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(54) **Cooking oven**

(57) An oven for cooking food comprises a casing (2) which forms a cooking compartment (3) where the food is cooked. The casing (2) in turn comprises a lower base (23); a ceiling (24); a rear wall (251); a door (21) which, in the closed configuration, is opposite the rear wall (251); two lateral walls (25) positioned opposite each other, said two lateral walls (25) being interposed between both the rear wall (251) and the door (21) in the closed configuration, and between the lower base (23) and the ceiling (24); The oven further comprises: i) a gas burner (4) located outside the cooking compartment (3) and in thermal contact with the cooking compartment (3), the lower

base (23) being interposed between the burner (4) and the cooking compartment (3) and preventing the combustion fumes generated by the gas burner (4) from passing inside the cooking compartment (3); ii) means (5) for expelling the combustion fumes generated by the burner (4), the expulsion means (5) comprising a channel (50) which conveys the combustion fumes generated by the gas burner, picking them up outside the cooking compartment (3), the channel (50) comprising at least one predetermined portion (51) which is in thermal contact with the cooking compartment (3) and extends at least along part of both of the lateral walls (25) thus improving the evenness of heating in the cooking compartment (3).

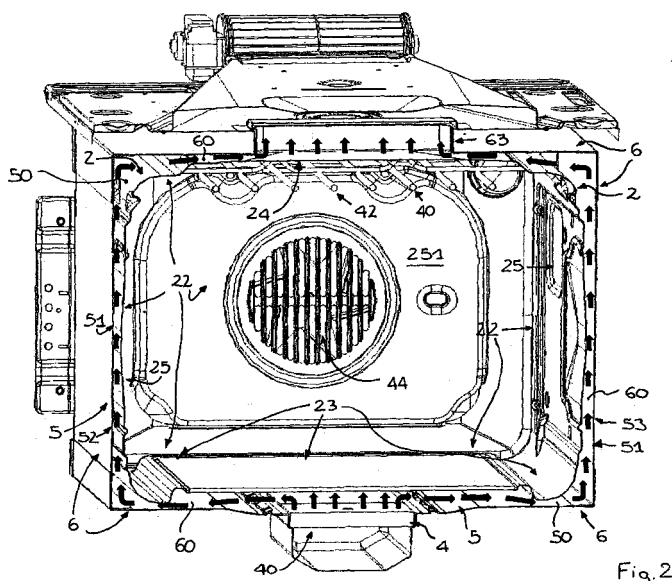


Fig. 2

Description

[0001] This invention relates to a cooking oven. Cooking ovens are normally used in the home and in catering establishments.

[0002] Known in the prior art are gas cooking ovens comprising a compartment in which the food to be cooked is placed.

[0003] In traditional gas ovens, the gas burner is located under the cooking compartment. More specifically, between the burner and the cooking compartment there is a plate with a plurality of slots in it. From the burner, heated air and combustion products flow by convection through the slots and into the cooking compartment.

[0004] The vapours produced by cooking food are channelled through a suitable duct that connects the cooking compartment with the outside environment.

[0005] These ovens, however, have drawbacks due mainly to the non-uniformity of the temperature from one part of the cooking compartment to another. In particular, the temperature is lower in the peripheral parts of the cooking compartment.

[0006] In this context, the technical purpose which forms the basis of this invention is to propose a cooking oven that overcomes the above mentioned drawbacks of the prior art.

[0007] In particular, this invention has for an aim to provide a cooking oven capable of improving cooking evenness.

[0008] Another aim of the invention is to provide a cooking oven capable of improving cooking quality.

[0009] The technical purpose and aims specified are achieved by a cooking oven comprising the technical characteristics described in one or more of the accompanying claims.

[0010] Further characteristics and advantages of the invention are more apparent in the non-limiting description which follows of a preferred non-exclusive embodiment of a cooking oven illustrated in the accompanying drawings, in which:

- Figure 1 is a perspective view of the cooking oven according to this invention;
- Figure 2 is a perspective view of the oven in a section through the plane 1-1 of Figure 1 and with some parts cut away in order to better illustrate others;
- Figure 3 is an enlarged view of a detail from Figure 2;
- Figure 4 is a perspective view of the oven in a section through the plane 2-2 of Figure 1 and with some parts cut away in order to better illustrate others;
- Figure 5 is a detail of a cross section through the plane 2-2 of Figure 1, with some parts cut away for clarity.

[0011] The reference numeral 1 in the accompanying drawings denotes an oven for cooking food.

[0012] The oven 1 comprises a casing 2 which forms a cooking compartment 3 designed to accommodate the

food to be cooked. Advantageously, the casing 2 comprises a lower base 23 and a ceiling 24 opposite the lower base 23. In the jargon of the trade, the term "ceiling" is used to mean the upper portion of the casing 2 that delimits the cooking compartment 3.

[0013] The lower base 23 is located under the ceiling 24 and the cooking compartment 3. Similarly, the ceiling 24 is located above the lower base 23 and the cooking compartment 3.

[0014] In this specification, the expressions "upper", "lower", "above" and "below" are always used with reference to the physical vertical (determined for example by a plumb line) and with reference to a preferred orientation in space (the one illustrated in the drawings) of the cooking oven 1.

[0015] The casing 2 also comprises:

- a rear wall 251 extending between the lower base 23 and the ceiling 24;
- a door 21 able to move between an open configuration and a closed configuration, the door 21 in the closed configuration being opposite the rear wall 251 (in Figure 1, the door 21 is in the open configuration).

[0016] In the closed configuration the door 21 extends at least partly between the ceiling 24 and the lower base 23. The door 21 provides access for the user to put food inside or take food out of the cooking compartment 3. Normally, the door 21 is hinged to the remaining parts of the cooking oven 1.

[0017] The casing 2 also comprises two lateral walls 25 located opposite each other and interposed between the rear wall 251 and the door 21 in the closed configuration. The two lateral walls 25 also extend between the ceiling 24 and the lower base 23. More specifically, the two lateral walls 25 connect the lower base 23 and the ceiling 24.

[0018] The lower base 23, the ceiling 24, the rear wall 251, the two lateral walls 25 and the door 21 in the closed configuration delimit the cooking compartment 3 designed to accommodate the food to be cooked.

[0019] Conveniently, the casing 2 comprises the door 21 and five walls 22 that delimit the cooking compartment 3, the casing 2 approximating a parallelepiped whose six faces correspond to the five walls 22 and the door 21 in the closed configuration.

[0020] The five walls 22 thus coincide with the lower base 23, the ceiling 24, the rear wall 251 and the two lateral walls 25.

[0021] Inside the casing 2 there are cooking racks, usually pull-out (not illustrated), on which the food to be cooked can be placed.

[0022] The cooking oven 1 comprises heat generating means 40 comprising a gas burner 4 outside the cooking compartment 3 and in thermal contact with the cooking compartment 3. Advantageously, the lower base 23 is interposed between the burner 4 and the cooking compartment 3 and prevents the combustion fumes produced

by the gas burner 3 from flowing into the cooking compartment 4. That means the combustion fumes produced by the gas burner 4 are stopped outside the cooking compartment 3 and used to improve the evenness of the temperature in the cooking compartment 3 (as described in more detail below).

[0023] As illustrated by way of a non-limiting example in the accompanying drawings, the burner 4 is located under the cooking compartment 3. More specifically, the burner 4 is located at (in particular below) the lower base 23 of the casing 2.

[0024] The cooking oven 1 further comprises means 5 for expelling the combustion fumes produced by the burner 4. The expulsion means 5 convey the combustion fumes outside the oven 1. The expulsion means 5 comprise a channel 50 which conveys the combustion fumes generated by the gas burner 4, picking them up outside the cooking compartment 3. The channel 50 comprises at least one predetermined portion 51 which is in thermal contact with the cooking compartment 3 and extends at least along part of both of the lateral walls 25 of the casing 2. Heating evenness inside the cooking compartment 3 is thus improved. Heating the two lateral walls 25 of the casing 2 is very important because it improves heating of two opposite peripheral zones of the cooking compartment 3 and thus spreads heat more evenly inside the cooking compartment 3. That is because the combustion fumes produced by the burner 4 are hot and, as they flow along the channel 50 (or at least along the predetermined portion 51 of the channel 50), transfer heat to the cooking compartment 3. Advantageously, the channel 50 does not extend along the rear wall 251, thus making it possible to reduce the dimensions of the oven 1 in depth. If the oven 1 is of the recessed type, for example, reducing its depth allows it to be adapted to a larger number of modular kitchen designs.

[0025] Further, at the rear wall 251 there might also be other components (heating elements, air movement means) whose presence would condition the path followed by the channel 50, thus constituting a further design constraint.

[0026] Advantageously, the channel 50 (in particular the predetermined portion 51 of the channel 50) is completely outside the cooking compartment 3.

[0027] Conveniently, the channel 50 (in particular the predetermined portion 51 of the channel 50) surrounds the cooking compartment 3. More specifically, there is at least one plane intersecting the two lateral walls 25 where the predetermined portion 51 of the channel 50 surrounds the cooking compartment 3.

[0028] As shown by way of an example in Figure 2, the channel 50, at the lower base 23 and outside the cooking compartment 3, divides into two branches 52, 53, each extending along a respective lateral wall 25. The two branches 52, 53 reconnect at the ceiling 24 of the casing 2 (still outside the cooking compartment 3). This optimizes heat exchange between the combustion fumes produced by the gas burner 4 and the cooking

compartment 3. The channel 50 (in particular, the predetermined portion 51 of the channel 50) touches at least the lower base 23 and/or the ceiling 24, and/or the two lateral walls 25 of the casing 2.

[0029] As illustrated by way of a non-limiting example in the accompanying drawings, the channel 50 does not lead into the cooking compartment 3. This allows better cooking quality because it means the food is not contaminated by the combustion fumes produced by the gas burner 4.

[0030] In an alternative embodiment not illustrated, the channel 50 might lead into the cooking compartment 3, for example at the ceiling 24. Even in an embodiment of that kind, the channel 50 would at least partly touch the casing 2, providing additional heat for the cooking compartment 3. The cooking vapours produced by the cooking food and the combustion fumes generated by the gas burner 4 might then be expelled from the inside of the cooking compartment 3 by a single conduit.

[0031] Generally speaking, the channel 50 (in particular the predetermined portion 51 of the channel 50) extends immediately downstream of the gas burner 4 relative to the direction of outflow of the combustion fumes produced by the gas burner 4.

[0032] Preferably, the predetermined portion 51 of the channel 50 extends along at least part of the two lateral walls 25 and/or along the ceiling 24 and/or along the lower base 23.

[0033] The channel 50 is almost completely in contact at least with the two lateral walls 25 and/or the ceiling 24 of the casing 2 and/or the lower base 23 of the casing 2.

[0034] The predetermined portion 51 of the channel 50 is almost completely in contact at least with the two lateral walls 25 and/or the ceiling 24 of the casing 2 and/or the lower base 23 of the casing 2.

[0035] The oven 1 comprises an outer case 6 which in conjunction with the casing 2 forms a hollow space 60 between the casing 2 and the outer case 6.

[0036] Although it touches the casing 2, the hollow space 60 is sealed, in that there is no direct fluid communication between the hollow space 60 and the adjacent cooking compartment 3. During operation, the channel 50 and the cooking compartment 3 are thus fluid-dynamically isolated from each other.

[0037] In particular, at the front of the oven 1, the hollow space 60 is delimited by a front frame which abuts the door 21 when the latter is in the closed configuration. In the same way, at the rear wall 251, there is a second frame that delimits the hollow space preventing the combustion fumes produced by the burner 4 to come into contact with the rear wall 251.

[0038] Advantageously, the hollow space 60 surrounds the cooking compartment 3. The hollow space 60 forms part of the predetermined portion 51 of the channel 50 and is designed to allow the passage of the combustion fumes produced by the gas burner 4.

[0039] Advantageously, the outer case 6 at least partially houses the casing 2. Preferably, the outer case 6

encompasses the casing 2.

[0040] The outer case 6 at least partly encompasses the two lateral walls 25 of the casing 2. Preferably the outer case 6 also at least partly encompasses the ceiling 24 and/or the lower base 23 of the casing 2.

[0041] Preferably the outer case 6 almost totally partly encompasses the ceiling 24 and/or the lower base 23 and/or the two lateral walls 25 of the casing 2.

[0042] Advantageously, the outer case 6 comprises a window 61 where the gas burner 4 is housed. Advantageously, the window 6 is formed under the casing 2. Advantageously, the window 6 faces the lower base 23 of the casing 2.

[0043] Advantageously, there is a thermally insulating lining between the outer case 6 and the outside of the oven 1.

[0044] The burner 4 is preferably of the flame retention type such as, for example, a ceramic or metal fibre burner. Advantageously, the oven 1 comprises means for generating a spark to ignite the gas flowing out of the burner 4. The spark generating means comprise a spark plug, for example. In another embodiment, there might be a known ionization ignition system instead of the spark plug.

[0045] Advantageously, the oven 1 comprises a flame detector located at the burner 4. The operation of the flame detector is linked to the detection of a temperature higher or lower than a preset limit temperature. For example, the flame detector might be a thermocouple. This is important for safety reasons. In effect, the oven 1 may comprise a system for stopping the flow of gas through the burner 4 if the flame is not ignited or if the temperature detected by the flame detector is lower than the preset limit temperature (a situation which might occur if the flame goes out accidentally). The stop system comprises a shutoff valve which interrupts the gas flow along the feed pipe that conveys the gas to the burner 4, the valve being operatively connected to the thermocouple.

[0046] Advantageously, the oven 1 comprises means 10 for supplying secondary air to the burner 4. The secondary air allows the combustion of the gas-air mixture flowing out of the burner 4 to be completed. The secondary air is drawn in from outside the oven 1 by the secondary air supply means 10. The secondary air supply means 10 comprise at least one outlet section 11 formed at the burner 4 and advantageously directed at the burner 4.

[0047] Advantageously, the air supply means 10 comprise a plurality of outlet sections 11 formed at the burner 4 and directed at the burner 4.

[0048] Advantageously, the outlet sections 11 at least partly surround the burner 4.

[0049] Advantageously, the outlet sections 11 of the secondary air supply means 10 completely surround the burner 4.

[0050] More specifically, the outer case 6 comprises a border 62 which at least partly surrounds the window 61 and which houses the burner 4. An opening 12 formed

along the border 62 is associated with at least one outlet section 11 directed at the burner 4 and forms part of the secondary air supply means 10. A deflector 13 formed downstream of the opening 12 (relative to the flow of secondary air) diverts the secondary air flowing through the opening 12, an outlet 110 of the deflector 13 forming part of the outlet section 11 of the secondary air supply means 10. Advantageously, each outlet section 11 directed at the burner 4 has associated with it a respective opening 12 which is in turn associated with a respective deflector 13 that diverts the secondary air flowing towards the burner 4.

[0051] The outer case 6 comprises a duct 63 for extracting the combustion fumes from the hollow space 60. Advantageously, the duct 63 is located at (advantageously above) the ceiling 24 of the casing 2. This solution is particularly convenient because the hot combustion fumes tend to rise spontaneously (see arrows along the channel 50, shown in Figure 2). The predetermined portion 51 of the channel 50 comprises or coincides with the part of the channel 50 that extends between the gas burner 4 and the duct 63. More specifically, the predetermined portion 51 of the channel 50 comprises or coincides with the part of the channel 50 that extends at the back of the casing 2.

[0052] Advantageously, the lower base 23 comprises a shaped element 7 of predetermined width providing a thermal flywheel effect for the cooking compartment 3. Advantageously, the shaped element 7 is more than 5 millimetres thick so as to obtain a good thermal flywheel effect. In effect, the burner 4 is located at the lower base 23. The shaped element 7 might be a plate 70 (for example, the shaped element 7 or plate 70 might be made of steel, enamelled cast iron or cooking stone). Conveniently, the food or food containers might be placed directly on the plate 70.

[0053] The lower base 23 may comprise a shaped element 7 which is at least partly transparent, allowing the gas burner 4 to cook by irradiation the food placed in the cooking compartment 3. The shaped element 7 is located at the burner 4. More specifically, the shaped element 7 faces the burner 4. The shaped element 7 might comprise or coincide with a plate 70 (for example, the plate 70 might be made of glass-ceramic material). Advantageously, the shaped element 7 that provides the thermal flywheel effect may comprise or coincide with the shaped element 7 that is at least partly transparent. Advantageously, the plate 70 forming part of the shaped element 7 that provides the thermal flywheel effect comprises or coincides with the plate 70 forming part of the shaped element 7 that is at least partly transparent.

[0054] In the rest of this specification below, the properties attributed to the shaped element 7 are understood to apply both to the shaped element 7 that is at least partly transparent and to the shaped element 7 that has the thermal flywheel effect (considering that the two may coincide).

[0055] The shaped element 7 occupies at least half of

the surface of the lower base 23 of the casing 2.

[0056] The channel 50 (in particular the predetermined portion 51 of the channel 50) is in thermal contact with the shaped element 7. In particular, the combustion fumes come into direct contact with the surface of the shaped element 7 outside the cooking compartment 3. More specifically, the shaped element 7 is located at the gas burner 4.

[0057] The heat generating means 40 may comprise heating elements 41 built into the cooking compartment 3. In the preferred embodiment, the heating elements 41 may be of the electrical type. In particular, they comprise an electrical resistor 42 located at the ceiling 24 and/or a circular resistor 43 located at the rear wall 251. Advantageously, the circular resistor 43 surrounds the delivery section of a fan 44 that rotates about a horizontal axis and is located at the rear wall 251. The essential purpose of the fan 44 is to improve air movement inside the cooking compartment 3, improving thermal uniformity and speeding up the cooking process.

[0058] Forced movement of the air inside the cooking compartment 3 might, however, be unnecessary thanks to heating of the two lateral walls 25 by the channel 50. The presence of the fan 44 is nevertheless advantageous to optimize temperature evenness in the cooking compartment 3, especially in the zone adjacent to the door 21 (for obvious reasons, the door 21 would not be the most convenient part for the passage of the channel 50). Furthermore, the fan 44 also makes the temperature more uniform throughout the cooking compartment 3 when the gas burner 4 is not being used.

[0059] Replacing the gas burner 4 with an electrical element capable of generating the same amount of heat would have the drawbacks due to the fact that the electrical power available in private homes is normally limited (usually to 3 kW). The gas supply, on the other hand, is independent of household electricity use and thus allows more power to be made available for cooking.

[0060] The oven 1 also comprises an electronic control system which allows the heat generating means 40 to be switched on and off (and, if necessary, adjusted) in order to maintain preset operating conditions. The preset operating conditions might consist in keeping a predetermined temperature in the cooking compartment 3 or creating in the cooking compartment 3 a predetermined temperature profile over time. In addition to the gas burner 4, the control system might also control another component of the heat generating means 40 (for example, the above mentioned circular resistor 43 or first resistor 42). The preset operating conditions might be set manually by the user through an interface forming part of the oven 1. For example, the user might select the cooking temperature required in the cooking compartment 3 of the oven 1. In one particular embodiment, the user can select the type of food to be cooked from a predetermined list. Each food item in the list is associated with specific instructions controlling the switching on and off or adjustment of the heat generating means 40.

[0061] The oven 1 further comprises a section 92 for outfeed to the outside environment of the combustion fumes produced by the gas burner 4 and the vapours generated inside the cooking compartment 3 during cooking of the food.

[0062] The oven 1 also comprises a duct 8 for extracting from the cooking compartment 3 the vapours generated during cooking of the food.

[0063] The channel 50 and the extraction duct 8 are in fluid communication with the outfeed section 92, allowing the discharge of the cooking vapours and combustion fumes.

[0064] Advantageously, the oven 1 comprises a cooling duct 90 through which air is drawn in from the environment outside the oven 1 in order to cool the components inside the oven 1 (in particular the electronic components of the oven 1). The duct 90 passes near the electronic components and thus dissipates the heat generated by the electronic components so as to keep them below the temperature threshold below which they can operate correctly.

[0065] The oven 1 also comprises air movement means 9 operatively associated with the cooling duct 90. The air movement means 9 advantageously comprise a tangential fan 91. In particular, the air movement means 9 are located along the cooling duct 90. Advantageously, the duct 8 for extracting the cooking vapours from the cooking compartment 3 puts the cooking compartment 3 in fluid communication with the cooling duct 90.

[0066] Conveniently, the channel 50 of the combustion fume extraction means 5 puts the burner 4 in fluid communication with the cooling duct 90.

[0067] The section 92 for outfeed to the outside environment of the vapours produced during cooking and of the combustion fumes produced by the gas burner coincides with the section 92 for outfeed to the outside environment of the cooling duct 90. The common outfeed section 92 is located above the door 21 when the latter is in the closed configuration.

[0068] The cooking vapour extraction duct 8 leads into the cooling duct 90 upstream of the mechanical movement means 9 relative to the outflow direction imparted by the mechanical movement means 9 to the air in the cooling duct 90. The channel 50 leads into the cooling duct 90 downstream of the mechanical movement means 9 relative to the outflow direction imparted by the mechanical movement means 9 to the air in the cooling duct 90 (see Figure 5).

[0069] The mechanical movement means 9 create a negative pressure in the cooking compartment 3 causing the cooking vapours to be extracted through the duct 8. Advantageously, the mechanical movement means 9 are located along the duct 8 and are crossed by the cooking vapours extracted from the cooking compartment 3. Advantageously, the passage of the gaseous fluid moved by the mechanical movement means 9 at the connection zone between the cooling duct 90 and the channel 50 may create a negative pressure (for example by the Ven-

turi effect) in the channel 50, this negative pressure attracting the combustion fumes from the channel 50.

[0070] Generally speaking, during use, the operation of a preferred embodiment of the oven 1 (for example, the one illustrated) is described below.

[0071] The food is cooked both by the contribution of the heating elements 41 inside the cooking compartment 3 and by the contribution linked to the action of the burner 4 outside the cooking compartment.

[0072] This invention is connected mainly with the contribution provided by the gas burner 4.

[0073] Conveniently, the gas burner 4 is located under the casing 2 and thus the combustion fumes tend to rise and come into contact with the casing 2. In particular, the hot combustion fumes are channelled through the hollow space 60 which is outside, and in thermal contact with, the casing 2. Advantageously, the hollow space 60 is in direct contact with the casing 2 but is sealed in that it is not in direct fluid communication with the cooking fumes in the cooking compartment 3. The cooking fumes are then extracted from the hollow space 60 through a suitable duct 63 located above the casing 2.

[0074] This invention has important advantages. First of all, it improves heat distribution in the cooking compartment 3.

[0075] Other advantages are due to the optimization of the energy provided by the gas burner 4 (for example, through the shaped element 7 that may provide a thermal flywheel effect and allow the food to be cooked by irradiation).

[0076] Another important advantage is due to the increase in the available cooking power, said increase being independent of normal household electricity use.

[0077] Yet another advantage is that the casing 2 can serve as a heat sink for dissipating the heat generated by the combustion fumes produced by the burner 4 and flowing through the channel 50. In effect, the combustion fumes heat the cooking compartment 3 by transferring heat and it is not therefore necessary to install a special heat sink to dissipate the heat of the combustion fumes.

[0078] It shall be understood that the invention described may be modified and adapted in several ways without departing from the scope of the inventive concept. Moreover, all the details of the invention may be substituted by other technically equivalent elements. In practice, all the materials used, as well as the dimensions, may be changed to meet specific needs.

Claims

1. An oven for cooking food comprising a casing (2) which in turn comprises:

- a lower base (23);
- a ceiling (24) opposite the lower base (23);
- a rear wall (251) extending between the lower base (23) and the ceiling (24);

- a door (21) able to move between an open configuration and a closed configuration, the door (21) in the closed configuration being opposite the rear wall (251);

- two lateral walls (25) positioned opposite each other, said two lateral walls (25) being interposed between both the rear wall (251) and the door (21) in the closed configuration, and between the lower base (23) and the ceiling (24);

the lower base (23), the ceiling (24), the rear wall (251), the two lateral walls (25), the door (21) in the closed configuration delimiting a cooking compartment (3) designed to accommodate the food to be cooked;

the oven being **characterised in that** it comprises:

i) a gas burner (4) located outside the cooking compartment (3) and in thermal contact with the cooking compartment (3), the lower base (23) being interposed between the burner (4) and the cooking compartment (3) and preventing the combustion fumes generated by the gas burner (4) from passing inside the cooking compartment (3);

ii) means (5) for expelling the combustion fumes generated by the burner (4), the expulsion means (5) comprising a channel (50) which conveys the combustion fumes generated by the gas burner (4), picking them up outside the cooking compartment (3), the channel (50) comprising at least one predetermined portion (51) which is in thermal contact with the cooking compartment (3) and extends at least along part of both of the lateral walls (25) thus improving the evenness of cooking compartment (3) heating.

2. The oven according to claim 1, **characterised in that** the channel (50) is completely outside the cooking compartment (3).

3. The oven according to claim 1 or 2, **characterised in that** the channel (50) surrounds the cooking compartment (3).

4. The oven according to any of the foregoing claims, **characterised in that** the channel (50) extends immediately downstream of the gas burner (4) relative to the direction of outflow of the combustion fumes generated by the gas burner (4).

5. The oven according to any of the foregoing claims, **characterised in that** the channel (50) does not lead into the cooking compartment (3).

6. The oven according to any of the foregoing claims, **characterised in that** the predetermined portion (51) of the channel (50) is almost completely in con-

tact with at least the lateral walls (25) and/or the ceiling (24) and/or the lower base (23) of the casing (2).

7. The oven according to any of the foregoing claims,
characterised in that it comprises an outer case (6) which in conjunction with the casing (2) forms a hollow space (60) between the casing (2) and the outer case (6), the hollow space (60) being part of the predetermined portion (51) of the channel (50) and being designed to allow the passage of the combustion fumes generated by the gas burner (4). 5 10
8. The oven according to claim 7, **characterised in that** the outer case (6) at least partly houses the casing (2). 15
9. The oven according to any of the foregoing claims, **characterised in that** the burner (4) is made at the lower base (23), said lower base (23) comprising a shaped element (7) which is at least partly transparent, allowing the gas burner (4) to cook by irradiation the food placed in the cooking compartment (3). 20
10. The oven according to any of the foregoing claims, **characterised in that** it comprises: 25
 - a duct (8) for extracting from the cooking compartment (3) the vapours generated during cooking of the food;
 - a section (92) for outfeed to the outside environment of the combustion fumes generated by the gas burner (4) and the vapours generated during cooking of the food; 30

the channel (50) and the extraction duct (8) being in fluid communication with the section (92) for outfeed into the outside environment, allowing the discharge of the vapours generated by cooking and the combustion fumes. 35 40

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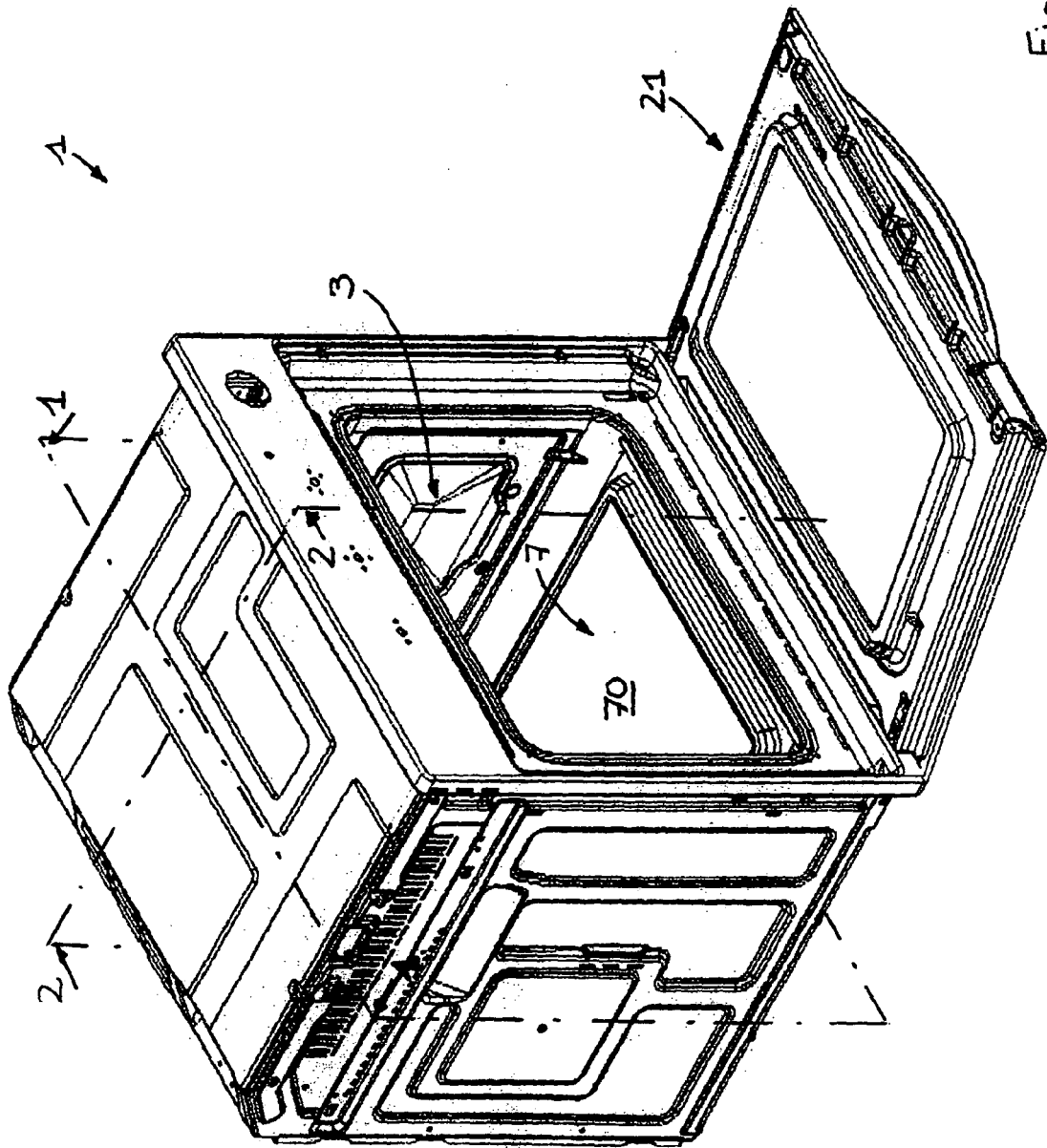


Fig. 1

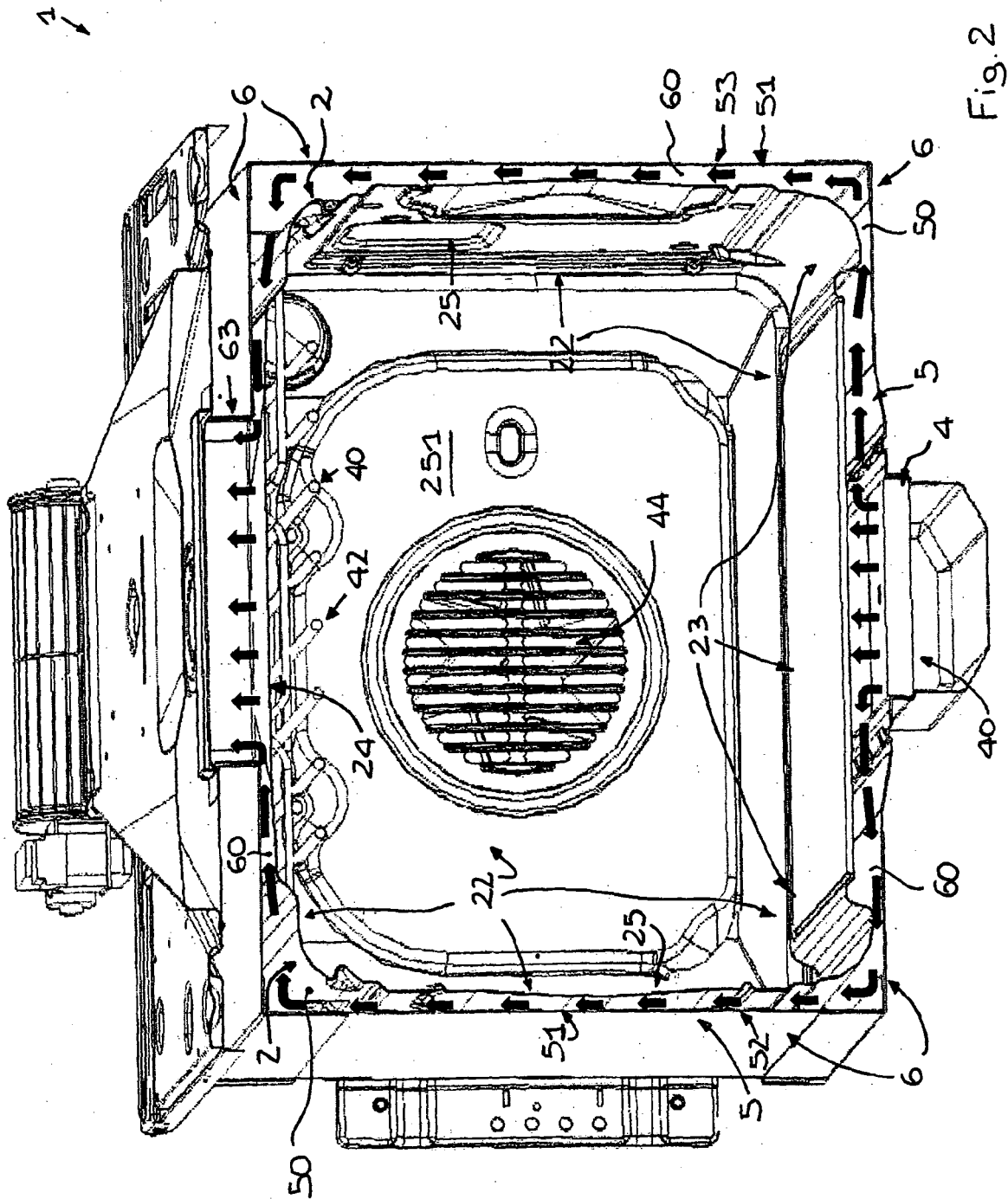


Fig. 2

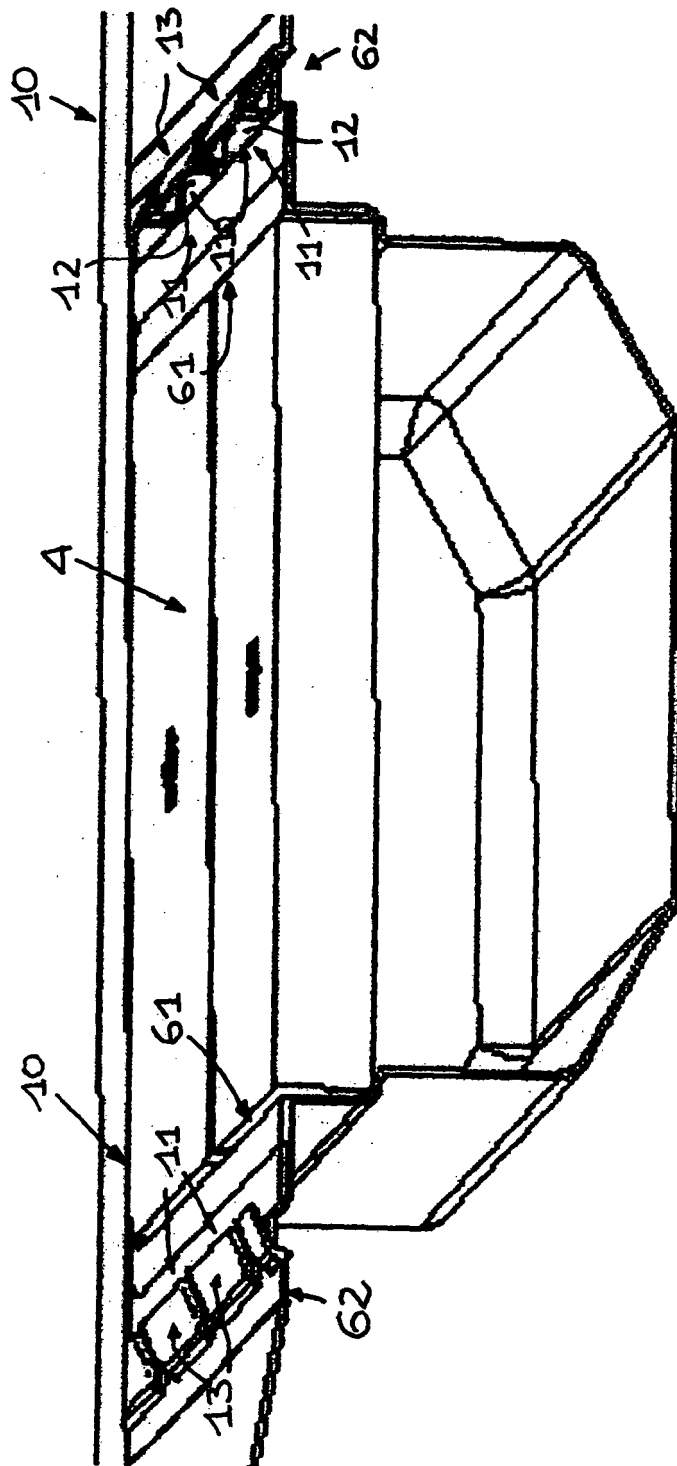
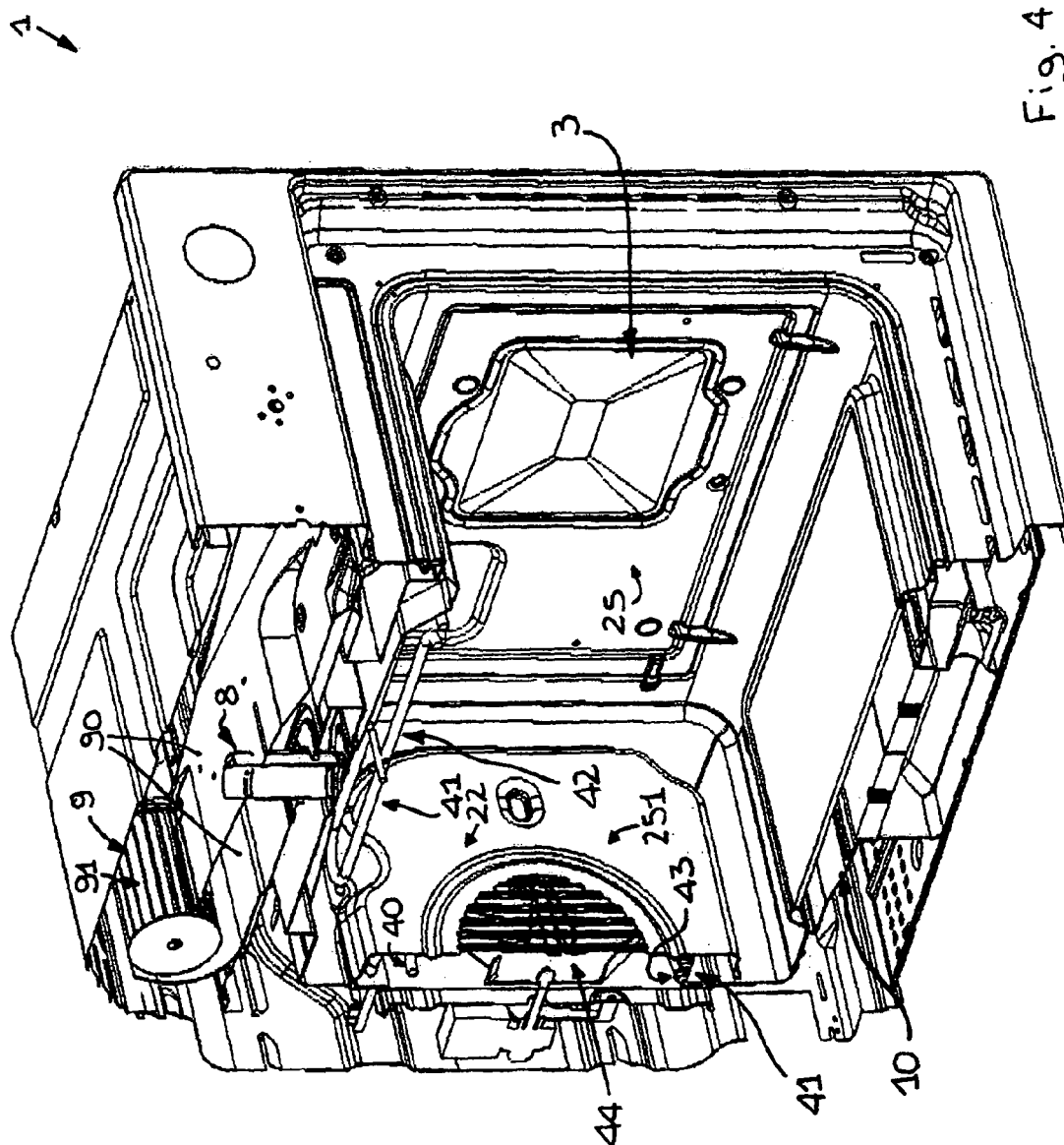


Fig. 3



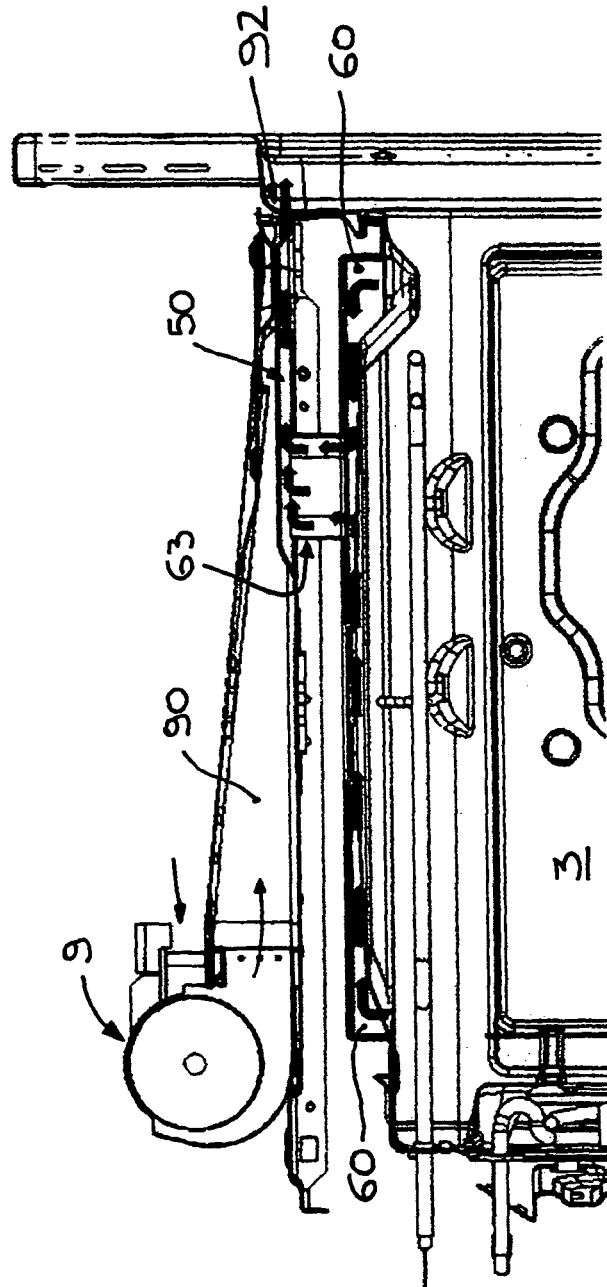


Fig. 5



EUROPEAN SEARCH REPORT

Application Number
EP 09 01 3637

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 816 303 C (HOMANN WERKE) 8 October 1951 (1951-10-08)	1-8	INV. F24C3/08 F24C15/32
Y	* claims 1,4; figures 1-2 *	9-10	
Y	US 2005/056267 A1 (LEVI DAVID E [US] ET AL) LEVI DAVID E [US] ET AL 17 March 2005 (2005-03-17) * figure 2 *	9	
Y	EP 1 312 293 A1 (CONDOR B S R L [IT]) 21 May 2003 (2003-05-21) * figure 3 *	10	
			TECHNICAL FIELDS SEARCHED (IPC)
			F24C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 18 February 2010	Examiner Adant, Vincent
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 01 3637

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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18-02-2010

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