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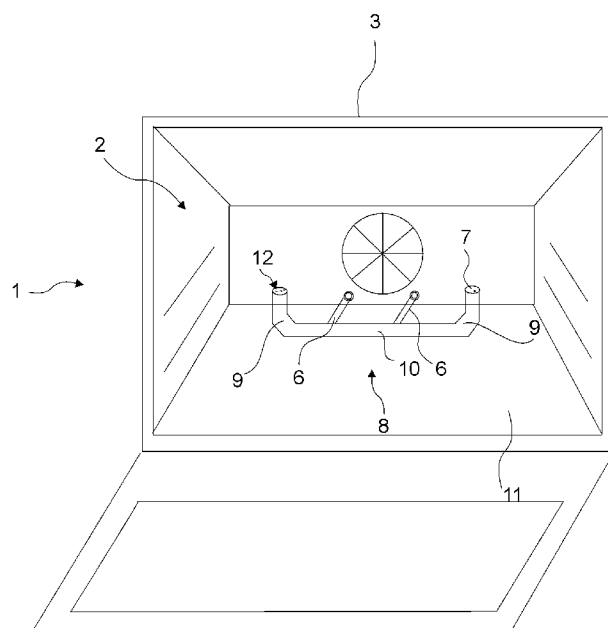
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- (54) Title: A COOKING DEVICE COMPRISING A STEAM ACCESSORY

Figure 3



- (57) Abstract: The present invention relates to a cooking device (1) comprising a cooking cavity (2) wherein the foods to be cooked are placed; a ceiling (3) positioned over the cooking cavity (2) and covering the cooking cavity (2); a rear wall (4) isolating the cooking cavity (2) from the outside environment; a steam generator (5) disposed on the rear wall (4) and at least one conveyor channel (6) that enables the steam generated in the steam generator (5) to be delivered into the cooking cavity (2).

Description**A COOKING DEVICE COMPRISING A STEAM ACCESSORY**

- [0001] The present invention relates to a cooking device comprising a steam accessory.
- [0002] In cooking devices, steam cooking is performed by delivering the steam obtained from the water heated in the steam generator to the cooking chamber. However, the delivery of the water droplets together with the steam into the cooking chamber results in the reduction of the cooking effectiveness. During the cooking process, the steam condensed in the cooking device cavity depending on the temperature difference causes stains to form on the cavity in the course of time. The condensed steam drops on the lower casing forming the cavity and generates noise.
- [0003] In the state of the art European Patent Application No. EP1909038, a cooking device comprising a steam generator is explained. A barrier unit is situated inside the steam generator in order to prevent the bubbles and the water droplets from being transmitted to the oven cavity together with the steam.
- [0004] In another state of the art document, the Japanese Patent Application No. JP2010121803, in a household appliance wherein steam cooking is performed, the steam outlet of the steam generator is configured so as to prevent splashing.
- [0005] The aim of the present invention is the realization of a cooking device, the steam cooking effectiveness of which is increased.
- [0006] The cooking device realized in order to attain the aim of the present invention and explicated in the claims, is a type of cooking device wherein steam cooking is performed, and comprises a steam generator disposed on the rear wall and at least one conveyor channel that extends from the steam generator towards the cooking cavity, wherein the steam is conveyed. Water droplets are also conveyed in the steam transferred to the outside of the steam generator by the conveyor channel. The cooking device furthermore comprises a steam accessory that remains partially inside the cooking cavity, whereto the conveyor channel opens and that has at least one outlet port positioned so as to remain at a higher level

than the base of the cooking cavity. The outlet port removes the steam transferred by the steam accessory into the cooking cavity from the base of the cooking cavity and thus formation of stains on the base of the cooking cavity is prevented. By means of the configuration of the outlet port that bends in the reverse direction with respect to the base of the cooking device, the water droplets carried with the steam are prevented from rapidly impacting the base and generating noise due to splattering.

- [0007] In an embodiment of the present invention, the steam accessory is portable and is mounted into the cooking cavity when desired, enabling steam cooking to be performed. The steam accessory is configured to be hollow so as to enable steam to pass through.
- [0008] In an embodiment of the present invention, the steam accessory comprises a bend-shaped barrier on the steam accessory. The water droplets inside the steam contact the curved barrier surface functioning as an obstruction before reaching the outlet port and refills into the conveyor channels. Thus, the water droplets are prevented from flowing into the cooking cavity and only steam is delivered into the cooking cavity. By means of the stepped configuration of the barrier, an air gap is formed that prevents the water droplets from reaching the outlet port and ejection of water instead of steam from the outlet port is prevented.
- [0009] In an embodiment of the present invention, the steam accessory comprises a passage in form of a hollow rod, that opens into the outlet ports and to the conveyor channels.
- [0010] In an embodiment of the present invention, the cooking device comprises a lower casing that forms its base. The steam accessory is embedded into the lower casing so that the outlet ports are disposed inside the cooking cavity but outside the lower casing. Thus, the steam accessory occupies less space inside the cooking cavity.
- [0011] In an embodiment of the present invention, the steam accessory comprises more than one hole that is arranged on the outlet port and that enables the steam to be filled into the cooking cavity controllably.
- [0012] By means of the present invention, the amount of water in the steam delivered from the steam generator into the cooking cavity is minimized by

means of the steam accessory comprising the outlet ports positioned in the cooking cavity so as to face the ceiling and the cooking effectiveness of the cooking device is increased.

[0013] The model embodiments that relate to the cooking device realized in order to attain the aim of the present invention are illustrated in the attached figures, where:

[0014] Figure 1 – is the front perspective view of a cooking device.

[0015] Figure 2 – is the rear perspective view of a cooking device.

[0016] Figure 3 – is the perspective view of a steam accessory disposed inside the cooking cavity in an embodiment of the present invention.

[0017] The elements illustrated in the figures are numbered as follows:

1. Cooking device
2. Cooking cavity
3. Ceiling
4. Rear wall
5. Steam generator
6. Conveyor channel
7. Outlet port
8. Steam accessory
9. Barrier
10. Passage
11. Lower casing
12. Hole

[0018] The cooking device (1) comprises a cooking cavity (2) wherein the foods to be cooked are placed; a ceiling (3) positioned over the cooking cavity (2) and covering the cooking cavity (2); a rear wall (4) isolating the cooking cavity (2) from the outside environment; a steam generator (5) disposed on the rear wall (4) and at least one conveyor channel (6) that enables the steam generated in the steam generator (5) to be delivered into the cooking cavity (2). Thus, the steam cooking process can also be performed with the cooking device (1) when desired.

[0019] The cooking device (1) of the present invention comprises a steam accessory (8) that is connected to the conveyor channel (6), that has at

least one outlet port (7) opening into the cooking cavity (2) and that curves so that the outlet port (7) face the ceiling (3). The steam delivered into the cooking cavity (2) by means of the conveyor channel (6) is guided upwards inside the cooking cavity (2). Thus, the steam is prevented from condensing toward the base of the cooking cavity (2) after leaving the steam generator (5) due to the effect of temperature difference inside the cooking cavity (2).

[0020] In an embodiment of the present invention, the steam accessory (8) is configured in a hollow U shape that can be mounted on or dismounted from the cooking cavity (2). The steam accessory (8) is placed into the cooking cavity (2) only when it is to be used. The steam is guided upwards inside the cooking cavity (2) by means to the parabolic shape of the steam accessory (8).

[0021] In an embodiment of the present invention, the steam accessory (8) comprises a barrier (9) where to the steam, that is partially condensed and converted into water droplets, impacts before reaching the outlet port (7). The water in the steam is enabled to impact the surface of the bend-shaped barrier (9) and to flow back and is prevented from reaching the inner volume of the cooking cavity (2) together with steam.

[0022] In an embodiment of the present invention, the steam accessory (8) comprises a hollow, cylinder shaped passage (10) that extends between two outlets ports (7) in the horizontal plane and that enables the steam converted into water droplets by impacting the barrier (9) to be transferred back to the steam generator (5) by means of the conveyor channel (6). The passage (10) is positioned between two outlet ports (7) such that the steam, that condenses and converts into water droplets by impacting the barrier (9) but does not reach the required temperature, is enabled to flow into the conveyor channel (6). The passage (10) having an outlet port (7) at each end enables the steam to be guided to the cooking cavity (2).

[0023] In an embodiment of the present invention, the cooking device (1) comprises a rear wall (4) that remains behind the cooking cavity (2) and the steam accessory (8) is hung on the rear wall (4). Thus, the steam accessory (8) is positioned close to the steam generator (5) disposed on

the rear wall (4).

- [0024] In an embodiment of the present invention, the cooking device (1) comprises a lower casing (11) that forms the base of the cooking cavity (2) and the steam accessory (8) is partially embedded into the lower casing (11) such that the outlet port (7) remains inside the cooking cavity (2). Thus, saving is provided in terms of the area inside the cooking cavity (2).
- [0025] In an embodiment of the present invention, the steam accessory (8) is mounted on the cooking cavity (2) so that there is a level difference between the outlet port (7) and the lower casing (11). Thus, steam outlet is moved away from the lower casing (11) and formation of stains on the lower casing (11) in the course of time is prevented. The steam cooking effectiveness of the cooking device (1) is improved by guiding the steam upwards.
- [0026] In an embodiment of the present invention, the steam accessory (8) comprises more than one outlet port (7) that faces different directions. Thus, the steam is enabled to disperse homogeneously inside the cooking cavity (2).
- [0027] By means of the present invention, the amount of water in the steam delivered from the steam generator (5) to the cooking cavity (2) is minimized and the cooking effectiveness of the cooking device (1) is improved. By means of the outlet ports (7) directed towards the ceiling (3), the steam is moved away from the lower casing (11) as much as possible, thereby preventing formation of stains due to water and the lime in water on the lower casing (11). A cooking device (1) that operates more silently is realized.

Claims

1. A cooking device (1) comprising a cooking cavity (2) wherein the foods to be cooked are placed; a ceiling (3) positioned over the cooking cavity (2) and covering the cooking cavity (2); a rear wall (4) isolating the cooking cavity (2) from the outside environment; a steam generator (5) disposed on the rear wall (4) and at least one conveyor channel (6) that enables the steam generated in the steam generator (5) to be delivered into the cooking cavity (2),
characterized by a steam accessory (8)
 - that is connected to the conveyor channel (6),
 - that has at least one outlet port (7) opening into the cooking cavity (2) and
 - that curves so that the outlet port (7) faces the ceiling (3).
2. A cooking device (1) as in Claim 1, **characterized by** the steam accessory (8) configured in a hollow U shape that can be mounted on or dismounted from the cooking cavity (2).
3. A cooking device (1) as in Claim 1 or Claim 2, **characterized by** the steam accessory (8) having a barrier (9) whereto the steam, that is converted into water droplets by condensing, impacts without reaching the outlet port (7).
4. A cooking device (1) as in Claim 3, **characterized by** the steam accessory (8) having a cylinder-shaped passage (10) that extends between two outlets ports (7) in the horizontal plane and that enables the steam converted into water droplets by impacting the barrier (9) to be transferred back to the steam generator (5) by means of the conveyor channel (6).
5. A cooking device (1) as in any one of the above claims, **characterized by** a rear wall (4) that remains behind the cooking cavity (2) and **by** the steam accessory (8) that is hung on the rear wall (4).
6. A cooking device (1) as in any one of the Claims 1 to 4, **characterized by** a lower casing (11) that forms the base of the cooking cavity (2) and **by** the steam accessory (8) that is partially embedded into the lower casing (11) such that the outlet port (7) remains inside the cooking cavity (2).
7. A cooking device (1) as in Claim 5 or Claim 6, **characterized by** the steam accessory (8) that is mounted on the cooking cavity (2) such that there is a level difference between the outlet port (7) and the lower casing (11).
8. A cooking device (1) as in any one of the above claims, **characterized by** the

steam accessory (8) comprising more than one hole (12) arranged on the outlet port (7).

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Figure 1

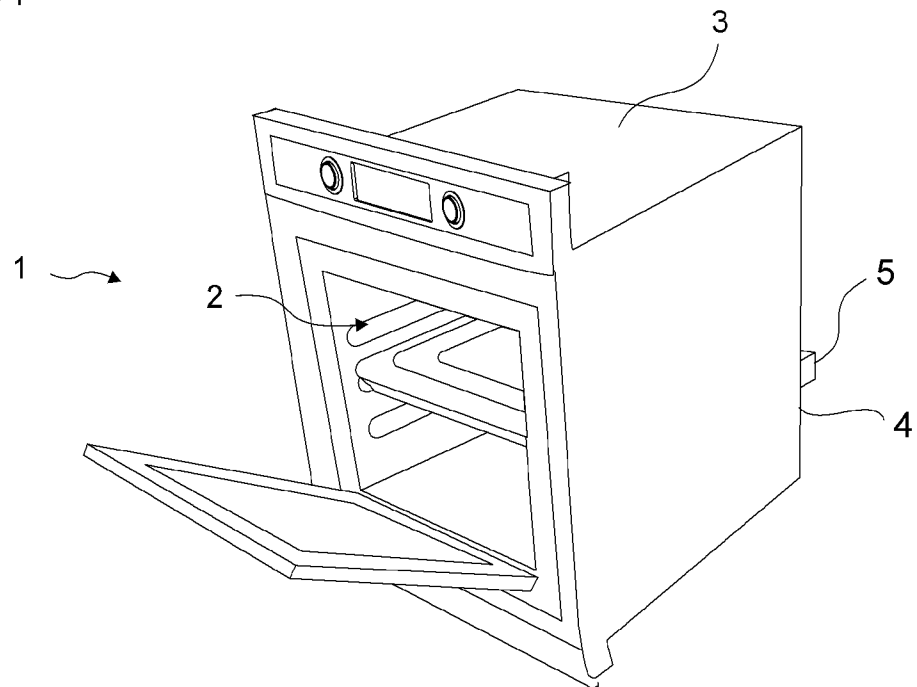


Figure 2

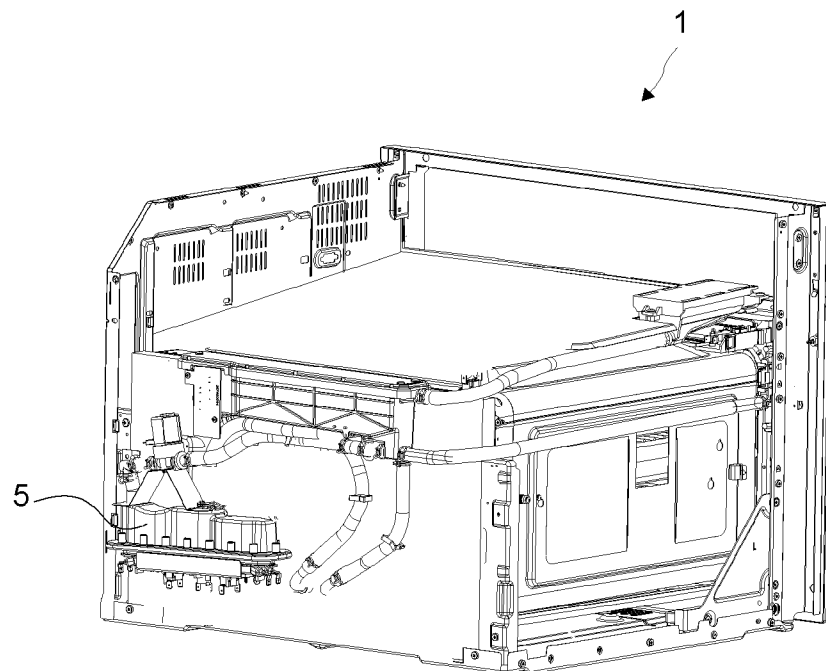
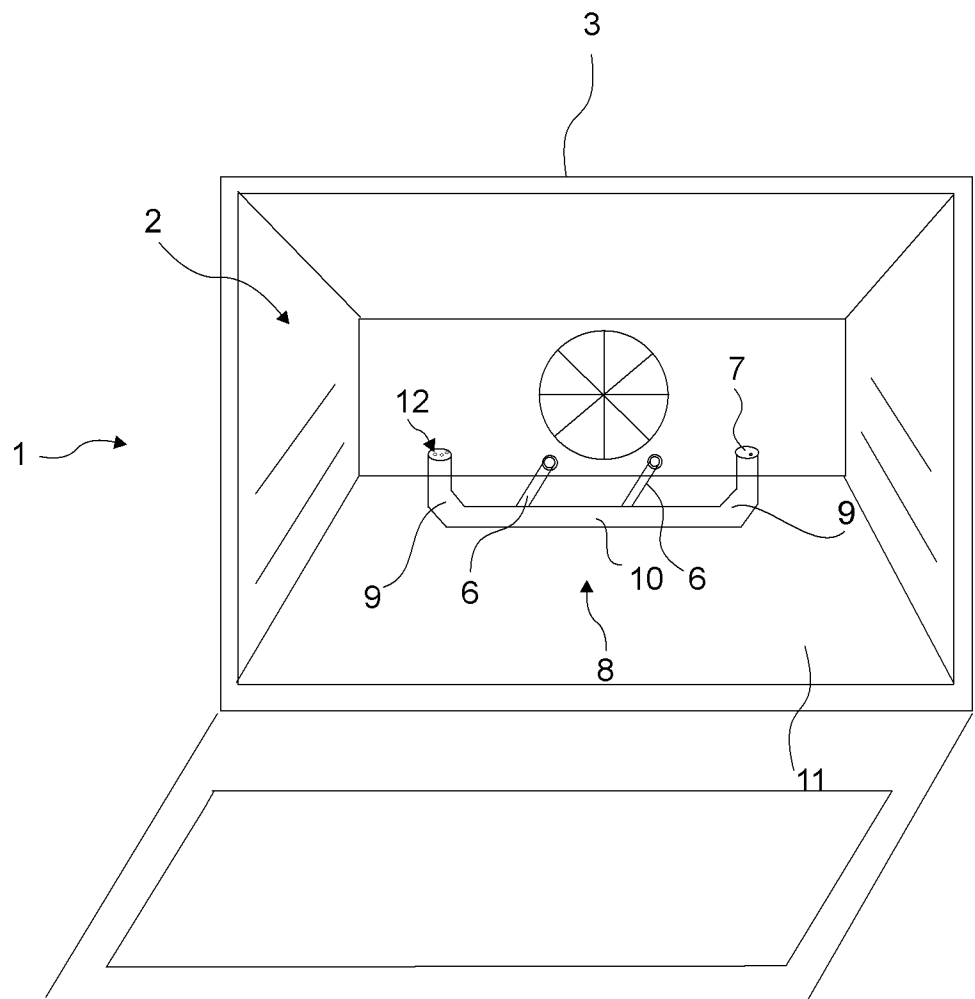


Figure 3



INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
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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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	EP 2 060 184 A1 (ELRO HOLDING AG [CH]) 20 May 2009 (2009-05-20) figures 1,4,5 paragraphs [0013] - [0017] -----	1,3,8
X	US 2006/112947 A1 (SAKSENA ATUL [US] ET AL) 1 June 2006 (2006-06-01) figures 1,2,10,11,12 paragraphs [0022] - [0025] ----- -/-	1,8



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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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