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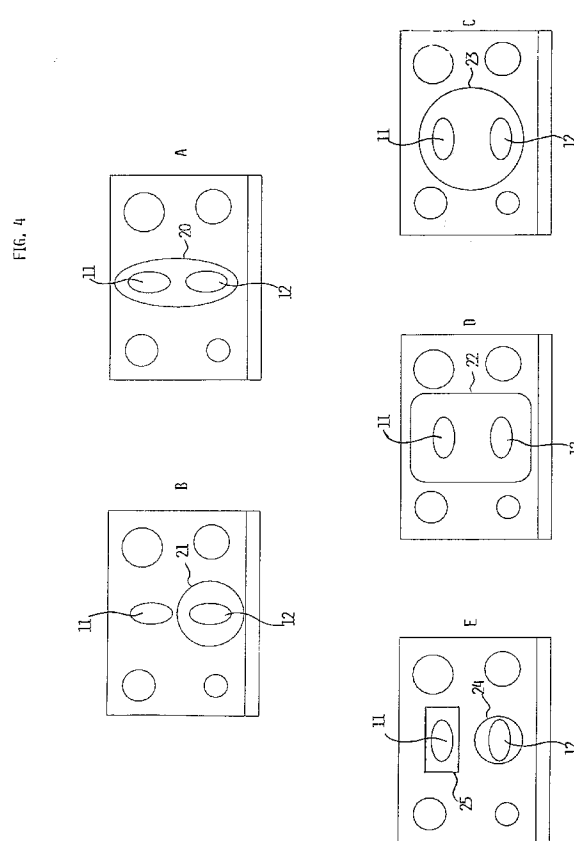
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(54) **Household cooking hob, with gas burner having variable positioning.**

(57) Domestic cooking hob, of the type comprising a plurality of gas burners (11-16), for the heating of cooking containers, characterized in that at least two of such burners (11,12 ; 30,31) are arranged on said cooking hob (10) in respective positions as such to allow the joint use for heating a single container of large dimensions, in particular a type of pan used for fish (Fig. 4, parts A,C,D), or the separate use so as to heat one or two containers being of smaller dimensions (Fig. 4, parts B,E).



The present invention refers to a domestic cooking hob, of the type comprising a plurality of gas burners for the heating of food contained in receptacles.

Cooking hobs of the type mentioned are known and are present, under various forms, in practically all domestic kitchens.

In some cases such hobs are independent elements, in the form of simple gas hot plates; in other cases such hobs are arranged as modular components, apt at being built-in in openings of standard dimensions obtained on the work top of a modular kitchen; in still other cases said hobs constitute the upper section of an electrical appliance comprising an oven for the cooking of food stuffs.

Some cooking hobs have a gas burner of the so called "fish-pan" type. As the name suggests, such type of burner is provided for the cooking of fish that, as known, has to be carried out with saucepans being of a particular shape if compared to those normally used in the kitchen (i.e. oval shaped saucepans or however being of an elongated form); such type of burner as a consequence is also very long in shape, which occupies a substantial part of the useful space of the cooking hob.

The use of the fish-pan burner is, according to known techniques, the source of several drawbacks, from the point of view of the flexibility of usage of the cooking hob.

The fish-pan burner is normally rather infrequently used; moreover it can only be used with oval or elongated saucepans, otherwise the flames will overcome the sides of circular pans, with the possible burning of the handles, also due to the amount of heat that the fish-pan burner is able to produce.

It therefore seems clear that, due to its dimensions, of its rather limited use and only with a certain type of saucepan, the fish-pan burner considerably reduces the flexibility of use of the cooking hob incorporating such type of burner.

Another practical drawback of the known art is that the cooking hobs are not supplied with burners apt at heating square or rectangular based containers, such as for instance roasting pans or broilers.

The aim of the present invention is that of solving the abovementioned problems and in particular to indicate a cooking hob that, even though of particularly flexible use, even with respect to the types of containers to be heated, even with respect to the power available, still allows the heating of typical fish-pans.

Such aims are reached according to the present invention by a domestic cooking hob, of the type comprising a plurality of gas burners, for the heating of cooking containers, whereby at least two of such burners are arranged on said cooking hob in respective positions as such to allow the joint use for heating a single container of large dimensions, in particular a type of pan used for fish, or the separate use so as to heat one or two containers being of smaller dimen-

sions.

Such aims are also reached through the setting up of a domestic cooking hob, of the type comprising a plurality of gas burners, for the heating of cooking containers, whereby at least a first burner is provided comprising a body and a burner tap of an elongated form, in particular elliptical, and that said body and flame divider are able to assume two different positions in function with the type of container to be heated on said first burner and/or of that placed on a second burner of said cooking hob.

Further characteristics and advantages of the present invention shall result in being clear from the following detailed description and annexed drawings, supplied purely as an explanatory and non-limiting example, wherein:

- figure 1 schematically represents a view of a cooking hob of the type substantially known, comprising a fish-pan type burner;
- figures 2 and 3 schematically represent different views of a cooking hob according to the present invention;
- figure 4 schematically represents different views the cooking hob of figures 2 and 3 in different possible conditions of use;
- figure 5 schematically represents different views of a cooking hob according to a possible variant of the present invention;
- figure 6 schematically represents a plan view of a detail of a cooking hob according to a possible variant of the present invention.

In its essence, the idea onto which the present invention is based is that of dividing a fish-pan burner in two distinct burners, of smaller dimensions and arranged in positions of such to allow the contemporary use, or separate, with a various range of containers, however maintaining the possibility of using the typical pans for the cooking of fish. This allows for reaching a considerable flexibility of use of the cooking hob, as will become clear in the following description.

Figure 1 schematically represents a prospective view of a cooking hob of the type substantially known; in such figure the reference number 1 indicates as a whole a domestic cooking hob; reference number 2 indicates a so called fish-pan gas burner, centrally arranged respects the hob 1 and being of an elongated form.

Reference numbers 3, 4, 5 and 6 indicate four gas burners of the normal type, being of different dimensions and heat power, that can be used for the needs of pots, frying pans and saucepans of different dimensions, for the cooking of different types of food-stuffs; such burners 3-6 are arranged laterally compared to the fish-pan burner 2 and are circular. Finally, reference number 7 indicates the commands, or cocks, of the single burners 2-6.

As is seen the fish-pan burner occupies a substantial part of the cooking hob; as previously men-

tioned, apart from reducing the useful space of the cooking hob, the fish-pan burner 2 determines considerable rigidity of use of the hob 1, be it from the point of view of the types of pans that are to be used, and also from the usable heat power.

In figures 2 and 3 different views of a cooking hob according to the details of the present invention are illustrated.

In such figures 10 indicates as a whole the cooking hob according to the invention; with 11 and 12 two burners are indicated, realized according to substantially known techniques; for instance such burners may have a lower sump, a main body, inserted over the sump, comprising air-gas mixing means (for instance in the form of a Venturi type tube), and an upper flame divider. The burners 11 and 12 may indifferently be of the type that withdraw the primary air from above or below the hob on which they are mounted.

As is seen from figures 2 and 3, the upper part of the burners 11 and 12 have a generally elongated form, being substantially elliptical; in the parts A of such figures, the two burners 11 and 12 are longitudinally arranged one to the other.

With 13, 14, 15 and 16 four normal type burners are indicated, arranged to the sides of burners 11 and 12, that are similar to burners 3-6 of figure 1; with 17 the command cocks of the four lateral burners 13-16 are indicated.

The burners 11 and 12 are realized in such a way that they can be rotated to 90°, as is clear in part B of figures 2 and 3, wherein the flame dividers of the two burners in fact result in being arranged in a parallel manner one to the other. Such rotation can be obtained in various ways, according to the chosen embodiment of the sump and body of the burners 11 and 12; for instance the rotation could be obtained:

- manually rotating by 90° the main body of the burner, on which the flame divider is arranged, to then re-insert it in the sump, or
- manually rotating by 90° the main body, without having to extract it from the sump, or
- arranging for an appropriate command device for the contemporary rotation of the two burners; in such case it could for example be provided a motorized system, or more simply a mechanical rotating system (for instance of the worm screw type), controlled by an appropriate handle arranged on the cooking hob.

The two burners 11 and 12 are also realized so as to be sure that the relative flame crowns do not create functional interference; in other words the burners 11 and 12 are apt at creating a smaller flame in correspondence of the eventual proximity points (fig. 2 - parts C and D); this can be obtained by appropriately realising the body of the burner and/or the relative flame divider, so that the passages from which the air-gas mixture exits are calibrated so as to gen-

erate a flame of reduced dimensions in correspondence of the two extremities of each burner.

In the case illustrated in the figures, the burners 11 and 12 are separately controlled by way of two distinct cocks, indicated with 18 and 19. Of course other control solutions of the gas supply are possible: for instance a single stepped cock, that allows for the contemporary or separate functioning of the two burners.

As can be understood, the cooking hob according to the invention has a flexibility of use considerably improved in respect of the cooking hob of figure 1.

With this in mind, figure 4 illustrates several possible utilisations of the cooking hob 10.

In figure 4, part A, the burners 11 and 12 are both in use and longitudinally positioned, for the heating of an oval pan for fish, indicated with 20; such use of burners 11 and 12 therefore allows for obtaining the same results as those obtained by the fish-pan burner 2 of figure 1, according to the known art.

In part B of the same figure 4 the burners 11 and 12 are both positioned longitudinally, but only burner 12 is in use and is being utilized for heating a round saucepan of medium dimensions, indicated with 21.

In parts C and D of figure 4 the burners 11 and 12 have been rotated to 90° in respect to the positions illustrated in parts A and B, and are therefore arranged in a parallel manner, and both are in use: such conditions of use results in being particularly useful for heating a roasting pan or rectangular broiler, indicated with 22, or a round saucepan having a large diameter, indicated with 23. In such conditions of use excellent characteristics of temperature distribution and increased heat power is obtained.

In part E of figure 4 the burners 11 and 12 are arranged in a parallel manner and both are in use, but in this case they are used for heating two pots or pans of smaller dimensions, indicated with 24 and 25; of course, in the case of part E of figure 4, also only one of the two burners 11 and 12 could be used, for heating a single pan of a small diameter.

Finally, it is clear that the cooking hob 10 will be equipped with a grid, or a system of multi grids cooperating one with the other, not represented for simplicity, realized so as to support containers of different shapes and sizes, for instance according to the cases illustrated in figure 4 (containers being oval and round, of small, medium and large diameters, square, rectangular, etc.).

From the given description the advantages of the cooking hob subject of the present invention result in being clear.

As are also clear the advantages of the invention, represented mainly by the great flexibility of use of the proposed cooking hob, be it from the point of view of the type of saucepans or that of the usable power, singularly or as a combination; the cooking hob according to the invention also has the advantage of offering the possibility of cooking in an optimal manner

also foodstuffs contained in square or rectangular pans.

It is clear that numerous variants are possible to the man skilled in the art to the cooking hob described as an example, without for this departing from the novelty principles inherent in the inventive idea.

A first possible variant embodiment of the present invention is illustrated in figure 5, in which some of the previously mentioned reference numbers are used.

In such figure 5 the reference numbers 30 and 31 indicate as a whole two gas burners having in substance the functions of those indicated with 11 and 12 in figure 2, and therefore being realized in such a way as to be able to modify their working position. Such burners 30 and 31 are realized according to the techniques described in Italian Patent n° 1.232.887 (*corresponding to FR-A-2,650,369*), in the name of the same Applicant, in the sense that each of the burners 30 and 31 comprises a couple of concentric burners; in particular with 30A and 31A the internal burners are indicated, apt at producing a central flame crown of reduced dimensions; with 30B and 31B, the external burners are indicated, apt at producing two peripheral flame semi-crowns; the distinct controls of the four burners 30A, 30B, 31A and 31B are indicated with 32.

It is clear that, while maintaining the other characteristics previously described with reference to figures 2-4, the cooking hob 10 illustrated in figure 5 has a flexibility of use which is further improved, which ranges from a limited heat output (i.e. use of the single burner 30A) to a very high output (i.e. the use of all four burners 30A, 30B, 31A and 31B simultaneously).

In a second possible variant embodiment, in the cooking hob according to the invention, the burners 11 and 12 are equipped with an ignition lighting system, for instance of the piezoelectric type, with a relative thermocouple, for verifying whether the burner is alight or not; in figure 6 a particularly advantageous disposition is illustrated of the ignition lighter, indicated with 40, and of the relative thermocouple 41; as can be seen, even though the burner 11 is able to assume the two previously mentioned working positions, 90° one from the other, the ignition lighter 40 and the thermocouple 41, are arranged in position that allow for an ever correct functioning of the lighting system; as can in fact be seen, the relative distances between said elements 40 and 41 (fixed elements) and the burner 11 (movable element), are in substance always the same, independently from the working position chosen for the burner 11.

Another possible variant is that of equipping the burners 11 and 12 of figures 2 and 3 with a sensor of the temperature reached by the foodstuffs being cooked, with the aims of an automatic control of the actual temperature; such sensor could in fact be realized according to that described in Italian Patent n° 1.178.820 (*corresponding to US 4,646,963*), in the

case of burners that withdraw the primary air from below the cooking hob, or of the type described in Italian Patent n° 1.233.204 (*corresponding to EP-A-392,523*), in the case of burners that withdraw the primary air from above the cooking hob. In view of such, it is also possible to equip the burners with a device for compensating the influence of external heat sources on the temperature sensor, for example of the type described in Italian Patent n° 1.179.564 (*corresponding to US 4,645,124*).

According to a further possible variant the burners 11 and 12 could be of the double flame crown type, such as the type described in the Italian Patent Application n° TO91A000723 (*corresponding to EP-A-534,301*) in the name of the same applicant.

Another variant could be that of providing for the cooking hob supporting grids of the cooking containers of the interchangeable type, or with the possibility different positionings, in measure with the burners 11 and 12, according to the arrangement and use of said burners.

Claims

1. Domestic cooking hob, of the type comprising a plurality of gas burners (11-16), for the heating of cooking containers, characterized in that at least two of such burners (11,12; 30,31) are arranged on said cooking hob (10) in respective positions as such to allow the joint use for heating a single container of large dimensions, in particular a type of pan used for fish (Fig. 4, parts A,C,D), or the separate use so as to heat one or two containers being of smaller dimensions (Fig. 4, parts B,E).
2. Domestic cooking hob, of the type comprising a plurality of gas burners (11-16), for the heating of cooking containers, characterized in that at least a first burner (11,12; 30,31) is provided comprising a body and a burner tap of an elongated form, in particular elliptical, and that said body and burner tap element are able to assume two different positions (Figs. 2,3) in function with the type of container to be heated on said first burner and/or in function of the container to be heated placed on a second burner of said cooking hob.
3. Domestic cooking hob, according to claim 1, characterized in that at least two of such burners (11,12; 30,31) each comprising a body and a burner tap of an elongated form, in particular elliptical, and that said body and burner tap element are able to assume two different positions, said two burners (11,12; 30,31) being arranged on said cooking hob (10) in respective positions of such to allow the joint use for heating a container of large dimensions, particularly a pan of the

type use for fish (Fig. 4, parts A,C,D), or the separate use for heating one or two containers of smaller dimensions (Fig. 4, parts B,E).

4. Domestic cooking hob, according to claim 3, characterized in that the body and the burner tap element of said burners (11,12; 30,31) are apt at being rotated, in particular by 90°, so as to be arranged longitudinally one to the other (Figs. 2,3 part A) or parallel to each other (Figs. 2,3 part B). 5 10
5. Domestic cooking hob, according to at least one of the previous claims, characterized in that means are provided apt at preventing and/or limiting functional interference between said two burners (11,12; 30,31), in particular interference between the flame crown of the two burners (11,12; 30,31) in correspondence of the proximity points (C,D), when the relative burner tap elements are longitudinally arranged one to the other (Fig. 2, part A). 15 20
6. Domestic cooking hob, according to the previous claim, characterized in that the passages from which the air-gas mixture exits from said burner taps are calibrated so as to generate a reduced flame in correspondence of eventual proximities (C,D) between said burner tap elements, when these are longitudinally arranged one to the other (Fig. 2, part A). 25 30
7. Domestic cooking hob, according to at least one of the previous claims, characterized in that at least one of said burners (11,12; 30,31) comprise a temperature sensor device and eventually a device for compensating the influence of external heat sources on said temperature sensor. 35
8. Domestic cooking hob, according to at least one of the previous claims, characterized in that said two burners (11,12; 30,31) are separately controlled by way of distinct taps (18,19) or by way of a single cock, in particular a release cock, that allows for a separate or contemporary functioning of the two burners. 40 45
9. Cooking hob, , according to at least one of the previous claims, characterized in that at least one of said burners (30,31) has a concentric burner system, in particular an internal burner (30A,31A), able to produce a central flame crown, and an external burner (30B,31B), able to produce two peripheral semi flame crowns (Fig. 5). 50 55
10. Cooking hob, according to at least one of the previous claims, characterized in that automatic lighting means (40,41) of the burners are provid-

ed, said means in particular comprise an ignition lighter (40) and a thermocouple (41), in fixed positions, where the relative distance between said ignition lighter (40), said thermocouple (41) and the body of the burner (11), are substantially the same independently from the chosen working position of the burner (11).

11. Cooking hob, according to at least one of the previous claims, characterized in that one or more grids are provided apt at supporting containers of different shapes and sizes, said grids being interchangeable and/or able to take on different positions, as a result of the arrangement and use of said burners (11,12;30,31).
12. Domestic cooking hob, according to claim 1, characterized in that with the aims of heating a single pan of the type used for fish being of a generally elongated shape, two distinct gas burners (11,12;30,31) are provided, each having a body and a burner tap of an elongated shape, in particular elliptical, the two bodies and two burner tap elements of said two distinct burners (11,12; 30,31) being longitudinally arranged one to the other.
13. Domestic cooking hob, according to claim 1, characterized in that with the aims of heating single containers having square or rectangular bases, two distinct gas burners (11,12; 30,31) are provided, each having a body and a burner tap element of an elongated shape, in particular elliptical, the two bodies and the burner tap elements of said two distinct burners (11,12; 30,31) being arranged in a parallel manner one to the other.

FIG. 1

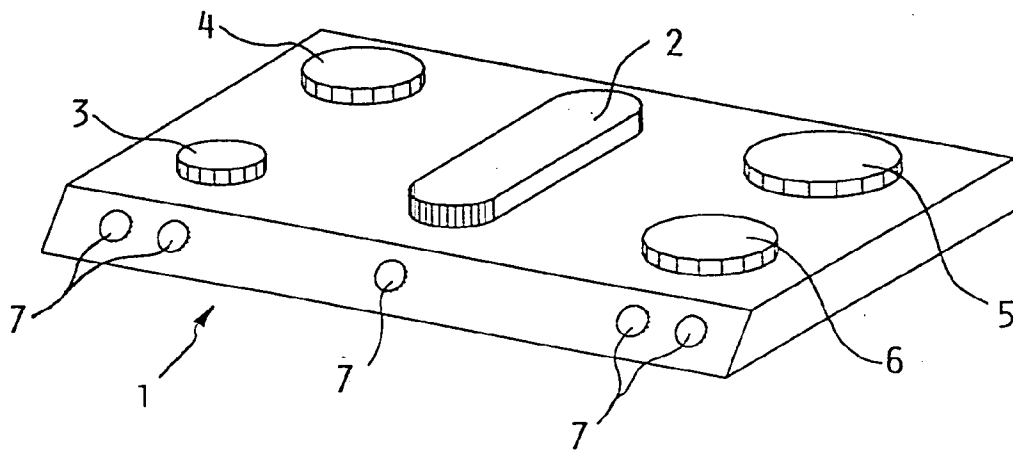


FIG. 2

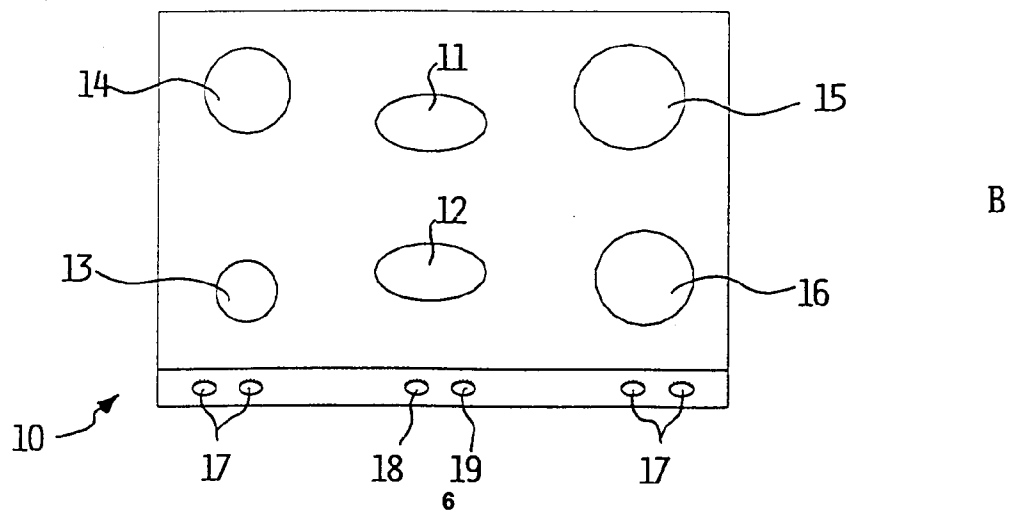
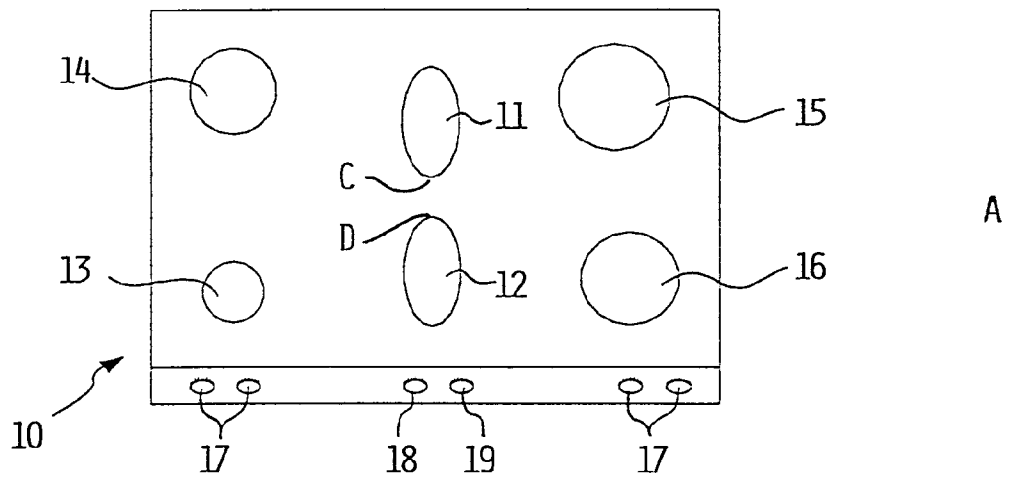


FIG. 3

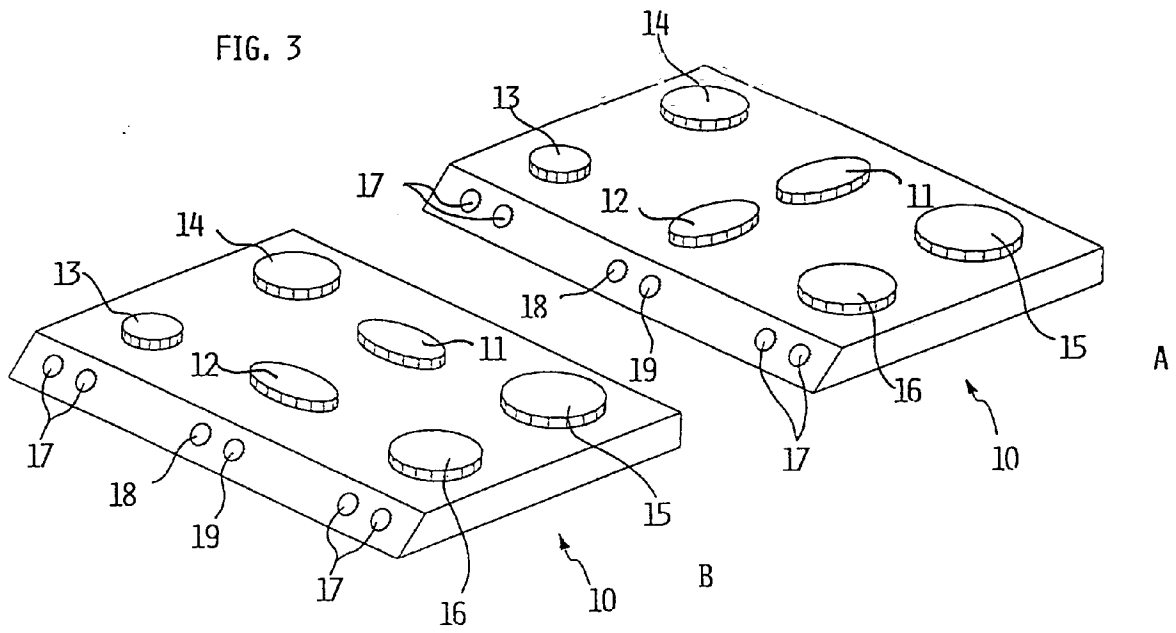


FIG. 5

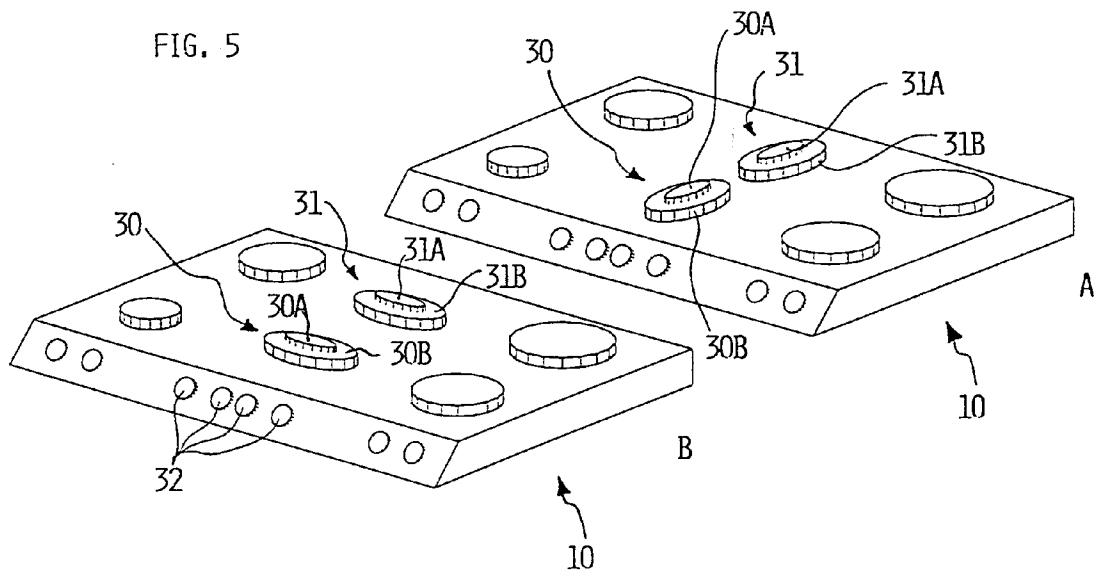


FIG. 6

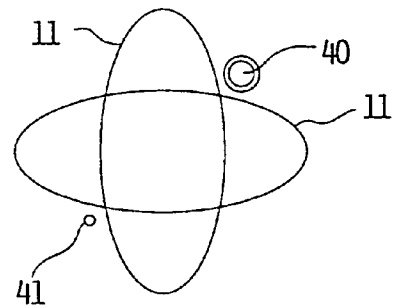


FIG. 4

