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(54) **Cooking oven comprising two-part gasket assembly**

(57) The invention relates to a cooking oven, particularly a cooking oven comprising a steam-generating system, comprising an oven liner (3) defining a cooking cavity (2) with a frontward access opening (40), an oven casing (5), an oven front frame (4) connected to the oven casing (5) and separated from the oven liner (3) by an open-mouthed circumferential frontward gap for receiving a two-part gasket assembly (6) for sealing an oven door to close said cooking cavity (2), wherein the two-part gasket assembly (6) comprises a support member (7) and a sealing member (8), the support member (7) comprising a support frame (70) enframing the access opening (40) of the oven cavity (2), comprising a series of slot-like apertures (73) in an arrangement for interfacing the circumferential frontward gap, and a series of bearing members (74) in line with the slot-like apertures (73), bearing a circumferential rearward sealing flange (75) for insertion into the open mouthed circumferential gap, and fastener means (71) to fasten the support frame (70) to the front frame (4), and the sealing member (8) comprising a sealing frame (80), comprising a recess (81) to accommodate to the support frame (70), a series of retainers (82) in an arrangement to fit in the slot-like apertures (73) of the support member and a peripheral sealing lip (83).

A further aspect of the invention relates to a two-part gasket assembly (6) for providing a seal between an oven cavity (2) of a cooking oven (1) and its associated oven door.

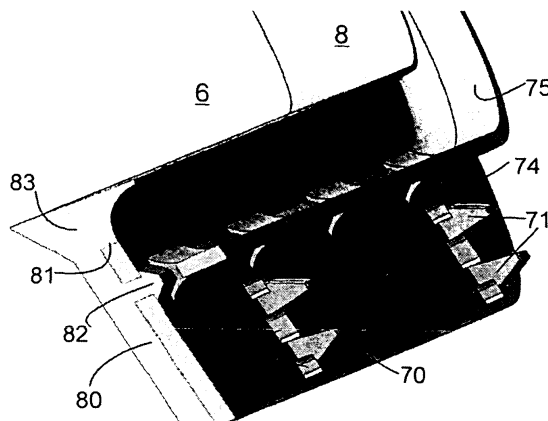


Fig. 1

Description

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention generally relates to a cooking oven for domestic or professional use, comprising an oven liner defining a cooking cavity, an oven casing, an oven front frame attached to the oven casing and separated from the oven liner by an circumferential frontward gap for receiving a two-part gasket assembly to provide sealing between the oven cavity and its associated oven door.

[0002] The invention also relates to a two-part gasket assembly to provide sealing between an oven cavity of a cooking oven and its associated oven door.

BACKGROUND OF THE INVENTION

[0003] In a cooking oven, good sealing between the oven cavity and its associated door is important to prevent heat and fumes, which are generated at elevated temperature, from leaking out of the oven cavity.

[0004] Prevention of leakage is particularly pertinent in steam ovens and combination ovens comprising a steam-generating system to provide for dry, steam or mixed cooking modes.

[0005] However, regardless of the cooking mode performed, leakage of heat, fumes and steam from the oven cavity of a cooking oven may cause safety problems, and thus various gasket configurations are known in the art for sealing between the confronting surfaces of an oven door and an oven cavity.

[0006] Conventional oven seal arrangements have included seals mounted to the oven door as well as seals mounted to the front part of the oven. Irrespective of their position, their only function had been to seal the abutting area between the oven door and the front frame of the oven cavity.

[0007] However, to save power, modern ovens are generally constructed with an inner oven liner mounted in a spaced apart relationship within an outer oven casing to provide a circumferential gap between the oven casing and oven liner, which acts as a thermal decoupling means. This space usually contains thermal insulation and often contains other oven components such as thermostats, switches, rheostats, electrical wiring and the like. It is a known measure to close the circumferential gap by a thermally insulating gasket. This gasket performs multiple sealing functions within the oven to reduce structural duplicity. On the one hand, the circumferential gap is closed so that the thermal insulation means are no longer visible to the user, and on the other hand, the oven cavity is sealed against the oven door.

[0008] It is known in the art to provide a gasket seal that functions this way in form of a sealing strip made of flexible heat-resisting material, secured in the circumferential gap by a rigid metal strip.

[0009] Example given, from DE 197 05 656 A a cooking

oven is known, wherein a resilient seal member is anchored along its entire length inside the circumferential gap between the oven liner and the oven front frame by a metallic bracket.

[0010] Although such gaskets are effective for their intended purpose, their installation requires a relatively high level of skill, which adds costs to the product. Moreover, the permanent installation hinders repair or replacement of the gasket.

SUMMARY OF THE INVENTION

[0011] It is an objective of the present invention to provide a cooking oven comprising a gasket assembly that provides ease of installation as well as ease of removal for repair or replacement.

[0012] According to the invention a cooking oven is provided, particularly a cooking oven comprising a steam-generating system, comprising an oven liner defining a cooking cavity with a frontward access opening, an oven casing, an oven front frame connected to the oven casing and separated from the oven liner by an open-mouthed circumferential frontward gap for receiving a two-part gasket assembly for sealing an oven door to close said cooking cavity, wherein the two-part gasket assembly comprises a support member and a sealing member, the support member comprising a support frame enfaming the access opening of the oven cavity, comprising a series of slot-like apertures in an arrangement for interfacing the circumferential frontward gap, and a series of bearing members in line with the slot-like apertures, bearing a circumferential rearward sealing flange for insertion into the open mouthed circumferential gap, and fastener means to fasten the support frame to the front frame, and the sealing member comprising a sealing frame, comprising a recess to accommodate to the support frame, a series of retainers in an arrangement to fit in the slot-like apertures of the support member and a peripheral sealing lip.

[0013] The two-part gasket assembly provides multiple sealing surfaces and a twofold sealing function to the cooking oven.

[0014] The support member part does not only align and position the gasket assembly but at the same time provides sealing against the faces of the open circumferential insulation gap.

[0015] The sealing member part wraps around the outer periphery of the access opening of the oven cavity and prevents the leakage of steam, fumes and heat at the opening. Because the sealing member comprises a series of resilient expandable retainers that fit into a series of apertures in the support member, the two-part gasket is capable of self-alignment. That is, forces which may act on the sealing member to cause misalignment between the sealing member and the oven access opening are dampened and counteracted by reactive resilient biasing forces within the two-part gasket.

[0016] The plurality of fastener means of the support

member ensures that the position of the gasket assembly above the access opening remains constant, and ensures that the parts of the gasket do not slide around within the circumferential gap. This results in fewer sealing problems, and less leakage from the oven cavity, which alleviates unnecessarily high energy consumption.

[0017] Due to the improved sealing functions, the present invention is particularly useful for cooking oven comprising a steam-generating system.

[0018] The two-part gasket assembly can be pre-assembled. Due to the multiple co-operations of a series of slot-like apertures and a series of retainers, assembling under tension or compression is prevented. Then, mounting the pre-assembled gasket assembly to the oven front does not request for more than fitting a few fasteners to the oven front in a simple mechanical operation that can easily be automated or performed by unskilled labor. This reduces assembling time and manufacturing costs of the cooking oven.

[0019] According to a preferred embodiment of the invention a fastener means comprises a detent hook for snap fitting said support member to the oven front frame and a fitting opening for releasable connection to the oven front frame.

[0020] The fitting opening provides an access region to which a force can be applied to the detent hooks to enable the detent hooks to be released from the aperture. This process can be completed without damage to the gasket assembly allowing its reintroduction, or the subsequent fitting of a replacement, if this is required.

[0021] It is impossible to assemble the gasket incorrectly, as its position is clearly defined by hooks and assembly slots. Thus, the concern that incorrect assembly could create a functional defect is eliminated.

[0022] Preferably, a retainer is a compact arrowhead or an arrowhead comprised of a plurality of rearwardly extending barbs. Arrowheads provide for a tight fit of the sealing member to the support member.

[0023] In arrowheads comprised of a plurality of rearwardly extending barbs, the force required to insert and to remove the arrowhead fastener is reduced. They can be easily pulled out of the respective slot-like apertures in the support frame. Thus, removal of a worn-out sealing member is easily achieved and the sealing member is not only easily installed but could also be easily replaced if it became damaged.

[0024] Advantageously, the bearer members are wedge-shaped and tapered to meet the curvature of the side faces of the circumferential gap for abutting engagement with the said faces of the circumferential gap. A tight fit of the bearing members is useful in discouraging lateral movement of the support frame.

[0025] The sealing lip of the sealing member may comprise an outward turned flange inclined to meet the oven liner with an inclination towards the oven liner. In addition to its sealing function, an inclined profile of the sealing lip serves the additional purpose of diverting condensates, which have collected on the cold parts of the oven

door into the oven cavity.

[0026] The sealing lip of the sealing member may comprise a hollow space and/ or a flexible metal member arranged therein. To be effective, gaskets must make a uniform contact between the oven door and the oven liner around the entire periphery of the oven access opening. This has been an especially common problem since the surfaces of the oven liner and door which are mated to the gasket are often irregular; in other words, not truly flat.

[0027] A hollow space may provide added flexibility of the sealing lip. When a flexible metal member is used, it provides added lateral stability and other functions, such as magnetism, which may be desirable.

[0028] Advantageously the support member and /or the sealing member comprise a thermoplastic polymeric material. Such materials have proven to be durable at the high temperatures used in cooking ovens. They stand up to the stresses, which arise in practice and provide a good seal despite repeated openings and closures of the oven door over many years of use.

[0029] A thermoplastic polymeric material allows to pre-manufacture the support member and the sealing member in segments, then thermowelding together separate parts in a jig to compensate for tolerances caused by the manufacturing tolerances of the parts.

[0030] According to a preferred embodiment of the invention the support member comprises a rigid thermoplastic polymer material and the sealing material comprises a soft thermoplastic polymer material. Rigid thermoplastics provide structural stability, soft thermoplastic polymers provide improved sealing by plastic deformation.

[0031] The support member and the sealing member are preferably manufactured by molding, particularly injection molding.

[0032] According to another aspect of the invention, the invention provides a two-part gasket assembly for a cooking oven to provide sealing of an oven door to a cooking cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033]

Fig. 1 is a partly cut-away isometric view of a corner of a gasket assembly according to the invention.

Fig. 2 is a partly cut-away isometric view of a corner of the support member of a gasket assembly according to the invention; attached to an oven front frame.

Fig. 3 illustrates the front of a cooking oven to which a support member of a gasket assembly of the form shown in Fig. 2 is fitted.

Fig. 4 illustrates the front of a cooking oven to which

a gasket assembly of the form shown in Fig. 1 is fitted.

DETAILED DESCRIPTION OF THE INVENTION

[0034] As illustrated in Figs. 3 and 4, a cooking oven 1 useful for the present invention comprises an oven liner 3 to form an oven cavity 2 with an access opening 40, a front frame 4 in front of the oven cavity 2 and an oven casing 5.

[0035] In a manner known in the art, the oven cavity 2 has associated therewith a door, which is operable between opened and closed positions for permitting access into and closing off the oven cavity, respectively.

[0036] For clarity of illustration, the oven is shown in Figs. 1 and 2 with the oven door removed, as the exact construction of the door and its mechanism is of no consequence to the invention, except for the fact that the interior surface of the door is intended to engage on the gasket assembly 6 placed around the access opening 40 of the oven cavity.

[0037] The cooking oven 1 is of generally sheet metal construction. It includes the outer oven casing 5, which is typically rectangular or box-shaped with an open front face. Mounted in the front face of oven casing 5 is a front frame 4 with an opening for an oven liner 3. The box-like oven liner 3 is disposed within the casing 5 and defines the oven cavity 2. The oven liner 3 comprises an outwardly turned front wall portion, which defines an access opening 40 to the oven cavity. The front wall portion of the oven liner 3 is typically generally coplanar with the front frame 4.

[0038] In view of the sealing construction of the invention, it will be observed that the front portion of the oven liner 3 does not touch the oven casing 5, but is fitted into the front frame 4, such that is thermally isolated by an spacing that is opened to the oven front by a circumferential open-mouthed frontward gap between the oven liner 3 and the front frame 4.

[0039] To provide thermal insulation and to prevent heat loss, the spacing is filled with thermal insulation means disposed various other oven components may also be disposed within the spacing between oven casing 5 and oven liner 3, such as door hinge mechanisms, electrical wiring, electrical control and switching devices.

[0040] To form one of the side faces of the circumferential gap, the edge of the front wall portion of the oven liner 3 is rearwardly turned into a rearward flange. This flange cooperates with a rearward flange of the front frame 4, which closely parallels the rear flange of the oven liner 3. The rims of both rearward flanges are tapered in a certain curvature to define said open-mouthed circumferential gap around the periphery of the oven access 40.

[0041] The oven front, formed by the oven front frame 4 and the front portion of the oven liner 3, may be provided with a seating face for accommodating the gasket assembly 6 according to the invention. The seating face,

with which the gasket assembly 6 engages, may be formed by a recess 81 in or a raised face or rib on the front frame 4.

[0042] Preferably, the oven of the invention is an electric oven comprising a steam generating system for providing - in addition to dry cooking modes - steaming cooking modes, aimed *inter alia* at ensuring a quicker and more even heat transfer to the food to be cooked.

[0043] However, the basic construction of oven can vary without departing from the invention. Instead, the invention is particularly concerned with the manner in which a sealing between the oven liner 3 and the oven casing 5 as well as between the oven casing 5 and the oven door is provided.

[0044] Fig. 1 shows a partly cut-away isometric view of a corner of the two-part gasket assembly 6 according to the invention.

[0045] As is best seen in Fig. 3 and 4, the gasket assembly 6, 7, 8 typically is of the closed frame type that is made up of four sides joined together to form a rectangle. However, although in the embodiments described herein, the gasket seal assembly extends all around the perimeter of the oven access opening 40, and the profile of the gasket is continuous, it is to be appreciated that it may be of the three-sided open-frame type. A three-sided open-frame gasket is typically lacking the bottom side, the area in which there is normally less heat loss and less emission of hot fumes and steam.

[0046] The two-part gasket assembly 6 includes a support member 7 and a sealing member 8.

[0047] The view illustrated in Fig. 2 shows a corner of the support member 7; attached to the oven front frame 4.

[0048] The support member 7 fastens the gasket assembly 6 to the oven front and provides a seal between the oven liner 3 and the front frame 4.

[0049] To this aim, the cross-section of the support member 7 is generally T-shaped in configuration, comprising a circumferential support frame 70, having a rearwardly turned circumferential sealing flange 75 attached to it.

[0050] The support frame 70, as is best seen in Fig. 3 is formed as a flat substantially rectangular frame member, said frame corresponding to the access opening 40 of the oven cavity.

[0051] In the fitted condition of the gasket assembly 6, the rear face of the support frame 70 faces the confronting seating face on the oven front and the front face engages to a complementary surface of the sealing member 8. While the faces have been illustrated as flat, they are intended to make complementary conformation with the cooperating surfaces to be sealed.

[0052] To hold the support frame 70 into position, the support member 7 includes a plurality of fastener means 71, which secure the gasket assembly 6 to a desired attachment surface of the oven front, typically the oven front frame 4.

[0053] The support member 7 may be fastened to the oven front by means of studs or pins of various type, all

provided with a protruding coupling member that project from the back of the support frame 70 to be fitted into associated assembly slots 41 formed in an attachment face of the oven front.

[0054] To this aim, the seating face of the oven front comprises a plurality of punched holes 41, sized and shaped to allow adjustment of the fastener means 71.

[0055] Figs 1 and 2 illustrate an embodiment of the invention, wherein the fastener means 71 are formed by a pair of detent hooks for snap fitting into the oven front frame 4.

[0056] The fastener means 71 may advantageously comprise additional fitting openings 72 in the support frame 70. The fitting openings 72 provide an access region to which a tool, such as a suitable plier, can be applied to the detent hooks to enable the hooks to be detached from the oven front.

[0057] Access to the fitting openings 72 is easily achieved by tearing the retainers of the sealing members out of the apertures of the support members. Thereafter the support frame 70 can be disengaged from the oven front by pulling the detent hooks out of the assembly slots.

[0058] Furthermore, as is best seen in Fig. 3 the support frame 70 is provided with a series of slot-like apertures 73, which interface with the circumferential gap in the oven front.

[0059] The slot-like apertures 73 provide a retention means for the retainers 82 of the sealing member 8, for fixing the position of the sealing member 8 with respect to the support member 7.

[0060] Each slot-like aperture 73 is of a size and a location that will permit snug engagement with the retainers 82 of the sealing member 8, as will be explained thereafter.

[0061] Obviously, the distances, at which the slot-like apertures 73 are spaced apart longitudinally, are predetermined according to the distances of the corresponding retainers 82 and vice versa.

[0062] At the junctions between the slot-like apertures 73, a series of bearing members 74 in line with the slot-like apertures 73 is arranged. These bearing members 74 provide a base for bearing a circumferential rearward sealing flange 75 extending into the open-mouthed circumferential gap.

[0063] Preferably, the bearing members 74 are generally wedge-shaped, having a broad base plane connected to the support frame 70 with a cross section that is preferably square and in parallel to the run of the slot-like apertures 73, and an upper face, which serves as the plane or line of contact with the rearward sealing flange 75.

[0064] The bearing members 74 may preferably of a form or shape to satisfy the requirements of serving to ensure sealing to the rim of the open-mouthed circumferential gap.

[0065] To this aim, as best seen in Fig. 2, the side faces of each wedge-shaped member, when viewed in cross-section, are concave and tapered to meet the curvature

of the rim of the circumferential gap. Thus, the annular wedge-shaped members resiliently bias the sealing flange 75 inwardly into the circumferential gap forming a resiliently annular closure thereof.

[0066] The series of bearing members 74 are interconnected in annular alignment by the rearward sealing flange 75. This way, the bearing members 74 form a bridge support to the rearward sealing flange 75, which forms a rearward extension of the bearing members 74.

[0067] The rearward sealing flange 75 extends away from the back surface of the support frame 70 into the direction of the circumferential gap, which direction may deviate from being substantially perpendicularly or 90° to the plane of the support frame 70.

[0068] The purpose of the sealing flange 75 is to isolate the front frame 4 as well as the oven casing 5 from metal contact with the oven liner 3 and to serve as a thermal break there between

[0069] Fig. 1 shows a view of the proposed gasket assembly 6 including the sealing member 8 that provides the sealing between the oven door and the oven front wall, when the oven door is closed.

[0070] As is best seen in FIG. 4, the sealing member 8 comprises a sealing frame 80, which is formed as a flat substantially rectangular frame member and enframes the access opening 40 of the oven cavity in a picture frame type configuration.

[0071] The sealing frame 80 abuts against the outer surface of the support frame 70. To this aim, the sealing frame 80 may comprise a circumferential recess 81 to wrap around the inner edge of the support frame 70.

[0072] The outermost edge of the sealing frame 80 is left unfastened to the oven front and merely presses against the outer surface of the oven front or a recess therein.

[0073] The sealing frame 80 is attached to the support frame 70 by a series of spaced apart retainers 82 depending from the sealing frame 80 and running substantially the entire circumferential length of the sealing member. The retainers 82 are arranged and positioned for accommodation in the slot-like apertures 73 of the support member.

[0074] Obviously, the distances at which the retainers 82 are applied to the sealing frame 80 are predetermined according to the distances of the corresponding slot-like apertures 73 in the support member. As the retainers are retained in the slot-like apertures 73 of the support members they are at the same time aligned to the bearing members 74 of the support frame 70.

[0075] This arrangement serves to keep the sealing member 8 and the support member 7 biased towards one another and thus tightly pressed against the oven front, when positioned therewith.

[0076] The series of retainers prevent lateral movement of the sealing member 8 relative to the oven liner 3 and also provide stability to the sealing member 8 to prevent it from rolling and crinkling.

[0077] A retainer could be in the form of a hook molded

integrally with the sealing member. 8. Preferably, a retainer is in the form of an arrowhead.

[0078] By means of the arrowheads 82, the sealing member 8 can be rapidly attached to the support frame by snap-fitting the arrowheads 82 into the appropriately shaped apertures in the support frame 70. There is no need to first go to the trouble of fitting separate clip devices to the sealing frame 80.

[0079] The cross sectional dimensions of the arrowheads 82 can be varied to permit ease of installation and the firmness of the fit to be regulated and maintained.

[0080] A neck portion should equal the wall thickness of the support member 7 and the taper of the undercut shoulders may be adapted to follow the curvature of the rim of the circumferential gap.

[0081] The arrowheads may be compact as shown in Figs. 1 and 2 to prevent their unintentional removal. Otherwise, to facilitate assembly and disassembly of the parts of the gasket, an arrowhead may be configured of a plurality of rearwardly extending barbs that can be more easily pulled out of the respective slot-like apertures 73.

[0082] The retainers 82, whether compact arrowheads or arrowheads, composed of rearwardly extending barbs, can be removed from the support member 7 by applying sufficient force to overcome the retaining action of shoulders, thus providing a straightforward means for replacement or service of the sealing member 8.

[0083] Furthermore, the sealing member 8 includes a sealing lip 83 extending in a lateral direction from the peripheral edge of sealing frame 80.

[0084] The sealing lip 83 functions to seat the sealing member 8 against the oven liner 3 as well as to exert a sealing function against a transverse surface of the oven door.

[0085] The sealing lip 83 is preferably provided as an outward turned flange, which is generally in the shape of a triangle in cross-section.

[0086] The flange includes a first concave sidewall, which wraps around the edge of the oven liner 3. A second sidewall provides the sealing contact to the confronting surface of the oven door. A slanting wall interconnects an outermost extent of each of the first and second wall in a generally straight line, whereby the slanting wall forms an uninterrupted, smoothly sloping surface between the first and second sidewall of the sealing lip.

[0087] The sealing lip may be inclined either to be diverging outwardly or convergent towards the oven inside with an inclination towards the oven liner. In the first instance, a better tightness will be obtained as the sealing lip seals under pressure. In the second one, the gasket assembly can be considered as "self-cleaning", since the first side has the function of a gutter to prevent possible dirt or fluids from entering the sealed opening, and the slanting side, has the opposite function of helping possible dirt or fluids to drop there from. When the door is closed, the seal forms a diverting surface sloping from its contact area of the door to its contact area on the oven liner, to divert condensate to the oven floor, where the

condensate re-evaporates. This embodiment is particularly useful in a cooking oven comprising a steam-generating system.

[0088] According to one embodiment of the invention, the sealing lip 83 may comprise a hollow space and/ or a flexible metal member arranged therein, to provide improved resilience or stability to the sealing lip 83. The flexible metal member may be comprised of a magnetic insert. By virtue of the magnetic attraction between the magnet and a metallic member of the oven door, a sealing force is generated which aids to maintain the door in the closed position, and prevent the ingress of outside air into the oven cavity.

[0089] The gasket seal can be formed from any desired material depending upon the required performance properties of the gasket. Preferably, the parts of the gasket assembly 6 are made of a thermoplastic polymeric material. Advantageously, the parts of the two-part gasket assembly are manufactured comprising at least two different thermoplastic polymeric materials.

[0090] The support member 7, which has to provide for a firm fit to the front wall of the oven, is preferably made from a rigid polymer material, which is suitable for providing the necessary strength to hold the gasket assembly 6 in place on the oven front.

[0091] The support member 7 may be made from rigid non-plasticized thermoplastic material, excluding elastomers. For example, the support member may be made from PVC-U (unplastized PVC), polypropylene, polyethylene, ABS or polystyrene. However, it is to be appreciated that any suitable rigid material may be used.

[0092] A thermoplastic polymer of the rigid type is represented by a hardness on the Shore A scale, measured using the ASTM D 2240 standard, that is more than or equal to 50.

[0093] On the other hand, it is desirable that the sealing member be flexible, and preferably resilient, in order to aid in achieving leak-tight seals to the oven cavity. The sealing member 8 is preferably made from a soft polymer material, which will also allow the sealing member 8 to fill in irregularities on the oven liner 3 and thus permit reduced tolerances, which minimizes, for example, machining and thus production costs.

[0094] The sealing member 8 may be made from silicone or a silicone-based thermoplastic elastomer, as silicone combines resistance to fumes and gases, resilience, and performance over a wide temperature range.

[0095] Otherwise, plasticized thermoplastics such as soft PVC, or elastomers such as SRT (synthetic rubber thermoplastic), TPE, or PUR may be used. However, it is to be appreciated that any suitable soft polymer may be used.

[0096] A thermoplastic polymer of the soft type is represented by a hardness on the Shore A scale that is less than 50.

[0097] The parts of the gasket assembly 6 are preferably manufactured by molding of a thermoplastic polymer. Particularly preferred is manufacturing by injection

molding. The two gasket parts of the frame type are not necessarily produced in an integral unitary construction, but the thermoplastic materials allows to pre-manufacture each frame part in segments, e.g. in two horizontal and two vertical segments, then thermowelding together separate segments in a jig to compensate for tolerances caused by the manufacturing tolerances of the gasket parts.

[0098] It will be appreciated that the fitting of the gasket assembly onto the oven front extremely simple, requiring no tools, as the fitter only has to push the seal into place, with the fastener 71s snapping into the assembly slots 41 in a known manner.

[0099] Although the fasteners hold the gasket seal securely in place it will be understood that it is an easy matter at any time to prise off the sealing member or the complete gasket assembly for replacement, when it is soiled or worn and an unskilled person can easily fit a new gasket assembly.

[0100] In the drawings and specification, there has been set forth a preferred embodiment of the invention and although specific terms are employed these are used in a generic and descriptive sense only and not for purposes of limitation. Changes in the form and the proportion of parts as well as the substitution of equivalents are contemplated as circumstances may suggest or render expedient without departing from the spirit or scope of the invention as further defined in the following claims.

List of reference numerals

[0101]

1	cooking oven
2	oven cavity
3	oven liner
4	front frame
40	access opening
41	assembly slot
5	oven casing
6	gasket assembly
7	support member
70	support frame
71	fastener
72	fitting opening
73	slot-like aperture
74	bearing member
75	rearward sealing flange
8	sealing member
80	sealing frame
81	recess
82	retainer
83	sealing lip

Claims

1. A cooking oven, particularly a cooking oven compris-

ing a steam-generating system, comprising an oven liner (3) defining a cooking cavity (2) with a frontward access opening (40), an oven casing (5), an oven front frame (4) connected to the oven casing (5) and separated from the oven liner (3) by an open-mouthed circumferential frontward gap for receiving a two-part gasket assembly (6) for sealing an oven door to close said cooking cavity (2), wherein

the two-part gasket assembly (6) comprises a support member (7) and a sealing member (8), the support member (7) comprising a support frame (70) enframing the access opening (40) of the oven cavity (2), comprising a series of slot-like apertures (73) in an arrangement for interfacing the circumferential frontward gap, and a series of bearing members (74) in line with the slot-like apertures (73), bearing a circumferential rearward sealing flange (75) for insertion into the open mouthed circumferential gap, and fastener means (71) to fasten the support frame (70) to the front frame (4), and the sealing member (8) comprising a sealing frame (80), comprising a recess (81) to accommodate to the support frame (70), a series of retainers (82) in an arrangement to fit in the slot-like apertures (73) of the support member and a peripheral sealing lip (83).

2. A cooking oven according to claim 1, wherein a fastener means (71) comprise a detent hook for snap fitting said support member (7) to the front frame (4) and a fitting opening (72) for a releasable connection to the front frame (4).

3. A cooking oven according to claims 1 to 2, wherein a retainer (82) is a compact arrowhead or an arrowhead, comprised of a plurality of rearwardly extending barbs.

4. A cooking oven according to claims 1 to 3, wherein a bearing member (74) is wedge-shaped and the side faces of a wedge-shaped member are concave and tapered to meet the curvature of the rim of the circumferential gap.

5. A cooking oven according to claims. 1 to 4, wherein the sealing lip (83) comprises an outward turned flange inclined to meet the oven liner (3) with an inclination towards the oven liner (3).

6. A cooking oven according to claims 1 to 5, wherein

the support member (7) and /or the sealing member (8) comprise a thermoplastic polymer material.

7. A cooking oven according to claim 6,
wherein the support member (7) comprises a rigid thermoplastic polymer material and the sealing member (8) comprises a soft thermoplastic polymer material. 5

8. A cooking oven according to claims 6 and 7,
wherein the support member (7) and the sealing member (8) are manufactured by molding, particularly injection molding. 10

9. A cooking oven according to claims 1 to 8,
wherein
the sealing lip (83) comprises a hollow space and/or a flexible metal member arranged therein. 15

10. Two-part gasket assembly for providing a seal between an oven cavity (2) of a cooking oven (1) and its associated oven door,
comprising a support member (7) and a sealing member (8),
the support member (7) comprising 25
a support frame (70) enframing the access opening (40) of the oven cavity (2), comprising
a series of slot-like apertures (73) in an arrangement for interfacing the circumferential frontward gap, and
a series of bearing members (74) in line with the slot-like apertures (73), bearing a circumferential rearward sealing flange (75) for insertion into the open mouthed circumferential gap, 30
and fastener means (71) to fasten the support frame (70) to the front frame (4), and 35
the sealing member (8) comprising
a sealing frame (80),
comprising a recess (81) to accommodate to the support frame (70),
a series of retainers (82) in an arrangement to fit in the slot-like apertures (73) of the support member and a peripheral sealing lip (83). 40

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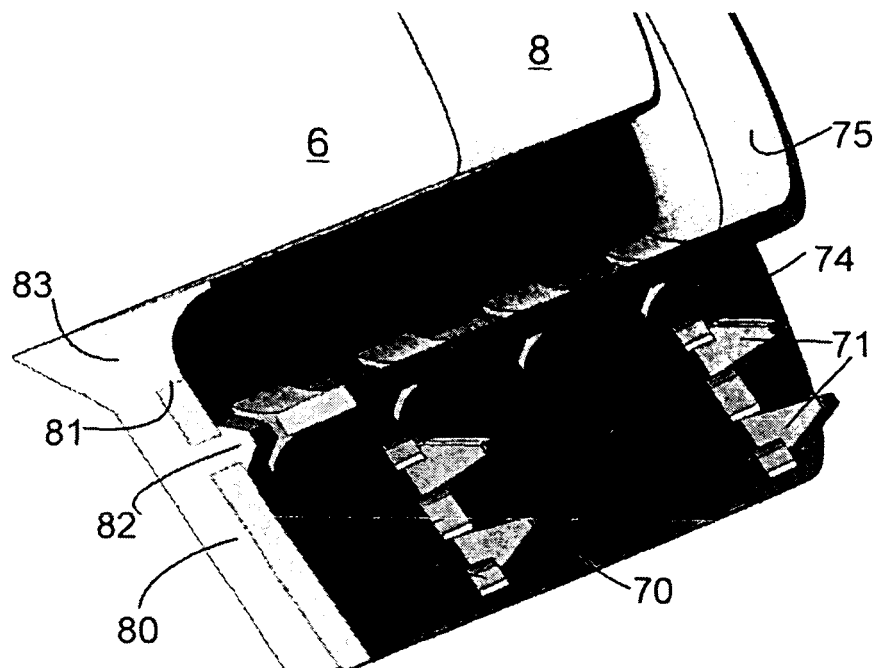


Fig. 1

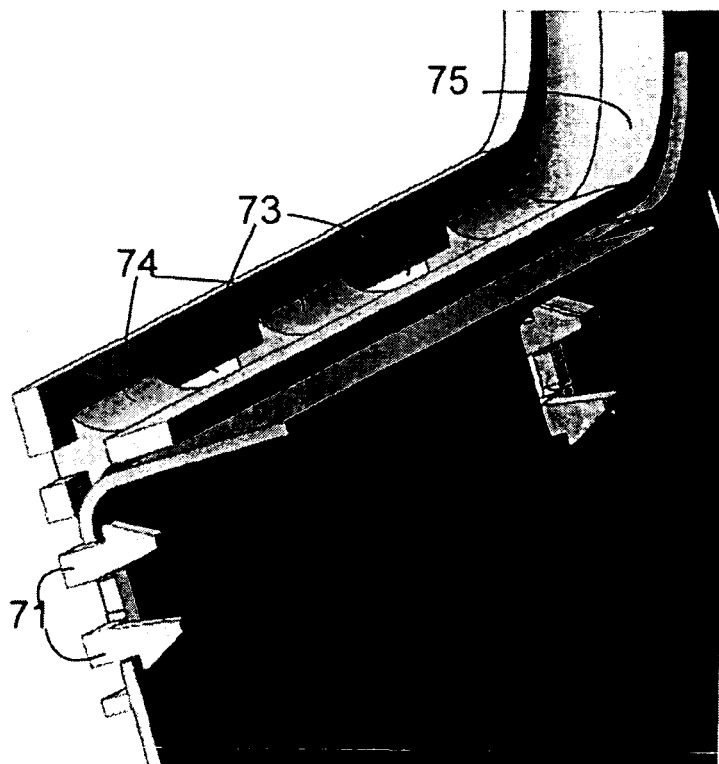


Fig. 2

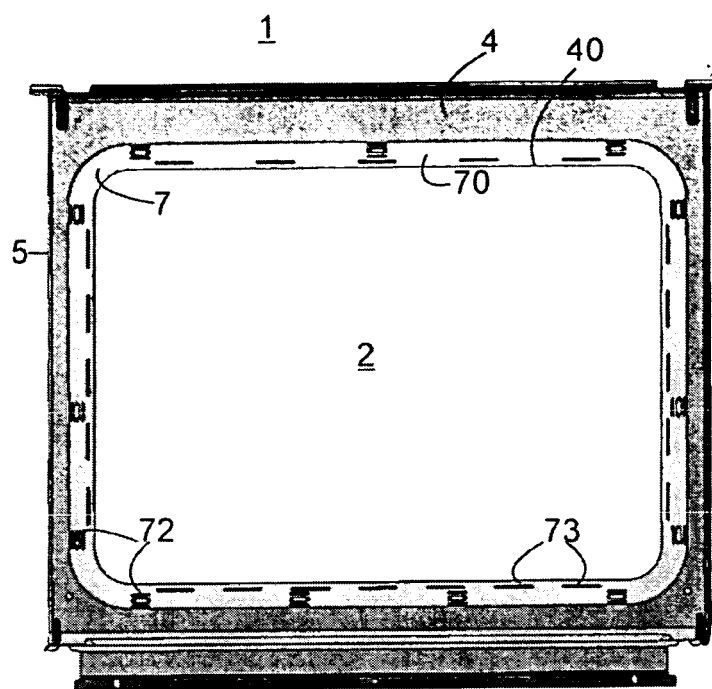


Fig. 3

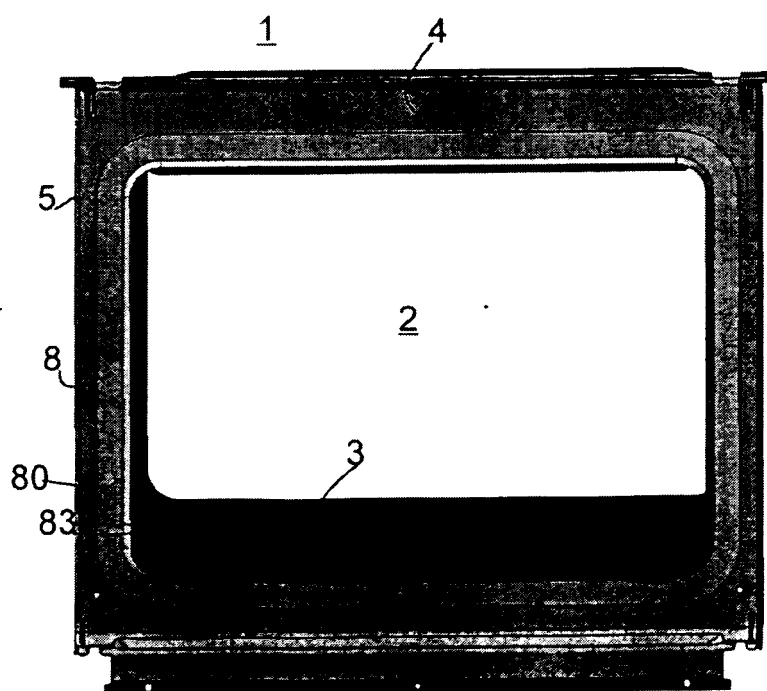


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 08 01 8129

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	DE 10 2004 032931 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 2 February 2006 (2006-02-02) * paragraphs [0035] - [0041]; figures 1-12 *	1-4,6-10	INV. F24C15/02
Y	DE 10 2004 039434 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 23 February 2006 (2006-02-23) * paragraphs [0034] - [0041]; figures 1-9 *	1-4,6-10	
A	EP 0 697 568 A (ELECTROLUX AG [CH] ELECTROLUX AG) 21 February 1996 (1996-02-21) * figures 4,5 *	3	
A	DE 20 2004 019224 U1 (REHAU AG & CO [DE]) 24 February 2005 (2005-02-24) * figure 1 *	9	
Y	GB 2 201 201 A (BELLING & CO LTD BELLING & CO LTD [GB]) 24 August 1988 (1988-08-24) * the whole document *	1-4,6-10	TECHNICAL FIELDS SEARCHED (IPC) F24C
Y	DE 10 2004 039432 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 23 February 2006 (2006-02-23) * the whole document *	1-4,6-10	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 June 2009	Examiner Blot, Pierre-Edouard
CATEGORY OF CITED DOCUMENTS 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		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	

 1
EPO FORM 1503 03.82 (P04C01)

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ON EUROPEAN PATENT APPLICATION NO.**

EP 08 01 8129

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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08-06-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102004032931 A1	02-02-2006	WO 2006003217 A1	12-01-2006
DE 102004039434 A1	23-02-2006	NONE	
EP 0697568 A	21-02-1996	DE 59507596 D1	17-02-2000
DE 202004019224 U1	24-02-2005	NONE	
GB 2201201 A	24-08-1988	NONE	
DE 102004039432 A1	23-02-2006	NONE	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- DE 19705656 A [0009]