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Fig. 3

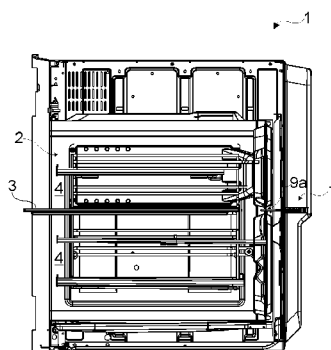
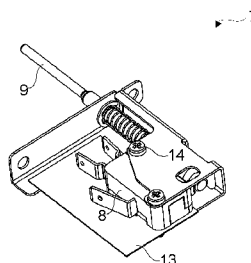


Fig. 4



(57) Abstract: The present invention relates to an oven (1) comprising: a cavity (2) for cooking food; a partition (3) for dividing the cavity (2) into two cavity parts (4) each for cooking food, wherein the partition (3) is removably disposed into the cavity (2); a heating unit (5) for selectively heating the cavity parts (4); a control unit (6) for controlling the heating unit (5), wherein the control unit (6) has a dual cooking function. The oven further comprises a switch unit (7) which is adapted to detect the presence/absence of the partition (3), and to output a signal which is indicative of the presence/absence of the partition (3), wherein the control unit (6) is further adapted to control the heating unit (5) based on the signal outputted by the switch unit (7).



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Description**OVEN WITH IMPROVED OPERABILITY**

- [0001] The present invention relates to an oven, in particular a divide-and-cook oven with the dual cooking function.
- [0002] Divide-and-cook ovens with the dual cooking function are commonly known in the art. Such an oven generally comprises: a cavity for cooking food; a partition for dividing the cavity into two cavity parts each for cooking food, wherein the partition is removably disposed into the cavity; a heating unit for selectively and separately heating the cavity parts; and a control unit for controlling the heating unit, wherein the control unit has the dual cooking function. In the divide-and-cook oven with the dual cooking function, the user can mount the partition into the cavity, and separately adjust the temperature for the selected cavity part to a desired temperature. Thereby, the user is allowed to cook only in the selected cavity part or simultaneously in both cavity parts at the desired temperatures.
- [0003] WO2016034191(A) discloses a prior art oven with the dual cooking function.
- [0004] A problem with the prior art oven is that the user may forget to mount the partition while using the dual cooking function. In such instances the desired cooking results may not be achieved, and thus the cooking performance may degrade.
- [0005] An objective of the present invention is to provide an oven which solves the aforementioned problems of the prior art in a cost-effective way and which enables an improved operability and an improved cooking performance.
- [0006] This objective has been achieved by the oven as defined in claim 1. Further achievements have been attained by the subject-matters respectively defined in the dependent claims.
- [0007] The oven of the present invention further comprises: a switch unit which is adapted to detect the presence/absence of the partition, and to output a signal which is indicative of the presence/absence of the partition, wherein the control unit is further adapted to control the heating unit based on the

signal outputted by the switch unit.

- [0008] A major advantageous effect of the present invention is that the operability of the oven has been improved by virtue of the switch unit. Thereby, the user can use the dual cooking function more reliably, and thus achieve the desired cooking results. Thereby also the risk to safety of the user can be reduced, and the user satisfaction can be increased.
- [0009] In alternative embodiments, the control unit audibly and/or visually informs the user about the presence/absence of the partition. This embodiment is particularly advantageous as user can be prevented from using the dual cooking function in the absence of the partition.
- [0010] In other alternative embodiments, the control unit inhibits the dual cooking function when the partition is absent. This embodiment is particularly advantageous as the oven can be protected against the deliberate misuse of the dual cooking function, and thus the safety of the oven can be further improved.
- [0011] In another embodiment, the switch unit comprises a micro switch which is mechanically linked to the partition through a mechanical arrangement such as a spring-loaded shaft which extends into the cavity through a hole and movably contacts the partition. This embodiment is particularly advantageous as the micro switch is cost effective and mechanically reliable.
- [0012] In an alternative embodiment, the switch unit comprises: a magnetic switch which is magnetically linked to the partition. In other alternative embodiments, the magnetic switch is provided in form of a Reed switch or a Hall Effect switch. In another alternative embodiment, the switch unit comprises: an optical switch which is optically linked to the partition. These embodiments are particularly advantageous as due to the absence of the aforementioned mechanical arrangement, the magnetic/optical switch can be protected from the mechanical stress generated through the movement of the partition, and thus the risk of mechanical damages to the switch unit or electric shock can be eliminated or reduced as much as possible. Thereby, also the number of mechanical parts can be decreased, and thus the production costs can be reduced both in terms of labor and material.

Thereby also the risk that the aforementioned mechanical arrangement is touched by the user can be eliminated, and the appearance of the cavity can be further improved. These embodiments are also particularly advantageous as the need for the hole for the spring-loaded shaft has been obviated, and the hole can be either omitted or hermetically sealed, and thus the risk of leakage of the hot air and/or the hot steam during steam cooking can be eliminated or reduced as much as possible.

Thereby, the energy efficiency of the oven can be further improved.

[0013] Additional features and additional advantageous effects of the oven of the present invention will become more apparent with the detailed description of an embodiment with reference to the accompanying drawings in which:

[0014] Figure 1 – is a schematic partial perspective view of an oven according to an embodiment of the present invention;

[0015] Figure 2 – is a schematic partial front view of the oven of Fig. 1;

[0016] Figure 3 – is a schematic partial sectional view of the oven of Fig. 2, taken along the line A-A;

[0017] Figure 4 – is a schematic partial perspective view of the switch unit of the oven of Fig. 3;

[0018] Figure 5 – is a schematic partial sectional view of the oven according to another embodiment of the present invention, taken along the line A-A in Fig. 2;

[0019] Figure 6 – is a schematic partial perspective view of the switch unit of the oven of Fig. 5.

[0020] The reference signs appearing on the drawings relate to the following technical features.

1. Oven
2. Cavity
3. Partition
4. Cavity part
5. Heating unit
6. Control unit
7. Switch unit
8. Micro switch

9. Spring-loaded shaft

[0021] 9a. Hole

10. Optical switch

11. Transmitter

12. Receiver

13. Mounting bracket

14. Screw

[0022] The oven (1) comprises: a cavity (2) for cooking food; a partition (3) for dividing the cavity (2) into two cavity parts (4) each for cooking food, wherein the partition (3) is removably disposed into the cavity (2); a heating unit (5) for selectively and separately heating the cavity parts (4); a control unit (6) for controlling the heating unit (5), wherein the control unit (6) has a dual cooking function (Fig. 1).

[0023] The oven (1) of the present invention further comprises: a switch unit (7) which is adapted to detect the presence/absence of the partition (3), and to output a signal which is indicative of the presence/absence of the partition (3), wherein the control unit (6) is further adapted to control the heating unit (5) based on the signal outputted by the switch unit (7) (Fig. 3 and Fig. 5).

[0024] In an embodiment, the switch unit (7) comprises: a micro switch (8) which is linked to the partition (3), and adapted to output the signal which is indicative of the presence/absence of the partition (3) (Fig. 3 and Fig. 4).

[0025] In another embodiment, the switch unit (7) further comprises: a spring-loaded shaft (9) which extends into the cavity (2) through a hole (9a) and movably contacts the partition (3) in the mounted state, wherein the micro switch (8) is linked to the spring-loaded shaft (9) (Fig. 3 and Fig. 4).

[0026] In another alternative embodiment, the switch unit (7) comprises: a magnetic switch (not shown) which is linked to the partition (3), and adapted to output the signal which is indicative of the presence/absence of the partition (3).

[0027] In another alternative embodiment, the switch unit (7) comprises: a magnetic member (not shown) which is attached to the partition (3); and

the magnetic switch is a reed switch which is linked to the magnetic member.

- [0028] In another alternative embodiment, the switch unit (7) comprises: an optical switch (10) which is linked to the partition (3), and adapted to output the signal which is indicative of the presence/absence of the partition (3) (Fig. 5 and Fig. 6).
- [0029] In another alternative embodiment, the optical switch (12) comprises: a transmitter (11) for transmitting the light towards the partition (3); and a receiver (12) which is adapted to receive the light which is reflected from the partition (3) (Fig. 5 and Fig. 6).
- [0030] In another embodiment, the switch unit (7) is disposed onto the rear side of the cavity (2) (Fig. 3 and Fig. 5).
- [0031] In other alternative embodiments, the control unit (6) is adapted to audibly and/or visually inform the user about the presence/absence of the partition (3) (Fig. 1).
- [0032] In another embodiment, the control unit (6) inhibits the dual cooking function when the partition (3) is absent.
- [0033] In another embodiment, the oven (1) is provided as a built-in type oven (1) (Fig. 1).
- [0034] In another embodiment, the switch unit (7) further comprises: a mounting bracket (13) for supporting the spring-loaded shaft (9) and the micro switch (8) (Fig. 4). In this embodiment, the micro switch (8) is fixed to the mounting bracket (13) through one or more screws (14) (Fig. 4). In this embodiment, the switch unit (7) further comprises an insulating cover (not shown) for enclosing the micro switch (8).
- [0035] A major advantageous effect of the present invention is that the operability of the oven (1) has been improved by virtue of the switch unit (7). Thereby, the user can use the dual cooking function more reliably, and thus achieve the desired cooking results. Other advantageous effects of the present invention can be taken from the above described embodiments.

Claims

1. An oven (1) comprising: a cavity (2) for cooking food; a partition (3) for dividing the cavity (2) into two cavity parts (4) each for cooking food, wherein the partition (3) is removably disposed into the cavity (2); a heating unit (5) for selectively and separately heating the cavity parts (4); a control unit (6) for controlling the heating unit (5), wherein the control unit (6) has a dual cooking function, characterized by further comprising: a switch unit (7) which is adapted to detect the presence/absence of the partition (3), and to output a signal which is indicative of the presence/absence of the partition (3), wherein the control unit (6) is further adapted to control the heating unit (5) based on the signal outputted by the switch unit (7).
2. The oven (1) according to claim 1, characterized in that the switch unit (7) comprises: a micro switch (8) which is linked to the partition (3), and adapted to output the signal which is indicative of the presence/absence of the partition (3).
3. The oven (1) according to claim 2, characterized in that the switch unit (7) further comprises: a spring-loaded shaft (9) which extends into the cavity (2) through a hole (9a) and movably contacts the partition (3) in the mounted state, wherein the micro switch (8) is linked to spring-loaded shaft (9).
4. The oven (1) according to claim 1, characterized in that the switch unit (7) comprises: a magnetic switch which is linked to the partition (3), and adapted to output the signal which is indicative of the presence/absence of the partition (3).
5. The oven (1) according to claim 4, characterized in that the switch unit (7) further comprises: a magnetic member which is attached to the partition (3); and the magnetic switch is a reed switch which is linked to the magnetic member.
6. The oven (1) according to claim 1, characterized in that the switch unit (7) comprises: an optical switch (10) which is linked to the partition (3), and adapted to output the signal which is indicative of the presence/absence of the partition (3).
7. The oven (1) according to claim 6, characterized in that the optical switch (10) comprises: a transmitter (11) for transmitting the light towards the partition (3);

and a receiver (12) which is adapted to receive the light which is reflected from the partition (3).

8. The oven (1) according to any one of claims 1 to 7, characterized in that the switch unit (7) is disposed onto the rear side of the cavity (2).
9. The oven (1) according to any one of claims 1 to 8, characterized in that the control unit (6) is adapted to audibly and/or visually inform the user about the presence/absence of the partition (3).
10. The oven (1) according to any one of claims 1 to 9, characterized in that the control unit (6) inhibits the dual cooking function when the partition (3) is absent.
11. The oven (1) according to any one of claims 1 to 10, characterized in that the oven (1) is provided as a built-in type oven (1).

Fig. 1

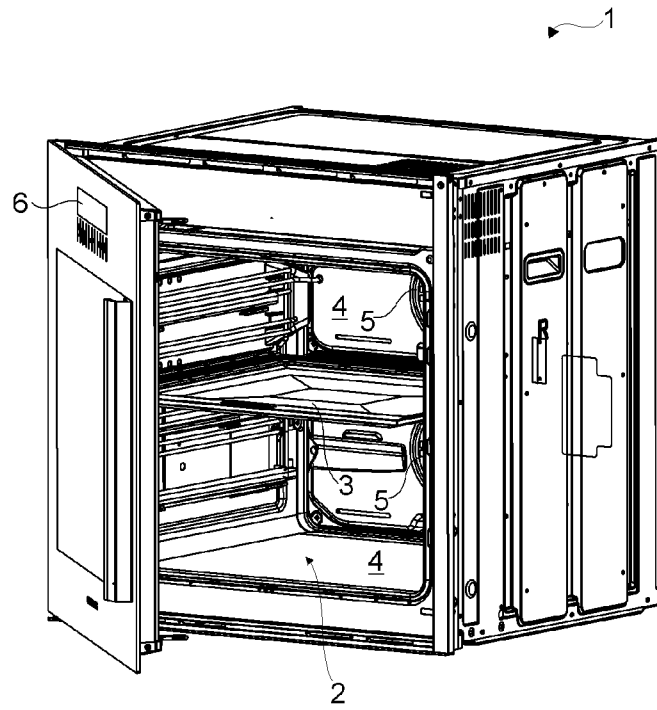


Fig. 2

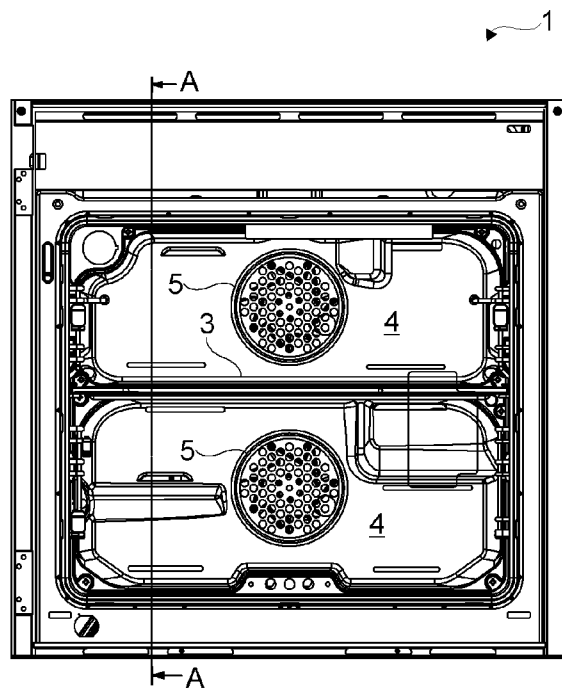


Fig. 3

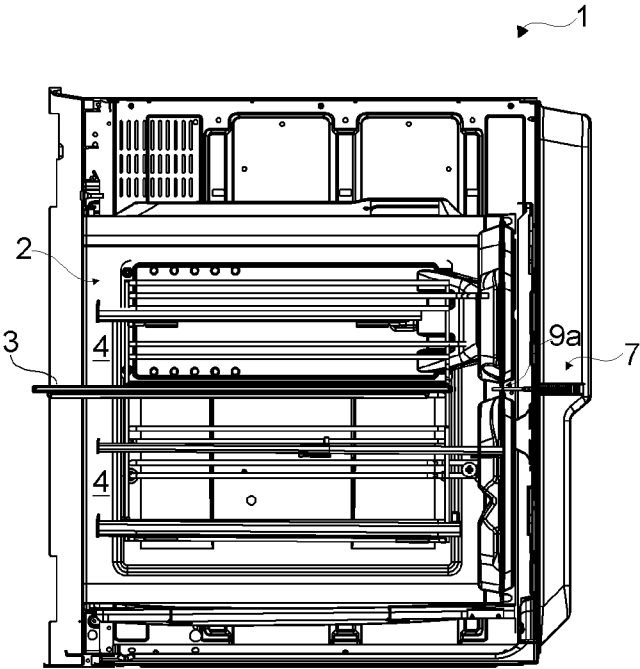


Fig. 4

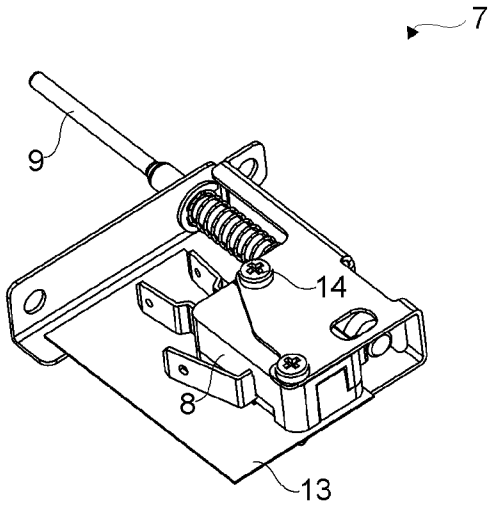


Fig. 5

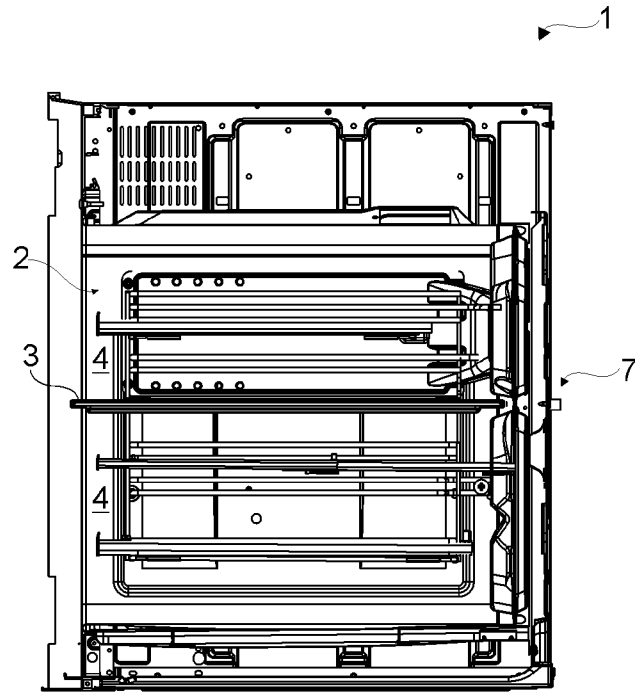
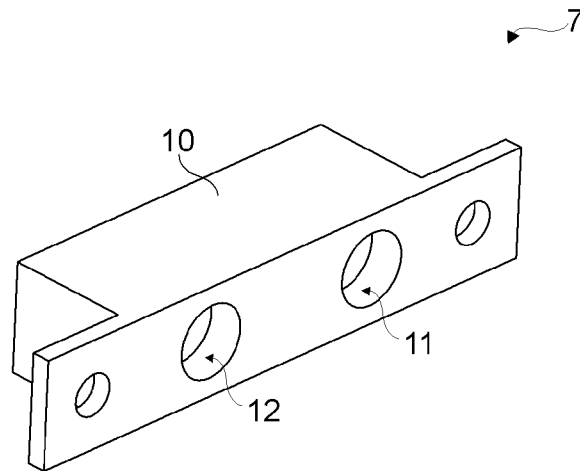


Fig. 6



INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. F24C15/16
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
F24C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

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Y	abstract; figures 1-4 paragraphs [0006], [0012], [0016], [0017], [0019]; claims 1,2 -----	4-7
X	EP 2 026 014 A1 (AGA CONSUMER PRODUCTS LTD [GB]) 18 February 2009 (2009-02-18) abstract; figures 1-5 paragraphs [0007] - [0011], [0020], [0024], [0030], [0033] -----	1,2,8, 10,11
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Further documents are listed in the continuation of Box C.



See patent family annex.

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Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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International application No

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