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(54) Cooking oven comprising a side opening door and a damper of the door movement

Ofen umfassend eine Tür die zur Seite öffnet und einen Dämpfer der Türbewegung

Four de cuisson comprenant une porte à ouverture latérale et un amortisseur du mouvement de la porte

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Description

[0001] The present application in particular is related to a cooking oven, and in particular to improvements for cooking oven doors.

[0002] Doors of cooking or baking ovens, in general are hingedly attached to a support structure of the oven. In order to improve handling and operability of the door it is known, for example from EP 1 731 704 A2, to provide respective hinges of drop-down-type doors with rotational dampers in particular in order to damp the drop-down opening movement of the door. Such rotational dampers in some instances, however, are comparatively complex to implement and, as they have to damp drop-down movements of the door against the action of gravity, in general are of robust and heavy construction, and comparatively expensive, and therefore are not suitable for all types of hinged doors.

[0003] Document GB 2 350 863 A describes an oven having wardrobe type doors opening about vertical axes and comprising gas springs for obtaining a controlled opening and closing of the doors, wherein a gas springs are respectively mounted between a door and a corresponding hinge axis of a door hinge of the door.

[0004] Document EP 2 708 820 A1 describes a door-opening structure of a microwave oven, comprising a hydraulic damper for dampening a spring-biased opening or closing movement of a microwave oven door, wherein the damper is attached at one end to the door hinge.

[0005] Document US 2005/0206286 A1 describes a door control assembly for a door of refrigerating chamber, wherein the door control assembly is configured to exert an opening and closing force on the door. A fluidic control mechanism, such as a gas piston, is integrated in the door control assembly which is part of an outer door handle attached to the outer side of the door.

[0006] Document DE 10 2006 019 332 A1 describes a door hinge for a refrigerator, the door hinge comprising a cylinder-piston type damper attached at one end to a hinge arm of the door hinge.

[0007] It is an object of the invention to solve the problems associated with the state of the art. In particular it is an object to provide solutions for damping hinged doors of ovens, such as for example baking ovens, cooking ovens, and microwave ovens, wherein respective damping elements shall be comparatively easy to implement and shall be available at comparatively low cost.

[0008] This object is solved by independent claim 1. Embodiments result from the dependent claims and the description below.

[0009] Claim 1 is related to cooking and/or baking ovens. The terms cooking oven, baking oven or their combination in particular shall cover any type of conventional oven, in particular operated with gas, electricity to generate radiant heat and/or hot air circulation, but also may cover microwave cooking ovens.

[0010] The oven as proposed in claim 1 comprises a main body, in particular constituting or comprising a support structure of the oven, with a cavity, muffle or cooking chamber which in particular is adapted to accommodate food to be processed.

[0011] The oven further comprises a side-opening door configured for opening and closing the cavity.

[0012] The term "side-opening" shall mean that a hinge axis of the door is oriented, in particular parallel to, the vertical direction relative to the ordinary operational state of the oven. Note that positional and locational specifications, in particular the term "vertical" as used in claim 1, shall relate to the ordinary operational position of the oven, or of respective elements.

[0013] The side-opening door is mounted hingedly about a vertical axis by means of at least one door hinge to the main body of the oven, in particular to a support structure of the oven. This in particular shall mean that the door is attached to the main body to be rotatable around a vertical axis of rotation from a closed to an open position and vice versa.

[0014] The oven further comprises a damping element which is mounted, in particular at opposite ends thereof, to the door and to the main body, and which extends between and interconnects the door and the main body. The damping element is installed in such a way, and is further adapted and configured such that it can, in the ordinary operational mode, damp at least one of a sideways opening movement of the door and a sideways closing movement of the door, wherein the damping element passes through an opening provided in a front lining of the main body.

[0015] The term "bridging between" in particular shall mean, that the damping element extends between the door and main body and, in the ordinary mounted state interconnects them with each other, which in the end results in damping effects or damping forces at least in sections of the opening or closing movements or cycles of the door. The generation of damping forces in particular may be advantages in end phases of the sideways opening and closing movements of the door, in particular for avoiding damages, e.g. to hinges, and/or slamming noises in opening and closing actions.

[0016] In embodiments, the damping element may comprise at least one bracket that is adapted for connecting the dampening element to the door. Advantageously, the bracket related to the damping element may be adapted for rotatably connecting the dampening element to the door. A respective axis of rotation may be parallel to the vertical direction.

[0017] The bracket in particular may function of an adapter between the door and/or main frame and the damping element, in particular may have a function of a mounting adapter. A respective mounting adapter may be advantageous for facilitating assembly of the damping element to the oven, in particular door and/or main frame, probably also in view of retrofit solutions.

[0018] A respective bracket may comprise a folded sheet, in particular may be implemented as an angle bracket. The angle bracket may comprise two rectangu-

lar flat sheet-type or flat-sheet-shaped wings. One of the wings may be attached in its longitudinal orientation to the door or main frame.

[0019] The proposed solution for damping sideways or side-opening and/or sideways or side-closing movements of the door of the oven in connection with a bracket, in particular mounting bracket, can be implemented with comparatively low complexity. Further brackets have been found to be suitable for side-hinged or side-opening doors of the mentioned ovens, in particular due to the comparatively moderate damping forces occurring with respective side-opening doors. Hence the side-opening assemblies of side-opening doors of ovens related to the invention are open for implementing brackets, in particular angular sheet type shape.

[0020] In embodiments, the door may comprise a door panel or an outer door panel that has an outer side facing the outside of the cooking oven, in particular is oriented away from the inside of the cavity in the closed state of the door. The dampening element in such embodiments may be connected via the bracket to an inner side of the outer door panel, which inner side is oriented towards the cavity , i.e. faces the inside of the cavity in the closed state of the door.

[0021] In variants, the bracket, which is attached to the door, may be attached directly to an inner surface of the inner side of the outer door panel. "Directly" in this connection in particular shall mean that the attachment between the bracket and inner surface is accomplished by primary attachment elements, such as screws, glue, bolts and the like, and that the attachment is free or does not comprise secondary attachment elements involved in the attachment effect as such.

[0022] In further embodiments, the door may comprise a door support structure that is connected to the inner side of the outer door panel. Here, the bracket may be formed as an integral part of or may be integrated with the door support structure. It is advantageous, in particular for stability reasons, that the bracket is formed as an integral part of the door support structure and is adapted for being connected to the dampening element.

[0023] In particular in embodiments as referred to before, the bracket formed as an integral part of the door support structure may be adapted for being rotatably connected to the dampening element. This in particular shall mean, that the bracket is fixed at the door support structure and may provide an interface for rotatably connecting thereto the bracket having a counterpart interface matching with that of the bracket.

[0024] In embodiments, the damping element may comprise at least one of a piston-type gas and oil-spring damping element, in particular of linear type or extension. The piston type damping element may comprise a cylinder and a piston moveable in axial direction within the cylinder. Respective damping elements are comparatively effective in damping rotational movements, in particular sideways pivoting movements, of the door, and can be implemented with comparatively low complexity.

[0025] The damping element as proposed herein may be hingedly attached or connected in particular via respective swivel connections to the door and main body. This in particular shall mean, that in particular in case of a piston-type damping element, one end of the damping element may be connected via a swivel or hinged connection to the door, and the other end of the damping element may be connected via a swivel or hinged connection to the main body or support structure.

[0026] In embodiments, in particular as indicated further above, the bracket may be attached to the door, in particular to a door mechanical structure or a glass pane of the door. The attachment may be a bonded connection, in particular a gluing connection.

[0027] In particular via a bonded connection, the bracket may on the one hand be tightly fixed, and on the other hand may be attached to allow comparatively easy replacement.

[0028] Further, with regard to gluing connections, in particular gluing connections for attaching the bracket or brackets of the damping element to the oven, in some instances it may even be advantageous to retrofit ovens with respective damping mechanisms just by attaching respective mounting brackets for the damping element.

[0029] In embodiments, the damping element is positioned close, i.e. nearby, in particular as close as possible, to a hinge connecting the door to the main body. Here, advantageous mechanical and technical configurations can be obtained, and, in particular, opening and closing forces can be effectively absorbed, i.e.damped. In particular, the attachment site, such as the bracket, may be attached close to or nearby a door hinge, in particular with respect to the radial direction of the hinge axis.

[0030] The damping element in particular may be arranged and provided at a lower side or edge of the door. This may be advantageous for reasons of space utilisation and/or heat exposure of the damping element. In embodiments, the damping element may be mounted or provided at the bottom site, i.e. near or close to the bottom, of the door and main body. This in particular is advantageous for side-opening doors in order to avoid interferences in the ordinary use of the oven. The bottom side, lower side or lower edge of the door corresponds to the coldest area of an oven during its operation. The inventors have observed that the temperature in that region rarely rises above about 80 °C during operation of an oven. Hence, the invention proposes to arrange a dampening element in that region wherein it is effectively protected from any thermal stress. Thus, a dampening element that is arranged in said region does not require any expensive structural or material adaptations to high temperature. Further, a dampening element that is arranged at the bottom side of the door is almost invisible, especially when the whole dampening unit is covered by a front lining of the oven that comprises an opening through which the dampening element passes. The lower side or the lower edge of the door corresponds also to the region of the oven, where a dampening element is

very easy to assemble and where, in the instance of a service call to a customer's home it can be very easily exchanged, since after removing the oven bottom liner, which is more convenient than any removal of an oven housing side wall, the dampening element can be directly accessed. It is particular advantage that in an oven with a door that the hinge opening in the lower region of the front lining of the oven door can also be used for passing through the dampening element.

[0031] Further, the damping element may be configured to bridge between the door and an inner surface of a lateral side wall of the main frame. In particular in this proposed configuration, the damping element may reach through or pass a front panel or front cover of the cooking oven.

[0032] In embodiments, the damping element may be part of a damper unit which further comprises an electronic component, in particular a switch, configured for executing or triggering a preset process in dependence of at least one opening state of the door. The preset process in particular may be at least one of switching on or switching off a light configured or illuminating the cavity, issuing a warning or message indicative of a closed or opened state of the door and the like.

[0033] In embodiments, and in particular as proposed above, the damping element may be attached or mounted in such a way that the damping element passes through an opening provided in a lower front lining or passes by lower section of a front lining of the main body, However, the damping element preferably is provided at a lower site of the door, in particular located below the oven cavity or muffle.

[0034] In embodiments, the bracket has an angle profile, in particular a 90 degree angle profile. The angle profiled bracket in particular may comprise two angled branches, such as for example 90-degree angled branches, in particular of sheet-type configuration.

[0035] In an angled configuration of the bracket, a first one of the branches may be adapted for attaching the bracket to the oven and a second one of the branches may be adapted for attaching or integrating a respective hinge element.

[0036] It shall, however, be noted, that the bracket may have a u-shaped cross section rather than an L-shaped cross section, or may be of any other suitable cross section,

[0037] In embodiments the first branch may have a rectangular shape, in particular a rectangular footprint. The second branch in this embodiment may be provided at a longside of the first branch. The second branch may protrude from the first branch in an angle of 90 degrees. Further, the second branch may have a triangular-type shape, in particular also dome-type or hemicycle-type shape, in particular footprint,

[0038] In embodiments, the bracket may be attached to the oven such that the second branch lies vertically above, the first branch. It shall, however be noted, that the second branch may be located at a lower side or at a lateral side of the first branch. The first branch, in particular adapted to be attached to the oven, in particular door, may be oriented vertically, and the second branch may be oriented horizontally, or vice versa.

[0039] As can be seen in particular from the description above, the proposed damping solutions for cooking or baking ovens can easily be implemented and provide enhanced user comfort.

[0040] Selected embodiments will now be described in connection with the annexed figures, in which:

FIG. 1 shows a perspective view of a domestic cooking oven;

FIG. 2 shows a detail of a damping unit of the cooking oven;

FIG. 3 shows a variant with respect to the damping arrangement of the cooking oven; and

FIG. 4 shows a further variant with respect to the damping arrangement.

[0041] FIG. 1 shows a perspective view of a domestic cooking oven 1. The cooking oven 1 comprises a main body 2, or support structure, which comprises a cavity 3, in the present case a cooking or baking cavity 3. Fig. 2 shows a detail of a damping unit of the cooking oven 1.

[0042] The cooking oven 1 further comprises a door 4 configured for opening and closing the cavity 3 during different operational cycles of the cooking oven 1.

[0043] The door 4 constitutes a side-opening door, which means that the door 4 is hingedly attached to the main body 2 via hinges defining a vertical hinge axis 5.

[0044] The oven 1 further comprises a damping element 6. The damping element 6 is attached via a hinge assembly at one end to a bottom side 7 of the door 4, and at the other end to an inner side face 8 of the main body 2.

[0045] The damping element 6 comprises a linear piston-type gas and/or oil-spring damping element bridging between the door 4, in particular an inner side of the door 4, and the main body 2, in particular an inner side face 8 of the main body 2.

[0046] The term "bridging" in particular shall mean, that the damping element 6 is attached both to the door 4 and the main body 2, and thus is able to generate a damping force acting on the door 4 in at least one of a closing and opening movement of the door 4.

[0047] As can be seen from FIG. 2, the damping element 6 passes, at least in the opened state of the door 4, through or by a front lining, in particular an opening provided in a lower frame or lining of the main body 2.

[0048] In the embodiment shown in FIG. 1 and FIG. 2, the damping element 6 is connected at one end to the door 4 and at the other end to the inner side, in particular side face 8 of the main body 2, wherein respective connections are implemented as swivel or hinged connec-

tions.

[0049] In more detail, the swivel or hinged connections are implemented as ball stud connections in which both ends of the damping element 6, i.e. cylinder and piston of the damping element 6, are respectively provided with ball stud couplings or stud clutch elements 9. The stud clutch elements 9 preferably may be in the shape of a half sphere adapted to at least partially enclose a corresponding ball stud (not visible in the figures), and advantageously adapted to be coupled to the ball stud in a snapping action. Ball stud connections are comparatively robust and nevertheless allow easy replacement in case of a failure or malfunction.

[0050] As can be seen in more detail from FIG. 2, the door-sided ball stud in the present case is attached to a bracket 11. The bracket 11 may be made from a plastic material, from metal, or from a plastic-metal composite material.

[0051] The bracket 11 in the present case is attached directly to the door 4, and at a lower side of the door 4 and main body 2 close to or at or below the level of a lower hinge 13 connecting the door 4 to the main body 2. A respective location of the bracket 11 and therefore the damping element 6 is advantageous in particular for the reason that interference with actions of a user operating the oven 1, and in particular heat impacts, can be greatly avoided.

[0052] The bracket 11 as shown in FIG. 1 and 2 is or may be connected to the door 4 by a gluing connection, which in particular can be readily applied to a variety of different materials such as glass, metal or plastic, in particular glass, metal or plastic surfaces of the door 4 or door frame. Other types of connections, such as screwing, caulking and the like may be used as well. Here it shall be mentioned, that the main-body sided ball stud can also be implemented and attached by gluing, however, also screwing type connections may be used.

[0053] The bracket 11 as shown in more detail in FIG. 2 comprises two branches, limbs or wings angled by about 90 degrees, wherein one of the limbs, i.e. a first branch 14, is glued to the door 4 and the other limb, i.e. a second branch 15, projects from an inner surface of the door 4 and supports the ball stud to which a respective stud clutch element 9 is coupled to. A corresponding bracket 11 may be provided at the other end of the damping element 6, in particular with a gluing connection to the inner face side 8 of the main body 2. As can be seen from the figures, the wings may comprise a sheet-type configuration, in particular of rectangular or, dome-shaped, hemicycle-shaped or triangular shape.

[0054] The bracket 11 in the present case is L-shaped, in particular has, in particular with respect to its longitudinal direction, an angled profile, in particular L-shaped angled profile, in which the two branches 14 and 15 are angled by 90 degrees. The first branch 14 comprises a rectangular footprint. The second branch 15 is arranged at an upper longside of the first branch 14. The second branch 15 is, relative to the longside of the first branch 14, shorter than the first branch 14. Further, the second branch has a dome-shaped or hemicycle-shaped footprint.

[0055] As can in particular be seen from FIG. 2, the second branch 15 lies, with respect to the vertical direction, above the first branch 14. However, the second branch 15 may also be arranged at a lower side, or at a lateral side of the first branch 14.

[0056] The damping element 6 may be part of a damper unit which may further comprise a switch (not shown) configured for executing or triggering a preset process in dependence of at least one opening state of the door 4. As already stated, such a process or action may be issuing or indicating a door opening and/or closing state and others.

[0057] FIG. 3 shows a variant with respect to the damping arrangement of the cooking oven 1. In this variant, the door 4 comprises an outer door panel 16 that is adapted to close the cavity, and may in the closed configuration, as in the present embodiment, also cover section of the front side of the oven (1).

[0058] An outer surface of the outer door panel 16 in the closed state of the door may face away from the oven and be visible from the exterior. The outer door panel 16 may be made for example from metal or glas. Further, a central inspection window allowing inspection of the inner of the cavity 3 in the closed state of the door 4 may be implemented with the outer door panel 16.

[0059] To the inner side of the outer door panel 16, i. e. the side facing the oven 1 and cavity 3 in the closed state of the door 4, there may be attached at least one strut 17, in particular intended for supporting and/or mechanically stabilizing the door structure and/or outer door panel 16, but may also have additional mechanical functions, such as acting as a support structure for attachment of the door 4 to the main body 2.

[0060] Regarding the strut or struts 17, it may be preferred to provide at struts respectively at opposing vertical sides or edges, in particular lateral edges, and/or at least two opposing horizontal sides or edges, in particular lateral edges, of the outer door panel 17. However, the struts 17 may also be provided at vertical and/or horizontal edges to implement an open U-or L-shaped frame, in particular partial frame.

[0061] Advantageously, a strut 17 is provided at a vertical lateral edge of the outer door panel 16 where it is hingedly connected to the main body 2. The at least one strut 17 may implement and/or be part of a supporting frame or supporting structure of the door 4, in particular outer door panel 16.

[0062] Adjacent to a strut 17 or in between two opposing struts 17 an inner door pane may be provided so as to face and be adjacent to the cavity 3 in the closed state of the door 4.

[0063] Within the frame, in particular as made up by the struts 17, and between the outer door panel 17 and the inner door pane an intermediate pane may be provided particular for obtaining improved thermal insula-

tion.

[0064] Regarding the bracket 11, it may with the present embodiment directly attached to the inner side of the outer door panel 16, e.g. by gluing, which is the case with the embodiment shown in FIG. 3.

[0065] Other possibilities for attaching the bracket 11 to the door 4 are to fix the bracket 11 to a strut 17 located at the hinge side of the door 4. Attachment to the strut 17 may for example comprise a form-fit or force-fit connection between the bracket 11 and strut 17. For example, the bracket 11 and strut 17 may be configured such that the bracket 11 can be inserted into an opening, orifice or slot of the strut 17.

[0066] As a further possibility, which is shown in FIG. 4, it may be that the bracket 11 forms an integral element or part of the strut 17 located at the hinge side of the door 4.

[0067] In particular with the different attachment modalities of the bracket 11 as mentioned before, it may in all cases be provided that the bracket 11 can be mechanically connected with the damping element 6 in an articulated or hinged joint manner.

[0068] Regarding the strut or struts 17 again, they may be made from a plastic material, in particular via injection molding. In particular, the strut or struts 17 may be glued to the inner panel side 18 of the outer door panel.

[0069] In all it becomes clear, that the solution, for damping a door 4 of a cooking oven 1, as proposed herein is effective for easily implementing damping elements with side-opening cooking oven doors.

Reference signs

[0070]

1	domestic cooking oven
2	main body
3	cavity
4	door
5	hinge axis
6	damping element
7	bottom side
8	inner side face
9	stud clutch element
10	ball stud
11	bracket
13	hinge
14	first branch
15	second branch
16	outer door panel
17	strut
18	inner panel side

Claims

1. Cooking oven (1) comprising a main body (2) with a cavity (3), and a side-opening door (4) configured for closing the cavity (3) and being mounted hingedly about a vertical axis by means of at least one door hinge (13) to the main body (2), wherein the cooking oven further comprises a damping element (6) which is mounted to the door (4) and to the main body (2) and extends between and interconnects the door (4) and the main body (2) **characterized in that** the damping element is adapted to at least one of damping a sideways opening movement of the door (4) and damping a sideways closing movement of the door (4), wherein the damping element (6) passes through an opening provided in a front lining of the main body (2).

2. Cooking oven (1) according to claim 1, wherein the damping element (6) comprises a bracket (11) that is adapted for connecting the dampening element (6) to the door (4), wherein the bracket (11) in particular may be adapted for rotatably connection the dampening element (6) to the door (4).

3. Cooking oven (1) according to claim 2, wherein the door (4) comprises an outer door panel (20) that has an outer side (21) that faces the outside of the cooking oven (1), and the dampening element (6) is connected via the bracket (11) to an inner side (22) of the outer door panel (29), which is oriented towards the cavity (3).

4. Cooking oven (1) according to claim 3, wherein the bracket (11) is attached directly to an inner surface of the inner side (22) of the outer door panel (20).

5. Cooking oven (1) according to claim 1 and 3, wherein the door (4) comprises a door support structure (12) that is connected to the inner side (22) of the outer door panel (20), wherein preferably the bracket is formed as an integral part of the door support structure and is adapted for being connected to the dampening element.

6. Cooking oven according to claim 5, wherein the bracket is formed as an integral part of the door support structure, wherein the bracket is adapted for being rotatably connected to the dampening element.

7. Cooking oven (1) according to at least one of claims 1 to 6, wherein the damping element (6) is at least one of a piston-type gas and/or oil-spring damping element (6) .

8. Cooking oven (1) according to claim 2, wherein the bracket (11) is attached to the door (4), in particular a door mechanical structure (12) or glass pane of the door (4) via a bonded, in particular gluing, connection.

9. Cooking oven (1) according to at least one of claims

1 to 8, wherein the damping element (6) is positioned, close to the door hinge (13) connecting the door (4) to the main body (2).

10. Cooking oven (1) according to at least one of claims 1 to 9, wherein the damping element (6) bridges between the door (4) and an inner surface of a lateral side wall of the main frame (2).

11. Cooking oven (1) according to at least one of claims 1 to 10, wherein the damping element (6) is part of a damper unit which further comprises an electronic component, in particular a switch, configured for executing or triggering a preset process in dependence of at least one opening state of the door (4).

12. Cooking oven (1) according to at least one of claims 1 to 11, wherein the dampening element (6) is arranged at a bottom side (7) of the door (4).

13. Cooking oven (1) according to at least one of claims 1 to 12, wherein the front lining is a lower front lining, of the main body (2).

14. Cooking oven (1) according to at least one of claims 1 to 13, wherein the bracket (11) has an angle profile with two angled branches (14, 15), in particular 90-degree branches (14, 15), a first branch (14) has a rectangular shape, and a second branch (15) is provided at a longside thereof, wherein the second branch (15) preferably has a triangular-type shape, and wherein further preferably the bracket (11) is attached to the cooking oven (1) such that the second branch (15) lies above the first branch (14).

Patentansprüche

1. Ofen (1), umfassend einen Hauptkörper (2) mit einem Hohlraum (3) und eine Tür (4), die zur Seite öffnet und dazu ausgelegt ist, den Hohlraum (3) zu schließen, und um eine senkrechte Achse aufklappbar mittels wenigstens eines Türscharniers (13) an dem Hauptkörper (2) befestigt ist,
wobei der Ofen ferner ein dämpfendes Element (6) umfasst, das an der Tür (4) und an dem Hauptkörper (2) befestigt ist und sich zwischen der Tür (4) und dem Hauptkörper (2) erstreckt und dieselben miteinander verbindet, **dadurch gekennzeichnet, dass** das dämpfende Element geeignet ist, eine zur Seite gerichtete Öffnungsbewegung der Tür (4) zu dämpfen und/oder eine zur Seite gerichtete Schließbewegung der Tür (4) zu dämpfen, wobei das dämpfende Element (6) durch eine Öffnung führt, die in einer Frontverkleidung des Hauptkörpers (2) vorgesehen ist.

2. Ofen (1) nach Anspruch 1, wobei das dämpfende Element (6) eine Halterung (11) umfasst, die geeignet ist, das dämpfende Element (6) mit der Tür (4) zu verbinden, wobei die Halterung (11) insbesondere geeignet sein kann, das dämpfende Element (6) auf drehbare Weise mit der Tür (4) zu verbinden.

3. Ofen (1) nach Anspruch 2, wobei die Tür (4) eine äußere Türverkleidung (20) umfasst, die eine äußere Seite (21) aufweist, die der Außenseite des Ofens (1) zugewandt ist, und das dämpfende Element (6) über die Halterung (11) mit einer Innenseite (22) der äußeren Türverkleidung (29), die in Richtung zu dem Hohlraum (3) ausgerichtet ist, verbunden ist.

4. Ofen (1) nach Anspruch 3, wobei die Halterung (11) direkt an einer Innenfläche der Innenseite (22) der äußeren Türverkleidung (20) angebracht ist.

5. Ofen (1) nach Anspruch 1 und 3, wobei die Tür (4) eine Türstützstruktur (12) umfasst, die mit der Innenseite (22) der äußeren Türverkleidung (20) verbunden ist, wobei die Halterung vorzugsweise als integraler Bestandteil der Türstützstruktur ausgebildet und geeignet ist, mit dem dämpfenden Element verbunden zu werden.

6. Ofen nach Anspruch 5, wobei die Halterung als integraler Bestandteil der Türstützstruktur ausgebildet ist, wobei die Halterung geeignet ist, auf drehbare Weise mit dem dämpfenden Element verbunden zu werden.

7. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 6, wobei das dämpfende Element (6) ein kolbenförmiges dämpfendes Gas- und/oder Ölfederelement (6) ist.

8. Ofen (1) nach Anspruch 2, wobei die Halterung (11) über eine Verbindung, insbesondere eine Klebeverbindung, an der Tür (4), insbesondere einer mechanischen Türstruktur (12) oder einer Glasscheibe der Tür (4) angebracht ist.

9. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 8, wobei das dämpfende Element (6) nahe dem Türscharnier (13), das die Tür (4) mit dem Hauptkörper (2) verbindet, positioniert ist.

10. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 9, wobei das dämpfende Element (6) zwischen der Tür (4) und einer Innenfläche einer Seitenwand des Hauptrahmens (2) eine Brücke bildet.

11. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 10, wobei das dämpfende Element (6) Teil einer Dämpfereinheit bildet, die ferner eine elektronische Komponente, insbesondere einen Schalter, umfasst, die dazu ausgelegt ist, einen voreingestellten

Vorgang in Abhängigkeit von wenigstens einem Öffnungszustand der Tür (4) durchzuführen oder auszulösen.

12. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 11, wobei das dämpfende Element (6) an einer Unterseite (7) der Tür (4) angeordnet ist.

13. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 12, wobei die Frontverkleidung eine untere Frontverkleidung des Hauptkörpers (2) ist.

14. Ofen (1) nach wenigstens einem der Ansprüche 1 bis 13, wobei die Halterung (11) ein Winkelprofil mit zwei abgewinkelten Abzweigungen (14, 15), insbesondere Abzweigungen von 90 Grad, aufweist, wobei eine erste Abzweigung (14) eine Rechteckform aufweist und eine zweite Abzweigung (15) auf einer Längsseite derselben vorgesehen ist, wobei die zweite Abzweigung (15) vorzugsweise eine Form von Dreiecksart aufweist und wobei die Halterung (11) ferner vorzugsweise auf eine solche Weise an dem Ofen (1) angebracht ist, dass die zweite Abzweigung (15) über der ersten Abzweigung (14) liegt.

Revendications

1. Four de cuisson (1) comprenant un corps principal (2) avec une cavité (3) et une porte (4) à ouverture latérale configurée pour fermer la cavité (3) et articulée autour un axe vertical au moyen d'au moins une charnière (13) de porte sur le corps principal (2), dans lequel le four de cuisson comprend en outre un élément d'amortissement (6) qui est monté sur la porte (4) et sur le corps principal (2) et s'étend entre la porte (4) et le corps principal (2) et les raccorde l'un à l'autre,
caractérisé en ce que l'élément d'amortissement est apte à amortir un mouvement d'ouverture de côté de la porte (4) et/ou amortir un mouvement de fermeture de côté de la porte (4), dans lequel l'élément d'amortissement (6) passe par une ouverture pratiquée dans une doublure frontale du corps principal (2).

2. Four de cuisson (1) selon la revendication 1, dans lequel l'élément d'amortissement (6) comprend un support (11) qui est apte à raccorder l'élément d'amortissement (6) à la porte (4), dans lequel le support (11) peut en particulier, être apte à raccorder à rotation l'élément d'amortissement (6) à la porte (4).

3. Four de cuisson (1) selon la revendication 2, dans lequel la porte (4) comprend un panneau extérieur (20) de porte qui comporte un côté extérieur (21) qui est tourné vers l'extérieur du four de cuisson (1), et l'élément d'amortissement (6) est raccordé via le support (11) au côté intérieur (22) du panneau extérieur (29) de porte, qui est tourné vers la cavité (3).

4. Four de cuisson (1) selon la revendication 3, dans lequel le support (11) est fixé directement à la surface intérieure du côté intérieur (22) du panneau extérieur (20) de porte.

5. Four de cuisson (1) selon les revendications 1 et 3, dans lequel la porte (4) comprend une structure (12) de support de porte qui est raccordée au côté intérieur (22) du panneau extérieur (20) de porte, dans lequel le support est de préférence constitué comme faisant partie intégrante de la structure de support de porte et est apte à être raccordé à l'élément d'amortissement.

6. Four de cuisson selon la revendication 5, dans lequel le support est constitué comme faisant partie intégrante de la structure de support de porte, dans lequel le support est apte à être raccordé rotatif à l'élément d'amortissement.

7. Four de cuisson (1) selon au moins une des revendications 1 à 6, dans lequel l'élément d'amortissement (6) est un élément d'amortissement (6) du type à piston à gaz et/ou à huile et ressort.

8. Four de cuisson (1) selon la revendication 2, dans lequel le support (11) est fixé à la porte (4), en particulier une structure mécanique (12) de la porte ou une vitre de la porte (4) à l'aide d'un raccordement liaisonné, en particulier par collage.

9. Four de cuisson (1) selon au moins une des revendications 1 à 8, dans lequel l'élément d'amortissement (6) est placé près de la charnière (13) de porte raccordant la porte (4) au corps principal (2).

10. Four de cuisson (1) selon au moins une des revendications 1 à 9, dans lequel l'élément d'amortissement (6) fait le pont entre la porte (4) et la surface intérieure d'une paroi latérale du châssis principal (2).

11. Four de cuisson (1) selon au moins une des revendications 1 à 10, dans lequel l'élément d'amortissement (6) fait partie d'une unité d'amortisseur qui comprend en outre un composant électronique, en particulier un commutateur, configuré pour exécuter ou déclencher un processus préétabli dépendant d'au moins un état d'ouverture de la porte (4).

12. Four de cuisson (1) selon au moins une des revendications 1 à 11, dans lequel l'élément d'amortissement (6) est disposé au niveau du côté inférieur (7) de la porte (4).

13. Four de cuisson (1) selon au moins une des revendications 1 à 12, dans lequel la doublure frontale est une doublure frontale inférieure du corps principal (2).

14. Four de cuisson (1) selon au moins une des revendications 1 à 13, dans lequel le support (11) a un profil en angle avec deux branches (14, 15) formant un angle, en particulier des branches (14, 15) à 90 degrés, une première branche (14) a une forme rectangulaire et la seconde branche (15) est disposée le long de celle-ci,
dans lequel la seconde branche (15) présente de préférence une forme de type triangulaire, et dans lequel de préférence encore le support (11) est fixé au four de cuisson (1) de telle sorte que la seconde branche (15) est située au-dessus de la première branche (14).

FIG 1

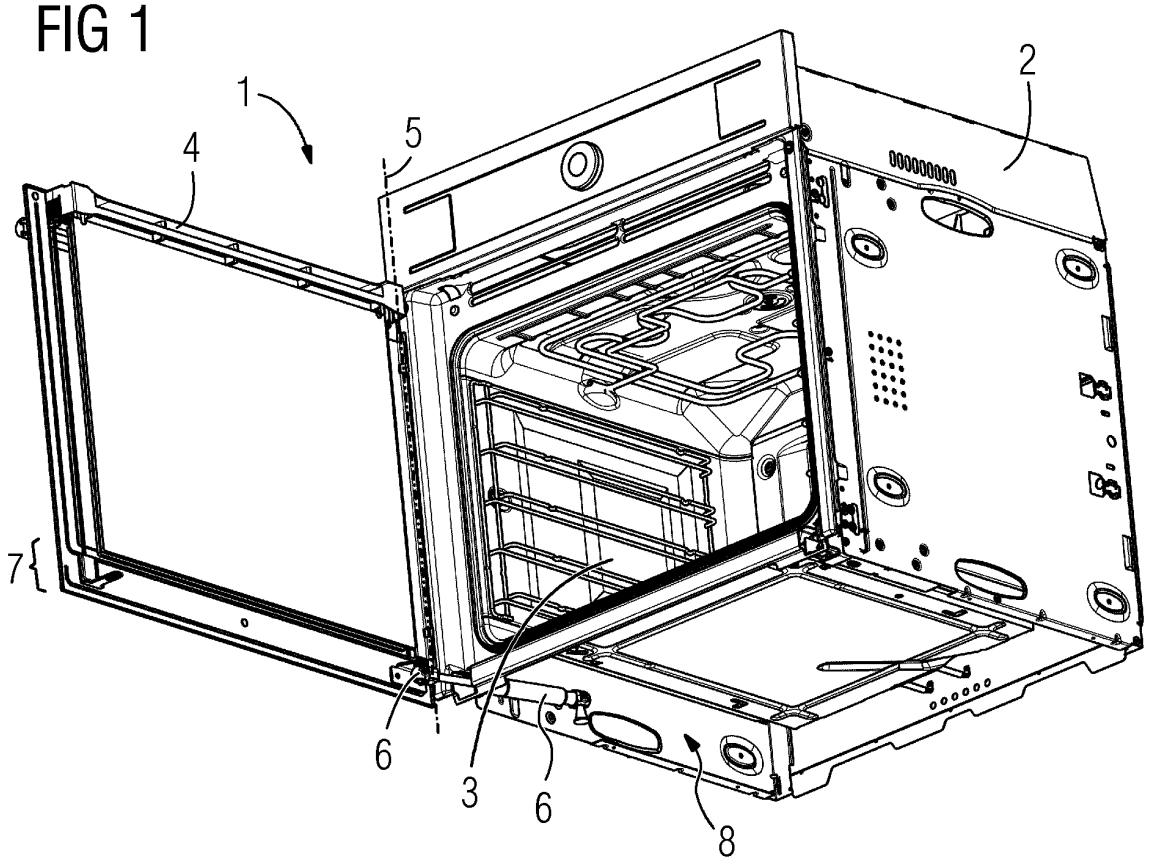


FIG 2

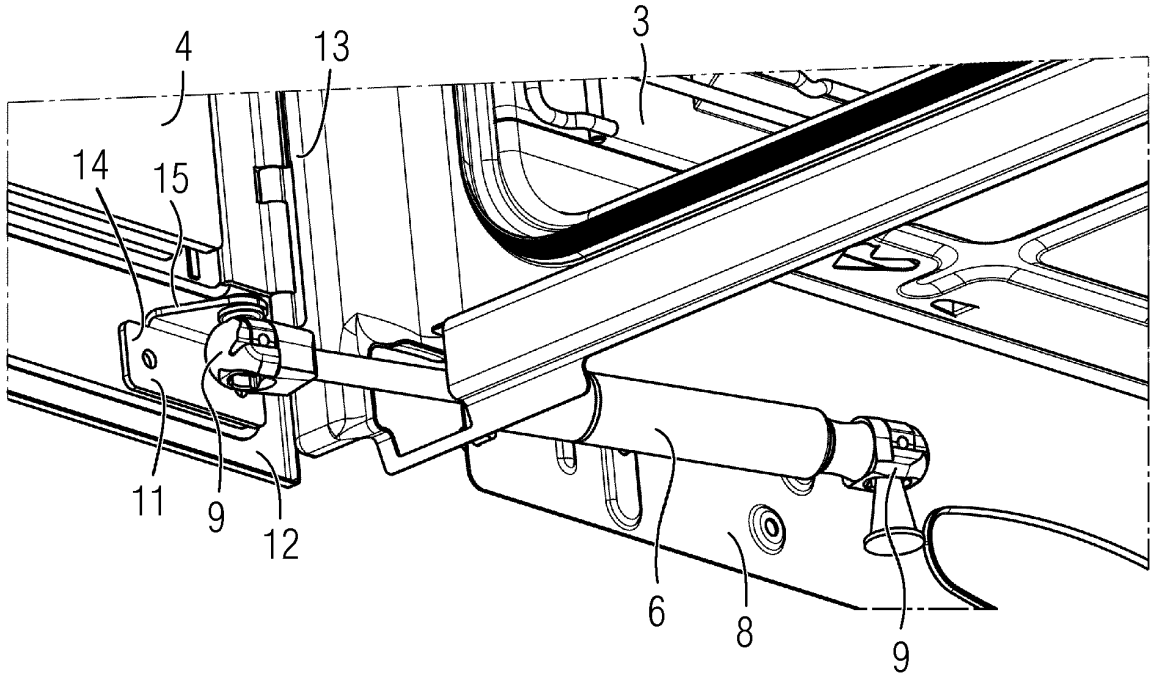


FIG 3

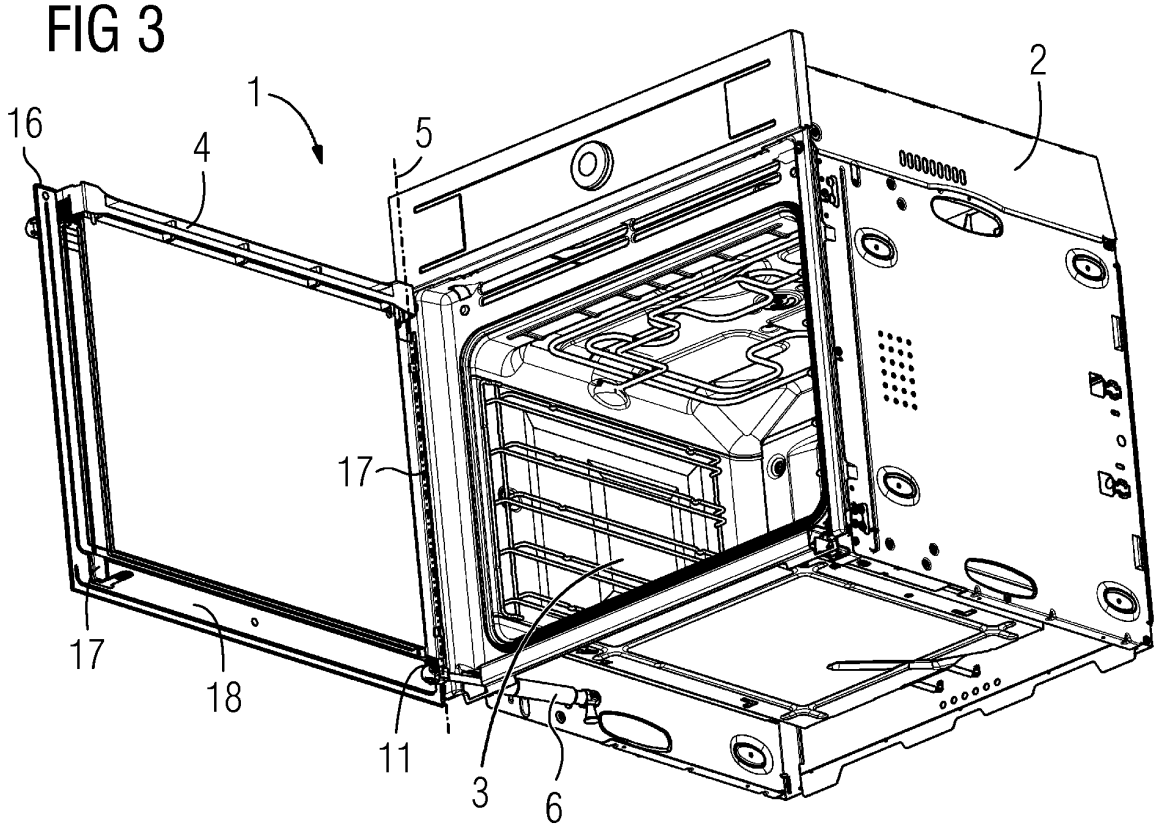
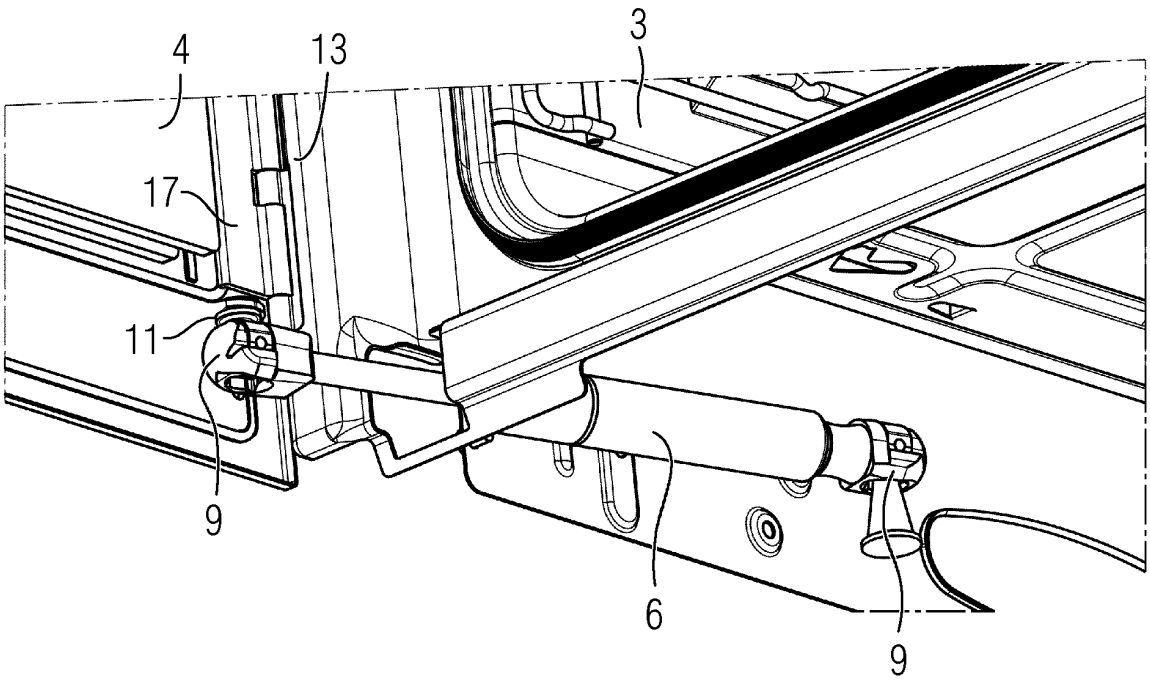


FIG 4



REFERENCES CITED IN THE DESCRIPTION

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