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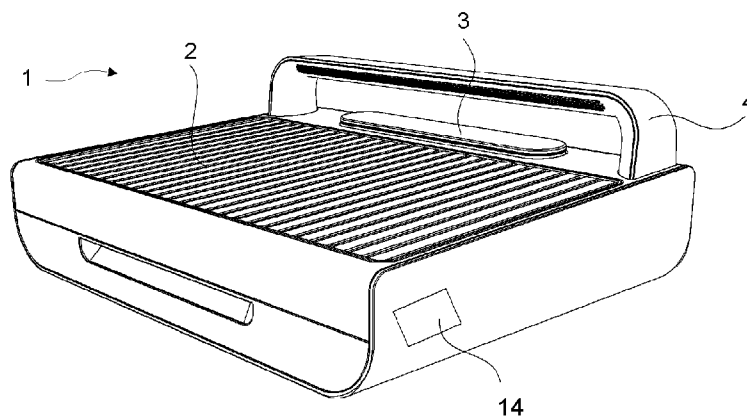
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(54) **Title:** A COOKING DEVICE WITH SMOKING FUNCTION

Figure 1



(57) **Abstract:** The present invention relates to a cooking device (1) comprising a cooking grill (2) whereon the foods to be cooked are placed and a smoking chamber (3) wherein smoking material is placed, enabling the foods on the cooking grill (2) to be smoked.

Description**A COOKING DEVICE WITH SMOKING FUNCTION**

[0001] The present invention relates to a cooking device with smoking function.

[0002] The smoking process is implemented for the aim of adding flavor to food with its unique aroma. During smoking, the cooking device is enabled to be filled with smoke by burning the smoking material with slow combustion inside the volume wherein the food is placed. In cooking devices with smoking function, the smoke inside the cooking cavity also disperses into the kitchen environment while the smoking process is applied to the food and/or after the smoking process. Generally an exhaust hood is situated above this type of cooking devices and the smell and humidity released from the cooked foods are enabled to be discharged to the exterior environment by means of the exhaust hood. In the cooking devices with smoking function, even though the dense smoke released at the end of the smoking process is discharged to the exterior environment from the exhaust hood, inevitably it disperses into the kitchen environment through the gap between the cooking device and the exhaust hood. Furthermore, the cooking devices wherein more than one cooking process can be realized generally have a complex operation since the process steps of different cooking processes are different from one another. Cooking devices of this type mostly comprise various accessories such as grill apparatus, smoking chamber, etc. according to the type of the food and the requirements of the cooking process required to be applied. Storing and stacking these accessories in the kitchen cause a significant problem. Due to these reasons, cooking devices are needed that have a simple and compact structure and which prevent formation of odor and smoke.

[0003] In the state of the art Korean Patent Document No. KR101236868, a cooking device is disclosed wherein the charcoal smoke is guided over the grill for the aim of smoking.

[0004] The aim of the present invention is the realization of a cooking device wherein dispersal of smoke and odor to the environment during the smoking process is prevented.

[0005] The cooking device realized in order to attain the aim of the present

invention, explicated in the first claim and the respective claims thereof, comprises a cooking grill whereon the foods to be cooked are placed and a smoking chamber that is positioned close to the cooking grill, that enables the foods on the cooking grill to be smoked and wherein materials like sawdust, coal, are placed, the smoke of which gives the taste of smoke. By means of the cooking device, cooking processes like smoking and grilling can be performed simultaneously or one after the other without requiring an additional cooking accessory. The cooking device furthermore comprises an aspirator disposed over the cooking grill and connected to the smoking chamber, which provides aspiration of the smoke and odor on the cooking grill. The aspirator and the smoking chamber are mechanically connected to each other and when pressed towards the cooking grill, the aspirator is raised over the cooking grill and pulls the smoking chamber upwards. Thus, the smoking process starts when the aspirator begins operating and formation of odor and smoke in the environment is prevented.

- [0006] In an embodiment of the present invention, the aspirator has a closed position that the aspirator is changed to by being pushed towards the cooking grill when the cooking device is not operated. Thus, the aspirator is almost aligned with the cooking grill and a cooking device that occupies less space is realized.
- [0007] In an embodiment of the present invention, the smoking chamber rises when the aspirator, whereto it is connected mechanically, moves upwards.
- [0008] In an embodiment of the present invention, the cooking device comprises a first heater that ignites the smoking material by increasing its heat and a second heater that enables the foods placed on the cooking grill to be cooked. The first heater is preferably disposed inside the smoking chamber and the second heater is positioned near the cooking grill.
- [0009] In an embodiment of the present invention, the aspirator has a first level where it is pulled upwards from the closed position and changed to a higher elevation. When changed to the first level, the aspirator actuates the first heater inside the smoking chamber, whereto it is connected mechanically and enables the smoking process to start.

- [0010] In an embodiment of the present invention, the aspirator has a second level that the aspirator is changed to by being moved upwards, wherein the level difference with the cooking grill is more than the first level. When changed from the closed position or from the first level to the second level, the aspirator actuates the second heater, thereby enabling the second heater to be operated and the foods placed on the cooking grill to be cooked.
- [0011] In an embodiment of the present invention, the cooking device comprises an actuation member that is disposed on the aspirator, that moves the smoking chamber by being mounted on the smoking chamber and that activates the first heater and the second heater. With the movement of the aspirator, the actuation member carries the smoking chamber to the level of the cooking grill. Thus, while the smoking process is started by actuating the first heater, the formed smoke is dispersed to the cooking grill.
- [0012] In an embodiment of the present invention, the cooking device comprises more than one hole arranged on the smoking chamber. The holes arranged on the surface of the smoking chamber facing the cooking grill enable air transfer between the smoking chamber and the cooking grill while the holes arranged on its opposite surface enable air transfer between the smoking chamber and the outside environment.
- [0013] In an embodiment of the present invention, the cooking device comprises a front plate that covers the surface of the smoking chamber facing the cooking grill and that has at least one smoking opening aligned with the holes when the aspirator is changed to the first level or the second level thereby enabling the smoke formed as a result of heating the smoking chamber to be dispersed over the cooking grill. As the aspirator changes position, the holes overlap with the smoking openings arranged on the front plate. Thus, the holes open such that the smoke and odor are allowed to be carried over the cooking grill. If the aspirator is not changed to the level suitable for the smoking process, the holes are kept closed by means of the front plate.
- [0014] In an embodiment of the present invention, the cooking device comprises

a rear plate that covers the surface of the smoking chamber so as to be opposite to the front plate, and that has at least one ventilation opening aligned with the holes when the aspirator is in the first level thereby allowing fresh air to fill into the smoking chamber. In the first level wherein the ventilation openings are aligned with the holes and the smoking process starts, oxygen that starts ignition fills into the smoking chamber together with the fresh air.

- [0015] In an embodiment of the present invention, the cooking device comprises a control unit which enables the surface temperature of the first heater to remain at the temperature range suitable for generating smoke. Thus, the first heater is turned on/off by the control unit so that the surface temperature thereof remains preferably at the temperature values between 400° C and 600° C.
- [0016] By means of the present invention, since the aspirator is positioned near the smoking chamber and the cooking grill, the odor and smoke formed during smoking and cooking the foods are aspirated before being dispersed to the outside environment.
- [0017] 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:
- [0018] Figure 1 – is the perspective view of a cooking device related to an embodiment of the present invention.
- [0019] Figure 2 – is the perspective view of a cooking device when the aspirator is in the closed position related to an embodiment of the present invention.
- [0020] Figure 3 – is the perspective view of a cooking device when the cooking grill is not mounted related to an embodiment of the present invention.
- [0021] Figure 4 – is the perspective view of a cooking device when the rear plate is not mounted related to an embodiment of the present invention.
- [0022] Figure 5 – is the exploded view of a cooking device related to an embodiment of the present invention.
- [0023] The elements illustrated in the figures are numbered as follows:
1. Cooking device
 2. Cooking grill

3. Smoking chamber
4. Aspirator
5. First heater
6. Second heater
7. Actuation member
8. Hole
9. Smoking opening
10. Front plate
11. Ventilation opening
12. Rear plate
13. Fan
14. Control unit

[0024] The cooking device (1) comprises a cooking grill (2) whereon the foods to be cooked are placed and a smoking chamber (3), wherein smoking material is placed, enabling the foods on the cooking grill (2) to be cooked. By means of the cooking device (1), savings in energy and time are provided since the smoking and grilling processes can be realized simultaneously.

[0025] The cooking device (1) of the present invention comprises an aspirator (4) that is disposed over the smoking chamber (3), that controls starting and ending of the smoking process by being moved in the vertical direction and enables the aspiration of the odor and smoke over the cooking grill (2). By means of the aspirator (4) being positioned near the smoking chamber (3) and the cooking grill (2), the odor and smoke formed during smoking and cooking the foods are aspirated before being dispersed to the outside environment. By means of moving the aspirator (4) over the cooking grill (2) in the vertical direction, a more compact structure is formed when the cooking device (1) is not used.

[0026] In an embodiment of the present invention, the aspirator (4) has a closed position (C) wherein the aspirator (4) is brought to almost to the same level as the cooking grill (2). In situations wherein the cooking device (1) is not used or when only the grilling function is desired to be used, the aspirator (4) connected to the smoking chamber (3) is pushed towards the smoking

chamber (3) and is brought almost to the same level as the cooking grill (2). Thus, the aspirator (4) occupies less space. The storage areas reserved for the cooking device (1) are used effectively.

[0027] In an embodiment of the present invention, the smoking chamber (3) changes position in the vertical direction as the aspirator (4) is moved in the vertical direction. Thus, when the aspirator (4) is pulled upwards over the cooking grill (2), the smoking chamber (3) also moves upwards and a suitable medium for starting the smoking process is prepared.

[0028] In an embodiment of the present invention, the cooking device (1) comprises a first heater (5) that is disposed over the smoking chamber (3) and that provides the ignition of the smoking material and a second heater (6) that is disposed under the cooking grill (2) and that enables the foods placed on the cooking grill (2) to be cooked.

[0029] In an embodiment of the present invention, the aspirator (4) has a first level (F) where to the aspirator (4) is changed from the closed position (C) by being moved upwards and wherein the aspirator (4) is positioned such that a gap remains between the aspirator (4) and the cooking grill (2). While the aspirator (4) is changed from the closed position (C) to the first level (F), the aspirator (4) enables the smoking process to be started by actuating the first heater (5). When the smoking process is desired to be performed inside the cooking device (1), the aspirator (4) is pulled to be changed from the closed position (C) to the first level (F). As the aspirator (4) moves upwards, the switch of the first heater (5) is opened mechanically.

[0030] In an embodiment of the present invention, the aspirator (4) has a second level (S) where to the aspirator (4) is changed from the first level (F) by being raised. When changed to the second level (S) from the closed position (C) or the first level (F), the aspirator (4) enables the food on the cooking grill (2) to be cooked by actuating the second heater (6). When the elevation of the aspirator (4) with respect to the cooking grill (2) is raised to the second level (S) in order to start the cooking process, the switch of the second heater (6) is actuated and opened by the aspirator (4).

[0031] In an embodiment of the present invention, the cooking device (1)

comprises an actuation member (7) that is disposed on the aspirator (4) and that activates the first heater (5) and the second heater (6). In this embodiment, the switches of the first heater (5) and the second heater (6) are easily actuated and the heaters (5, 6) are activated by means of the actuation member (7).

[0032] In an embodiment of the present invention, the cooking device (1) comprises more than one hole (8) arranged on the smoking chamber (3). The holes (8) enable the air transfer between the smoking chamber (3), the cooking grill (2) and the outside environment.

[0033] In an embodiment of the present invention, the cooking device (1) comprises a front plate (10) that covers the surface of the smoking chamber (3) facing the cooking grill (2) and that has at least one smoking opening (9) aligned with the holes (8) when the aspirator (4) is changed to the first level (F) or the second level (S), thereby enabling the smoke formed as a result of heating the smoking chamber (3) to be dispersed over the cooking grill (2). As the aspirator (4) changes position, the holes (8) overlap with the smoking openings (9) disposed on the front plate (10). Thus, the holes (8) open such that the smoke and odor are allowed to be carried over the cooking grill (2). If the aspirator (4) is not changed to the level suitable for the smoking process (first level (F)), the holes (8) are kept closed by means of the front plate (10).

[0034] In an embodiment of the present invention, the cooking device (1) comprises a rear plate (12) that covers the surface of the smoking chamber (2) so as to be opposite to the front plate (10) and that has at least one ventilation opening (11) aligned with the holes (8) when the aspirator (4) is in the first level (F), thereby allowing fresh air to fill into the smoking chamber (3). In the first level (F) wherein the ventilation holes (11) are aligned with the holes (8) and the smoking process starts, oxygen that starts ignition fills into the smoking chamber (3) together with the fresh air.

[0035] In an embodiment of the present invention, the cooking device (1) comprises at least one fan (13) that is disposed near the smoking chamber (3) and that is isolated from the outside environment by means of the rear

plate (12). The radial fans (13) provide circulation of odor and smoke between the cooking grill (2) and the aspirator (4).

[0036] In an embodiment of the present invention, the cooking device (1) comprises a control unit (14) that enables the first heater (5) temperature to remain within the temperature range which is suitable for generating smoke. When the temperature of the first heater (5) reaches the predetermined upper limit value, the first heater (5) is turned off by the control unit (14). When the temperature of the first heater (5) reaches the predetermined lower limit value during the smoking process, the first heater (5) is operated again. Thus the smoking process is performed in a controlled manner by preventing the sawdust from flaming up.

[0037] By means of the present invention, the need for more than one cooking device (1) for different cooking processes is fulfilled by a single cooking device (1). By means of the cooking device (1) savings in energy and time are provided since the smoking and grilling processes can be realized simultaneously when desired and the storage area allocated for the cooking device (1) is decreased. By means of the cooking device (1) of the present invention comprising the mechanically connected aspirator (4) and the smoking chamber (3), the smoking process begins when the aspirator (4) starts to operate. Thus, formation of odor and smoke in the environment is prevented.

Claims

1. A cooking device (1) comprising a cooking grill (2) whereon the foods to be cooked are placed and a smoking chamber (3) wherein smoking material is placed, enabling the foods on the cooking grill (2) to be smoked, **characterized by** an aspirator (4) that is disposed over the smoking chamber (3), that controls starting and ending of the smoking process by being moved in the vertical direction and enables the aspiration of the odor and smoke over the cooking grill (2).
2. A cooking device (1) as in Claim 1, **characterized by** the smoking chamber (3) that changes position in the vertical direction as the aspirator (4) is moved in the vertical direction.
3. A cooking device (1) as in Claim 1 or Claim 2, **characterized by** the aspirator (4) having a closed position (C) wherein the aspirator (4) is brought to almost the same level as the cooking grill (2).
4. A cooking device (1) as in any one of the above claims, **characterized by** a first heater (5) that is disposed over the smoking chamber (3) and that provides the ignition of the smoking material and a second heater (6) that is disposed under the cooking grill (2) and that enables the foods placed on the cooking grill (2) to be cooked.
5. A cooking device (1) as in any one of the Claim 3 or Claim 4, **characterized by** the aspirator (4) that has a first level (F) whereto the aspirator (4) is changed from the closed position (C) by being moved upwards and wherein the aspirator (4) is positioned such that a gap remains between the aspirator (4) and the cooking grill (2), and that enables the smoking process to be started by actuating the first heater (5) while being changed from the closed position (C) to the first level (F).
6. A cooking device (1) as in Claim 5, **characterized by** the aspirator (4) that has a second level (S) whereto the aspirator (4) is changed from the first level (F) by being moved upwards and that enables the food on the cooking grill (2) to be cooked by actuating the second heater (6) after being changed to the second level (S) from the closed position (C) or the first level (F).
7. A cooking device (1) as in any one of the Claims 4 to 6, **characterized by** an actuation member (7) that is disposed on the aspirator (4) and that activates

the first heater (5) and the second heater (6).

8. A cooking device (1) as in any one of the above claims, **characterized by** more than one hole (8) arranged on the smoking chamber (3).
9. A cooking device (1) as in Claim 8, **characterized by** a front plate (10) that covers the surface of the smoking chamber (3) facing the cooking grill (2) and that has at least one smoking opening (9) aligned with the holes (8) when the aspirator (4) is changed to the first level (F) or the second level (S), thereby enabling the smoke formed as a result of heating the smoking chamber (3) to be dispersed over the cooking grill (2).
10. A cooking device (1) as in any one of the Claim 8 or Claim 9, **characterized by** a rear plate (12) that covers the surface of the smoking chamber (3) facing the outer environment so as to be opposite to the front plate (10) and that has at least one ventilation opening (11) aligned with the holes (8) thereby allowing fresh air to fill into the smoking chamber (3).
11. A cooking device (1) as Claim 10, **characterized by** at least one fan (13) that is disposed near the smoking chamber (3) and that is isolated from the outside environment by means of the rear plate (12).
12. A cooking device (1) as in any one of the above claims, **characterized by** a control unit (14) that enables the first heater (5) surface temperature to remain within the temperature range which is suitable for generating smoke.

Figure 1

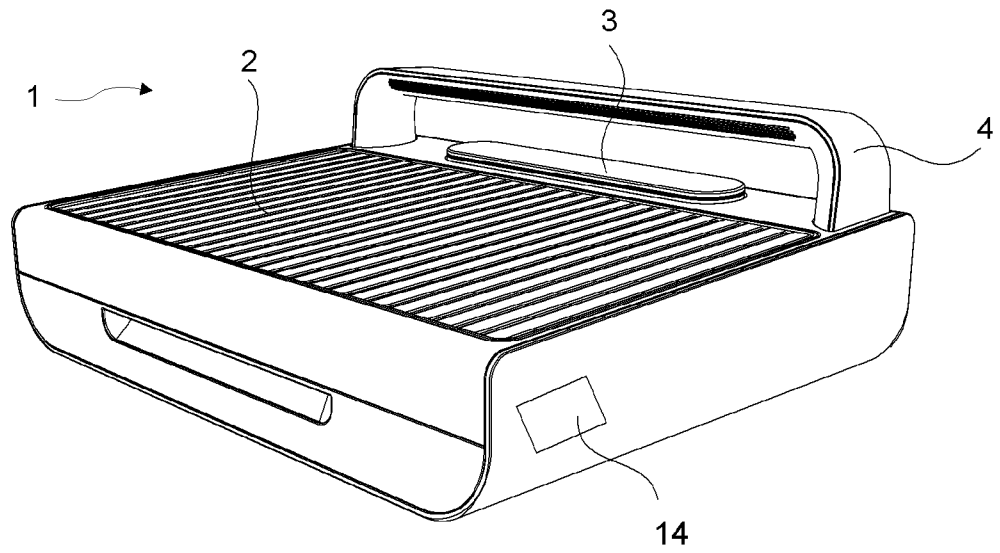


Figure 2

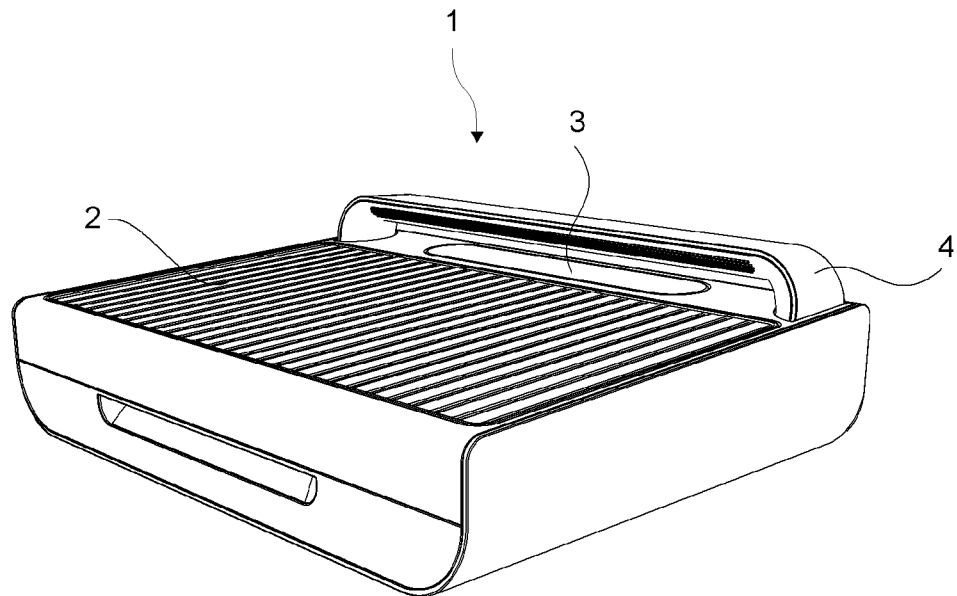


Figure 3

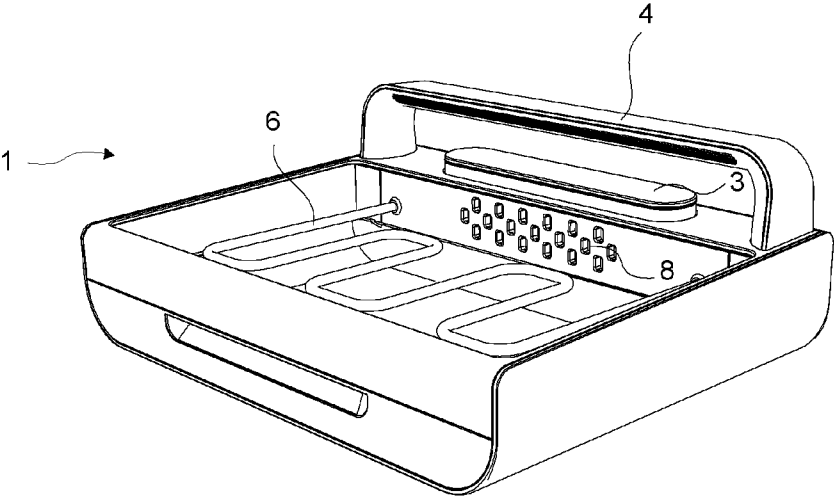


Figure 4

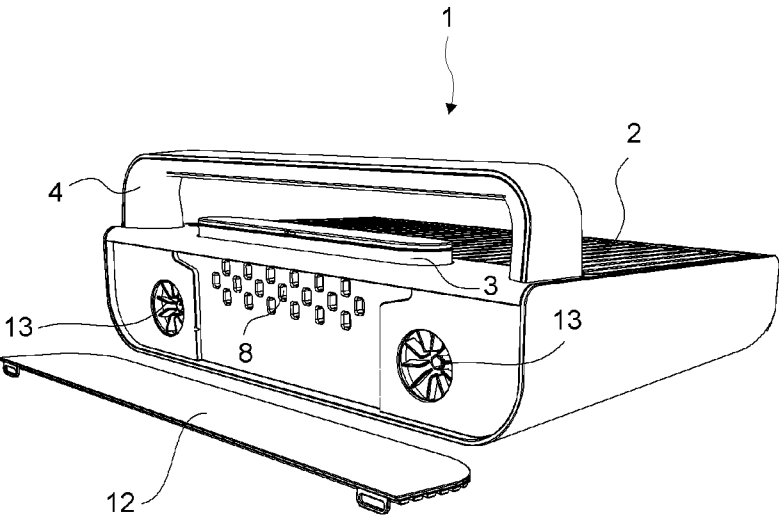
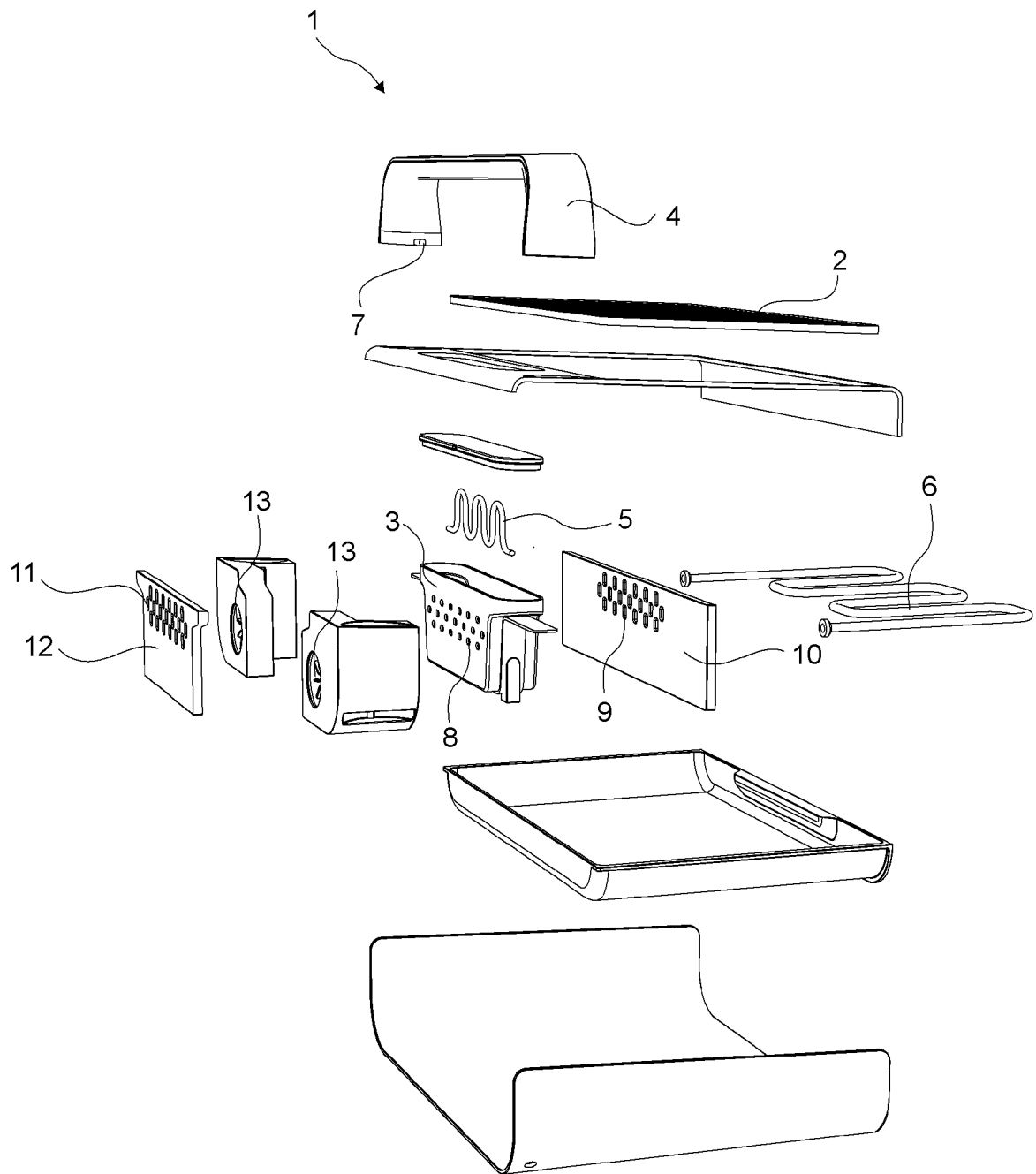


Figure 5



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/059025

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47J37/07 A23B4/052
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)
A47J A23B

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

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2007/007952 A1 (KANG KYUSUK [KR]) 18 January 2007 (2007-01-18) paragraphs [0003], [0061] - [0065], [0071]; claims; figures -----	1-12
A	US 8 490 614 B1 (GREGORY MICHAEL S [US]) 23 July 2013 (2013-07-23) column 8, line 34 - line 45 column 9, line 13 - line 20 column 10, line 33 - line 62; claims; figures -----	1-12
A	US 2006/157046 A1 (NA SEON U [KR] ET AL) 20 July 2006 (2006-07-20) the whole document -----	1-12



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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007007952 A1	18-01-2007	KR 20070008383 A WO 2007007952 A1	17-01-2007 18-01-2007
US 8490614 B1	23-07-2013	NONE	
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