician, as is the case with prior art solutions.

[0032] Fig. 4 shows a household appliance 100 built into a workplate 400. It is shown that the first subassembly has overlapping first and second design elements 410 and 430 allowing them to cope with larger cutouts, while at the same time providing room for the horizontal displacement of the second subassembly. In particular, it shows an overlap 420 that allows the movement of the second subassembly in a rear direction of the household appliance relatively to the workplate 400, thus providing sufficient space for disengagement of the third 185 and fourth 115 support structures.

List of reference numerals

[0033]

100: kitchen hob;
102: vertical border of the frame;
103: heating element;
104: second subassembly;
105: frame;
108: lashes with through-holes;
110: vertical border of the second subassembly;
115: fourth support structure;
120: detail of the third and fourth support structure;
130: detail of the first and second support structure;
140: protective cover
150: first support structure;
155: screw hole;
160: upper edge of an opening;
165: fixing screw;
170: lower edge of an opening;
185: third support structure/opening;
190: distance between upper edge 160 and lower edge 170 of opening acting as second support structure; distance of vertical displacement;200: lower rear edge of the second sub-assembly;
210: lower rear edge of the first subassembly;

400: workplate;
410: first design element;
430: second design element;
420: way of horizontal displacement

Claims

1. A kitchen hob (100) at least comprising a first and a second subassembly,

- the first subassembly at least comprising:
  - a frame (105) for inserting into a workplate (400);
  - a protective cover (140) covering the frame in an assembled state;
  - a first support structure (150) to support a second subassembly (104);
- the second subassembly (104) at least comprising:
  - a functional part (103) of the household appliance (100), and
  - a second support structure (160) adapted to engage the first support structure (150);

the first and second support structures (150, 160) being adapted to engage each other when the protective cover (140) is fixed to the frame (105) in the assembled state, **characterized in that** the first support structure (150) is separately fixed to the workplate (400) and the frame (105) with the protective cover (140) is inserted into a cutout of the workplate (400), thereby fixing the first subassembly to the workplate and **in that** the first support structure (150) has the form of a hook and the second support structure (160) has the form of the edge of an opening or cutout allowing for a hinge operation and relative movement (190) against each other.

2. The kitchen hob (100) according to claim 1, wherein the first subassembly comprises a third support structure (185) and the second subassembly comprises a fourth support structure (115) to engage the third support structure (185) and to prevent a movement of the second subassembly (104) in at least one direction.

3. The kitchen hob (100) according to claim 2, wherein the third support structure (185) and the fourth support structure (115) are implemented in the form of an opening respectively cutout and a hook respectively resilient element (105).

4. The kitchen hob (100) according to any one of the previous claims, wherein the second subassembly (104) comprises a heating element (103).

5. The kitchen hob (100) according to one of the previous claims comprising a fixing element (155, 165) to fix the first subassembly and the second sub-

assembly (104) against each other in a final assembled state.

6. The kitchen hob (100) according to claim 5, wherein the first support structure (150) comprises a screw hole (155) cooperating with a corresponding hole in the second subassembly (103) and the fixing element is a screw (165).

7. A method of assembling a kitchen hob (100) according to any one of the claims 1 to 6, **characterized in that** the method comprises the steps of:

- fixing separately the first support structure (150) to the workplate (400);
- inserting the frame into a cutout of the workplate (400), thereby fixing the first subassembly to the workplate (400)
- engaging, the first and second support structure (150, 160) so that they act as a hinge;
- closing an angle between the first subassembly and the second subassembly by vertically moving a front edge of the first subassembly and the second subassembly against each other until the third and the fourth support structure (185, 115) engage;
- the third support structure (185) and the fourth support structure (115) acting as a hinge vertically displacing the lower rear edge (200) of the second subassembly (104) to bring it in line with the lower rear edge (210) of the first subassembly; and
- fixing the first and the second subassembly against each other (155, 165).

8. A method for disassembling a kitchen hob (100) according to any of the claims 1 to 6, **characterized in that**

- in a first step a fixing between the first and a second subassembly (104) is opened;
- in a second step, a horizontal displacement of the second subassembly (104) against the first subassembly is performed (420), until the fourth support structure (115) disengages the third support structure (185);
- in a third step, a lowering of the second subassembly (104), while the first support structure (150) and the upper edge (160) of an opening in a vertical border (110) of the second subassembly act as a hinge, is performed; and
- in a fourth step, an unhinging of the second subassembly from the first subassembly by disengaging the second support structure (160) from the first support structure (150) is performed.

Patentansprüche

1. Kochfeld (100), das mindestens eine erste und eine zweite Teilbaugruppe umfasst,

- wobei die erste Teilbaugruppe mindestens umfasst:
- einen Rahmen (105) zum Einsetzen in eine Arbeitsplatte (400);
- eine Schutzabdeckung (140), die den Rahmen in einem montierten Zustand bedeckt;
- eine erste Trägerstruktur (150) zum Tragen einer zweiten Teilbaugruppe (104);
- wobei die zweite Teilbaugruppe (104) mindestens umfasst:

- ein funktionales Teil (103) des Haushaltsgeräts (100), und
- eine zweite Trägerstruktur (160), die zum Eingriff mit der ersten Trägerstruktur (150) ausgestaltet ist; wobei die erste und die zweite Trägerstruktur (150, 160) zum Eingriff ineinander ausgestaltet sind, wenn die Schutzabdeckung (140) an dem Rahmen (105) im montierten Zustand befestigt ist, **dadurch gekennzeichnet, dass** die erste Trägerstruktur (150) separat an der Arbeitsplatte (400) befestigt wird und der Rahmen (105) mit der Schutzabdeckung (140) in eine Aussparung der Arbeitsplatte (400) eingesetzt wird, wodurch die erste Teilbaugruppe an der Arbeitsplatte befestigt wird, und dass die erste Trägerstruktur (150) die Form eines Hakens aufweist und die zweite Trägerstruktur (160) die Form des Randes einer Öffnung oder Aussparung aufweist, wodurch ein Scharnierbetrieb und eine relative Bewegung (190) gegeneinander möglich ist.

2. Kochfeld (100) nach Anspruch 1, wobei die erste Teilbaugruppe eine dritte Trägerstruktur (185) umfasst und die zweite Teilbaugruppe eine vierte Trägerstruktur (115) umfasst, um in Eingriff mit der dritten Trägerstruktur (185) zu kommen und eine Bewegung der zweiten Teilbaugruppe (104) in mindestens eine Richtung zu verhindern.

3. Kochfeld (100) nach Anspruch 2, wobei die dritte Trägerstruktur (185) und die vierte Trägerstruktur (115) in Form einer Öffnung beziehungsweise Aussparung und eines Hakens beziehungsweise nachgiebigen Elements (105) implementiert werden.

4. Kochfeld (100) nach einem der vorhergehenden Ansprüche, wobei die zweite Teilbaugruppe (104) ein Heizelement (103) umfasst.

5. Kochfeld (100) nach einem der vorhergehenden Ansprüche, das ein Befestigungselement (155, 165) umfasst, um die erste Teilbaugruppe und die zweite Teilbaugruppe (104) in einem fertigen montierten Zustand aneinander zu befestigen.

6. Kochfeld (100) nach Anspruch 5, wobei die erste Trägerstruktur (150) ein Schraubenloch (155) umfasst, das mit einem entsprechenden Loch in der zweiten Teilbaugruppe (103) zusammenwirkt, und das Befestigungselement eine Schraube (165) ist.

7. Verfahren zum Montieren eines Kochfelds (100) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** das Verfahren die Schritte umfasst:

- separates Befestigen der ersten Trägerstruktur (150) an der Arbeitsplatte (400);
- Einsetzen des Rahmens in eine Aussparung der Arbeitsplatte (400), wodurch die erste Teilbaugruppe an der Arbeitsplatte (400) befestigt wird,
- in Eingriff bringen der ersten und zweiten Trägerstruktur (150, 160), so dass sie als Scharnier wirken;
- Schließen eines Winkels zwischen der ersten Teilbaugruppe und der zweiten Teilbaugruppe durch vertikales Bewegen eines vorderen Randes der ersten Teilbaugruppe und der zweiten Teilbaugruppe gegeneinander, bis die dritte und die vierte Trägerstruktur (185, 115) in Eingriff kommen;
- wobei die dritte Trägerstruktur (185) und die vierte Trägerstruktur (115) als Scharnier wirken, das vertikal den unteren hinteren Rand (200) der zweiten Teilbaugruppe (104) verschiebt, um sie in eine Linie mit dem unteren hinteren Rand (210) der ersten Teilbaugruppe zu bringen; und
- Befestigen der ersten und der zweiten Teilbaugruppe (155, 165) aneinander.

8. Verfahren zum Demontieren eines Kochfelds (100) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass**

- in einem ersten Schritt eine Befestigung zwischen der ersten und einer zweiten Teilbaugruppe (104) geöffnet wird;
- in einem zweiten Schritt eine horizontale Verschiebung der zweiten Teilbaugruppe (104) gegen die erste Teilbaugruppe (420) durchgeführt wird, bis die vierte Trägerstruktur (115) den Eingriff mit der dritten Trägerstruktur (185) löst;
- in einem dritten Schritt ein Absenken der zweiten Teilbaugruppe (104) durchgeführt wird, während die erste Trägerstruktur (150) und der obere Rand (160) einer Öffnung in einer vertikalen Kante (110) der zweiten Teilbaugruppe als Scharnier wirken; und
- in einem vierten Schritt ein Lösen des Scharniers zwischen der zweiten Teilbaugruppe und der ersten Teilbaugruppe durchgeführt wird, indem der Eingriff der zweiten Trägerstruktur (160) mit der ersten Trägerstruktur (150) gelöst wird.

Revendications

1. Plaque de cuisson (100) comprenant au moins un premier et un deuxième sous-ensembles,

- le premier sous-ensemble comprenant au moins:
  - un cadre (105) à insérer dans une plaque de travail (400);
  - un couvercle de protection (140) qui couvre le cadre dans un état assemblé;
  - une première structure de support (150) pour supporter un deuxième sous-ensemble (104);
- le deuxième sous-ensemble (104) comprenant au moins:
  - une partie fonctionnelle (103) de l'appareil ménager (100), et
  - une deuxième structure de support (160) apte à engager la première structure de support (150);

les première et deuxième structures de support (150, 160) étant aptes à s'engager mutuellement lorsque le couvercle de protection (140) est fixé au cadre (105) à l'état assemblé,
caractérisée en ce que la première structure de support (150) est fixée séparément à la plaque de travail (400) et le cadre (105) muni du couvercle de protection (140) est inséré dans une découpe de la plaque de travail (400), fixant de ce fait le premier sous-ensemble à la plaque de travail,
et **en ce que** la première structure de support (150) a la forme d'un crochet et la deuxième structure de support (160) a la forme du bord d'une ouverture ou d'une découpe, permettant une action de type de charnière et un déplacement relatif (190) l'une contre l'autre.

2. Plaque de cuisson (100) selon la revendication 1, dans laquelle le premier sous-ensemble comprend une troisième structure de support (185) et le deuxième sous-ensemble comprend une quatrième structure de support (115) pour engager la troisième structure de support (185) et empêcher un déplace-

ment du deuxième sous-ensemble (104) dans au moins une direction.

3. Plaque de cuisson (100) selon la revendication 2, dans laquelle la troisième structure de support (185) et la quatrième structure de support (115) sont implémentées sous la forme d'une ouverture respectivement une découpe et un crochet respectivement un élément élastique (105).

4. Plaque de cuisson (100) selon l'une quelconque des revendications précédentes, dans laquelle le deuxième sous-ensemble (104) comprend un élément de chauffage (103).

5. Plaque de cuisson (100) selon l'une des revendications précédentes, comprenant un élément de fixation (155, 165) pour fixer le premier sous-ensemble et le deuxième sous-ensemble (104) l'un contre l'autre dans un état assemblé final.

6. Plaque de cuisson (100) selon la revendication 5, dans laquelle la première structure de support (150) comprend un trou à vis (155) qui coopère avec un trou correspondant dans le deuxième sous-ensemble (103) et l'élément de fixation est une vis (165).

7. Procédé d'assemblage d'une plaque de cuisson (100) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** le procédé comprend les étapes suivantes:

- fixer séparément la première structure de support (150) à la plaque de travail (400);
- insérer le cadre dans une découpe de la plaque de travail (400), fixant de ce fait le premier sous-ensemble à la plaque de travail (400);
- engager les première et deuxième structures de support (150, 160) de telle sorte qu'elles agissent comme une charnière;
- fermer un angle entre le premier sous-ensemble et le deuxième sous-ensemble en déplaçant verticalement un bord avant du premier sous-ensemble et du deuxième sous-ensemble l'un contre l'autre jusqu'à ce que les troisième et quatrième structures de support (185, 115) s'engagent;
- la troisième structure de support (185) et la quatrième structure de support (115) agissent comme une charnière pour déplacer verticalement le bord arrière inférieur (200) du deuxième sous-ensemble (104) afin d'amener celui-ci en ligne avec le bord arrière inférieur (210) du premier sous-ensemble; et
- fixer les premier et deuxième sous-ensembles l'un contre l'autre (155, 165).

8. Procédé de désassemblage d'une plaque de cuisson (100) selon l'une quelconque des revendications 1 à 6, **caractérisé par** les étapes suivantes:

- dans une première étape, on ouvre une fixation entre les premier et deuxième sous-ensembles (104);
- dans une deuxième étape, on effectue un déplacement horizontal du deuxième sous-ensemble (104) contre le premier sous-ensemble (420), jusqu'à ce que la quatrième structure de support (115) se désengage de la troisième structure de support (185);
- dans une troisième étape, on effectue un abaissement du deuxième sous-ensemble (104), pendant que la première structure de support (150) et le bord supérieur (160) d'une ouverture dans une bordure verticale (100) du deuxième sous-ensemble agissent comme une charnière; et
- dans une quatrième étape, on effectue un décrochage du deuxième sous-ensemble du premier sous-ensemble en désengageant la deuxième structure de support (160) de la première structure de support (150).

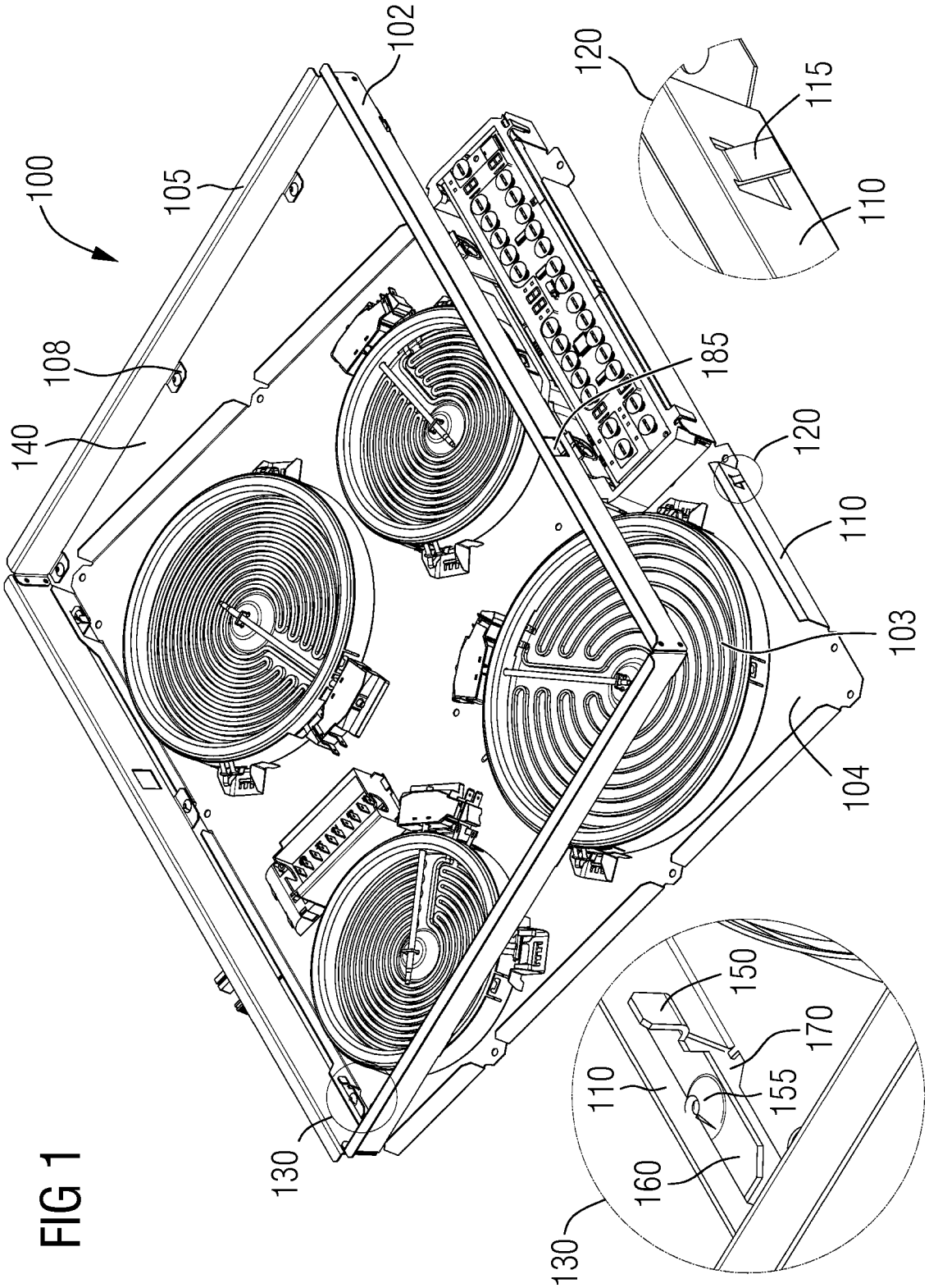

100
102
105
108
140
120
115
110
185
120
110
103
104
130
150
170
155
110
160
130

FIG 1

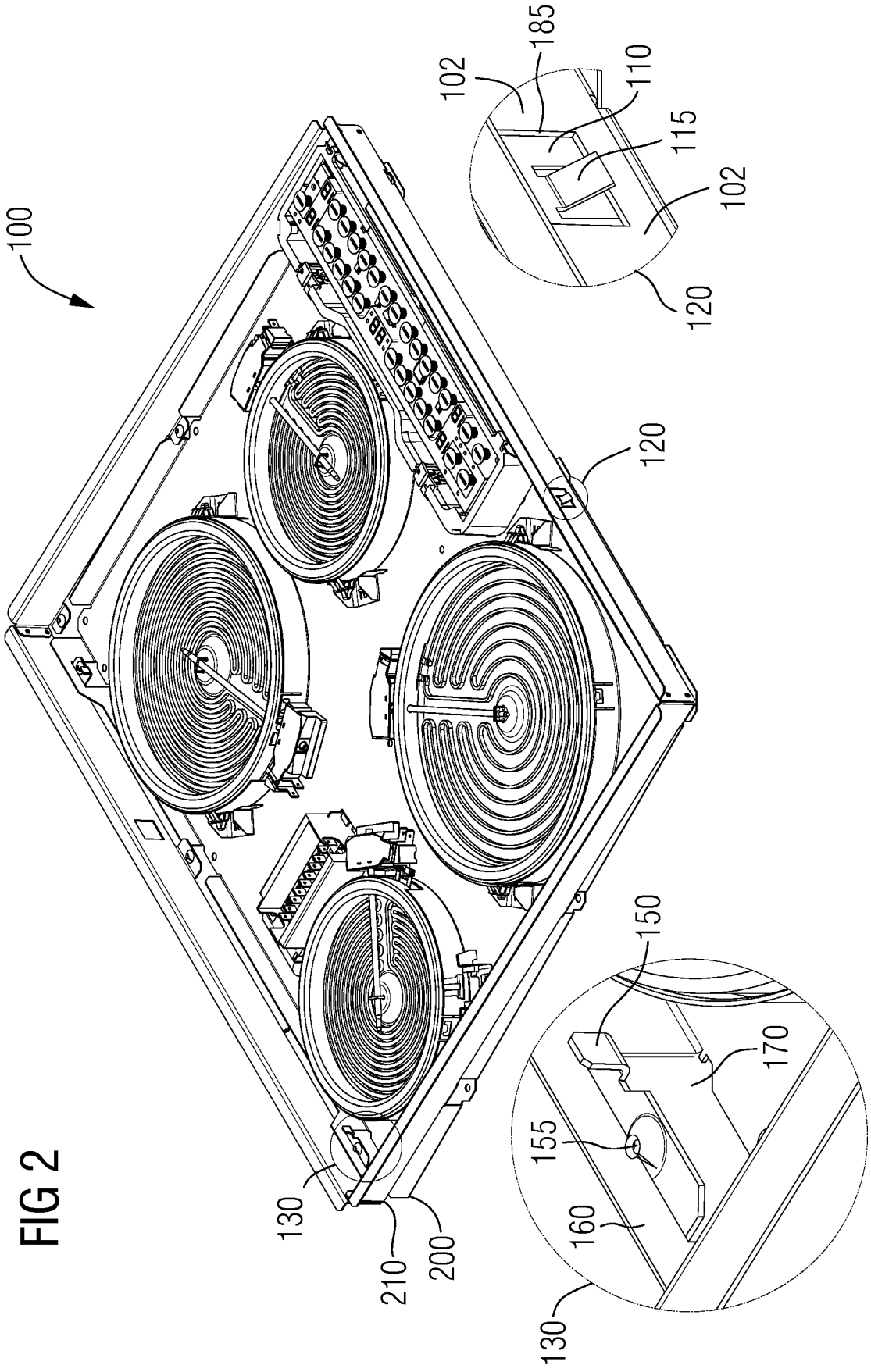


FIG 2

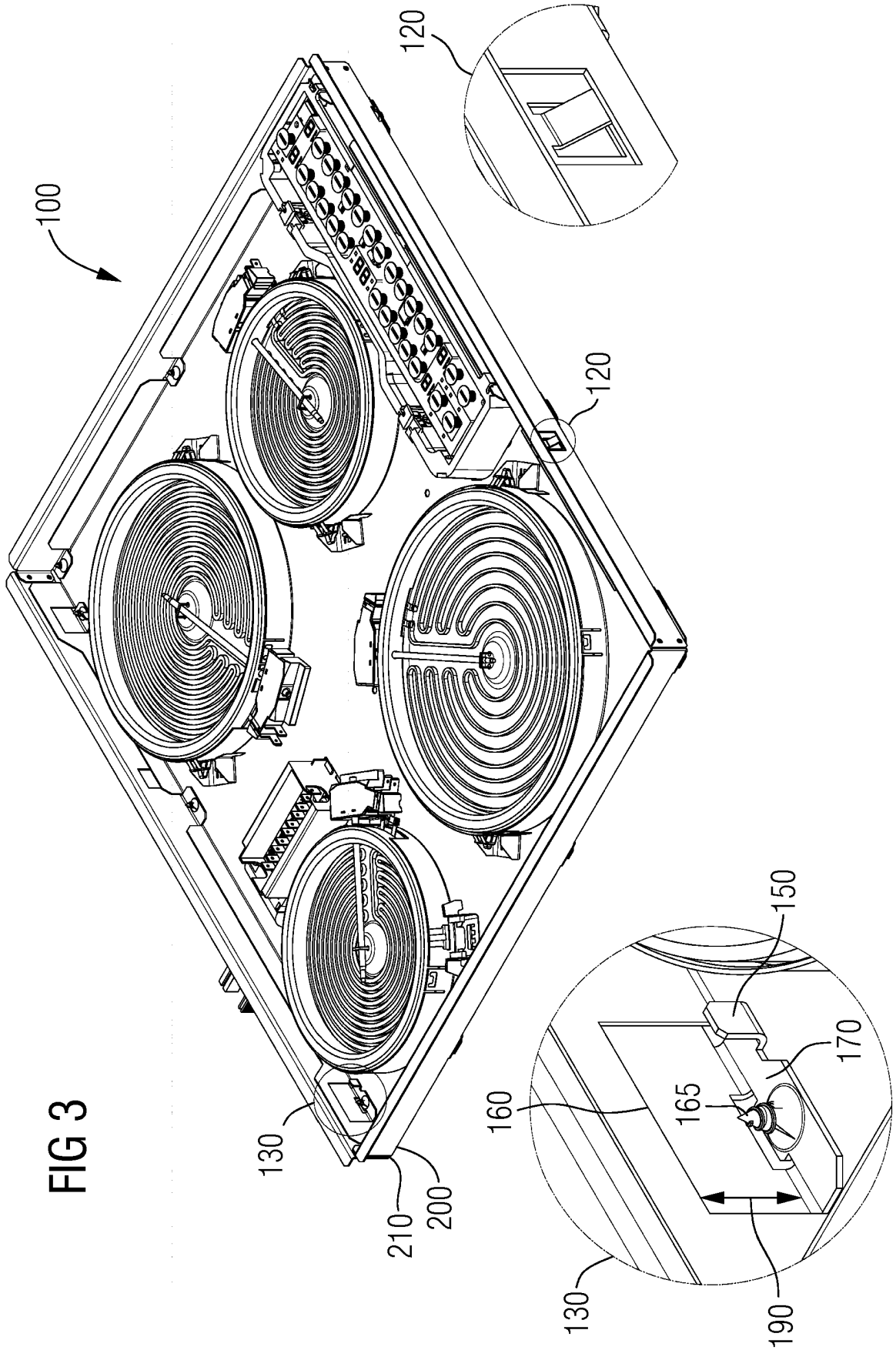


FIG 3

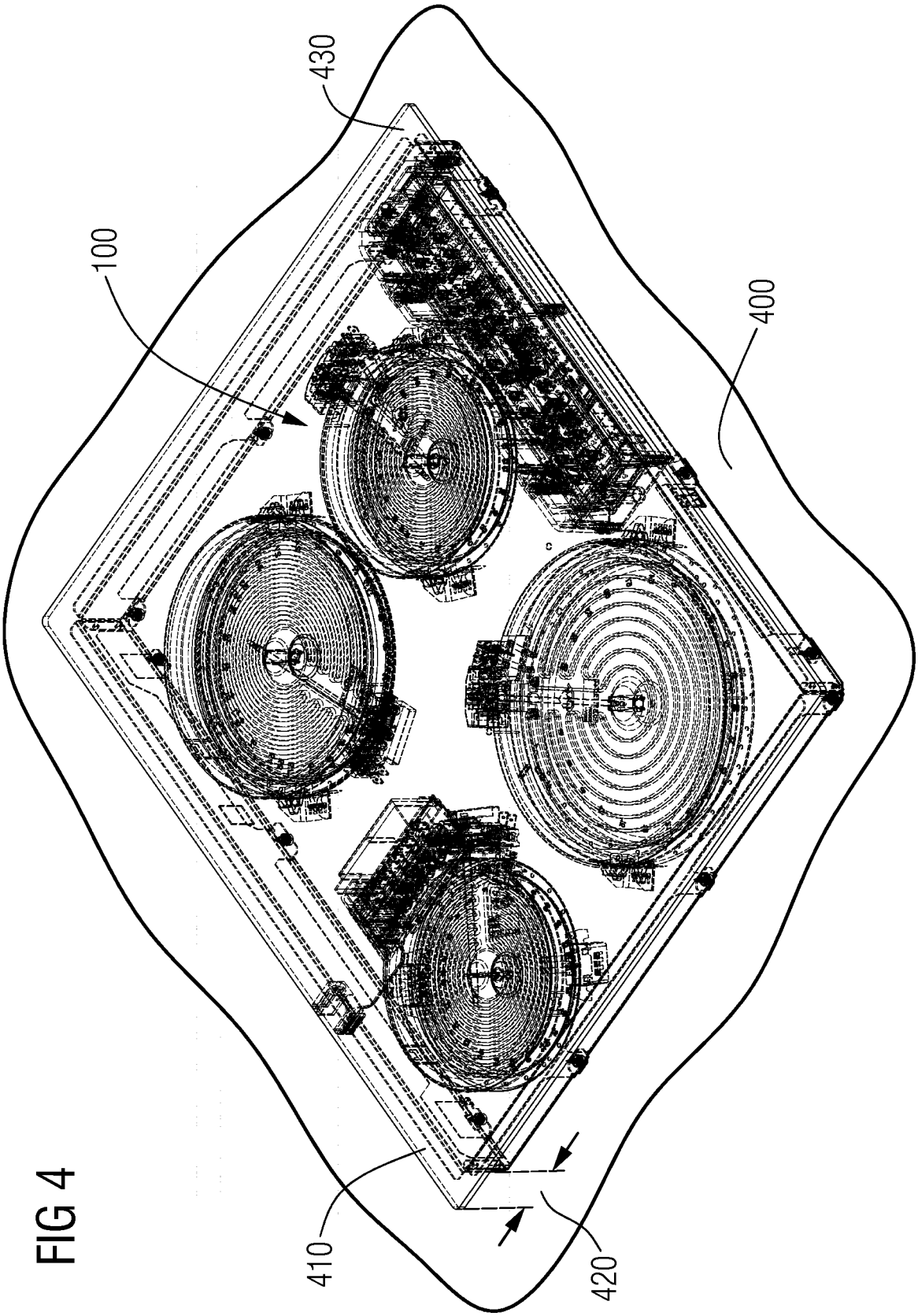


FIG 4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 8119275 U **[0003]**
- EP 2110607 A1 **[0004]**
- EP 2602556 A1 **[0004]**
- AT 371911 **[0004]**