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(54) **Baffle for an automatic heat protection of the controls on the front panel of a household cooking oven.**

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Description

The present invention relates to a baffle for protecting the controls on a front panel of a household oven in particular of the recessed type, against heat and vapours being liberated from the oven itself upon opening of the door.

It is known that the push-buttons and the control knobs, as well as the various displays relating to a household oven are mounted on the front panel of the appliance, immediately above the oven mouth and therefore upon opening of the door, which always occurs upwardly as it is hinged at the lower side, they are directly interested by the heat and vapours being released from the oven. This involves possible inconveniences to the controls due to 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, sometimes with the final consequence of damaging the operation thereof, in addition to impair their appearance.

A solution of this technical problem is the object of US-A-2879370 relating to a device with a flat, rigid element having a width at least corresponding to the width of the oven hearth and projecting outwardly, upon opening of the oven door, so as to act as a baffle for heat and vapours being conveyed far from the controls above. Such a baffle forms a top door which, when closed, has to perfectly abut with its lower edge to the upper edge of the lower door, together cooperating to close the access opening of the oven.

A different approach is provided by FR-A-1430981, according to which the baffle is completely outside of the oven access opening and usually kept retracted within a chamber comprised between the controls on the front panel and the actual oven hearth by the action exerted by closing the door, while it is pushed to the outside upon opening of the door due to the action of springs the force of which is lower than that of the springs for closing the door.

However such a solution requires the provision of the above-mentioned chamber between the front panel and the insulating muffle of the oven, as well as some structural difficulties being due to the requirement of a correct sliding of the baffle on guides which are subjected to presence of expansions as a consequence of the existing temperatures. Also the pushing action exerted by the springs may be not completely well balanced and give rise to jamming in the forward stroke of the baffle.

Therefore is the object of the present invention to provide still simpler baffle means which does not require its own chamber within the oven appliance and, as it performs a rotation instead of a rectilinear movement, undergoes less friction, and thus less likely causes of jamming, being in addition subject to a lower degree to possible unbalance conditions as to

the force of the operating springs.

The device according to the invention, comprising a flat, rigid baffle element, having a width which is at least equal to that of the oven hearth, and being hinged along an axis parallel and underlying the front panel to be protected, is characterized in that it is recessed with respect to said panel in the zone comprised between the front wall of the oven and the upper portion of the door with handle, said element usually extending, with closed door, in the hollow space between the front wall of the oven and the door itself, the seal of which is provided by a gasket, along such a length as to have no interference with the gasket, about said hinge axis there being provided springs adapted to cause said baffle to rotate outwardly, with open door, the force of said springs for pushing outward being less than the force exerted by the springs closing the door, stop means being also provided for stopping the baffle rotation, when opening the door, in a position projecting from the front panel to be protected and such as to cross the closing path of the oven door.

According to a preferred embodiment this stop means is formed of at least a pair of tabs fixed to the baffle, which are capable to engage the lower surface of the front panel in association with the said position of the baffle which is rotated outwards.

Further features, as well as purposes and advantages of the baffle device according to the invention will appear more clearly from the following description of a preferred embodiment thereof, given by way of a non-limiting example with reference to the annexed drawings wherein :

Figure 1 shows a front view of an oven provided with the device according to the invention with a partially opened door ; and

Figure 2 shows a partial cross-section view taken along the line II-II of Figure 1.

With reference to the drawings the household oven appliance, generally designated 1, comprises as is known a door 2 provided with a handle 2a and a window 2b, which is hinged by springs means at the lower side so as that the door is normally brought to the closed position having also a possible intermediate balance position. With closed door the oven hearth 3, where cooking occurs, is completely insulated from the outside all around its mouth by means of a sealing gasket 5, of known type, whereby a hollow space 6 is formed between an inner surface of the door 2 and the front wall 7 of the oven with respect to which the control front panel 9 juts out at the upper side.

The baffle device according to the invention is substantially formed as a rigid, flat member 10 having a width at least equal to that of the oven chamber 3, as shown in Figure 1, which is hinged at an end about an axis 11 parallel to the front panel 9 to be protected and mounted thereunder, in an area comprised between the upper side of the door 2 with handle 2a, and

the front wall 7 of the oven, which is recessed with respect to the front panel 9. The baffle 10 will preferably have, at about its longitudinal median zone, an S-shaped area 10a radiusing each other the two half portions of the baffle 10 which thereby will extend itself along two parallel planes not only to improve its mechanical stiffness, but also in view of the purpose that will be described in the following. Furthermore at its free end there will be preferably applied rubber buffers 10b (in number of two in the drawings).

As shown in phantom in figure 2, when door 2 is closed, the baffle 10 is housed, at least with the outer half portion thereof, in the hollow space 6 and thus the fact that the two planes of baffle are staggered ensures its being vertical even if the hinged axis 11 is shifted with respect to the middle of this space, as clearly results from figure 2.

At least a pair of springs 13 provided about axis 11 and symmetrically placed along the same have the purpose of pushing the baffle 10 to the outside, whereby upon opening the door 2, as there are no longer any hindrances to the action exerted by the springs 13, the baffle 10 rotates about its axis 11 until it reaches a position such as shown with full lines in figure 2, or however such as to be protruding with respect to the front panel 9. As a consequence it will be able to act as a baffle automatically while the door 2 is opened.

A stop means to the rotation movement of the baffle 10 is provided to avoid that the latter may reach such a position not to ensure the correct return within the hollow space 6 when the door 2 is closed again. To this aim tabs 15 are for example provided, being fixed to the inner end of baffle 10 and forming a selected angle therewith, thus preventing the baffle from a further rotation, upon reaching the desired position, such as by engagement with the lower surface of the protruding front panel 9. At this position the free end of the baffle 10 can come into abutment with the door 2 along the closure path of the latter, which causes the baffle to rotate rearward until returning into the hollow space 6 against the force of springs 13. This in fact will have an elastic force which is lower than that of the springs pushing the door 2 to close, being in practice resilient hinges which are not shown.

Claims

1. A baffle for automatically protecting from heat the controls on the front panel of a household oven appliance (1) with door (2) hinged at the lower side and provided with springs for pushing it towards the closed position, comprising a flat, rigid element (10) having a width at least equal to the width of the oven mouth (3), this element being hinged along an axis (11) underlying and parallel to the front panel (9) to be protected, characterized in that the element (10) is

recessed with respect to the front-panel (9) in a zone comprised between a front wall (7) of the oven (1) and the upper portion of the door (2) with a handle (2a), said element (10) normally extending, with closed door, in a hollow space (6) defined by said wall (7) and an inner surface of the door (2), along such a length to have no interference with a seal gasket (5) comprised therebetween, springs (13) being provided around said axis (11) for rotating said baffle (10) to the outside with opened door, the force of said springs (13) being lower than that exerted by the springs closing the door (2), there being provided stop means (15) for stopping the baffle rotation during opening of the door at a position which juts out of the front panel (9) and crosses the closure path of the door (2).

2. A baffle according to claim 1, characterized by the fact that said stop means is formed of at least a pair of tabs (15) being fixed to the baffle (10) and adapted to engage the lower surface of the front panel (9) in association with said outwardly rotated position of the baffle (10), whereby it is locked at this position.

3. A baffle according to claim 1 or 2, characterized by the fact of comprising two flat surfaces, substantially parallel, radiused to each other at a central zone of the baffle itself by an S-shaped portion (10a) parallel to said axis (11) thus helping the baffle itself to be housed in said hollow space (6), with the door (2) closed, said axis (11) being outwardly shifted with respect to the central line of said hollow space.

4. A baffle according to one or more of the preceding claims, characterized by the fact of comprising a pair of rubber buffers (10b) on the outer free edge, opposite to said axis (11).

Patentansprüche

1. Schirm zum automatischen Wärmeschutz von Bedienelementen an der Frontplatte eines Haushaltsbackofens (1) mit einer Tür (2), die an der Unterseite angelenkt und mit Federn zum Zurückdrücken der Tür in eine geschlossene Stellung versehen ist, welcher ein flächiges steifes Element (10) mit einer Breite, die zumindest gleich ist der Breite der Ofenöffnung (3) aufweist, das entlang einer Achse (11) unterhalb von und parallel zu der Frontplatte (9), die geschützt werden soll, angelenkt ist, dadurch gekennzeichnet, daß das Element (10) bezogen auf die Frontplatte (9) zurückversetzt ist in einen Bereich zwischen einer Vorderwand (7) des Ofens (1) und dem oberen Abschnitt der Tür (2) mit einem Griff (2a); wobei sich dieses Element (10) im Normalzustand bei geschlossener Tür in einem Hohlraum (6), der begrenzt wird durch die Vorderwand (7) und die innere Oberfläche der Tür (2), in einer solchen Länge erstreckt, daß keine Überlagerung mit dem dazwischen befindlichen Dichtungsring (5) entsteht, und um diese Achse (11) herum zur Drehung des Schirms (10) bei offener Tür

nach außen Federn (13) vorgesehen sind, deren Kraft geringer ist als diejenige, die durch die Federn ausgeübt wird, die die Tür (2) schließen, und Stopmittel (15) vorgesehen sind, um die Drehung des Schirmes beim Öffnen der Tür in einer Stellung zu stoppen, die aus der Frontplatte (9) vorspringt und den Schließweg der Tür (2) kreuzt.

2. Schirm nach Anspruch 1, dadurch gekennzeichnet, daß die Stopmittel aus mindestens einem Paar von Zungen (15) gebildet sind, die an dem Schirm (10) befestigt und so ausgerichtet sind, daß sie dann an der unteren Fläche der Frontplatte (9) anliegen, wenn sich der Schirm (10) in der auswärts gedrehten Stellung befindet, wodurch er in dieser Stellung arretiert wird.

3. Schirm nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß er zwei flache, im wesentlichen parallele Flächen aufweist, die in einem zentralen Bereich des Schirmes selbst mittels Rundungsübergängen durch einen S-förmigen Abschnitt (10a) parallel zur Achse (11) miteinander verbunden sind, so daß der Schirm damit bei geschlossener Tür (2) leichter in dem Hohlraum (6) aufgenommen werden kann, wobei die Achse (11) bezogen auf die Mittellinie des Hohlraums nach außen versetzt ist.

4. Schirm nach einem oder mehreren der vorangehenden Ansprüche, dadurch gekennzeichnet, daß ein Paar von Gummipuffern (10b) an der äußeren freien Kante gegenüber der Achse (11) angebracht ist.

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également prévues pour, lorsque la porte est ouverte, arrêter la rotation de l'écran en une position dans laquelle il s'avance au-delà du panneau frontal (9) et de manière à couper la course de fermeture de la porte du four (2).

2. Ecran selon la revendication 1, caractérisé en ce que lesdites butées sont formées d'au moins une paire d'onglets (15) fixés à l'écran (10) et conçus pour s'engager sur la surface inférieure du panneau frontal (9) en association avec ladite position après pivotement de l'écran (10), ce qui permet à ce dernier d'être bloqué dans cette position.

3. Ecran selon la revendication 1 ou 2, caractérisé en ce qu'il comprend deux surfaces plates, pratiquement parallèles, réunies en une zone centrale de l'écran lui-même par une partie (10a) en forme de S parallèle audit axe (11), ce qui permet à l'écran lui-même d'être logé dans ledit creux (6), lorsque la porte (2) est fermée, ledit axe (11) étant déplacé vers l'extérieur par rapport à ladite ligne centrale dudit creux.

4. Ecran selon l'une ou plusieurs des revendications précédentes, caractérisé en ce qu'il comprend une paire de tampons en caoutchouc (10b) sur le bord libre extérieur, à l'opposé dudit axe (11).

Revendications

1. Ecran pour la protection automatique d'un panneau frontal de commande d'un four ménager de cuisson (1) et une porte (2) présentant des charnières sur son côté inférieur et pourvu de ressorts pour le pousser en direction de la position fermée, comprenant un élément plat et rigide (10) d'une largeur au moins égale à celle du foyer du four (3), dont les charnières sont disposées selon un axe (11) parallèle et qui se trouve en dessous du panneau frontal (9) devant être protégé, caractérisé en ce que l'élément (10) est encastré par rapport au panneau frontal (9) dans une zone comprise entre une paroi frontale (7) du four (1) et la partie supérieure de la porte (2) avec une poignée (2a), ledit élément (10), lorsque la porte est fermée, s'étendant habituellement dans un creux (6) ménagé entre ladite paroi frontale (7) du four et une surface intérieure la porte (2), placé sur une longueur telle qu'il n'y a pas d'interférence avec un joint (5) intercalé, des ressorts (13) étant prévus le long dudit axe de charnières (11) pour faire tourner ledit écran (10) vers l'extérieur, lorsque la porte est ouverte, la force desdits ressorts (13) exerçant la poussée vers l'extérieur étant moindre que la force exercée par les ressorts fermant la porte (2), des butées (15) étant

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Fig. 1

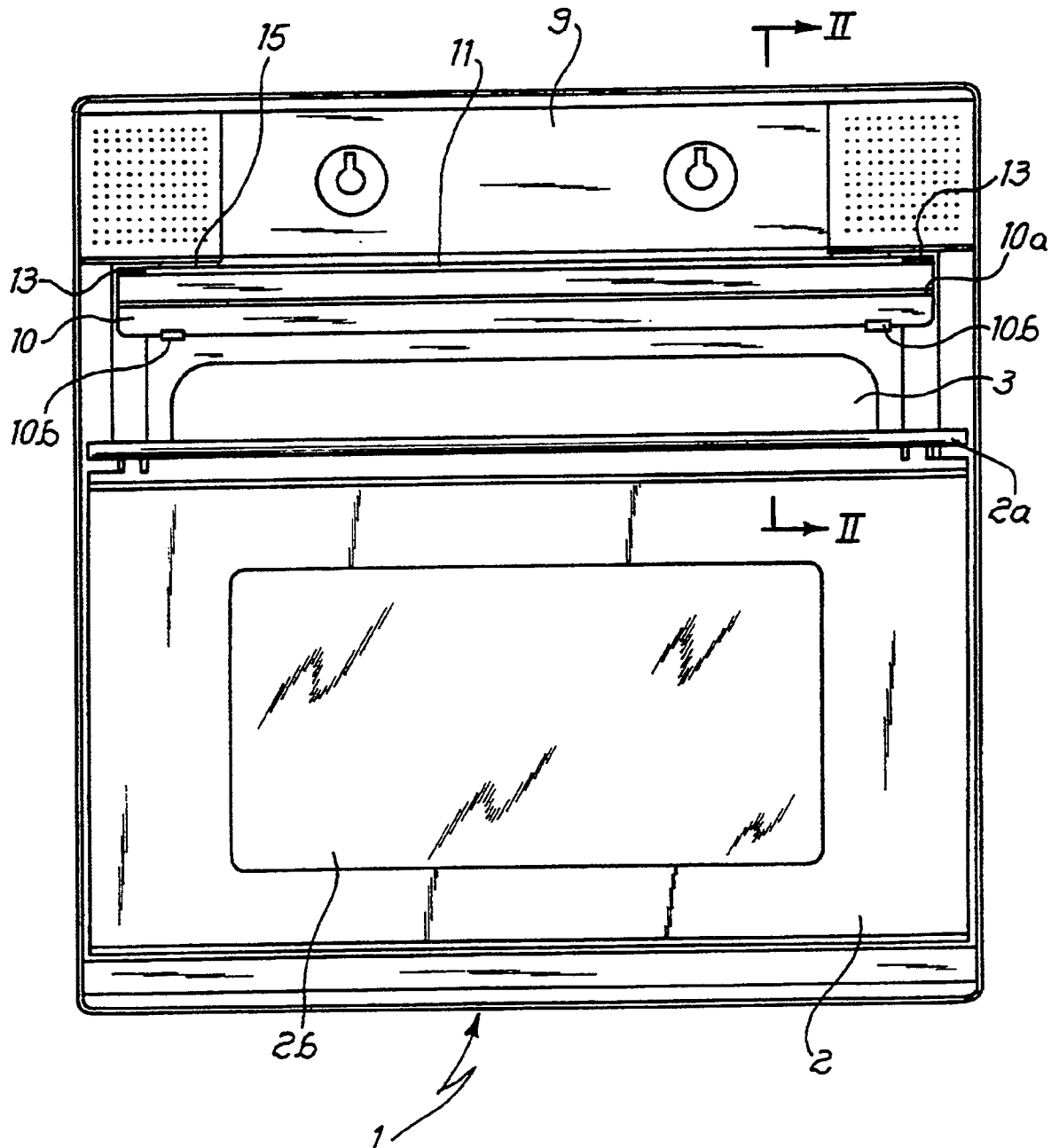


Fig. 2

