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(54) Assembly of cooking device and work top

(57) Assembly of a worktop (20) or kitchen counter-top provided with an upper surface (24) and a number of cooking devices, which cooking devices each comprise a gas burner including burner body (44) and a heat plate (11) surrounding the gas burner, wherein the assembly furthermore comprises an undermount unit (1) having a number of burner bodies for the gas burners, and a sup-

port for the burner bodies, wherein the worktop (20) or kitchen countertop is provided with a primary through-hole (21) for each individual burner body (44), wherein the undermount unit (1) is placed at the lower side of the worktop or kitchen countertop and extends with each burner body from below from the support through the hole in question.

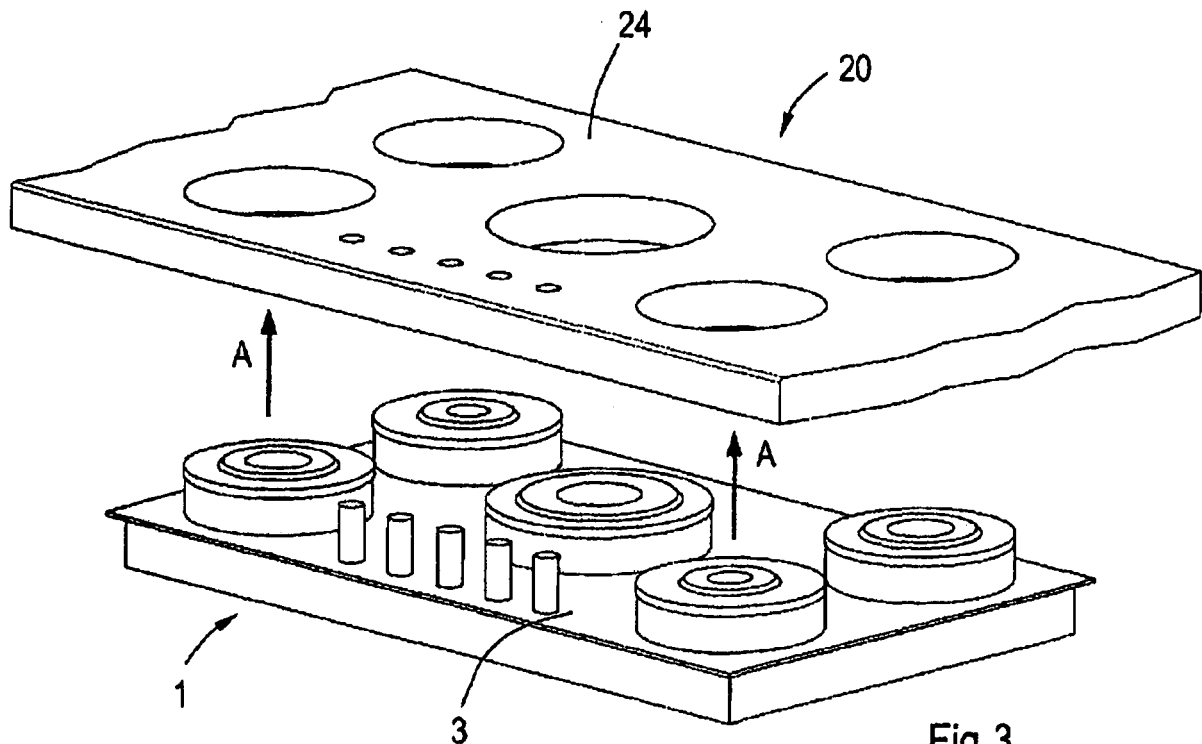


Fig.3

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Description

BACKGROUND OF THE INVENTION

[0001] The invention relates to an assembly of a number of cooking devices for forming a number of cooking spots (burners), with a support for them and a kitchen countertop, as well as a mounting unit for them. The invention furthermore relates to a method for fitting an assembly with cooking devices in a kitchen countertop.

[0002] Kitchens may traditionally be equipped with a multiple cooking device assembly that may be designed as a permanent part of a kitchen stove. For some decades it has also been common practice to accommodate a cooktop provided with several cooking devices for as many cooking spots or burners by means of a drop-in range in a kitchen countertop, over an oven accommodated in a kitchen unit. The oven initially was provided with operation knobs for the cooking devices, later on the operation knobs were positioned in a operation unit spaced apart adjacent to the burners, with which a further separation of functions was realised. With the rise of microwave ovens and developments in kitchen design a further separation between the oven function and the cooking function in kitchens became possible over the years.

[0003] Therewith a need arose for arrangements that do justice to the often well thought-out, aesthetic designs of kitchens, the fact that kitchens are more and more a part of the living space in a house playing a part as well.

SUMMARY OF THE INVENTION

[0004] It is an object of the invention to contribute to this.

[0005] It is an object of the invention to provide a cooking device assembly that constitutes a limited interruption of a kitchen countertop.

[0006] It is an object of the invention to provide a cooking device assembly that is easy to fit in a kitchen countertop.

[0007] It is an object of the invention to provide an assembly of a worktop and such a cooking device assembly.

[0008] It is an object of the invention to provide a method for fitting such a cooking device assembly in a worktop.

[0009] At least one of these objects is achieved according to the invention, from one aspect, by means of an assembly of a worktop or kitchen countertop provided with an upper surface and a number of cooking devices, which cooking devices each comprise a gas burner including burner body and a heat plate surrounding the gas burner, wherein the assembly furthermore comprises an undermount unit having a number of burner bodies for the gas burners, and a support for the burner bodies, wherein the worktop or kitchen countertop is provided with a primary through-hole for each individual burner body, wherein the undermount unit is placed at the lower

side of the worktop or kitchen countertop and extends with each burner body from below from the support through the hole in question.

[0010] Such an assembly is easy to arrange. Several cooking devices can be simultaneously fitted in one action. The quantity of material to be removed out of the worktop can remain limited. The upper surface of the worktop can be left largely undisturbed. Damage to the upper surface of the worktop is thus prevented. The cooking devices are integrated better in the surroundings. Due to the solitary arrangement of the cooking devices with individual heat plates, less material is furthermore needed for the heat plate, usually the cooktop of stainless steel. The burners with the burner bowls (also called burner head or burner crown or flame distributor) and burner caps can extend out of the heat plate above the worktop, after having been placed on the burner bodies (also called burner basis, in which the gas line debouches and mixing with combustion air takes place). The support, that may be plate-shaped, particularly tray-shaped, preferably box-shaped, can be made of cheap material, as it will remain out of sight.

[0011] Preferably the heat plates extend in radial outward direction to over the upper surface of the worktop, in which way they also cover the through-holes and facilitate the cleaning of the worktop.

[0012] The heat plates can be -directly or indirectly- attached to the undermount unit and the undermount unit can be provided with adjustable supporting means for the support, which supporting means engage onto a lower surface at the worktop to bias the heat plates against the upper surface of the worktop. The through-holes can then be sealed against dirt and moisture, so that they will not end up in said space and the parts situated in there and below it.

[0013] In an alternative embodiment the horizontal circumferential dimensions of the heat plates at the most at least substantially correspond with those of the through-holes in question.

[0014] The support may in one embodiment be detachable, in connection with repairing or replacing parts. Damage to the upper surface of the worktop is thus prevented.

[0015] In one embodiment the heat plates are part of individual housings for the burner bodies in question, which housings extend upwards from the support and are attached thereto.

[0016] In a simple further embodiment thereof the heat plates are attached - preferably detachably - to the rest of the housings in question.

[0017] In an alternative further embodiment thereof the heat plates are detachably attached to the gas burners in question, particularly to the burner bodies.

[0018] In a further development of the assembly according to the invention the support is furthermore provided with a number of holders for a number of operation elements for the cooking devices in question, wherein the worktop is provided with one or more secondary

through-holes for the holders, wherein, preferably, for each single holder for an operation element a secondary through-hole is provided in the worktop. In that case as well the quantity of worktop material to be removed is limited, while providing ease of fitting. In one embodiment the secondary through-holes are vertical.

[0019] In one embodiment the support forms a box in which the carrier(s) for the burner(s) and burner bodies/ burner interior(s), as well as the gas line(s) for them are accommodated. The box walls protect said parts, so that they cannot get damaged prior to or during fitting and are not directly accessible for interventions by incompetent persons. The box may have an upper wall on which said housings are attached in order to project upwardly therefrom and thus form an undermount unit that can easily be handled as one unity.

[0020] In one embodiment of the assembly according to the invention a pan support for a cooking device may at least partially support on the upper surface of the worktop.

[0021] The heat plates may form a support for burner flame distributors that are detachable therefrom without tools.

[0022] The heat plates may form a support for the pan supports.

[0023] The edge of the heat plates may form a centring means for the pan supports.

[0024] From a further aspect the invention provides an assembly of a worktop or kitchen countertop provided with an upper surface and an undermount unit having a number of cooking devices, wherein the cooking devices each from a joint undermount support extend through respective individual through-holes in the worktop and comprise individual heat or leakage plates. Each cooking device may comprise a gas burner, wherein the heat plate surrounds the burner sideways.

[0025] From a further aspect the invention provides an assembly of a worktop or kitchen countertop provided with an upper surface and at least one cooking device, which cooking device comprises a gas burner with burner body and a heat plate surrounding the gas burner, wherein the assembly furthermore comprises an undermount unit with a burner body for the gas burners, and a support for the burner body, wherein the kitchen countertop for the burner body is provided with its individual primary through-hole, wherein the undermount unit is placed at the lower side of the worktop and extends with each burner body from below from the support through the hole in question, wherein the heat plate in radial outward direction extends to over the upper surface of the worktop, wherein the heat plate is -directly or indirectly-attached to the undermount unit and the undermount unit is provided with adjustable supporting means for the support, which supporting means engage onto a lower surface on the worktop to bias the heat plate against the upper surface of the worktop. Preferably the heat plate is attached on the burner body.

[0026] According to a further aspect the invention pro-

vides a kitchen provided with an assembly according to the invention.

[0027] From a further aspect the invention provides a building provided with an assembly according to the invention.

[0028] According to a further aspect the invention provides an undermount unit apparently suitable and intended for an assembly according to the invention, comprising a support with a number of burner bodies supported thereon which individually from each other project upwards, preferably have each been provided with means for attachment of a heat plate thereto.

[0029] According to a further aspect the invention provides a simple method for equipping a kitchen, wherein a kitchen countertop is provided with a through-hole for each cooking spot to be created, wherein an undermount unit having a support for at least the burner bodies of a number of cooking devices for the cooking spots in question is lifted from the lower side of the worktop while having the burner body in question extend through its own hole up to a working position, after which the support is secured in position.

[0030] Preferably subsequently a heat or leakage plate is placed on the worktop from above and is attached to the undermount unit, in order to support against the upper surface of the worktop, wherein the undermount unit is as it were suspended from the worktop via the heat plates, after which the undermount unit is biased downwards against a lower surface of the worktop. The heat plate then forms a fitting aid and, after fitting has been completed, an attachment means for the undermount unit.

[0031] The aspects and measures described in this description and the claims of the application and/or shown in the drawings of this application may where possible also be used individually. Said individual aspects may be the subject of divisional patent applications relating thereto. This particularly applies to the measures and aspects that are described per se in the sub claims.

SHORT DESCRIPTION OF THE DRAWINGS

[0032] The invention will be elucidated on the basis of a number of exemplary embodiments shown in the attached drawings, in which:

Figures 1A and 1B show an isometric view and a top view of an undermount unit for a first exemplary embodiment of an assembly according to the invention;

Figure 2 shows a top view of a worktop that is prepared for the undermount unit of figures 1A and 1B;

Figure 3 shows a schematic view of a step during the fitting of the undermount unit of the figures 1A and 1B in the worktop of figure 2;

Figures 4A and 4B show an isometric view of the

worktop after fitting and a detail in cross-section of a part of the first exemplary embodiment of an assembly according to the invention after fitting; and

Figures 5A and 5B show an isometric view of an undermount unit for a second exemplary embodiment of an assembly according to the invention and a detail in cross-section of a part of the second exemplary embodiment of an assembly according to the invention after fitting, respectively.

DETAILED DESCRIPTION OF THE DRAWINGS

[0033] The undermount unit 1 shown in figures 1A and 1B comprises a flat box or casing 2 made of thin metal sheet, such as tin plate, having an upper wall 3, a circumferential wall 4 and a lower wall 5. A placement flange 3a runs all round. At the upper wall 3 five straight circle-cylindrical bushes 6a-e are attached, which are made of thin metal sheet, such as tin plate, and each consist of a circumferential wall 12a-e and a lid 11 a-e covering it on top and detachably supported thereon. The lid 11a-e is centrally provided with an elevation having an inclined circumferential edge and a central aperture 10a-e. The lid is for instance made of metal or cast iron, particularly heat resistant and/or heat proof material. For one lid 11e the diameter D1 is shown, which, for instance for a wok burner, may be 180 mm.

[0034] The box 2 is furthermore provided with bushes 7 projecting from the upper wall for operation knobs.

[0035] Figure 2 shows a top view of a worktop 20 with upper surface 24, for instance of stone, concrete or granite. In the worktop 20 five through-holes 21a-e situated spaced apart from each other have been drilled out, and are bounded by circle-cylindrical walls 22a-e, as well as five small holes 23. For one hole 21e the diameter D2 is shown, which will be a little larger than D1, for instance 2mm more. The diameters of the holes 21a-d also approach the diameters of the bushes 6a-e of the undermount unit 1.

[0036] Prior to fitting the undermount unit 1 it may optionally be almost completely prepared and for that purpose already be provided with burner bodies (also burner basis or burner interior) to be surrounded by the bushes 6a-e, in which burner bodies the gas line debouches and mixing with combustion air takes place, with the lines necessary for that purpose, as well as with flame distributors for the burners, optionally with burner caps, to be placed on the burner interiors, having an access channel for the gas/air mixture extending through the apertures 10a-e. Between the burner bodies and the walls 12 of the bushes 6 there is room for access with tools and fingers of the fitter and for the said lines. In figure 3 arranging the undermount unit 1 from below is shown, wherein the bushes 6 are accommodated in the holes 21 with a slight play in order to finally with the heat plates 13 extend just above or at the level of the upper surface 24.

[0037] In figure 4 a situation is shown in which the fitting is completed. In this case only one cooking device is shown, but it will be understood that the undermount unit carries several cooking devices. The upper wall 3, particularly its flange 3a, of the box 2 is screwed to the mounting laths 30 that are attached to the lower side 25 of the worktop 20. Other ways of attaching the box to the lower side of the worktop are also possible. It can be seen that within the box 2 onto its lower wall 5 an inverted U-shaped carrier 50 is attached, at the upper wall 52 of which the burner body or burner interior 44 is detachably attached, to which among others the gas line 54 is connected. On the burner interior 44 the flame distributor 40, provided with a burner cap 41, is detachably supported in a manner known per se. The part of the cooking device that is placed with the undermount unit 1 as one unity from below comprises the burner interior, optionally with a flame distributor placed thereon, and by the bush 6a-e and the lid or heat plate 11a-e. The heat plate 11a-e extends radially outside of the flame distributor 40 to form an annular surface 13a-e that stops the heat.

[0038] The lid 11a snugly fits in the hole 21a, wherein the circumferential slit is sealed with a putty 53, and with the heat plate 11 a extends some mm, for instance 5mm, above the surface 24. For repairs or replacement the box 2 can be lowered after having it detached from the worktop, and then the flame distributor 40 is removed (if it has not already been removed from above), the connection between the burner interior and the lid 11a is detached and the lid 11a is detached from the wall 12a. The burner body 44 is then properly accessible.

[0039] The flame distributor 40 is surrounded by a number of pan supports 42, which with a ring 46 connecting them, at the lower side provided with a rubber strip, support on the upper surface 24. The pan supports 42 are thus the only parts that need to be placed from above for completing the cooking spot, after the undermount unit has been placed as one unity. The flame distributors 40 can also be placed from above, but can also be placed from below together with the undermount unit.

[0040] In the embodiment of figures 5A and 5B parts that are comparable with parts of the embodiment shown in the previous figures, have the same numbers, increased by 100.

[0041] The undermount unit 101 of figure 5A comprises a box 102 having a bottom plate 105 and an upper plate 103. Round holes have been made in the upper plate 103, at the location of the edge of which cylindrical bushes 106a-e have been attached on the upper plate 103. Burner bodies 108a-e extend within the bushes 106a-e, which burner bodies are bowl-shaped and in the circumferential wall 161a-e are provided with igniters 180a-e and with bolt holes. Between the wall 112a-e of the bushes 106a-e and the burner bodies 108a-e circumferential line spaces and mounting spaces 109a-e have been left free.

[0042] The undermount unit 101 is supplied from below, direction A, under a worktop 120, wherein the bushes

106a-e are inserted from below into their individual holes 121 intended for that purpose, just like in the embodiment discussed before, wherein the walls 112 extend into the holes 121 with some play. In figure 5B again only a part of the undermount unit 101 is shown, wherein the indications "a" have been left out for reasons of illustration.

[0043] As soon as the undermount unit has been brought at approximately the right height a temporary support for it is arranged. This may for instance be some rods supporting on the ground. The fitter subsequently places the heat plate 111 over the hole 121. He then inserts bolts into holes 160 in the heat plate 111 and the bolt holes 162 on the circumferential wall 161 and in that way screws the heat plate 111 onto the burner body 144. The undermount unit 101 then is as it were suspended from the heat plate 111 that supports on the worktop 120.

[0044] For securing the undermount unit 101 to the worktop 120 set bolts 170 are utilised, of which the heads 173, are accessible to tools from below through a hole intended for that purpose in the bottom plate 105. The set bolts 170 have been screwed in nuts 171 attached on the upper plate 103 and extend through a suitable hole in said upper plate 103 for with their end 172 abutting the lower surface 125 of the worktop 120, after rotation of the set bolt 170 in direction B. By rotating the set bolts 170 further, the undermount unit 101 is urged downwards, direction C, wherein the heat plate 111 is pulled along downwards, direction D. Thus the heat plate 111 can be biased against the upper surface 124 of the worktop 120 and the undermount unit 101 can be secured. The heat plate 111 in this embodiment will not need to contact the bush 106, but will cover it nonetheless. Subsequently the flame distributor 140 and the burner cap, as well as the pan support are placed from above.

[0045] The heat plate 111 has a downward collar edge 114, in order to let the horizontal upper surface of the heat plate 111 extend approximately one cm above the upper surface 124, which is advantageous for keeping the heat away from the worktop, and for holding a u-shaped sealing profile 115, with which sealing against the upper surface 124 is effected. The collar edge 114 moreover forms a placement aid for the pan support 142/146, when its inner diameter corresponds with the outer diameter of the heat plate 111.

[0046] The above description is included to illustrate the operation of preferred embodiments of the invention and not to limit the scope of the invention. Starting from the above explanation many variations that fall within the spirit and scope of the present invention will be evident to an expert.

Claims

1. Assembly of a worktop or kitchen countertop provided with an upper surface and a number of cooking devices, which cooking devices each comprise a gas burner including burner body and a heat plate sur-

rounding the gas burner, wherein the assembly furthermore comprises an undermount unit having a number of burner bodies for the gas burners, and a support for the burner bodies, wherein the worktop or kitchen countertop is provided with a primary through-hole for each individual burner body, wherein the undermount unit is placed at the lower side of the worktop or kitchen countertop and extends with each burner body from below from the support through the hole in question.

2. Assembly according to claim 1, wherein the heat plates extend in radial outward direction to over the upper surface of the worktop.

3. Assembly according to claim 2, wherein the heat plates are attached to the undermount unit and the undermount unit is provided with adjustable supporting means for the support, which supporting means engage onto a lower surface at the worktop to bias the heat plates against the upper surface of the worktop.

4. Assembly according to claim 1, 2 or 3, wherein the horizontal circumferential dimensions, in case of a circular shape the diameter, of the heat plates at least substantially corresponds with those of the related through-holes.

5. Assembly according to any one of the preceding claims, wherein the heat plates are part of individual housings for the burner bodies in question, which housings extend upwards from the support and are attached thereto.

6. Assembly according to claim 5, wherein the heat plates are attached - preferably detachably - to the rest of the housings in question.

7. Assembly according to any one of the claims 1-5, wherein the heat plates are detachably attached to the gas burners in question, particularly to the burner bodies.

8. Assembly according to any one of the preceding claims, wherein the support is furthermore provided with a number of holders for a number of operation elements for the cooking devices in question, wherein the worktop is provided with one or more - preferably vertical - secondary through-holes for the holders, wherein, preferably, for each single holder for an operation element a secondary through-hole is provided in the worktop.

9. Assembly according to any one of the preceding claims, wherein the support is plate-shaped or tray-shaped, wherein, preferably, the plate-shaped or tray-shaped support is hollow, preferably forms a

box, wherein, preferably, the carrier(s) for the burners and gas line(s) for the burners are accommodated.

10. Assembly according to claims 5 and 9, wherein the box has an upper wall on which the housing(s) is/are attached in order to project upwardly therefrom. 5
11. Assembly according to any one of the preceding claims, wherein the heat plates form a support for burner bowls/flame distributors that are detachable therefrom without tools. 10
12. Kitchen provided with an assembly according to any one of the preceding claims. 15
13. Undermount unit suitable and intended for an assembly according to any one of the claims 1-11, comprising a support with a number of burner bodies supported thereon which individually from each other project upwards, preferably have each been provided with means for attachment of a heat plate thereto. 20
14. Method for equipping a kitchen, wherein a kitchen countertop is provided with a through-hole for each cooking spot to be created, wherein an undermount unit having a support for at least the burner bodies of a number of cooking devices for the cooking spots in question is lifted from the lower side of the worktop while having the burner body in question extend through its own hole up to a working position, after which the support is secured in position. 25
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15. Method according to claim 14, wherein subsequently a heat or leakage plate is placed on the worktop from above and is attached to the undermount unit, in order to support against the upper surface of the worktop, after which the undermount unit is biased downwards against a lower surface of the worktop. 35
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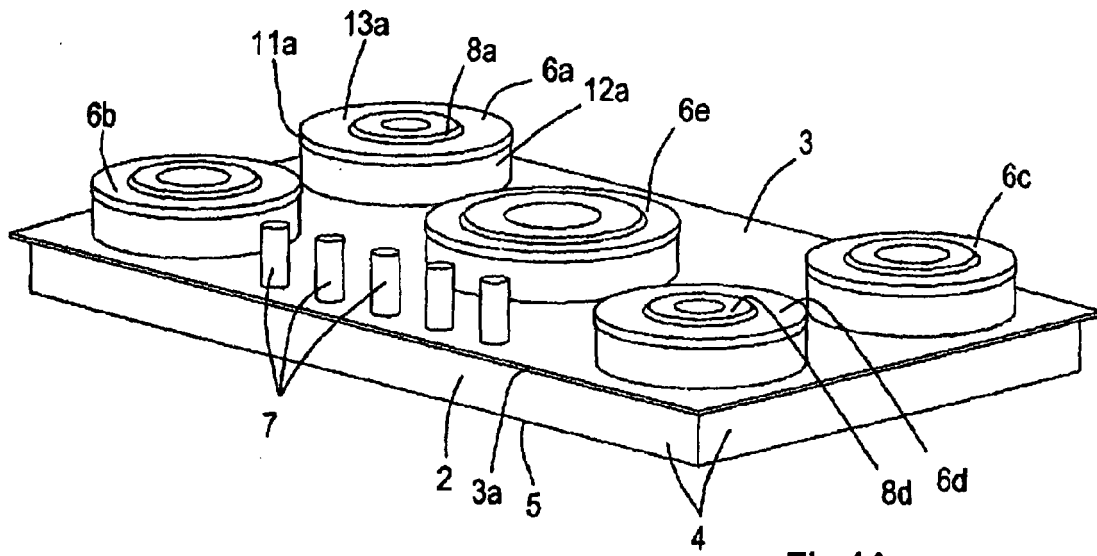


Fig. 1A

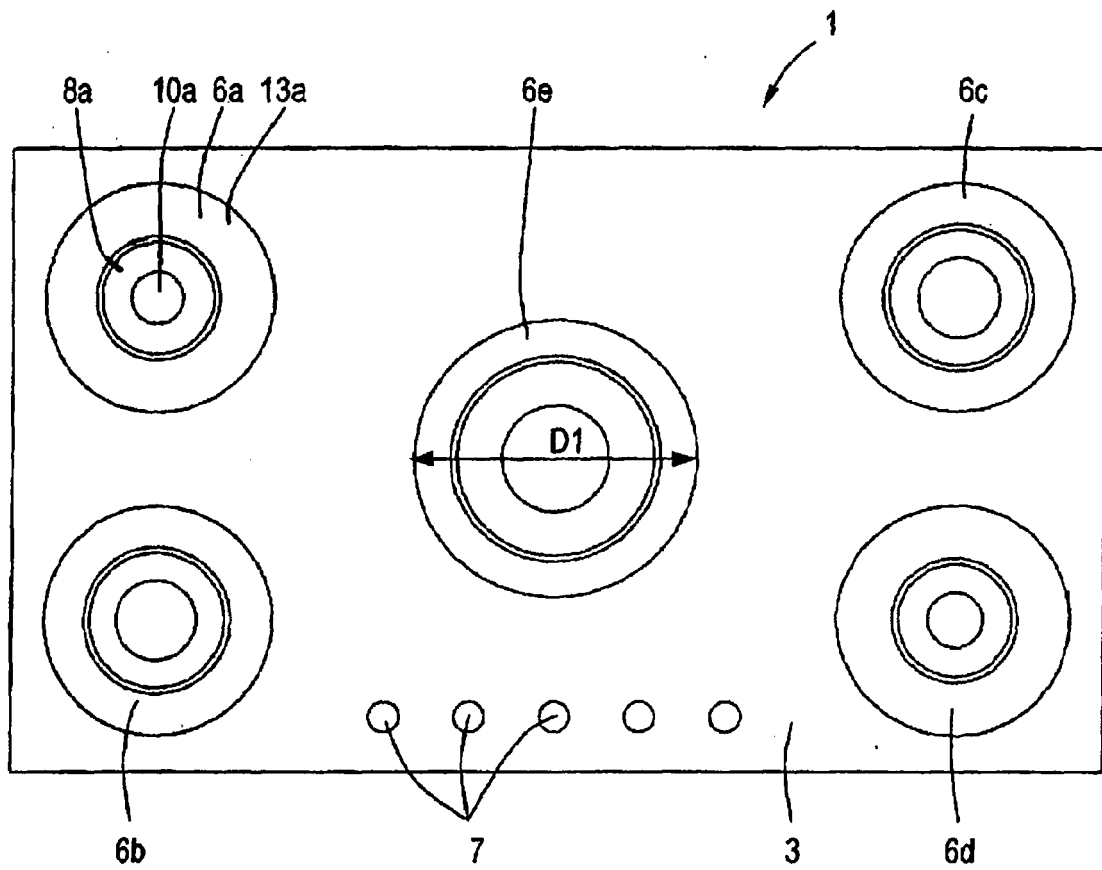
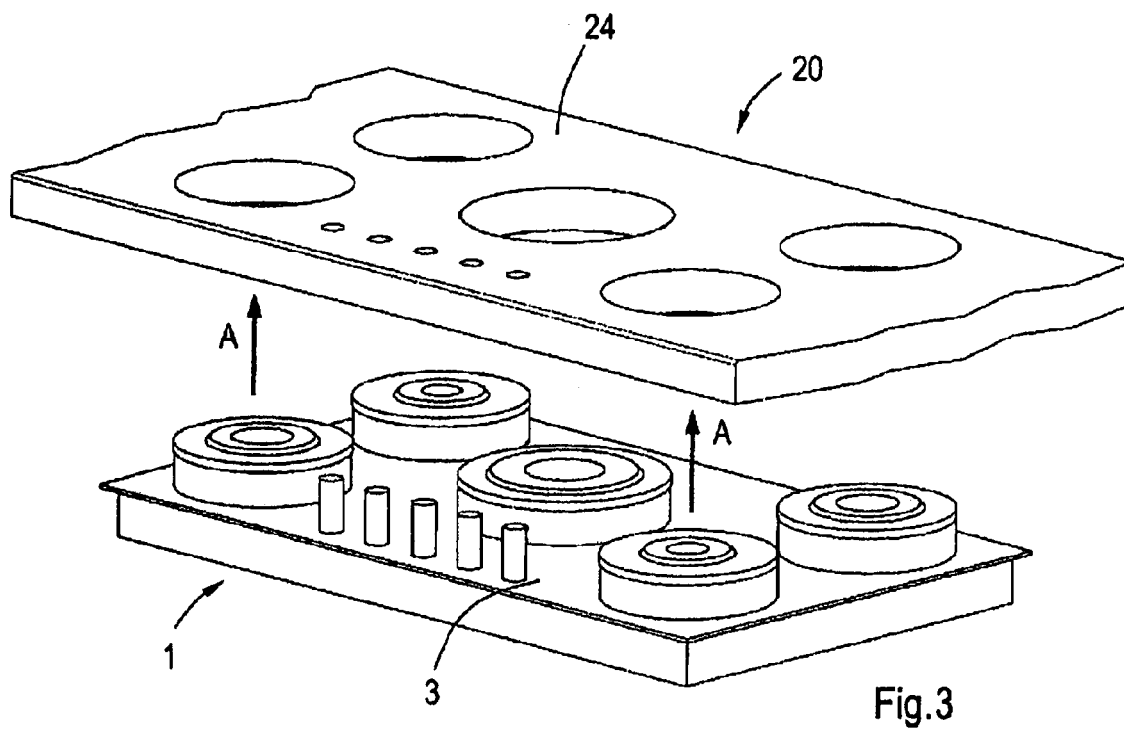
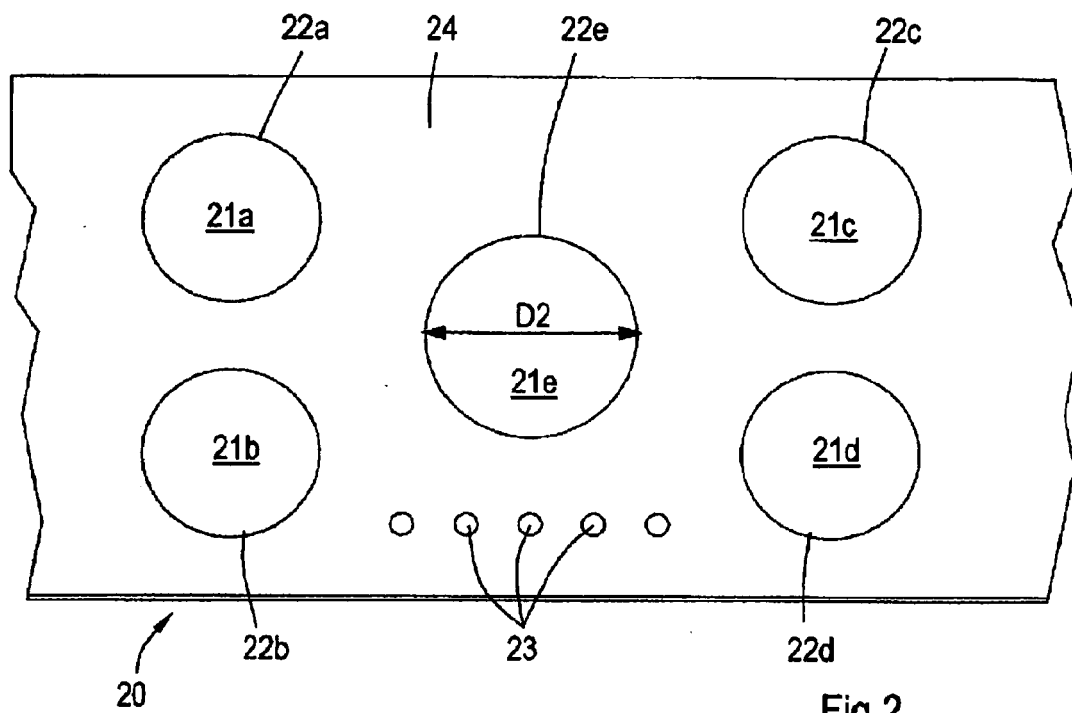


Fig. 1B



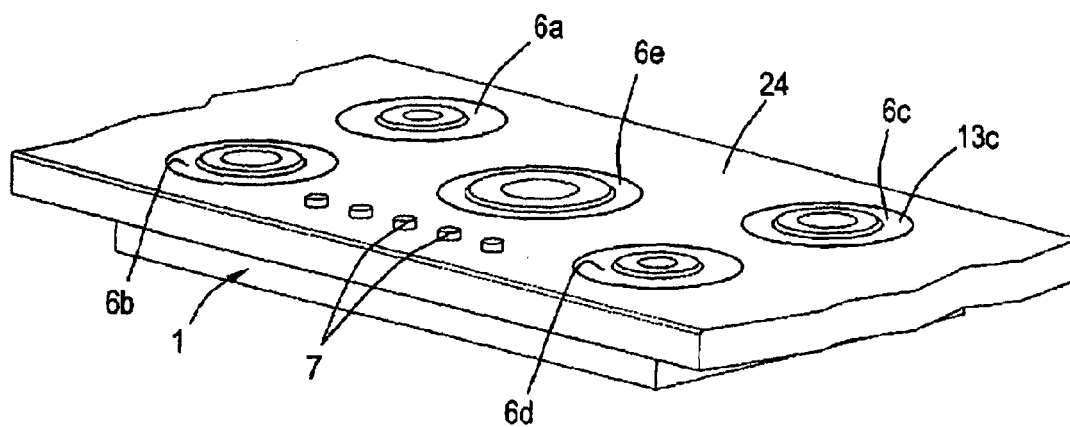


Fig.4A

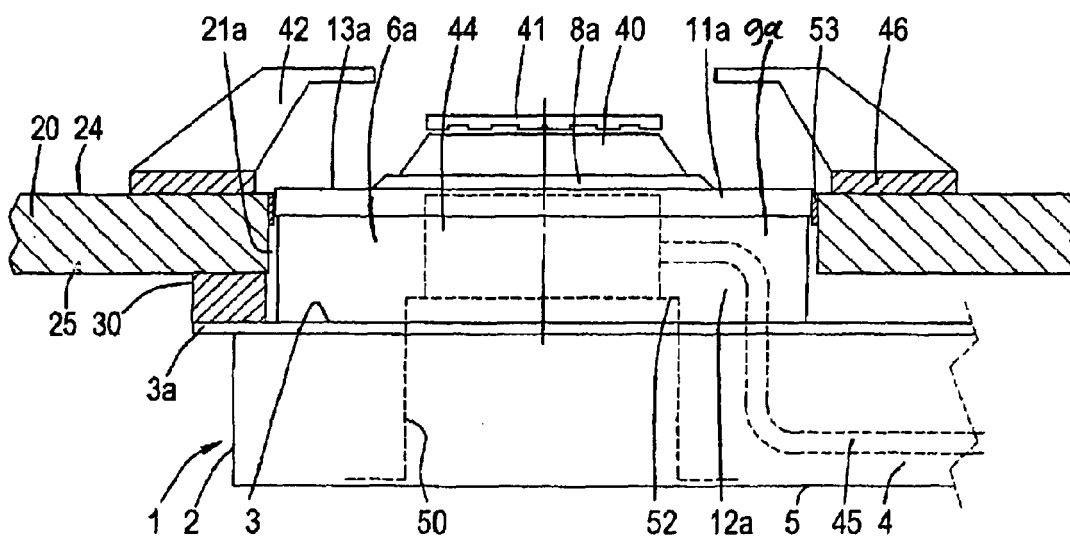


Fig.4B

