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(54) **COOKING HOBS INCLUDING COOKING ELEMENTS OF PARTICULAR CONSTITUTION**

KOCHFELDER MIT EINER BESONDEREN FORM

PLAQUES DE CUISSON COMPRENANT DES ELEMENTS DE CONSTITUTION PARTICULIERE

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Description

[0001] The present invention relates to a built-in type cooking hob, particularly apt to be easily and conveniently mounted in a single unit in suitable openings of kitchen furniture, according to the preamble of claim 1.

[0002] The present invention relates to a type of cooking hobs apt to be applied to modem kitchens, mainly for domestic use, and in particular to the so-called built-in kitchens, wherein the household appliances are inserted inside their respective pieces of furniture. Said type of cooking hobs includes particular cooking elements that characterise said hobs. The cooking elements can be gas burners or electrical or radiant plates, grills, or other known systems.

[0003] At present built-in cooking hobs are constructed in a single unit, and apt to be inserted into suitable openings, substantially of rectangular shape, obtained in kitchen furniture. An alternative to this solution is to construct said cooking hobs in rectangular modules that can be assembled within the same openings.

[0004] The aforesaid cooking hobs, generally constructed in easily machined and finished metal materials, present the covers of the respective gas burners or, in general, alternative cooking elements, already preformed by moulding. Said covers present central threaded holes in which the burners are screwed. Last of all, on the cooking hob and on the burners are placed the pot-holders of each gas burners. Said cooking hobs can also present other types of cooking elements in addition to the gas burners, for example radiant or electric hot plates. With said cooking hobs machining and assembly technology, when it is necessary to realise cooking hobs with different heat capacities, arranged in a particular mode, or with a variety of cooking elements that can be assembled, for example, in order to increase functionality or to provide a more attractive and innovative appearance, new moulds should be created. This involves setting up a complete new production line specifically dedicated to the production of a new mould. Subsequently there is the need for adapting complete machining and production lines to realise a single new cooking element layout.

[0005] Common cooking hobs present the obvious drawback of not being very flexible or economical to manufacture in cases where it is necessary to obtain aesthetic and/or functional variants thereof.

[0006] Another drawback is the fact that, if one gas burner is damaged near the cup, the whole cooking hob must be necessarily replaced because of the single unit construction.

[0007] During the 60's and 70's gas cookers were further manufactured with the gas burner covers positioned on the higher cooking hobs, and the burners set on supports at a lower position in the range itself connected to the frame. The gas cocks for controlling the burners' flame were connected to the aforesaid supports, and frontally built-in to the piece of furniture of the kitchen.

[0008] In particular, document US 3,877,865 discloses a burner having an aeration pan assembly made in such a way that the diameter of the secondary air opening around the burner can be decreased. The bottom of the pan extends upwardly toward the burner at a slope directed toward the burner port bases to guide supplemental secondary air drawn into the pan through openings in its side wall. However, said document does not disclose a pan apt to realise efficient and complete modularity of the cooking element.

[0009] In any case, the gas cookers described above are of a different type from those for which the present invention is destined. In fact, these ranges are of the type built with a metal structure including cooking hobs, oven, and sometimes also the housing for the gas bottle, all in a single and transportable structure separated from the rest of the kitchen furniture.

[0010] Today, however, for reasons of versatility, practicality, transport and design, household appliances and, in this particular case, cooking hobs tend to be embedded in kitchen furniture previously fitted and designed for this specific purpose.

[0011] The most important aim of this invention is to solve the aforesaid drawbacks by realising cooking hobs including cooking elements of a particular constitution, the use of which guarantees greater versatility in the realisation of the hobs. In fact said hobs can be suited to a wide range of design needs, to a variety of cooking element layouts, and to combined gas burner use with different heat capacities.

[0012] A further aim is to realise new variants and types of cooking hobs in a simple and easier way, without the need for adapting whole production lines or new moulds for this purpose with all the relative costs involved.

[0013] Another aim is to succeed in realising appreciable flexibility for manufacturing said cooking hobs with new manufacturing modularity, reduced costs and a large variety of stylistic personalization of the same hobs.

[0014] In order to achieve such aims, it is the object of the present invention to realise cooking hobs including cooking elements of particular constitution having the features described in the annexed claims that form an integral part of the description herein.

[0015] Further objects, features and advantages of the present invention will become apparent from the following detailed description and annexed drawings, which are supplied by way of non limiting example, wherein:

- Fig. 1 and Fig. 2 show, in a cross section view with respect to a transversal plane, a cooking element according to the present invention in two of its possible realisations;
- Figure 3 shows an assembled cooking hob according to the present invention;
- Figure 4 shows an escalation view of a possible variant of a cooking element according to this invention.

[0016] In the figures listed above a cooking element,

and more specifically, a gas burner, referenced 1, while a cooking hob including said elements referenced 10. Said cooking hob 10 presents housing holes 10A for said cooking elements 1.

[0017] In particular, a cooking element 1 or a gas burner made up of a cover 2 with a threaded hole in the centre is illustrated in Fig. 1 and Fig. 2. A cup 4 of a burner element is screwed into said hole, and referenced 3.

[0018] As known, the cup 4 presents a mouth 41 apt to be connected to a gas hose that passes below the cooking hob 10, terminating with a threaded outlet onto which a nozzle 5 is screwed to distribute a settled quantity of gas. As known, said nozzle 5 is regulated to supply a certain heat capacity to gas burner 1.

[0019] The cup 4 shows then a small shelf 4M on the side drilled with a hole for the insertion of known auxiliary means such as an ignition plug 6 to strike the flame in the gas burner and/or a thermocouple to activate a safety protection system against gas leaks, this not being illustrated for simplicity's sake.

[0020] A flame separator element 7 closed on top by a cap 8 is positioned above the cup support 4. As known, the gas to be burnt, coming from an external duct fastened to the mouth 41, spreads inside the cup 4 of the gas burner element 3 mixing with the air; finally, the gas bums coming out through the flame separator element 7.

[0021] Cover 2 of the gas burner 1 shows seats 2S near the bottom of said cover 2, into which the arms of a pot-holder 9 are lodged. The conformation of the external edge 2B of the cover 2 is a particularly important component of cooking element 1. In Fig. 1 said external edge 2B is folded over slightly in a downward direction to provide greater stability in supporting cover 2, and consequently the whole cooking element 1.

[0022] Conveniently, the cooking hob 10 could have a flared form near the housing hole 10A of the cooking element 1, in order to better employ the external edge 2B of the cooking element 1 stably supported.

[0023] Fig. 2 shows the external edge 2B in a flat version apt to be attached in a common way to the lower surface of cooking hob 10. For example, fixing elements such as screws could be used in order to be applied from the bottom to the top, rivets, or even plain pasting with suitable heat resistant glues. Said fixing elements, not illustrated for simplicity's sake, could further constitute stylized and visible elements to contribute to a new and original appearance of the whole cooking hob 10.

[0024] Fig. 3 shows a cooking hob 10 according to the invention that seems to be completely similar to the cooking hobs currently on the market. In particular, said cooking hob 10 shows three cooking elements 1 made up of gas burners with various capacities inserted into three housing holes 10A of compatible sizes. The employed cooking elements 1 are of the type shown in Fig. 1 as can be seen by the raised edges 2B having light-coloured lines in Fig. 3, that abut on the edge of the housing holes 10A.

[0025] According to this innovative modularity of cooking elements 1, it is possible to form the cooking hob 10 according to the widest range of geometrical and architectural layouts possible, in a manner that is compatible with design needs of capacity and weight that the openings in the hob 10 must satisfy in order to lodge each cooking element 1.

[0026] In fact, to this aim it is necessary to prepare only a single cooking hob mould, having compatible sizes with those of the furniture opening where it will be inserted. This will satisfy every possible variant and layout, since said hobs are later cut and/or tool machined to drill the holes where the cooking elements will be inserted basically flush with the cooking hob surface.

[0027] Therefore it is obvious that a new cooking hob of the same sizes will only require different tool machining after the moulding stage, and not a new and different mould as requested in the present state of the art. The creativity of designers and technicians is inspired to a greater extent by this new type of cooking hobs that permits the realisation of different variants of the same cooking hob at low cost.

[0028] A different illustration of the cooking element, i.e. the gas burner illustrated in Fig. 1, is shown in Fig. 4, and referenced 1'. This burner 1' presents a burner element 3' of the so-called "square" type, widely illustrated and described in the Patent for an Italian utility model N° TO2002U000101 in the name of the same applicant. Fig. 4 shows the particular square shape of the cover 2', having a flat edge 2B' preferably apt to be connected to a cooking hob 10 on the respective lower surface, aligned with housing hole 10A.

[0029] The features of the cooking hobs including cooking elements of particular constitution, according to this invention, are made apparent by the description and the annexed drawings, just as the advantages to be gained.

[0030] Said cooking hobs can be fitted to the widest range of design requirements and different layouts of the elements in a versatile, economical and efficient manner. Moreover, it is possible to combine gas burners with different applied heat capacities, as well as gas burners with cooking elements of other types such as electric, radiant hot plates, grills etc.

[0031] The most important aspect therefore, is the possibility of realising cooking hobs with different types and variants in a simple and easy manner without having to fit whole production lines or produce new moulds for this purpose with all the relative costs involved.

[0032] One advantage is therefore to be able to obtain considerable productive flexibility of said cooking hobs using a new realization modularity, reduced costs, and wide possibilities of personalized design for cooking hob layout.

[0033] It is obvious that many changes are possible for the man skilled in the art, to cooking hobs including cooking elements of particular constitution described as an example, without departing from the novelty principles of the inventive idea, as it is also obvious that in the prac-

tical construction, the forms of the illustrated details can be different and the latter replaced by other elements that are technically equivalent.

[0034] One variant that should be strongly underlined is the use, during the setting up of a cooking hob according to the present invention, of any type of a cooking elements currently known in the state of the art. For example, the gas burners shown in Fig. 1-4 can be combined with or replaced by electric or radiant hot plates, grill or barbecue type elements, either electrically controlled, or charcoal burners.

Claims

1. Built-in type cooking hob, particularly apt to be easily and conveniently mounted in a single unit in suitable openings of kitchen furniture, comprising at least one cooking element (1) of a type apt to be assembled with the cooking hob (10) in housing holes (10A) present in said cooking hob (10), in order to realise functional and stylistic changes to the cooking hob (10) in a simple and economical manner, said cooking element (1) being made for being modular and able to be inserted in a predetermined hole (10A) of said cooking hob (10) and providing first means which comprise a cover (2) fitted to close the external surface of said cooking hob (10), as a support for second means (3) to generate cooking heat and to contain any possible liquids or wastes that commonly drop onto a cooking hob (10), said cover (2) comprising an external edge (2B) that allows the coupling of said cover (2) with the cooking hob (10),
   characterized in that,
   in order to realise efficient and complete modularity of said cooking element (1), said cover (2) comprises:

   - third means for the stable attachment of said second means (3) to said cover (2);
   - seats (2S) near the bottom of said cover (2) onto which the arms of a pot-holder (9) abutting lodge.

2. Cooking hob, according to the previous claim, **characterized in that** said second means (3) comprise a plurality of detachable elements (4, 7, 8) in order to improve the modularity of said cooking element (1).

3. Cooking hob, according to the previous Claim, **characterized in that** said cooking element (1) comprises a gas burner, and therefore said second means of said cooking element (1) comprise a burner element (3) of said gas burner (1).

4. Cooking hob, according to Claim 2, **characterized in that** said plurality of detachable elements (4, 7, 8) comprise a flame separator element (7) closed on the top by a cap (8) positioned above a cup support (4).

5. Cooking hob, according to the previous Claim, **characterized in that** said third means of said cover (2) of said cooking element (1) comprise a threaded hole to internally house said second means (3) through a screwing action.

6. Cooking hob, according to one or more of the previous Claims **characterized in that** said cooking elements connected to said cooking hob (10) are gas burners (1; 1') and/or electric or radiant hot plates, and/or grill or barbecue type grills, either electrically controlled or charcoal burners.

7. Cooking hob, according to claim 1, **characterized in that** said external edge (2B) is flat and it is suited for the stable attachment, through fixing means, of said cover (2) to the lower surface of said cooking hob (10) aligned with said housing hole (10A).

8. Cooking hob, according to claim 1, **characterized in that** said external edge (2B) is folded over slightly in a downwards direction and is apt to act as a stable support on said cooking hob (10).

Patentansprüche

1. Einbau-Kochfeld, das insbesondere geeignet ist, um einfach und bequem in einer einzelnen Einheit in passende Öffnungen einer Kücheneinrichtung eingebaut zu werden, das zumindest ein Kochelement (1) von einem Typ umfasst, der geeignet ist, um mit dem Kochfeld (10) in Einbauöffnungen (10 A) montiert zu werden, welche in dem Kochfeld (10) vorhanden sind, um funktionelle und stilistische Veränderungen des Kochfeldes (10) in einer einfachen und wirtschaftlichen Art und Weise auszuführen, wobei das Kochelement (1) gefertigt ist, um einen modularen Zustand aufzuweisen und um in der Lage zu sein, in eine vorbestimmte Öffnung (10 A) des Kochfeldes (10) eingesetzt zu werden, und welches erste Mittel vorsieht, die eine Abdeckung (2) umfassen, welche geeignet sind, um die äußere Oberfläche des Kochfeldes (10) zu verschließen, als eine Halterung für zweite Mittel (3), um Kochhitze zu erzeugen und um irgendwelche möglichen Flüssigkeiten oder Abfälle, die gewöhnlich auf ein Kochfeld (10) herabfallen, zu enthalten, wobei die Abdeckung (2) eine äußere Kante (2 B) umfasst, welche die Kopplung der Abdeckung (2) mit dem Kochfeld (10) gestattet,
   dadurch gekennzeichnet, dass
   die Abdeckung (2) folgendes umfasst, um eine effiziente und vollständige Modularität des Kochelements (1) zu realisieren:

- dritte Mittel für die sichere Befestigung der zweiten Mittel (3) an der Abdeckung (2);
- Sitze (2 S) nahe des Bodens der Abdeckung (2), auf denen die Arme einer Topf-Haltevorrichtung (9) angrenzend untergebracht sind.

2. Kochfeld nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** die zweiten Mittel (3) eine Mehrzahl von lösbaren Elementen (4, 7, 8) umfassen, um die Modularität des Kochelements (1) zu verbessern.

3. Kochfeld nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** das Kochelement (1) einen Gasbrenner umfasst, und folglich die zweiten Mittel des Kochelements (1) ein Brennerelement (3) des Gasbrenners (1) umfassen.

4. Kochfeld nach Anspruch 2, **dadurch gekennzeichnet, dass** die Mehrzahl von lösbaren Elementen (4, 7, 8) ein Flammen-Trennelement (7) umfassen, das auf der Oberseite durch eine Abdeckkappe (8) verschlossen ist, die über der Abdeckkappen-Stütze (4) positioniert ist.

5. Kochfeld nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** die dritten Mittel der Abdeckung (2) des Kochelements (1) ein Gewindeloch umfassen, um die zweiten Mittel (3) durch einen Schraubvorgang im Inneren unterzubringen,

6. Kochfeld nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Kochelemente, die mit dem Kochfeld (10) verbunden sind, Gasbrenner (1; 1') und / oder elektrische Kochplatten oder Strahlungsplatten und / oder Grillvorrichtungen oder Barbecue-Grillvorrichtungen sind, die entweder elektrisch oder durch Holzkohlebrenner gesteuert werden.

7. Kochfeld nach Anspruch 1, **dadurch gekennzeichnet, dass** die äußere Kante (2 B) einen flachen Zustand aufweist und durch Befestigungsmittel für die sichere Befestigung der Abdeckung (2) an der unteren Oberfläche des Kochfeldes (10) in einer Flucht mit der Einbauöffnung (10 A) geeignet ist.

8. Kochfeld nach Anspruch 1, **dadurch gekennzeichnet, dass** die äußere Kante (2 B) einen in einer abwärts gerichteten Richtung leicht umgekanteten Zustand aufweist und geeignet ist, um als sichere Stütze auf dem Kochfeld (10) zu wirken.

Revendications

1. Plaque de cuisson de type intégré, particulièrement apte à être montée facilement et de manière pratique en une seule unité dans des ouvertures appropriées d'un meuble de cuisine, comportant au moins un élément de cuisson (1) d'un type apte à être assemblé avec la plaque de cuisson (10) dans des trous de réception (10A) présents dans ladite plaque de cuisson (10), afin d'apporter des changements fonctionnels et stylistiques à la plaque de cuisson (10) d'une manière simple et économique, ledit élément de cuisson (1) étant réalisé pour être modulaire et pour pouvoir être inséré dans un trou prédéterminé (10A) de ladite plaque de cuisson (10), et fournissant des premiers moyens qui comportent un capot (2) adapté pour fermer la surface externe de ladite plaque de cuisson (10), en tant que support pour des deuxièmes moyens (3) destinés à générer de la chaleur de cuisson et à contenir tous liquides ou déchets possibles qui tombent généralement sur une plaque de cuisson (10), ledit capot (2) comportant un bord externe (2B) qui permet le couplage dudit capot (2) avec la plaque de cuisson (10),
caractérisée en ce que,
afin de réaliser une modularité efficace et complète dudit élément de cuisson (1), ledit capot (2) comporte :

- des troisièmes moyens pour la fixation stable desdits deuxièmes moyens (3) audit capot (2),
- des embases (2S) près de la partie inférieure dudit capot (2) sur lesquelles se logent les bras d'un porte-pot (9) venant en butée.

2. Plaque de cuisson selon la revendication précédente, **caractérisée en ce que** lesdits deuxièmes moyens (3) comportent une pluralité d'éléments amovibles (4, 7, 8) afin d'améliorer la modularité dudit élément de cuisson (1).

3. Plaque de cuisson selon la revendication précédente, **caractérisée en ce que** ledit élément de cuisson (1) comporte un brûleur à gaz, et ainsi lesdits deuxièmes moyens dudit élément de cuisson (1) comportent un élément formant brûleur (3) dudit brûleur à gaz (1).

4. Plaque de cuisson selon la revendication 2, **caractérisée en ce que** ladite pluralité d'éléments amovibles (4, 7, 8) comportent un élément séparateur de flamme (7) fermé sur la partie supérieure par un couvercle (8) positionné au-dessus d'un support en forme de coupelle (4).

5. Plaque de cuisson selon la revendication précédente, **caractérisée en ce que** lesdits troisièmes moyens dudit capot (2) dudit élément de cuisson (1) comportent un trou fileté destiné à recevoir intérieurement lesdits deuxièmes moyens (3) par l'intermédiaire d'une action de vissage.

6. Plaque de cuisson selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** lesdits éléments de cuisson reliés à ladite plaque de cuisson (10) sont des brûleurs à gaz (1, 1') et/ou des plaques chauffantes électriques ou à chaleur rayonnante, et/ou un grill ou des grills de type barbecue, des brûleurs commandés électriquement ou à charbon.

7. Plaque de cuisson selon la revendication 1, **caractérisée en ce que** ledit bord externe (2B) est plat et est approprié pour la fixation stable, par l'intermédiaire de moyens de fixation, dudit capot (2) sur la surface inférieure de ladite plaque de cuisson (10) en alignement avec ledit trou de réception (10A).

8. Plaque de cuisson selon la revendication 1, **caractérisée en ce que** ledit bord externe (2B) est replié légèrement dans une direction vers le bas, et est apte à agir en tant que support stable sur ladite plaque de cuisson (10).

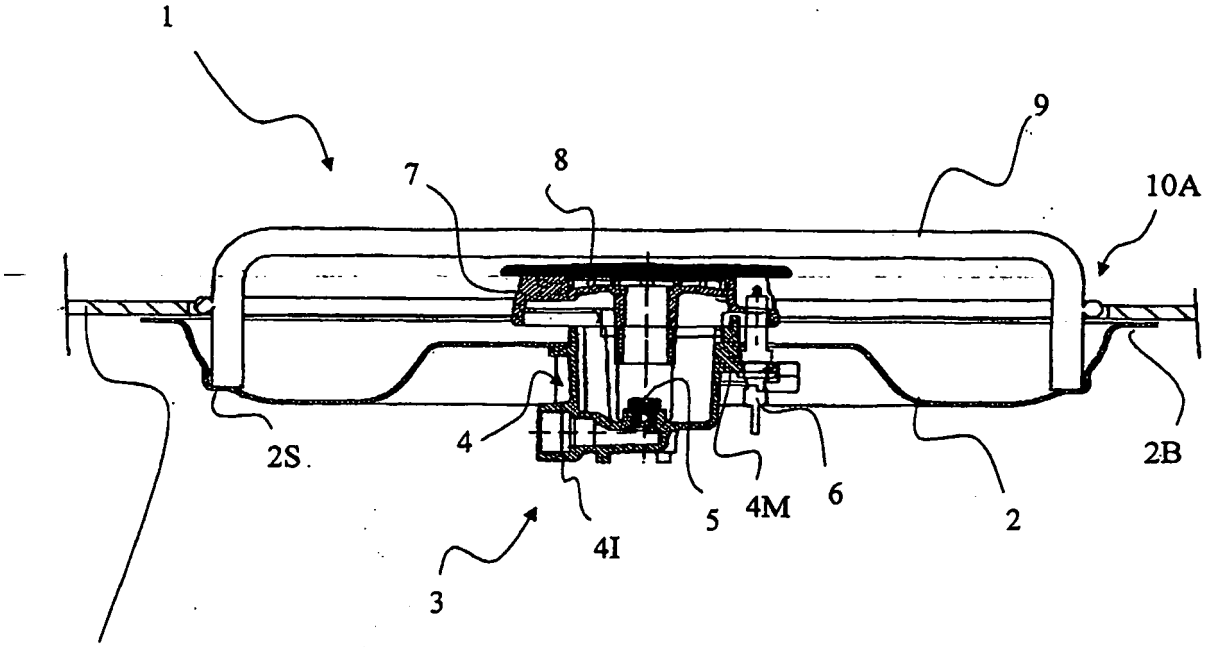

Fig. 2

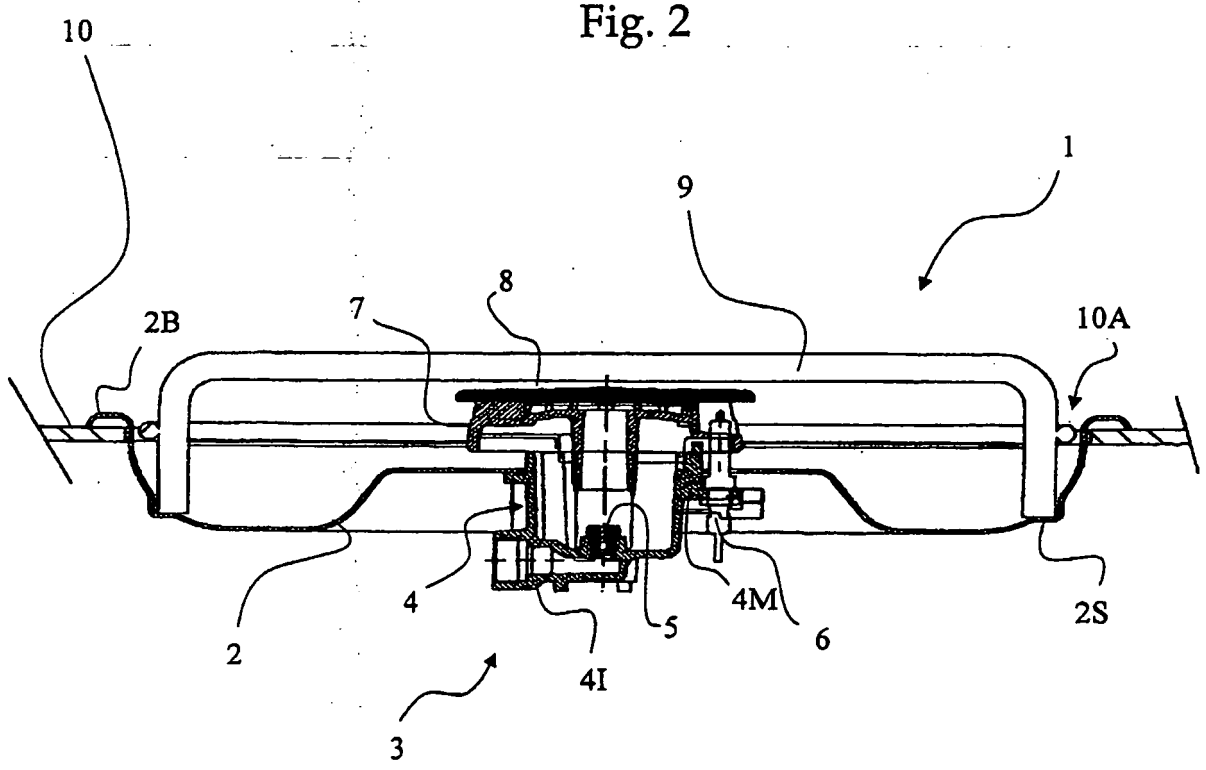

Fig. 1

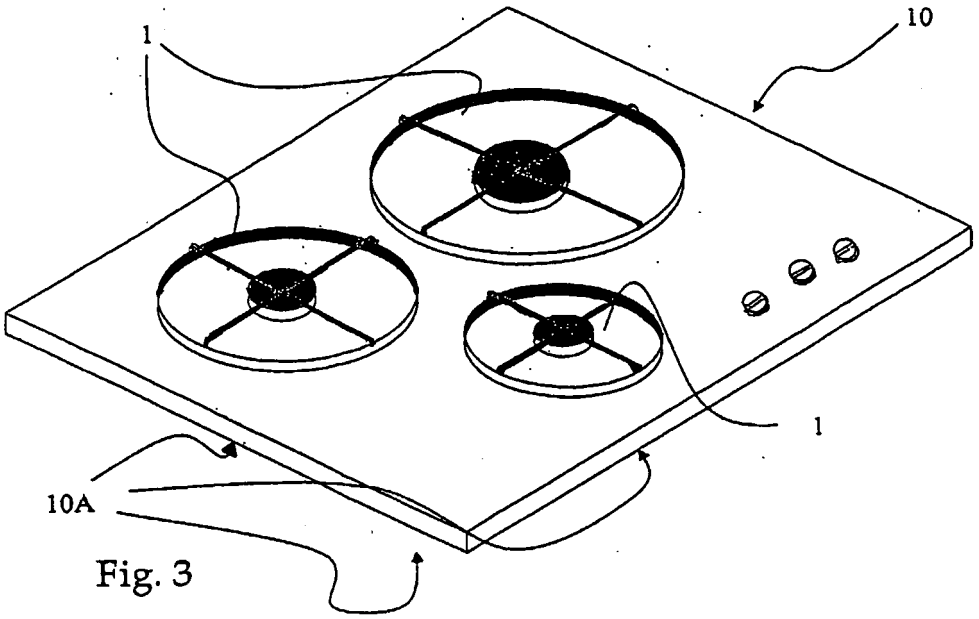

Fig. 3

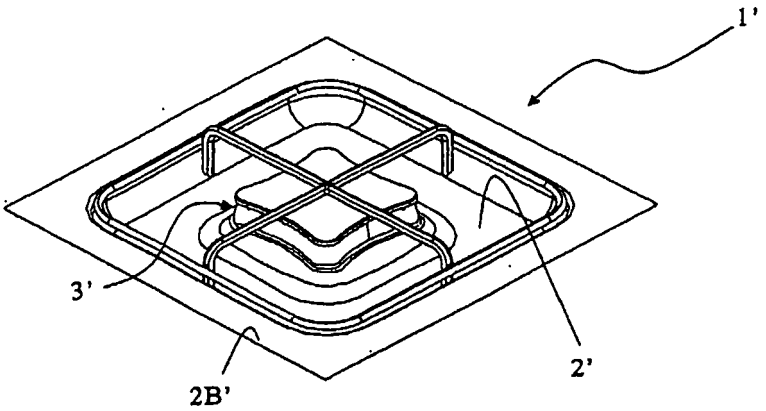

Fig. 4