

12

# EUROPEAN PATENT APPLICATION

21 Application number: 90830103.9

51 Int. Cl.<sup>5</sup>: **F24C 3/12, F24C 7/08**

22 Date of filing: 14.03.90

30 Priority: 16.03.89 IT 1979589

72 Inventor: **Bertazzoni, Roberto**

43 Date of publication of application:  
19.09.90 Bulletin 90/38

Via Maldotti 2

Guastalla (Reggio Emilia)(IT)

84 Designated Contracting States:  
**DE ES FR GB SE**

74 Representative: **Adorno, Silvano et al**

71 Applicant: **SMEG S.p.A.**  
Via Circonvallazione Nord, 36  
Guastalla (Reggio Emilia)(IT)

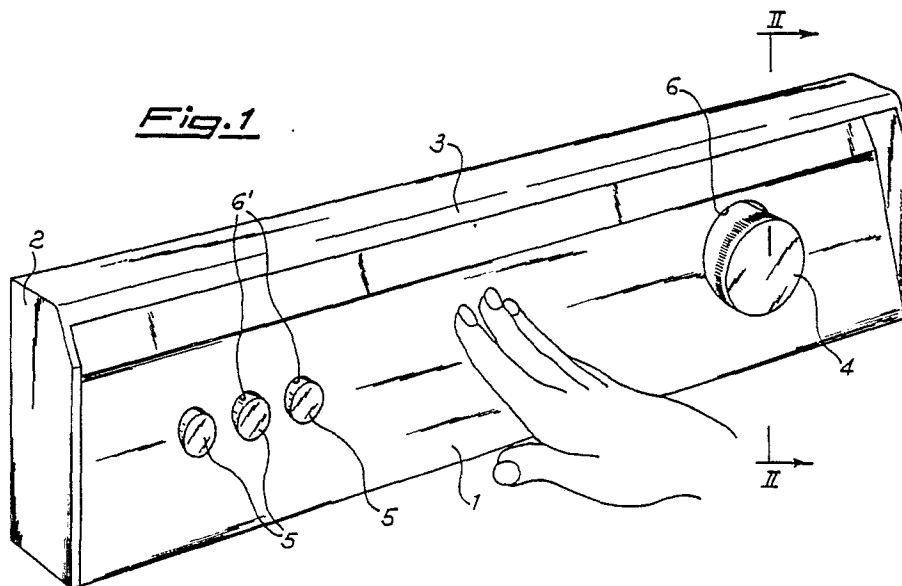
c/o SOCIETA' ITALIANA BREVETTI S.p.A. Via  
Carducci, 8  
I-20123 Milano(IT)

54 **Control panel for electrical or household appliances with retractable front portion for access to the controls.**

57 A control panel for household appliances is described, such as cookers and ovens which may be electrically fed or by gas, or even washing machines, clothes-driers, dish washers or similar equipments, being provided with a movable front portion (1) capable of being retracted from a usual rest position, while the apparatus is working and the control units (4, 5) can not be reached, to a recessed position for operating the controls only. When in said

usual position, to which it can return by a simple action of further pushing by means of the known "push-push" system, the front panel (1) is substantially co-planar with the surrounding surface, thus preventing from knocks or undesirable operations of the control units (4, 5). At the retracted position the upper side (3) of the control panel (1) may be shaped graspable to act as a handle for opening the appliance door.

**Fig.1**



The present invention deals with a control panel for electrically or gas fed household appliances with a front portion being retractable for the access to the control units of the appliance itself.

It is known that for the most part the household appliances, both of the cooking type such as electrical or gas-fed cookers and ovens, and the machines of the type like washing machines, clothes-driers, dish washers or the like, there is provided a front control panel on which the controlling, regulating and signalling units are mounted, such as the knobs of timers and thermostats, the gas supply cocks, the ignition push-buttons, the warning lights etc. These control units, especially when are shaped as knobs, protrude from the control panel which is usually provided co-planar with the front surface of the appliance or only slightly recessed with respect therewith. Therefore the control units, since are protruding from the front surface of the appliance, are susceptible to knocks and undesirable shifts which, not only are absolutely unpleasant for the person accidentally running against them, but may also cause various inconveniences relating to the appliance operation, when this is working, or the subsequent operating cycle in case of e.g. programmed machines such as washing machines or dish washers, up to the possible consequence of a serious danger when, owing to the knock or the accidental actuation, e.g. a gas supply cock is caused to open. In addition, besides the possibility of knocks, the danger is always present that children, unconsciously or for fun, may cause some operation of the control units thus exposed to their curiosity.

Further to safety and encumbrance grounds there are also aesthetical reasons according to which it is advisable to cancel as much as possible the controls of these household appliances which should show a single planar front surface not interrupted by the protrusion of knobs, push-buttons and the like. However all the attempts so far made to conceal and render less accessible the control units on the front panel of household appliances have not yet solved satisfactorily such a problem, as they have added either remarkable complications of the construction, with some rise of costs, if e.g. all the control knobs are provided to be retractable or some difficulties of direct access to control units when they have to be operated while are at a recessed position or hidden by outer elements which are to be removed.

It is therefore an object of the present invention to provide a mobile front panel, and namely retractable from a forward position of rest and safety, substantially co-planar with the front surface of the appliance, to a retracted back position at which all the control units are directly accessible, the movement from the first to the second position and the

return stroke to the initial rest position being accomplished by means of a simple manual action always carried out to the same direction by exerting a pressure against the front panel itself. The mechanism allowing this is a device known as "push-push".

The control panel according to the present invention is characterized by comprising a front portion being hinged to the stationary structure of the panel, and movable between a rest position, substantially co-planar with the front surface of the appliance and the outer surface of the control units mounted to said panel passing through corresponding holes formed in the front portion, and a back position which causes said control units to be accessible from the outside, said front portion being provided on its inner side with a shaped member for engagement with a known clasp device mounted on the control panel.

According to a particular aspect of the present invention the stationary portion of panel is formed, at the opposite side with respect to the said movable front portion hinge, with a graspable shape used as a handle for opening the appliance door.

These and additional objects, advantages and features of the control panel with a movable front portion according to the present invention will be clear to those skilled in the art from the following detailed description of the preferred embodiment thereof, given by way of a non-limiting example with reference to the annexed drawings in which:

FIGURE 1 shows a perspective view of the panel with movable front portion at a back position;

FIGURE 2 shows a cross-sectional view taken along line II-II of Fig. 1; and

FIGURE 3 shows a cross-sectional view of the same control panel with front portion at a forward position of rest or safety.

With reference to the drawings, which show only the front control panel relating, by way of example, to a dish washer, with 1 the front panel has been designated, which can move with respect to the stationary control panel 2.

With particular reference to Figs. 2 and 3 there is seen that the front panel portion 1 is hinged at an end 11 thereof to the stationary control panel 2, thus being able to oscillate about a horizontal axis, parallel to the longitudinal extension of the front panel itself, between a rest position shown in Fig. 3 and a retracted position shown in Fig. 2. In the illustrated embodiment the control panel 2 has a vertical position, but in an actual household appliance it may be oriented along whichever suitable direction.

A limit to the forward rotation, until the rest or safety position of Fig. 3, is given by engagement between the free edge of the front panel 1, suitably shaped, and the front profile 3 of panel 2, thus

causing the front panel 1 to extend itself in a direction co-planar with the surrounding surfaces, in practice the appliance door, and substantially flush with the front faces of the control units which have been shown in the drawing as a knob 4 and some push-buttons 5, the front panel 1 being provided with through holes 6 and 6' respectively for their path. The opposite position, represented in Fig. 2, is caused by engagement of a recess 7, suitably provided on the inner side of front portion 1 with the end, preferably shaped as a roller 12, of an arm 10 pivotally mounted on the body of a clasp device 8. This arm 10 is normally pushed to a forward direction by a spring 10a for keeping as shown in Fig. 3 the front panel 1 at its rest forward position, while the back position of Fig. 2 is held by a fastening device which is released, as is known, upon reaching a given position of lever arm 10.

Therefore, upon merely applying a manual pressure onto the front panel 1 from the position of Fig. 3 against the thrust force of spring 10a, the lever arm 10 rotates upward until, when the roller 10 is housed in the recess 7 of the front panel, the clasp device 8 is spring locked to keep the front panel 1 at the position allowing operation of members 4 or 5, as shown in Fig. 2. When such an operation is over, a further manual pressure, still in the direction of arrow F, causes the clasp device 8 to be released and sets free the lever 10 which, pushed by spring 10a, brings again the front panel to the fully advanced position of rest or safety. Of course between openings 6 and 6' and the respective control units passing therethrough there is provided a sufficient clearance to allow the path of front panel 1 without any interference from one position to the other.

It should be appreciated that in case the control panel 2 is housed within the upper portion of a household appliance door, such as of a dish washer or a washing machine, its upper edge 3, or however the edge at the opposite side with respect to the side at which the front panel 1 is hinged along the axis 11, may be advantageously shaped so as to be claspable and used as a handle for opening the door (not shown).

Finally it will be noted that at the inside of the control panel 2 a switch 9 could be provided the control means 9a of which can be actuated by the contact with the movable front portion 1, so that the latter, e.g. at the retracted position of Fig. 2, is able to actuate the switch 9 for whichever operation of regulation, control or display.

Possible additions and/or modifications can be provided by those skilled in the art to the above-described and illustrated embodiment of a control panel with retractable front portion according to the present invention without exceeding the scope of

the invention itself. In particular a different type of clasp device 8 could be provided, of which several different embodiments are known.

## Claims

1. A control panel for a household appliance having mounted thereon control, regulation and signalling units (4, 5) of the same appliance, being provided with a mobile front portion (1), characterized by the fact that the said front portion is hinged along one side thereof about an axis (11) for moving from a rest position, substantially co-planar with the surrounding front surface of the appliance and with the outer face of the control units (4, 5) passing through corresponding holes (6, 6') formed on the front portion (1), to a retracted position for housing said control units (4, 5) to be accessible from the outside for their operation and viceversa, the front portion (1) being provided at the inside with a shaped portion (7) adapted to be engaged by a movable member (10) of a snap clasp device (8) of known type, mounted on said panel (2).

2. A control panel according to claim 1, characterized by the fact of having a free edge (3) for stopping at said forward position of rest the front portion (1) under the thrust to a forward direction of a spring (10a) of said clasp device (8).

3. A control panel according to claim 2, characterized in that said second rearward position is defined by the locking of said mobile member (10) of the clasp device (8) in engagement with said part (7) of the front panel portion (1) being pushed from the outside against the force exerted by said spring (10a), said mobile member (10) and thereby the front panel portion (1) itself being releasable from said locked position through a further push action imparted from the outside on the front panel.

4. A control panel according to claim 2, characterized by having an edge (3) on the opposite side with respect to the side at which the panel portion (1) is hinged, said edge having a graspable shape to be used as a handle for the appliance door.

5. A control panel according to one or more of the preceding claims, further characterized by the fact of comprising an electric switch (9) mounted thereon, the control means (9a) of which is operable according to the position reached by the mobile panel portion (1).

6. A control panel of a household appliance with retractable front panel for causing the appliance controls to be accessible, substantially as above described and illustrated.

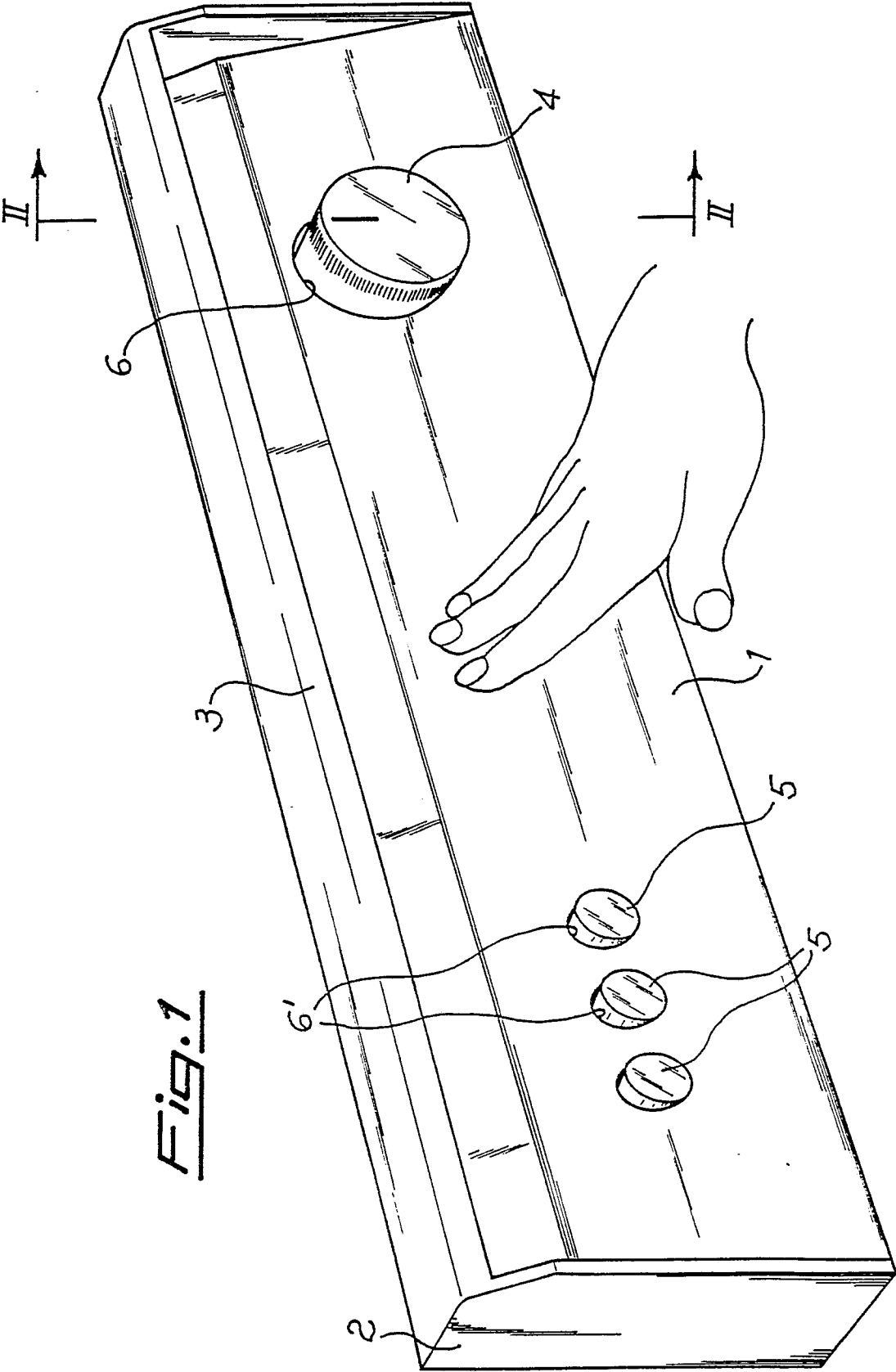


Fig. 2

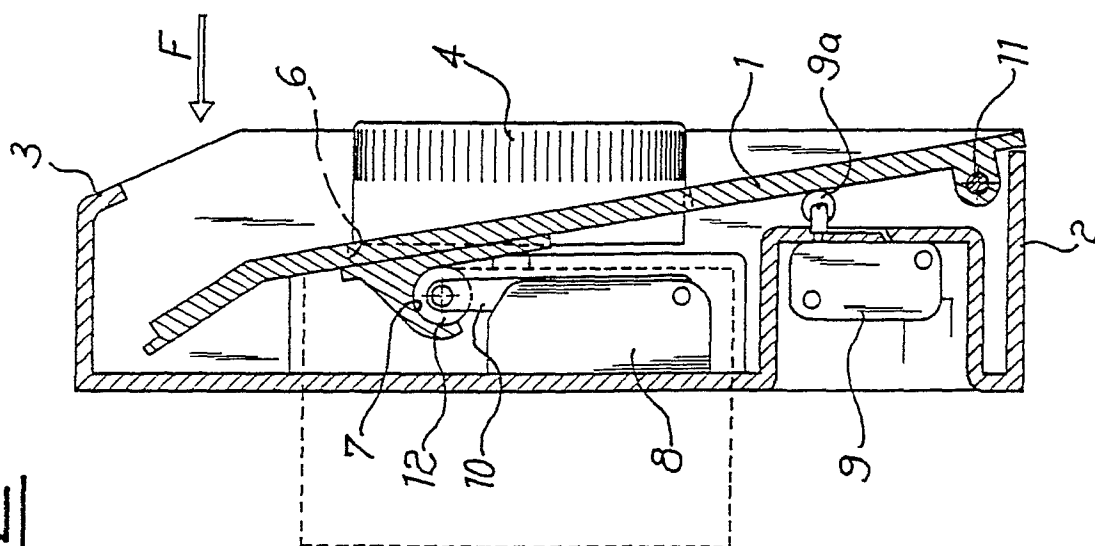


Fig. 3

