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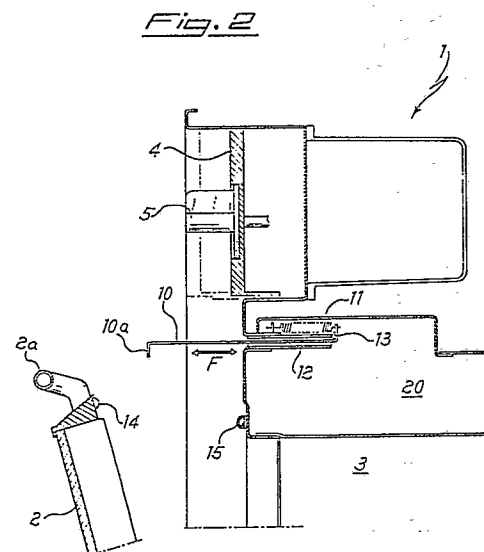
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⑤④ **Heat-guard for the control on the front panel of a cooking oven.**

⑤⑦ A device is described for protecting the controls (5) on the front panel (4) of an oven (1) from the heat radiating from the oven hearth (3) on opening of its door (2). The device comprises a flat, rigid element (10) having a length at least equal to the width of the oven hearth (3) and protruding outwardly when the oven door (2) is open, thus acting as a baffle for the heat and vapours which are directed away from the controls (5) placed above. Said baffle (10) is usually kept back in a space (20) between the controls on the front panel (4) and the oven hearth (3) by the action of the closing door (2), whereas it is pushed outwardly on door opening due to the action of springs (11) having a lower force than the door closing springs (14).



Description

HEAT-GUARD FOR THE CONTROLS ON THE FRONT PANEL OF A COOKING OVEN

The present invention relates to a guard device for protecting the controls on the front panel of a cooking oven appliance from the heat and the vapours or smoke being released from the oven upon opening of the door.

It is known that the control push-buttons and knobs as well as the various indicators relating to a cooking oven are mounted on the front panel of the appliance, immediately above the oven hearth. Therefore, when the door is opened, always in an upward direction, as it is hinged at its lower side, these devices are directly attacked by the heat and vapours being liberated from the oven. This involves possible inconveniences to the controls due the temperature increase and above all dirtying caused by the fatty vapours and smoke of the food cooked in the oven, which may give rise to deposits on the knobs and push-buttons with sometimes the final consequence of damaging the operation thereof, in addition to impair their appearance.

Therefore it is the object of the present invention to provide a simple device suitable to protect the above-mentioned controls when the oven door is opened, as it acts like a baffle for guiding heat and vapours away from the said controls, whereas, when the door is closed, such a device is absolutely unnoticed and without any consequence. Furthermore this device may be inserted in the existing appliances and in any case without modifying the present dies for manufacturing ovens, as it is housed in a hollow space which in practice is useless, whereby there is no need of an additional room within the appliance.

The guard device of the invention is characterized by the fact of comprising a rigid, flat element having a length at least corresponding to the width of the oven hearth and being able to project outwardly of a length jutting out with respect to the controls to be protected, under the action of springs which can be compressed thus causing a backward stroke of said flat element, the latter interfering at every position with the closing path of the oven door, the force of said outwardly biasing springs being lower than that exerted by the closing door onto the device itself.

As it is known the oven doors are provided on their lower side with spring biased hinges, acting to the closure direction, and the guard springs causing the baffle member to project outwardly will exert a lower force, of opposite direction to the force of said spring hinges.

According to a preferred embodiment of the device a slide guide is provided for the flat guard element to move at the inside of the appliance.

These and further objects, advantages and features of the device according to the invention will appear more clearly from the following detailed description of a preferred embodiment thereof, given by way of non-limiting example with reference to the drawings in which:

Fig. 1 shows a front view of an oven appliance being provided with the guard device of the

invention and having a half opened door;

Fig. 2 shows a partial view of said oven in a cross-section along line A-A of Fig. 1 with the door nearer to the closed position; and

Fig. 3 shows a view similar to Fig. 2 with completely closed door.

With reference to the drawings the cooking oven appliance, generally designated 1, comprises as is known a door 2 provided with handle 2a and window 2b, and spring hinged at the lower side in such a way to be continuously biased to the closed position, except for at least one possible intermediate position of equilibrium. When closed the oven hearth 3, where the combustion takes place, is completely insulated from the outside, as there is preferably provided all around its opening a sealing gasket 15, also known. At the upper and front portion of the oven a panel plate 4 is provided with various control knobs 5, 5a, push-buttons and possible light indicators generally designated 5'. The front panel may be e. g. of the retractable or "push-pull" type as shown in Fig. 2, 3 without any relation with the invention.

The guard device of the invention substantially comprises a rigid, flat element 10 having a length at least equal to the width of the oven hearth 3, as it is seen in fig. 1 and such as to extend outwardly, with door 2 open, to a length jutting out from the panel 4 and the controls 5 mounted thereon, as it is seen in fig. 2. Therefore it functions as a baffle for the heat and vapours or smoke leaving the oven hearth 3, thus avoiding that the controls 5 become directly interested thereby, particularly if they are at the retracted position of the front panel 4. The member 10 can slide according to the bi-directional arrow F as it is lead to a length inside of the appliance 1 along a guide 12, such as a groove between two parallel sheets of iron. The inner end of member 10 is fixed to an end of a spiral spring 11 having the other end fastened to the appliance frame.

The whole device is housed in a space 20 between the oven hearth 3 and the front control panel 4, above the zone, which is usually filled with insulating material such as fiberglass, at such a height that the front edge of element 10 comes into abutment with the door 2 along the closure path of the latter. For this purpose the front edge is preferably shaped as a 90° angle-bent tab, as shown by 10a to increase the area of contact with the door, preferably with a bumper 14 of rubber provided thereon. A rubber bead 13 is similarly provided at the inner end of the member 10 in order to deaden the engagement impact with the inner end of guide 12 when said member is at its most forward position.

Upon abutment between door and element 10 or, to say it better, between bumper 14 and tab 10a, the door being closed pushes the member 10, thus causing it to completely slide back until the position shown in Fig. 3, with spring 11 being at the maximum of the tensile stress which may be foreseen therefor. As a matter of fact attention will be paid to choose

springs 11, preferably in number of two, at either side of element 10 for a better balance of their action, such that the resilient force of the springs driving the door 2 to closure, in practice spring hinges not shown. At this closed position, shown in Fig. 3, the element 10 does not impair the oven seal, but its tab 10a abutting onto the bumper 14 even enhances the sealing action of the gasket 15.

Possible additions and/or variations can be made by those skilled in the art to the above-mentioned and illustrated embodiment of the device according to the invention without departing from the scope of protection itself. In particular, the flat member 10 serving as a baffle may be of whichever suitable material and its tab bent upward instead of downward as shown, while the springs 11 could be arranged to work under a compressive rather than a tensile force.

Claims

1. A guard device for protecting from heat the controls (5) on the front panel (4) of a cooking oven (1) having a closing door (2) hinged at its lower side and provided with springs biasing the same to the closed position, characterized by the fact of comprising a rigid, flat member (10) having a length corresponding at least to

the width of the cooking hearth (3) of the oven and suitable to project outwardly of a length jutting out with respect to the controls to be protected, under the action of springs (11) deformable to an opposite direction, thus causing a backward stroke of said member (10), which at every position thereof interferes with the closing path of said door (2), the force of said outwardly biasing springs (11) being lower than that exerted by the door against the member (10).

2. A device according to claim 1, characterized in that said member (10) is slidably mounted along the depth direction of the oven in a guide (12) at the inside of a space (20) between the upper wall of said cooking hearth (3) and the front panel (4).

3. A device according to claim 1 or 2, characterized by the fact that said springs (11) are in number of two and symmetrically mounted with respect to the median axis of member (10), parallel to the movement direction thereof, being suitable to undergo a tensile stress, as they are mounted each on one side at the inner end of member (10) and on the other side, in a front region, at a point integral with the oven frame.

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Fig. 1

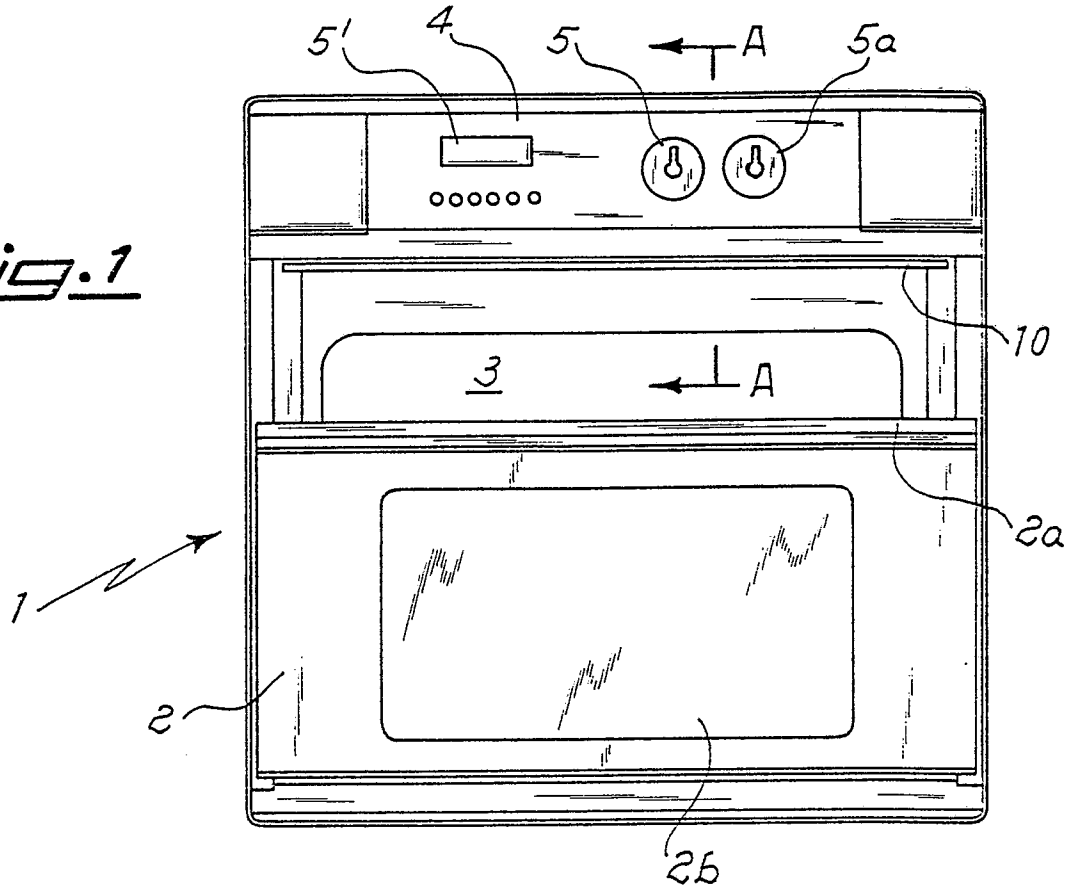


Fig. 3

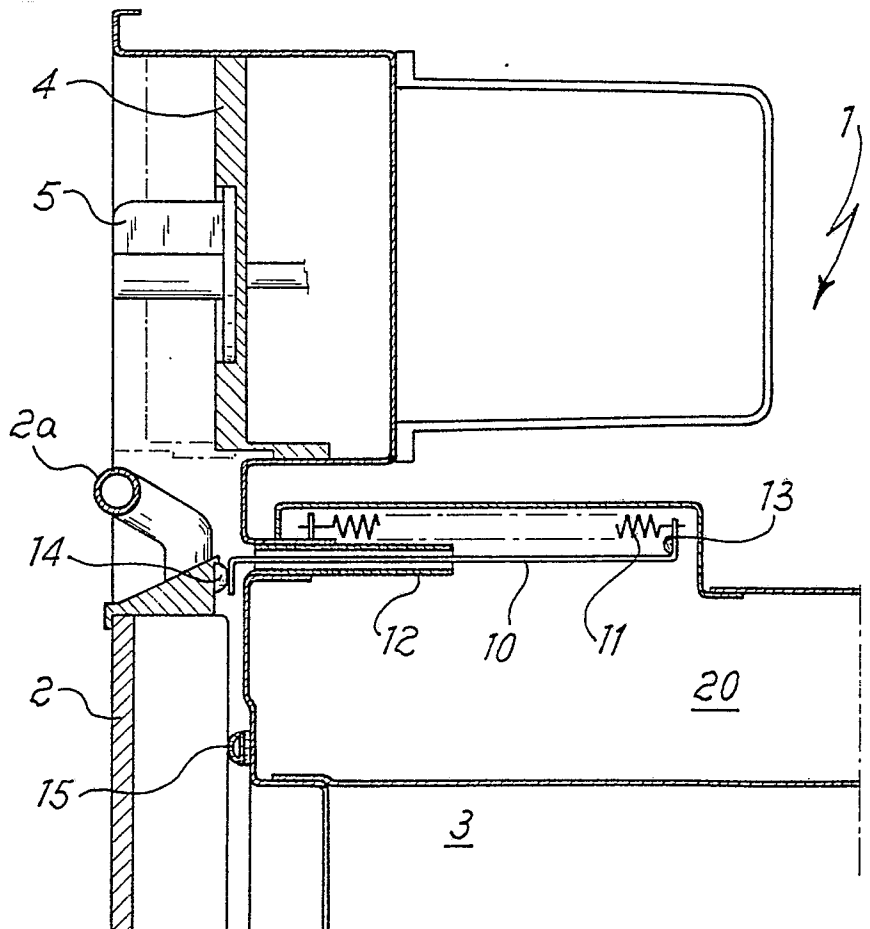
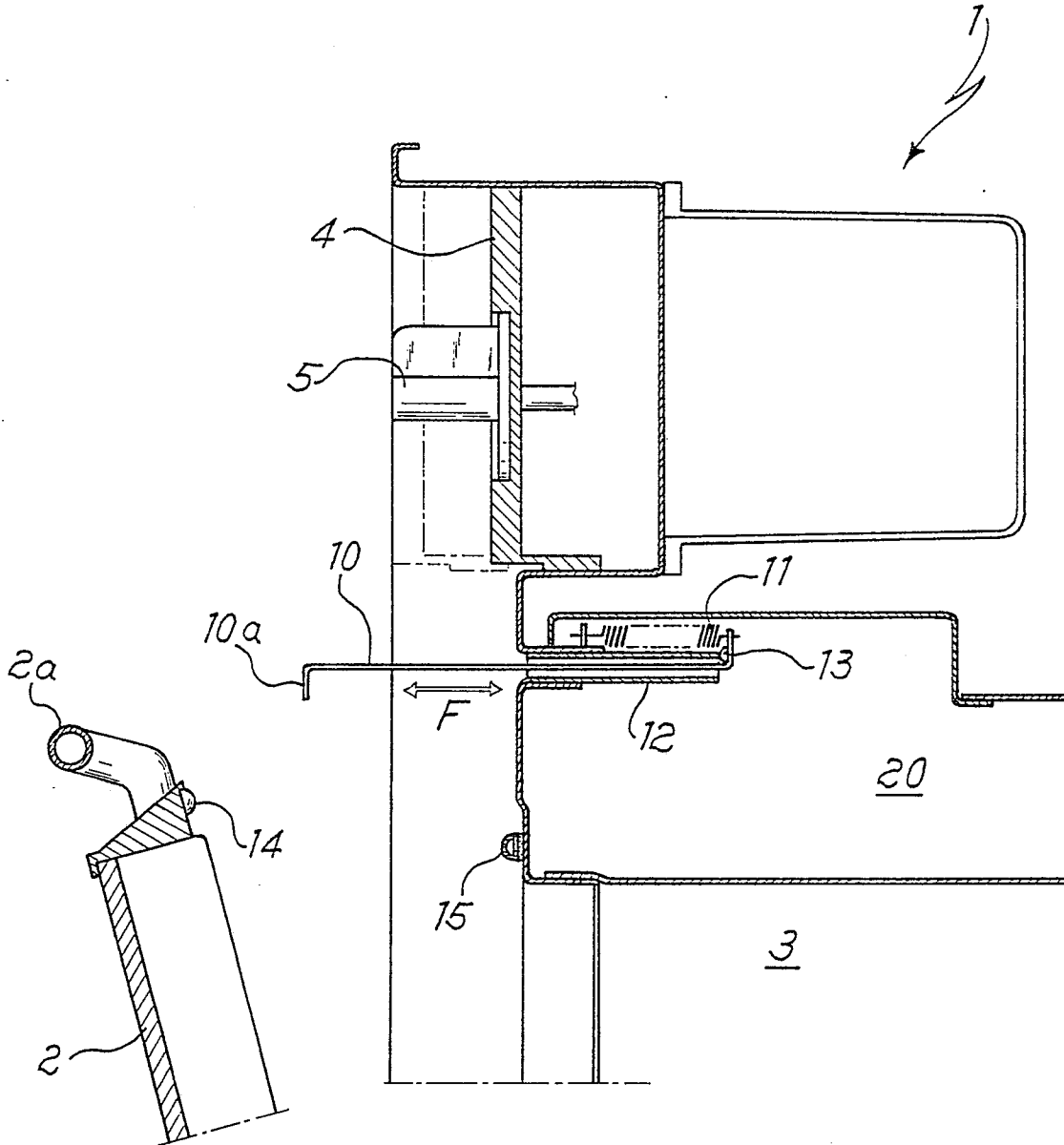


Fig. 2





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	US-A-3132638 (HABE) * column 3, line 10 - column 3, line 28; figures 1-9 *	1, 3	F24C15/36 F24C3/12
X	FR-A-1430981 (ANSTELL) * page 2, right-hand column, paragraph 2 - page 2, right-hand column, paragraph 4; figure 1 *	1-3	
A	US-A-1604503 (TINNERMAN) * page 2; claim 1; figures 1-3 *	1	
A	DE-A-1815693 (SIEMENS-ELECTROGERATE) * page 3; claims 1, 2; figure 1 *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			F24C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 JULY 1989	Examiner VANHEUSDEN J.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			