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(54) **COOKING APPARATUS**

KOCHVORRICHTUNG

APPAREIL DE CUISSON

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Description

Technical Field

[0001] The present invention relates in general to a cooking apparatus, more specifically, to a cooking apparatus that is capable of exhausting a flow coming out of a cooking cavity to the outside, by using a different flow.

Background Art

[0002] Korean Patent Application Laid-Open No. 2005-0083504 discloses a typical example of a cooking apparatus that has major components inclusive of a magnetron, a high voltage transformer, a high voltage capacitor, and a cooling fan provided at one side of a cooking cavity. Korean Patent Application Laid-Open No. 2006-0037003 discloses a cooking apparatus that has major components inclusive of a magnetron, a high voltage transformer, and a high voltage capacitor installed at the upper side of a cooking cavity and accommodates a convection heater assembly at the rear wall of the cooking cavity. Korean Utility Model Application Laid-Open No. 1999-0010444 discloses a cooking apparatus that has major components inclusive of a magnetron, a high voltage transformer, and a cooling fan and an operating panel provided at the lower side of a cooking cavity.

[0003] In addition, Korean Utility Model Application Laid-Open No. 1998-0016489 discloses a cooking apparatus, which has major components inclusive of a magnetron, a high voltage transformer and a cooling fan installed at a side wall of a cooking cavity and which is provided with a cooling flow path starting from the upper wall of the cooking cavity to a lateral side thereof.

[0004] Korean Patent Application Laid-Open No. 1998-0053939 discloses a door of a microwave oven used as a typical example of cooking apparatuses, in which the door is provided with a door frame for blocking microwaves and a choke cover surrounding the door frame.

[0005] Korean Patent Application Laid-Open No. 1995-0003729 discloses a cooking apparatus that has a cooking flow path starting from a lateral side of a cooking cavity, going via the bottom side of the cooking cavity, to the door.

[0006] Korean Patent Application Laid-Open No. 2004-0108050 discloses an example of an operating panel for use in a cooking apparatus, in which the operating panel is provided with a glass-touch keyboard using static electricity.

[0007] EP 0 248 580 A2 describes a microwave cooking apparatus including a cooking chamber and a reflecting chamber disposed on the cooking chamber. The reflecting chamber is provided with a rotatable reflector for reflecting microwaves from a magnetron. The cooking apparatus further includes a fan device for producing cooling air, and a duct device directing a portion of the air to the reflecting chamber for rotating the reflector, and by-passing the reflecting chamber and directing a portion of the air to the cooking chamber for ventilating the cook-

ing chamber. This construction may provide sufficient air to the reflecting chamber and the cooking chamber.

[0008] DE 38 39 657 A1 describes an air-conducting system for an oven to prevent excessive heating of the components of the control apparatus by controlled conduction of vapours and cooling air and to permit extraction of the vapours. US 4 598 689 A describes an oven system comprising a grill unit and a microwave oven unit built into a standard kitchen unit framework or other structure for receiving same with the grill unit surmounting the microwave oven unit. A duct extends from the rear of the microwave oven unit, upwardly past the rear of the grill unit, over the top of the grill unit to a front exit. The rear wall of the cavity of the microwave oven unit has a vent communicating with the duct, and the rear wall of the cavity of the grill unit has a vent communicating with the duct. The microwave oven unit has a magnetron cooled by a blower which directs a flow of air through the duct, this flow being capable of venting both cavities.

[0009] JP H07 95472 B2 describes how to improve the cooling efficiency for a microwave feeding means by providing a cooling wind improving means for the microwave feeding means, a duct for guiding the cooling wind to a heating chamber after cooling the microwave feeding means, and an auxiliary wind path merging both cooling winds.

[0010] JP H01 221881 A describes how to improve the cooling function by cooling a magnetron to feed high-frequency waves to a heating chamber, a high voltage transformer, and a control electron circuit, in a spray cooling by a cross flow fan, making no branching flow.

Disclosure of Invention

Technical Problem

[0011] It is an object of the present invention to provide a cooking apparatus that is capable of exhausting a flow escaped from a cooking cavity to the outside through a flow with a different flow path.

[0012] Another object of the present invention is to provide a cooking apparatus that is capable of getting rid of heat and smells produced in a cooking cavity by using a flow formed in a rear space of a cooking cavity.

[0013] Still another object of the present invention is to provide a cooking apparatus that is capable of guiding a flow escaped from a cooking cavity to a lower space of the cooking apparatus.

[0014] Yet another object of the present invention is to provide a cooking apparatus that is capable of effectively guiding a flow to a cooking cavity and effectively guiding the flow passing through the cooking cavity to the outside of the cooking apparatus.

Technical Solution

[0015] The objects are solved by the features of the independent claim.

[0016] A cooking apparatus is provided, which comprises: a cooking cavity provided with a first opening and a second opening; a first flow path extended for a flow to enter into the first opening and come out of the second opening; and a second flow path combining with the flow coming out of the second opening and driving the flow to the outside. Through this structure, it is possible to exhaust a flow escaped from the cooking cavity to the outside of the cooking apparatus through a flow with a different flow path.

[0017] The cooking apparatus further comprises a lower space located below the cooking cavity, and the second flow path guides the flow to the lower space and the lower space is provided with an outlet of the flow. Through this configuration, it is possible to guide a flow escaped from the cooking cavity to the lower space of the cooking apparatus through a flow of a different flow path.

[0018] The cooking apparatus further comprises a flow guide for guiding a flow to the first opening. Through this configuration, a flow can be effectively guided into the cooking cavity.

[0019] There is provided a cooking apparatus, comprising: a cooking cavity; a rear space located behind the cooking cavity and generating a flow; a first opening and a second opening formed at the cooking cavity, into which the flow enters. Preferably a third opening is formed at the cooking cavity, out of which the flow comes. Through this configuration, heat and smells produced in the cooking cavity can be removed by using a flow that is formed in the rear space of the cooking cavity.

[0020] The first opening is formed at one side of the cooking cavity, the second opening is formed at an upper side of the cooking cavity, and the third opening is formed at the other side of the cooking cavity.

[0021] The cooking apparatus further comprises a magnetron for providing microwaves to the cooking cavity, and the flow entering into the first opening passes the magnetron.

[0022] Preferably, the cooking apparatus further comprises a door for opening and closing the cooking cavity, and the flow entering into the second opening travels along the door, within the cooking cavity.

[0023] There is provided a cooking apparatus, comprising: a cooking cavity; a rear space located behind the cooking cavity; an upper space located over the cooking cavity; a lateral space located at one side of the cooking cavity; a lower space located below the cooking cavity; an outlet formed at the one side of the cooking cavity, out of which a flow from the cooking cavity comes; and a cooling flow path extended from the rear space through the upper space to the lateral space, along which a flow generated in the rear space travels, and which guides the flow coming out of the outlet to the lower space.

[0024] Additional and/or other aspects and advantages of the present invention will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the invention. Brief Description of the Drawings

[0025] The above aspects and features of the present invention will be more apparent by describing certain embodiments of the present invention with reference to the accompanying drawings, in which:

FIG. 1 is an exploded schematic view of the main structure of a cooking apparatus according to the present invention;

FIG. 2 schematically shows an example of the rear space of a cooking apparatus according to the present invention;

FIGS. 3 and 4 schematically show other examples of the rear space of a cooking apparatus according to the present invention; and

FIGS. 5 and 6 schematically show a cooling flow path according to the present invention. Mode for the Invention

[0026] The present invention will be described in detail herein below with reference to the accompanying drawings.

[0027] FIG. 1 is an exploded schematic view of the main structure of a cooking apparatus in accordance with the present invention, showing a cooking cavity 100, a door 200, an upper space 300 located over the cooking cavity 100, a rear space 400 located at the rear of the cooking cavity 100, lateral spaces 500 located on both sides of the cooking cavity 100, and a lower space 600 located under the cooking cavity 100.

[0028] The cooking cavity 100 is a space for cooking food, and is defined by an inner case 110. A heater 120 is provided at the upper portion of the inside of the cooking cavity 100, and a plate or a rack 130 is placed inside the cooking cavity 100. The inner case 110 includes an inlet (not shown) and an outlet 111 formed on the sides for forming an air flow path to remove heat and smell inside the cooking cavity 100. An example of the heater 120 is a sheath heater. The use of the plate 130 in replacement of a circular turntable brings change to width and length (depth) of the cooking cavity 100, the modification of which is restricted by the turntable. At one side of the cooking cavity 100 is provided a guide 140 for guiding the plate 130. In addition, at the front and rear sides of the cooking cavity 100 are provided a front frame 150 and a rear frame 160, respectively, and the front frame 150 has an opening 151 for forming a flow path between the upper space 300 and the door 200. The rear frame 160 also has an opening 161 formed at the upper side for communication with the rear space 400.

[0029] The lower portion of the door 200 is hinged to the cooking cavity 100 so that the door 200 can open and close the cooking cavity 100. The door 200 is formed to cover the cooking cavity 100 and the upper space 200. The door 200 is composed of a handle 210, a front plate 220, an input sensing unit 230, a door panel 240, a control panel 250, a middle plate 260, a bracket 270, a door frame 280, and a choke cover 290.

[0030] The handle 210 is a part that a user uses to

open or close the door 200, and can be fixed to the front plate 220 by bolts (not shown). Desirably, the handle 210 has at least one channel (not shown) formed inside along its longitudinal direction in a manner that the channel is communicated with outside, so that the total weight can be reduced and the amount of heat transferred to the user from the cooking cavity 100 during cooking can be minimized.

[0031] The front plate 220 is desirably made of a transparent glass for the user to be able to see the inside of the cooking cavity 100, and a display unit (not shown) including buttons may be attached or coated thereto, the buttons being used for the user to select a cooking course or for the indication of an operating status of the cooking apparatus.

[0032] The input sensing unit 230 is a part that recognizes which button is selected by the user. In the case that the input sensing unit 230 is located at the rear of the front plate 220 made of glass, it can be composed of a glass touch unit and serve as an electrostatic sensor. The glass touch unit can be attached to the front plate 220 using a tape. The input sensing unit 230 is located at the upper region of the door 200 facing the upper space 300 of the cooking cavity 100, and this structure ensures a broader cooking cavity and helps the user easily see the inside of the cooking cavity 100 without hindrance.

[0033] The door panel 240 is a part that fixes other components 220, 250 and the like of the door 200, and has an opening 241 for the user to see the inside of the cooking cavity 100. Moreover, the door panel 240 has in its lower side an outlet (not shown) through which the flow traveling along a cooling flow path extended from a cooling fan 420 (to be described) to the door 200 via the upper space 300 is discharged.

[0034] The control panel 250 is a part for controlling the overall operation of the cooking apparatus according to a user input. To this end, it cooperates with the input sensing unit 230 and a relay substrate 350 (to be described), and is fixed to the door panel 240 from the rear side of the input sensing unit 230. Desirably, the control panel 250 is provided with a light-emitting source such as an LED (light emitting diode), and irradiates the light emitted from the light-emitting source to the display unit (not shown).

[0035] The middle plate 260 is a part fixed to the door panel 240, while being spaced out from the front plate 220 and the door frame 280, respectively. Its primary function is to block heat transfer from the cooking cavity 100 to the front frame 220 and the handle 210. Desirably, the middle plate 260 is installed at the door panel 240 so that a flow generated from the cooling fan 420 (to be described) enters the door 200 via the rear space 400 and the upper space 300 and then travels between the middle plate 260 and the front plate 220 under the guidance of a bracket 270 (to be described). Such a flow vents through the outlet (not shown) of the door panel 240.

[0036] The bracket 270 is fixed to the door panel 240

from the rear side of the control panel 250. It serves to protect the input sensing unit 230 and the control panel 250, each including electronic components, against heat and microwaves from the cooking cavity 100 and against the flow by the cooling fan 420, and guides the flow to travel between the door panel 240 and the front plate 220.

[0037] The door frame 280 is accommodated in the door panel 240, and serves to block leakage of microwaves to the outside of the cooking apparatus.

[0038] The choke cover 290 is a cover for the door 200 located towards the cooking cavity 100, and has an opening 291 formed on its upper side in correspondence to the opening 151 of the front frame 150. The opening 291 is preferably composed of tiny holes in order to prevent food or foreign substances from getting into the door 200 while the door 200 is being open.

[0039] The upper space 300 is a space over the cooking cavity 100 defined by an external case 310, and includes a heater 320, a waveguide 330, an insulating upper plate 340, and a relay substrate 350. Optionally, a lamp (not shown) for lightening the cooking cavity 100 may be provided as well.

[0040] The external case 310 has a shape that encompasses the top and both sides of the cooking cavity 100 at a distance away, and is connected to the front frame 150 and the rear frame 160. If necessary, it may have an outlet 311 so that a flow having traveled around the cooking cavity 100 and the heating elements installed in the cooking apparatus can be vented to the outside.

[0041] An example of the heater 320 is a halogen heater. Since such a heater 320 is influenced by microwaves, unlike the heater 120 formed of a sheath heater, the heater 320 is installed at the upper side of the inner case 110 so as to provide heat downwardly into the cooking cavity 100 from above.

[0042] The waveguide 330 is extended from the rear space 400 to the upper space 300, and serves to provide microwaves generated from a magnetron (not shown) to the cooking cavity 100. To do this, at the upper surface of the cooking cavity 100 is provided a port 331 (see FIG. 2).

[0043] The insulating upper plate 340 prevents heat generated by the heater 120 housed in the inner case 110 from transferring to the upper space 300, and has a shape that covers the upper portion of the cooking cavity 100 except for the heater 320 and the waveguide 330.

[0044] The relay substrate 350 is mounted on the insulating upper plate 340 from one side of the upper space 300, and interworks with the control panel 250 to operate components inclusive of the magnetron (to be described) placed at the rear space 400.

[0045] FIG. 2 schematically shows an example of the rear space of a cooking apparatus according to the present invention. Referring to FIGS. 1 and 2, the rear space 400 is a space behind the cooking cavity 100 defined by the cover 410, and includes a cooling fan 420, a convection heater assembly 430, and heating elements such as a magnetron 440, a high voltage transformer

450, and a high voltage capacitor 460, together building a component room of the cooking apparatus.

[0046] The cover 410 is connected to the rear frame 160 or the outer case 310 so as to cover the upper space 300 and the rear space 400, and its lower portion is connected to a base 610. At the lower portion of the cover 410 or the base 610 is provided an inlet 411 for air inflow to the cooling fan 420.

[0047] The cooling fan 420 is located at the lower portion of the rear space 400 along the width direction thereof, and includes flow-generating units 421 and 422 on both sides to cool the components installed at the upper side. As the rear space 400, the upper space 300 and the door 200 are built in a way to be communicated, the entire area of the cooking apparatus can be cooled by means of the cooling fan 420. In addition, the cooling fan 420 is provided with a partition wall 423 for preventing the flow generated by the cooling fan 420 from flowing back to the cooling fan 420. The partition wall 423 has openings 424 and 425 formed on both sides in a manner to make the flow go up to the upper portion of the rear space 400. At the space 426 between the flow-generating units 421 and 422 is provided a motor (not shown) for driving the flow-generating units 421 and 422.

[0048] FIGS. 3 and 4 schematically show other application examples of the rear space of a cooking apparatus according to the present invention. Referring to FIGS. 1-4, the rear space is provided, in addition to the structure shown in FIG. 2, with a flow guide 441 for guiding air flow to the magnetron 440, and a flow guide 442 for guiding the air flow coming out of the magnetron 440 to the inlet 112 that is formed on the lateral face of the cooking cavity 100. This structure, especially the flow guide 442, makes it possible to guide the air flow generated from the cooling fan 420 into the cooking cavity 100 stably and efficiently, and to effectively cool the magnetron, one of core components.

[0049] The convection heater assembly 430 includes a fan 431, a heater 432, an inner heater cover 433, an outer heater cover 434, and a motor 435. Desirably, a heat insulating material (not shown) is placed between the inner heater cover 433 and the outer heater cover 434. Such a convection heater assembly 430 must have the motor 435. Since the motor 435 is installed being protruded backwardly from the rear space 400, the rear space 400 must have a room that is deep enough at least to accommodate the motor 435. Based on the attention to this space, such a large volume component 440, 450, and/or 460 among the major components used in the operation of the cooking apparatus can be placed in the rear space 400. In this way, even though part of the cooking cavity 100 in the longitudinal direction is sacrificed, the cooking cavity 100 is expanded in the lateral and vertical directions. Also, by using a plate instead of a turntable, a cooking apparatus according to the present invention can change the height, width and depth of the cooking cavity 100. Also, by placing the cooling fan 420 at the lower portion of the rear space 400, a cooking

apparatus according to the present invention can utilize the rear space 400 and can cool the heating elements 440, 450, and/or 460 as well. Also, by providing the cooling fan 420 at the lower portion of the rear space 400 and building the rear space 400, the upper space 300, the door 200, the cooking cavity 100, and the lateral spaces 500 to be communicated with one another, the whole part of a cooking apparatus according to the present invention can be effectively cooled by the cooling fan 420. Also, as the cooling fan 420 is installed along the width direction of the rear space 400, the heating elements such as the convection heater assembly 430, the magnetron 440, the high voltage transformer 450, and the high voltage capacitor 460, which are provided in the rear space 400, can be cooled effectively, the flow can be traveled to the upper space 300, the lateral spaces 500 and the cooking cavity 100 and be vented through an outlet 611 formed on the base at the lower portion of the cooking cavity 100. Also, by providing the partition wall 423 and the openings 424 and 425, a cooking apparatus according to the present invention can form the flow path and flow and cool the heating elements, effectively and selectively. Also, the rear frame 160 may further comprise an opening 162 for communicating the lateral space 500. The opening 162 enables a direct air flow from the rear space 400 to the lateral space 500 and creates air flow to both sides of the rear space 400, thereby promoting the cooling process and the air flow onto both sides of the rear space 400.

[0050] The magnetron 440, the high voltage transformer 450, and the high voltage capacitor 460 are major components used in the operation of the cooking apparatus, each generating a lot of heat. The magnetron 440 is placed above the opening 424, while the high voltage transformer 450 and the high voltage capacitor 460 are placed above the opening 425. The arrangement of these heating elements can be changed.

[0051] The lateral spaces 500 are spaces on both sides of the cooking cavity 100 defined by the outer case 100, and they desirably communicate with the upper space 300, the rear space 400, and the lower space 600, and also with the cooking cavity 100 through the inlet 112 and the outlet 111. The flow generated from the cooling fan 420 travels from the rear space 400, the upper space 300, the cooking cavity 100, the lateral spaces 500, and eventually to the lower space 600. At this time, the flow traveling the upper space 300 and heading to the lateral space 500 can guide the flow that came out of the cooking cavity 100 through the outlet 111 to the lower space 600.

[0052] The lower space 600 is a space below the cooking cavity 100 defined by the base 610. The base 610 is connected to the front frame 150 and the rear frame 160 to support the cooking apparatus, and includes the outlet 611 so as to exhaust the flow originated from the cooling fan 420 and the smell and heat generated in the cooking cavity 100. Even though the lower space 600 is defined by the rear frame 160 from the rear side, the base 610 is connected to the cover 410 over the rear frame 160.

Therefore, the base 610 also functions as a member for limiting the lower portion of the rear space 400. The location of the outlet 611 is not particularly limited, so it can be on the side of the outlet 111, or preferably at the center of the base 610 to give a sufficiently long flow path. Since hot air flow is vented through the outlet 611, the cooking apparatus should not be placed on a kitchen appliance that is sensitive to heat. To protect such a kitchen appliance from any damages due to overheated air, a plate (not shown) may be connected to the base 610 at a distance so that heat may be exhausted in the lateral directions.

[0053] FIGS. 5 and 6 schematically show a cooling flow path according to the present invention. As shown in the drawings, flow generated from the rear space 400 travels to the lateral spaces 500 formed on both sides of the cooking cavity 100 via the upper space 300, while part of the flow comes out of the opening 151 and turns towards the door 200. Also, another part of the flow may turn towards the lateral spaces through the opening 162 formed in the rear frame 160. The flow coming to the upper space 400 cools the heater 320 and the relay substrate 350. Desirably, the relay substrate 350 is provided to the insulating upper plate 340 along the direction of the flow, so as to minimize the hindrance to the flow. The flow passing through the lateral spaces 500 turns towards the lower space 600, and is vented through the outlet 611 (refer to FIG. 1) formed at the center of the base 610. Even though there is no particular restriction to the location of the outlet 610, it is preferably located around the center of the base 610 because a sufficient amount of heat exchange is performed as the flow travels or circulates inside the cooking apparatus as long as possible. At this time, to protect a bottom surface where the cooking apparatus is placed, a protective plate 612 may be connected to the base 610 at a distance so that the flow may be exhausted in the lateral directions. In addition, the flow passing by the lateral spaces 500 guides the flow vented through the outlet 111 of the cooking cavity 100 to the lower space 600. Meanwhile, the air flow that comes through the opening 291 of the choke cover 290 travels between the front plate 220 and the middle plate 260 being guided by the bracket 270, and is vented through the outlet 242 formed in the bottom surface of the door panel 240. As such, the input sensing unit 230 (see FIG. 1) and the control panel 250 (see FIG. 1) covered by the bracket 270 can be protected from heat and air flow, one side of the middle plate 260 blocks heat through the air flow (Although the air flow is blocked by the bracket 270, the air flow serves to block heat transfer to the input sensing unit 230 and the control panel 240.), and the other side of the middle plate 260 blocks heat through a stagnant air layer. In result, heat generated from the cooking cavity 100 is blocked and not transferred to the outside of the door 200 or the handle 210 (see FIG. 1).

[0054] As explained so far, a cooking apparatus the present invention can exhaust a flow escaped from a cooking cavity to the outside through a flow with a differ-

ent flow path.

[0055] Also, a cooking apparatus the present invention can get rid of heat and smells produced in a cooking cavity by using a flow formed in a rear space of a cooking cavity.

[0056] Also, a cooking apparatus the present invention can guide a flow escaped from a cooking cavity to a lower space of the cooking apparatus.

[0057] Also, a cooking apparatus the present invention can effectively guide a flow to a cooking cavity and effectively guide the flow passing through the cooking cavity to the outside of the cooking apparatus.

15 Claims

1. A cooking apparatus, comprising:

- an external case (310);
- a cooking cavity (100) positioned within the external case (310);
- an upper space (300) located over the cooking cavity (100);
- two lateral spaces (500) located at two opposite lateral sides of the cooking cavity (100);
- a lower space (600) located below the cooking cavity (100); a first opening (112) provided in the cooking cavity (100), the first opening (112) is formed in one of the two opposite lateral sides thereof;
- a second opening (111) formed in the other one of the two opposite lateral sides thereof; and
- characterized by**
- a rear space (400) located behind the cooking cavity, wherein an inlet (411) is provided at the rear space (400) and a component room is provided in the rear space (400);
- a cooling flow path in which cooling air flows from the inlet (411) at the rear space (400) into the upper space (300) and/or the lateral spaces (500), and consecutively to an outlet (611) provided at the lower space (600);
- a magnetron (440) provided at the component room in the rear space (400) and providing microwaves to the cooking cavity,
- a flow guide (442) located on the cooling flow path for connecting the magnetron (440) provided in the rear space (400) to the first opening (112) formed in one of the two opposite lateral sides of the cooking cavity (100);
- a first flow path that directs flow from the magnetron (440) in the rear space (400) into the cooking cavity (100) through the first opening (112) and directs out of the cooking cavity (100) through the second opening (111); and
- a second flow path that extends from the rear space (400) so as to intersect with the first flow path as it directs flow out of the second opening

(111), wherein the second flow path drives the flow to the outlet (611) at the lower space (600) and then to an outside of the cooking apparatus.

auslenkt, wobei der zweite Strömungsweg die Strömung zu dem Auslass (611) an dem unteren Raum (600) und dann zu einer Außenseite der Kochvorrichtung treibt.

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Patentansprüche

1. Kochvorrichtung, die Folgendes umfasst:

- ein externes Gehäuse (310);
- ein Kochhohlraum (100), der innerhalb des externen Gehäuses (310) positioniert ist;
- einen oberen Raum (300), der sich über dem Kochhohlraum (100) befindet;
- zwei seitliche Räume (500), die sich an zwei gegenüberliegenden seitlichen Seiten des Kochhohlraums (100) befinden;
- einen unteren Raum (600), der sich unter dem Kochhohlraum (100) befindet;
- eine erste Öffnung (112), die in dem Kochhohlraum (100) vorgesehen ist, wobei die erste Öffnung (112) in einer seiner beiden gegenüberliegenden seitlichen Seiten gebildet ist; eine zweite Öffnung (111), die in der anderen seiner beiden gegenüberliegenden seitlichen Seiten gebildet ist; und **gekennzeichnet durch**
- einen hinteren Raum (40), der sich hinter dem Kochhohlraum befindet, wobei ein Einlass (411) an dem hinteren Raum (400) vorgesehen ist und ein Komponentenraum in dem hinteren Raum (400) vorgesehen ist;
- einen Kühlungsströmungsweg, in dem Kühlluft von dem Einlass (411) an dem hinteren Raum (400) in den oberen Raum (300) und/oder die seitlichen Räume (500) und anschließend zu einem Auslass (611), der an dem unteren Raum (600) vorgesehen ist, strömt;
- ein Magnetron (440), das an dem Komponentenraum in dem hinteren Raum (400) vorgesehen ist und Mikrowellen an den Kochhohlraum liefert,
- eine Strömungsführung (442), die sich in dem Kühlungsströmungsweg befindet, um das Magnetron (440), das in dem hinteren Raum (400) vorgesehen ist, mit der ersten Öffnung (112), die in einer der beiden gegenüberliegenden seitlichen Seiten des Kochhohlraums (100) gebildet ist, zu verbinden;
- einen ersten Strömungsweg, der eine Strömung von dem Magnetron (440) in dem hinteren Raum (400) durch die erste Öffnung (112) in den Kochhohlraum (100) hineinlenkt und durch die zweite Öffnung (111) aus dem Kochhohlraum (100) hinauslenkt; und
- einen zweiten Strömungsweg, der sich von dem hinteren Raum (400) erstreckt, um den ersten Strömungsweg zu kreuzen, wenn er eine Strömung aus der zweiten Öffnung (111) hin-

Revendications

1. Appareil de cuisson, comprenant :

- un boîtier extérieur (310) ;
- une cavité de cuisson (100) positionnée à l'intérieur du boîtier extérieur (310) ;
- un espace supérieur (300) situé au-dessus de la cavité de cuisson (100) ;
- deux espaces latéraux (500) situés sur deux côtés latéraux opposés de la cavité de cuisson (100) ;
- un espace inférieur (600) situé au-dessous de la cavité de cuisson (100) ;
- une première ouverture (112) prévue dans la cavité de cuisson (100), la première ouverture (112) étant formée dans l'un des deux côtés latéraux opposés de celle-ci ;
- une seconde ouverture (111) formée dans l'autre des deux côtés latéraux opposés de celle-ci ; et **caractérisé par**
- un espace arrière (400) situé derrière la cavité de cuisson, dans lequel une entrée (411) est prévue au niveau de l'espace arrière (400) et un compartiment de composants est prévu dans l'espace arrière (400) ;
- un trajet d'écoulement de refroidissement dans lequel de l'air de refroidissement s'écoule depuis l'entrée (411) au niveau de l'espace arrière (400) jusque dans l'espace supérieur (300) et/ou les espaces latéraux (500), et consécutivement vers une sortie (611) prévue au niveau de l'espace inférieur (600) ;
- un magnétron (440) prévu au niveau du compartiment de composants dans l'espace arrière (400) et émettant des micro-ondes vers la cavité de cuisson,
- un guide d'écoulement (442) situé sur le trajet d'écoulement de refroidissement pour connecter le magnétron (440) prévu dans l'espace arrière (400) à la première ouverture (112) formée dans l'un des deux côtés latéraux opposés de la cavité de cuisson (100) ;
- un premier trajet d'écoulement qui dirige un écoulement depuis le magnétron (440) dans l'espace arrière (400) jusque dans la cavité de cuisson (100) à travers la première ouverture (112) et qui le dirige hors de la cavité de cuisson (100) à travers la seconde ouverture (111) ; et
- un second trajet d'écoulement qui s'étend depuis l'espace arrière (400) de manière à recouper le premier trajet d'écoulement lorsqu'il dirige

l'écoulement hors de la seconde ouverture (111), dans lequel le second trajet d'écoulement conduit l'écoulement vers la sortie (611) au niveau de l'espace inférieur (600) et ensuite vers l'extérieur de l'appareil de cuisson.

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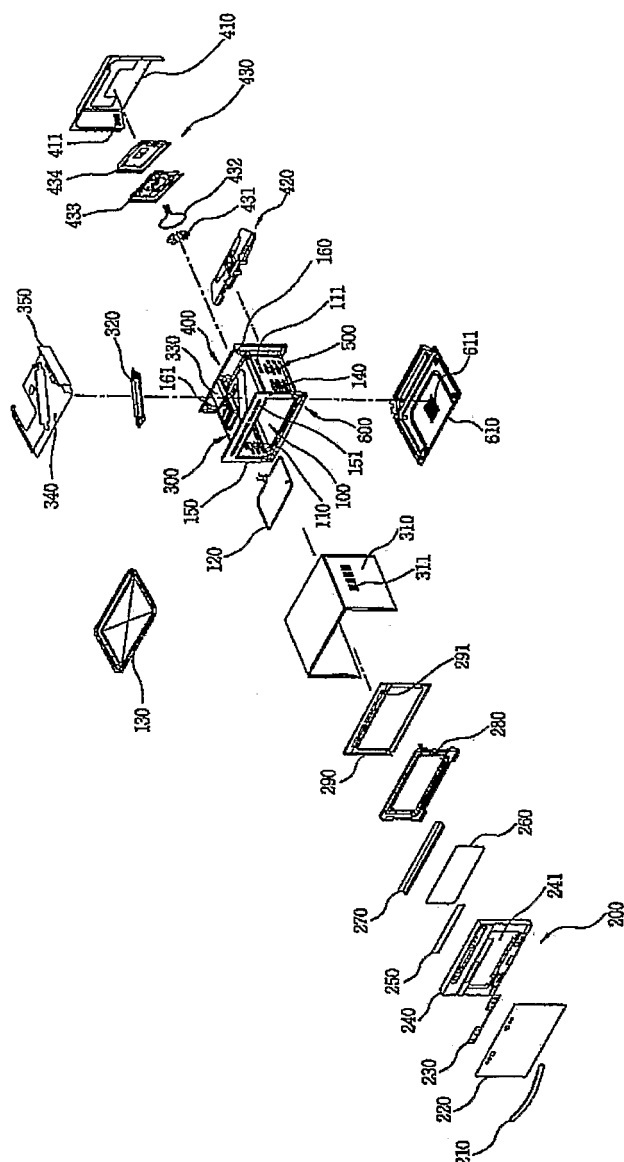
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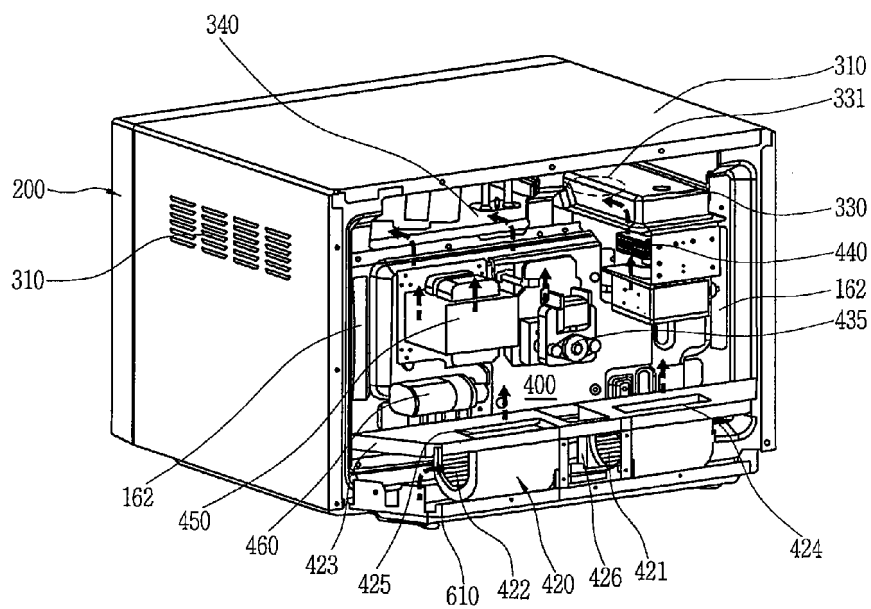
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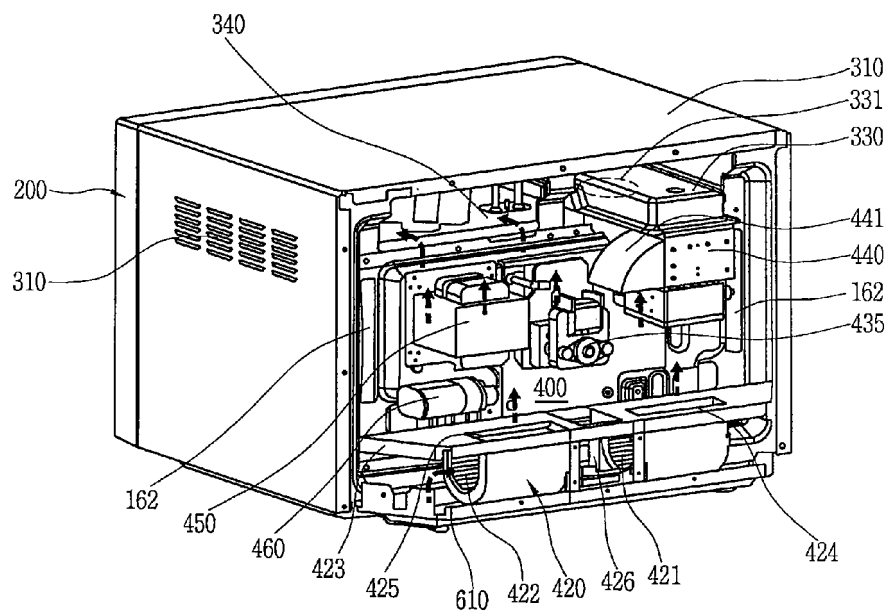
[Fig. 1]



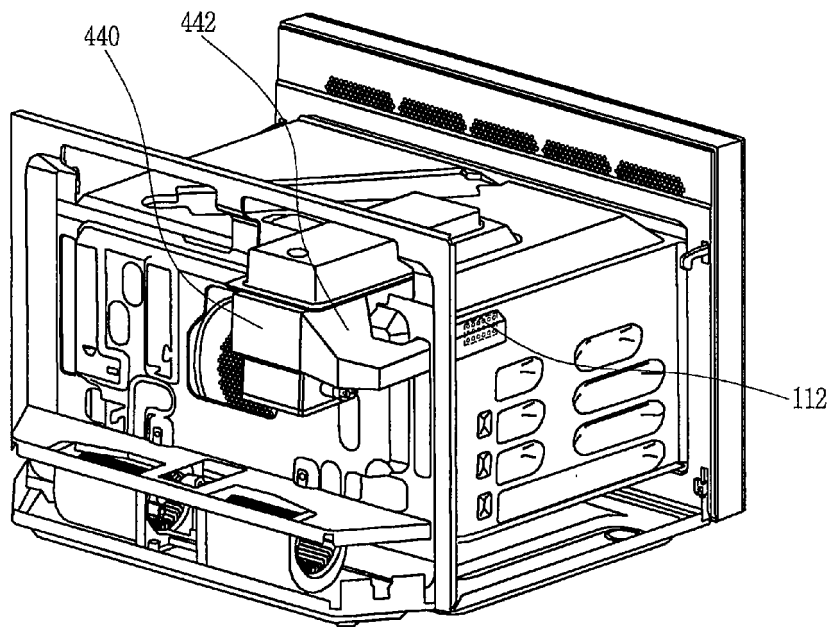
[Fig. 2]



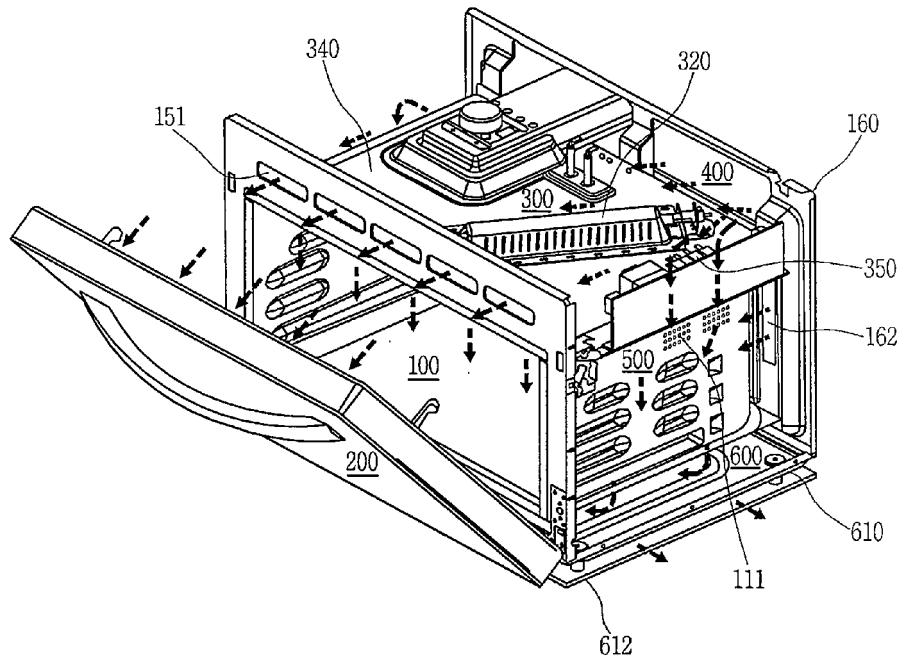
[Fig. 3]



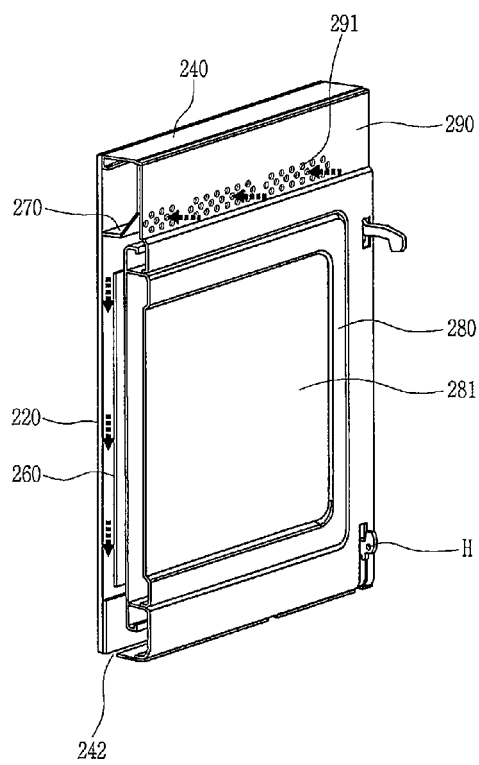
[Fig. 4]



[Fig. 5]



[Fig. 6]



REFERENCES CITED IN THE DESCRIPTION

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