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(54) **COOKING DEVICE**

(57) Provided is a cooking device (100). The cooking device (100) includes an inner housing (110) having an opening (117) and a cavity (115). An outer edge of the opening (117) is provided with a first enamel layer (121). An inner wall of the cavity (115) is provided with a second enamel layer (122). The first enamel layer (121) has a thickness within a first thickness range. The second enamel layer (122) has a thickness within a second thickness range. A lower limit value of the first thickness range is greater than or equal to 100 micrometers. An upper limit value of the first thickness range is smaller than or equal to 270 micrometers. A lower limit value of the second thickness range is greater than or equal to 100 micrometers. An upper limit value of the second thickness range is smaller than or equal to 350 micrometers.

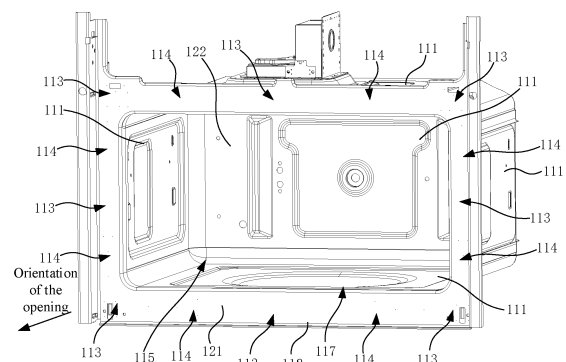


FIG. 2

Description

PRIORITY INFORMATION

[0001] This application claims a priority to and benefit of Chinese Patent Applications No. 202210253810.2 and No. 202220567222.1, filed with China National Intellectual Property Administration on March 15, 2022, the entire contents of which are incorporated herein by reference.

FIELD

[0002] The present disclosure relates to the field of cooking device technologies, and more particularly, to a cooking device.

BACKGROUND

[0003] Enamel is a composite material formed by solidifying an inorganic vitreous material onto a base metal by fusion and combining the inorganic vitreous material with the metal firmly. Owing to its characteristics such as high hardness, high temperature resistance, corrosion resistance, scratch resistance, oil resistance, easy cleaning, and high radiation coefficient, the enamel is widely used in household appliances.

SUMMARY

[0004] The present disclosure provides a cooking device.

[0005] Embodiments of the present disclosure provide a cooking device. The cooking device comprises an inner housing having an opening and a cavity. An outer edge of the opening is provided with a first enamel layer. An inner wall of the cavity is provided with a second enamel layer. The first enamel layer has a thickness within a first thickness range. The second enamel layer has a thickness within a second thickness range. A lower limit value of the first thickness range is greater than or equal to 100 micrometers. An upper limit value of the first thickness range is smaller than or equal to 270 micrometers. A lower limit value of the second thickness range is greater than or equal to 100 micrometers. An upper limit value of the second thickness range is smaller than or equal to 350 micrometers.

[0006] With the above-mentioned cooking device, both the thickness of the first enamel layer and the thickness of the second enamel layer are at least greater than 100 micrometers, which can avoid a bottom exposure caused by a thin enamel layer at a surface of the inner housing. Enamel layers at different parts of the inner housing are set to corresponding thicknesses. The thickness of the first enamel layer is smaller than or equal to 270 micrometers and the thickness of the second enamel layer is smaller than or equal to 350 micrometers, which can prevent adhesion of each enamel layer from being affected

due to a large thickness of the enamel layer.

[0007] In some embodiments, when hardness of the enamel is greater than first predetermined hardness, the lower limit value of the first thickness range is greater than or equal to 100 micrometers, and the lower limit value of the second thickness range is greater than or equal to 100 micrometers.

[0008] In some embodiments, when hardness of the enamel is smaller than second predetermined hardness, the lower limit value of the first thickness range is greater than or equal to 120 micrometers, and the lower limit value of the second thickness range is greater than or equal to 120 micrometers.

[0009] In some embodiments, the lower limit value of each of the first thickness range and the second thickness range is 150 micrometers, and the upper limit value of each of the first thickness range and the second thickness range is 200 micrometers.

[0010] In some embodiments, the cooking device comprises an operation component configured to form a cooking environment in the cavity in an operation state.

[0011] In some embodiments, the operation component comprises a microwave generator configured to emit microwaves into the cavity.

[0012] In some embodiments, the operation component comprises a heating member disposed in the cavity and configured to heat the cavity.

[0013] In some embodiments, the operation component comprises a hot air motor disposed outside the cavity and configured to introduce hot air into the cavity.

[0014] In some embodiments, the operation component comprises a steam generator in communication with the cavity and configured to deliver steam into the cavity.

[0015] In some embodiments, the cooking device comprises a cooling component arranged close to the operation component and configured to form a cooling channel around the operation component.

[0016] Additional aspects and advantages of the present disclosure will be provided at least in part in the following description, or will become apparent at least in part from the following description, or can be learned from practicing of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The above and/or additional aspects and advantages of the present disclosure will become more apparent and more understandable from the following description of embodiments taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a schematic partial structural view of a cooking device according to an embodiment of the present disclosure.

FIG. 2 is a schematic structural view of an inner housing according to an embodiment of the present disclosure.

FIG. 3 is a schematic side view of an inner housing

according to an embodiment of the present disclosure.

FIG. 4 to FIG. 6 each are a schematic partial structural view of a cooking device according to an embodiment of the present disclosure.

[0018] Description of reference numerals of main elements:

cooking device 100, housing plate 101;
inner housing 110, plate surface 111, front plate 112,
point 113, path 114, cavity 115, grid structure 116,
opening 117;
first enamel layer 121, second enamel layer 122;
operation component 130, microwave generator 131,
heating member 132, first heating tube 133,
second heating tube 134, hot air motor 135, third
heating tube 136, steam generator 137, water storage
tank 138, nozzle 139;
cooling component 140, cooling channel 141, first
air duct 142, first air inlet 1421, first air outlet 1422,
second air duct 143, second air inlet 1431, second
air outlet 1432, third air duct 144, third air inlet 1441,
third air outlet 1442.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0019] Embodiments of the present disclosure will be described in detail below with reference to examples thereof as illustrated in the accompanying drawings, throughout which same or similar elements, or elements having same or similar functions, are denoted by same or similar reference numerals. The embodiments described below with reference to the drawings are illustrative only, and are intended to explain, rather than limiting, the present disclosure.

[0020] Various embodiments or examples for implementing different structures of the present disclosure are provided below. In order to simplify the description of the present disclosure, components and arrangements of specific examples are described herein. These specific examples are merely for the purpose of illustration, rather than limiting the present disclosure. Further, the same reference numerals and/or reference letters may appear in different examples of the present disclosure for the purpose of simplicity and clarity, instead of indicating a relationship between different embodiments and/or the discussed arrangements. In addition, the present disclosure provides examples of various specific processes and materials. However, applications of other processes and/or the use of other materials are conceivable for those of ordinary skill in the art.

[0021] As illustrated in FIG. 1 and FIG. 2, the embodiments of the present disclosure provide a cooking device 100 comprising an inner housing 110. Specifically, in the embodiment illustrated in FIG. 2, the inner housing 110 comprises a plurality of plate surfaces 111. A quantity of plate surfaces 111 is greater than one. A cavity 115 lo-

cated in the inner housing 110 is enclosed by all plate surfaces 111. The cavity 115 is semi-enclosed to form an opening 117 located at the inner housing 110 and in communication with the cavity 115. For the cooking device 100, the cavity 115 located in the inner housing 110 is configured to hold food for cooking the food. In the embodiment illustrated in FIG. 1, the cooking device 100 comprises a plurality of housing plates 101. The plurality of housing plates 101 is disposed at an outer side surface of the inner housing 110 to form a casing of the cooking device 100, which provides protection and accommodation for the inner housing 110 and electrical components in the cooking device 100. A part of the plurality of housing plates 101 may be fixed or relatively movable. The part of the plurality of housing plates 101 that is relatively movable may be a door body of the cooking device 100, allowing the door body to be movable to expose or cover the opening 117.

[0022] In the embodiment illustrated in FIG. 2, the inner housing 110 further comprises a front plate 112. The front plate 112 presents a hollow frame structure. The frame structure of the front plate 112 is arranged along an edge of the opening 117 to form an outer edge of the opening 117.

[0023] On the above basis, each of an outer edge surface of the opening 117 and an inner wall surface of the cavity 115 is provided with enamel. The enamel located at the outer edge surface of the opening 117 forms a first enamel layer 121. The enamel located at the inner wall surface of the cavity 115 forms a second enamel layer 122. The first enamel layer 121 and the second enamel layer 122 each have a corresponding thickness.

[0024] It should be understood that, in the related art, although the enamel is widely applied in household appliances and other devices, the processing of the enamel is demanding. To achieve an effect of cooking food by the cooking device 100, heating the cooking device 100 to a high temperature is required, in such a manner that the cavity 115 is often in a high-temperature environment.

[0025] For an enamel layer, if the enamel layer is thin, the plate surface 111 to which the enamel layer is attached is likely to be exposed to an outside, which easily leads to a problem of a bottom exposure, causing the inner housing 110 to rust. If the enamel layer is thick, a large number of irregular air bubbles are likely to enter the enamel during sintering of the enamel, which affects adhesion of the enamel layer. Moreover, the thick enamel layer means that more sintering time is required, and thus insufficient sintering time is also likely to result in unsatisfactory adhesion of the enamel layer.

[0026] Specifically, the thickness of each of the first enamel layer 121 and the second enamel layer 122 may be selected within a corresponding thickness range. A thickness range corresponding to the first enamel layer 121 is a first thickness range. A thickness range corresponding to the second enamel layer 122 is a second thickness range. Each of the first thickness range and the second thickness range has an upper limit value and

a lower limit value. The lower limit value of the first thickness range may be identical to the lower limit value of the second thickness range to ensure that both the first enamel layer 121 and the second enamel layer 122 have a certain thickness, which avoids an occurrence of the bottom exposure. The upper limit value of the first thickness range is smaller than the upper limit value of the second thickness range. In this way, the second enamel layer 122 has relatively great adhesion that meets a thermal expansion need of the second enamel layer 122, which avoids chipping. Since the first enamel layer 121 is further away from an interior of the cavity 115 than the second enamel layer 122, the first enamel layer 121 may be set to be relatively thin while ensuring an avoidance of chipping. Of course, in other embodiments, the upper limit value of the first thickness range may also be equal to the upper limit value of the second thickness range.

[0027] In some embodiments, the lower limit value (in micrometers) of the first thickness range may be 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, or 270, while the upper limit value (in micrometers) of the first thickness range may be 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, or 270.

[0028] That is, the first thickness range may span from 100 micrometers to 270 micrometers, or may be a sub-range between 100 micrometers and 270 micrometers. The first enamel layer 121 having the thickness of 100 micrometers can meet a thermal expansion need at the front plate 112. The first enamel layer 121 having the thickness of 270 micrometers can meet needs for sufficient adhesion and structural elasticity at the front plate 112 and is conducive to reducing a possibility of chipping.

[0029] In some embodiments, the lower limit value (in micrometers) of the second thickness range may be 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, or 350, while the upper limit value (in micrometers) of the second thickness range may be 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, or 350.

[0030] That is, the second thickness range may span from 100 micrometers to 350 micrometers, or may be a sub-range between 100 micrometers and 350 micrometers. The second enamel layer 122 having the thickness of 100 micrometers can meet a thermal expansion need in the cavity 115. The second enamel layer 122 having the thickness of 350 micrometers can meet needs for sufficient adhesion and structural elasticity in the cavity 115 and is conducive to reducing the possibility of chipping.

[0031] With the above-mentioned cooking device 100, both the thickness of the first enamel layer 121 and the thickness of the second enamel layer 122 are at least greater than 100 micrometers, which can avoid the bottom exposure caused by a thin enamel layer at a surface of the inner housing 110. Enamel layers at different parts

of the inner housing 110 are set to corresponding thicknesses. The thickness of the first enamel layer 121 is smaller than or equal to 270 micrometers and the thickness of the second enamel layer 122 is smaller than or equal to 350 micrometers, which can prevent adhesion of each enamel layer from being affected due to a large thickness of the enamel layer.

[0032] In addition, to ensure that the first enamel layer 121 can meet a corresponding thickness standard, in the embodiment illustrated in FIG. 2, the front plate 112 comprises a plurality of points 113. All points 113 are sequentially disposed at the front plate 112 in a manner of surrounding the opening 117. A part of the plurality of points 113 are located at a corner area of the front plate 112. The other part of the plurality of points 113 are located at middle areas of corresponding borders of the frame structure of the front plate 112. In a case where the first enamel layer 121 is attached to the front plate 112, the enamel layer is arranged around the point 113 first, until a thickness of the arranged enamel layer reaches a required thickness.

[0033] On the above basis, in the embodiment illustrated in FIG. 2, the front plate 112 further comprises a plurality of paths 114. Each of the plurality of paths 114 has two ends corresponding to two adjacent points 113 in a direction surrounding the opening 117, respectively. Or, the path 114 is formed between the two adjacent points 113 and is located at a border of the frame structure of the front plate 112. When the thickness of the first enamel layer 121 at each of the two adjacent points 113 reaches the required thickness, the first enamel layer 121 is attached to the path 114 between the two adjacent points 113, until the thickness of the first enamel layer 121 at the path 114 also reaches the required thickness.

[0034] That is, during an actual processing, the enamel layer is attached to all the points 113 at the front plate 112, and then the enamel layer is attached to the each path 114 between the points 113. Therefore, the enamel layer at the point 113 can provide a thickness reference for the enamel layer at the path 114, which facilitates realization of the processing of attaching the entire first enamel layer 121 to the front plate 112.

[0035] In addition, to ensure that the second enamel layer 122 can meet a corresponding thickness standard, reference can be made to FIG. 2 and FIG. 3. In an embodiment illustrated in FIG. 3, the opening 117 of the cavity 115 faces downwards as a whole, in such a manner that the inner housing 110 is in a hung-up state. For an inner wall of the cavity 115, an attachment processing of the second enamel layer 122 can be achieved by sequentially performing: oil removal; multi-channel water washing; drying; electrostatic powder spraying; powder attraction for a core part; hanging transfer; sintering; hanging removal; and inspection. Arranging the inner housing 110 in the state illustrated in FIG. 3 first can avoid the case in which during the processing, when the enamel layer attached to the inner wall of the cavity 115 has not yet been wholly adhered to the inner wall of the cavity

115, it will move to a cavity bottom of the cavity 115 by gravity, which results in the enamel layer for the inner wall at the cavity bottom exceeding the second thickness range. The core part may comprise an inner wall region of the cavity 115 that is liable to be exposed to a high temperature environment for a long period of time, or a region having a large number of uneven structures at the inner wall of the cavity 115. In an embodiment, thickness control of the enamel layer may be achieved by adjusting a duration of the electrostatic powder spraying or adjusting a duration of the powder attraction for the core part.

[0036] In some embodiments, when hardness of the enamel is greater than first predetermined hardness, the lower limit value of the first thickness range is greater than or equal to 100 micrometers, and the lower limit value of the second thickness range is greater than or equal to 100 micrometers.

[0037] Specifically, in an embodiment, the enamel having hardness greater than the first predetermined hardness may be black metallic enamel. It should be understood that, the black metallic enamel has relatively high hardness and a relatively low brittleness value. Therefore, the first enamel layer 121 and the second enamel layer 122 may be set to be relatively thin. Of course, when the enamel is the black metallic enamel, the thickness of the enamel layer may also be greater than 100 micrometers.

[0038] In some embodiments, when the hardness of the enamel is smaller than second predetermined hardness, the lower limit value of the first thickness range is greater than or equal to 120 micrometers, and the lower limit value of the second thickness range is greater than or equal to 120 micrometers.

[0039] Specifically, in an embodiment, the enamel having the hardness greater than the first predetermined hardness may be non-ferrous metallic enamel. It should be understood that, the non-ferrous metallic enamel has relatively low hardness and a relatively high brittleness value. Therefore, the first enamel layer 121 and the second enamel layer 122 may be set to be relatively thick. Of course, when the enamel is the black metallic enamel, the thickness of the enamel layer may also be greater than 100 micrometers. The non-ferrous metallic enamel may comprise blue and white dot enamel.

[0040] In addition, on a basis of the above embodiments, in some embodiments, the first thickness range and the second thickness range may have a same value range. That is, the lower limit value of the first thickness range may be identical to the lower limit value of the second thickness range, and the upper limit value of the first thickness range may also be identical to the upper limit value of the second thickness range. Preferably, in an embodiment, the lower limit value of each of the first thickness range and the second thickness range is 150 micrometers, and the upper limit value of each of the first thickness range and the second thickness range is 200 micrometers. In this way, when the thermal expansion needs can be met simultaneously to reduce the chipping

and the adhesion at the surface of the inner housing 110 is sufficient, a processing process of a same parameter standard can be applied to the first enamel layer 121 and the second enamel layer 122 to reduce unnecessary parameter adjustments and corresponding inspection steps.

[0041] In some embodiments, the cooking device 100 comprises an operation component 130. Specifically, for the operation component 130, when the cooking device 100 starts operation, the operation component 130 enters an operation state, and enables the operation component 130 to form a cooking environment in the cavity 115 in the operation state. The cooking environment is an environment formed for heating and cooking the food. A method for forming the cooking environment varies depending on a type of the operation component 130.

[0042] As illustrated in FIG. 1 and FIG. 4, in some embodiments, the operation component 130 comprises a microwave generator 131. Specifically, in the illustrated embodiments, the microwave generator 131 is arranged at a top of the outer wall of the inner housing 110. When the cooking environment needs to be formed in the cavity 115, microwaves generated by the microwave generator 131 may be transmitted along a conduit in communication with the cavity 115. Therefore, the microwaves may be emitted into the cavity 115 and fill the cavity 115. Water molecules in the food undergo polarization in an electromagnetic field formed by the microwaves, achieving an effect of heating and cooking the food. The microwave generator 131 may be a magnetron.

[0043] As illustrated in FIG. 1 and FIG. 5, in some embodiments, the operation component 130 comprises a heating member 132. Specifically, in the illustrated embodiments, the heating member 132 is capable of generating heat in an energized state, and thus the heating member 132 can heat the cavity 115 for cooking the food.

[0044] More specifically, in the embodiment illustrated in FIG. 5, the heating member 132 comprises a first heating tube 133 and a second heating tube 134. The first heating tube 133 is arranged close to a top of the cavity 115. The second heating tube 134 is arranged close to a bottom of the cavity 115. The first heating tube 133 is capable of heating a top space in the cavity 115. The second heating tube 134 is capable of heating a bottom space in the cavity 115. In this way, a high-temperature environment is formed in the cavity 115. Therefore, a space in the cavity 115 can be uniformly heated.

[0045] As illustrated in FIG. 1, FIG. 5, and FIG. 6, in some embodiments, the operation component 130 comprises a hot air motor 135. Specifically, in the embodiments illustrated in FIG. 5 and FIG. 6, the cooking device 100 comprises a third heating tube 136. The third heating tube 136 is arranged at the plate surface 111 opposite to the opening 117 and located outside the cavity 115. A surface of the plate surface 111 opposite to the opening 117 has a grid structure 116. The hot air motor 135 is located outside the cavity 115 and positioned facing the grid structure 116. When the third heating tube 136 starts

heating air around the third heating tube 136, the hot air motor 135 enables the heated air to form an airflow. The airflow flows along the grid structure 116 into the cavity 115. Therefore, the heat generated by the third heating tube 136 can be brought into the cavity 115 to heat the space in the cavity 115.

[0046] As illustrated in FIG. 1 and FIG. 6, in some embodiments, the operation component 130 comprises a steam generator 137. Specifically, in the illustrated embodiments, the cooking device 100 further comprises a water storage tank 138, a nozzle 139, and a water pump (not illustrated). The water storage tank 138 is in communication with the steam generator 137 by a pipe. The water pump is arranged at the pipe communicating the water storage tank 138 with the steam generator 137 and is capable of opening or closing the pipe. The nozzle 139 is in communication with the steam generator 137. When the steam generator 137 generates steam, the steam can flow through the nozzle 139 into the cavity 115. In this way, the steam can be delivered into the cavity 115. Due to a high temperature of the steam, a high-temperature cooking environment can be formed in the cavity 115. The steam generator 137 may be a channel steam generator.

[0047] As illustrated in FIG. 1 and FIG. 4, in some embodiments, the cooking device 100 comprises a cooling component 140. Specifically, in the embodiment illustrated in FIG. 4, the cooling component 140 may have a plurality of cooling channels 141. The plurality of cooling channels 141 comprises a first air duct 142, a second air duct 143, and a third air duct 144. The first air duct 142 has a first air inlet 1421 and a first air outlet 1422. The second air duct 143 has a second air inlet 1431 and a second air outlet 1432. The third air duct 144 has a third air inlet 1441 and a third air outlet 1442.

[0048] When the operation component 130 in FIG. 4 comprises the microwave generator 131, the third air duct 144 is arranged surrounding the microwave generator 131. In addition, the third air inlet 1441 and third air outlet 1442 are both located at a same side of the microwave generator 131. Therefore, when entering the third air inlet 1441 and flowing along the third air duct 144 to be discharged from the third air outlet 1442, the air is allowed to exchange heat with the microwave generator 131 to a maximum extent to improve a cooling effect exerted by the third air duct 144 on the microwave generator 131.

[0049] In addition, in the embodiment illustrated in FIG. 4, the first air duct 142 and the second air duct 143 each are capable of cooling other electrical components (for example, other operation components 130) of the cooking device 100. Further, the first air duct 142, the second air duct 143, and the third air duct 144 may intersect with each other to facilitate formation of a cooling system having the composite path 114, to improve a cooling efficiency.

[0050] In addition, as illustrated in FIG. 4 to FIG. 6, for the cooking device 100, in an embodiment, the operation component 130 further comprises the microwave gener-

ator 131, the heating member 132, the hot air motor 135, and the steam generator 137. Further, different cooking effects can be achieved by combining different operation components 130. Specifically, with the steam generator 137 and the heating member 132, coupling of a steam function and a baking function can be achieved. Therefore, a baking effect of the food is satisfactory, and a dry taste of the food is avoided. With the steam generator 137 and the microwave generator 131, coupling of the steam function and a microwave function can be achieved to provide the cooking device 100 with fast steaming and other cooking effects. With the steam generator 137, the microwave generator 131, and the heating member 132, coupling of the steam function, the microwave function, and the baking function can be achieved, which can greatly improve an efficiency and the cooking effect. With the hot air motor 135 and the heating member 132, or with the hot air motor 135 and the steam generator 137, the steam function or the baking function can be enhanced to improve the cooking effect.

[0051] Reference throughout this specification to "an embodiment," "some embodiments," "an illustrative embodiment," "an example," "a specific example," or "some examples," means that a particular feature, structure, material, or characteristic described in connection with the embodiment or example is comprised in at least one embodiment or example of the present disclosure. The appearances of the above phrases in various places throughout this specification are not necessarily referring to the same embodiment or example of the present disclosure. Furthermore, the particular features, structures, materials, or characteristics described here may be combined in any suitable manner in one or more embodiments or examples.

[0052] In addition, the terms "first" and "second" are only used for descriptive purposes, and cannot be understood as indicating or implying relative importance or implicitly indicating the number of indicated technical features. Therefore, the features associated with "first" and "second" may explicitly or implicitly comprise at least one of the features. In the description of the present disclosure, "plurality" means at least two, unless otherwise specifically defined.

[0053] In the description of the present disclosure, it should be understood that, the orientation or the position indicated by terms such as "center", "longitudinal", "lateral", "length", "width", "thickness", "over", "below", "front", "rear", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer", "clockwise", and "anti-clockwise" should be construed to refer to the orientation and the position as shown in the drawings, and is only for the convenience of describing the embodiments of the present disclosure and simplifying the description, rather than indicating or implying that the pointed device or element must have a specific orientation, or be constructed and operated in a specific orientation, and therefore cannot be understood as a limitation of the present disclosure.

[0054] In the present disclosure, unless expressly stipulated and defined otherwise, the first feature "on" or "under" the second feature may mean that the first feature is in direct contact with the second feature, or the first and second features are in indirect contact through another feature between the first and second features. Moreover, the first feature "above" the second feature may mean that the first feature is directly above or obliquely above the second feature, or simply mean that the level of the first feature is higher than that of the second feature. The first feature "below" the second feature may mean that the first feature is directly below or obliquely below the second feature, or simply mean that the level of the first feature is smaller than that of the second feature.

[0055] In the present disclosure, it should be noted that, unless otherwise clearly specified and limited, terms such as "install", "connect", "connect to" and the like should be understood in a broad sense. For example, it may be a fixed connection or a detachable connection or connection as one piece; mechanical connection or electrical connection; direct connection or indirect connection through an intermediate; internal communication of two components or the interaction relationship between two components. For those skilled in the art, the specific meaning of the above-mentioned terms in the present disclosure can be understood according to specific circumstances.

[0056] Although embodiments of the present disclosure have been illustrated and described, it is conceivable for those skilled in the art that various changes, modifications, replacements, and variations can be made to these embodiments without departing from the principles and spirit of the present disclosure. The scope of the present disclosure shall be defined by the claims as appended and their equivalents.

Claims

1. A cooking device, comprising:
an inner housing having an opening and a cavity, an outer edge of the opening being provided with a first enamel layer, an inner wall of the cavity being provided with a second enamel layer, the first enamel layer having a thickness within a first thickness range, and the second enamel layer having a thickness within a second thickness range, wherein:

a lower limit value of the first thickness range is greater than or equal to 100 micrometers;
an upper limit value of the first thickness range is smaller than or equal to 270 micrometers;
a lower limit value of the second thickness range is greater than or equal to 100 micrometers; and
an upper limit value of the second thickness range is smaller than or equal to 350 micrometers.

2. The cooking device according to claim 1, wherein when hardness of the enamel is greater than first predetermined hardness, the lower limit value of the first thickness range is greater than or equal to 100 micrometers, and the lower limit value of the second thickness range is greater than or equal to 100 micrometers.
3. The cooking device according to claim 1 or 2, wherein when hardness of the enamel is smaller than second predetermined hardness, the lower limit value of the first thickness range is greater than or equal to 120 micrometers, and the lower limit value of the second thickness range is greater than or equal to 120 micrometers.
4. The cooking device according to any one of claims 1 to 3, wherein the lower limit value of each of the first thickness range and the second thickness range is 150 micrometers, and wherein the upper limit value of each of the first thickness range and the second thickness range is 200 micrometers.
5. The cooking device according to any one of claims 1 to 4, comprising:
an operation component forming a cooking environment in the cavity in a predetermined operation state.
6. The cooking device according to claim 5, wherein the operation component comprises a microwave generator emitting a microwave into the cavity.
7. The cooking device according to claim 5 or 6, wherein the operation component comprises a heating member disposed in the cavity and heating the cavity.
8. The cooking device according to any one of claims 5 to 7, wherein the operation component comprises a hot air motor disposed outside the cavity and introducing hot air into the cavity.
9. The cooking device according to any one of claims 5 to 8, wherein the operation component comprises a steam generator in communication with the cavity and delivering steam into the cavity.
10. The cooking device according to any one of claims 5 to 9, comprising:
a cooling component arranged close to the operation component and forming a cooling channel around the operation component.

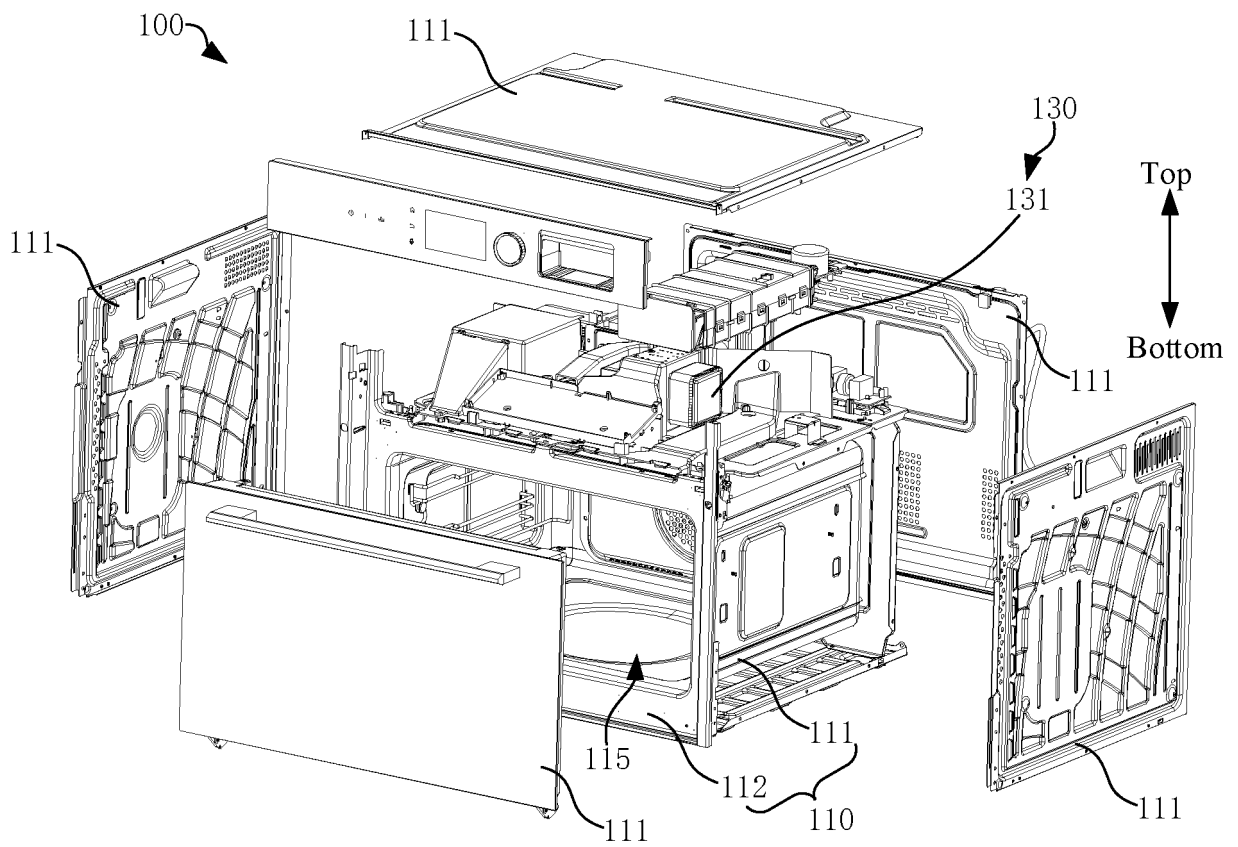


FIG. 1

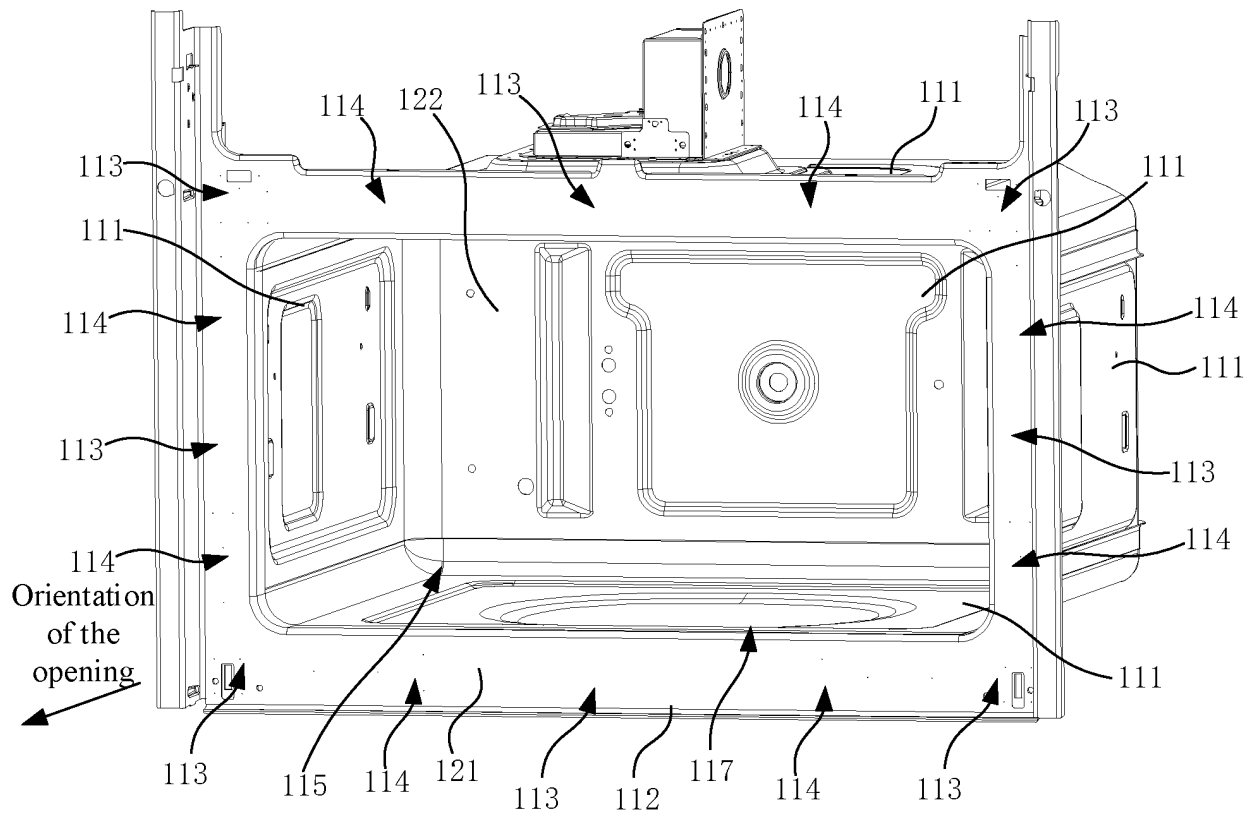


FIG. 2

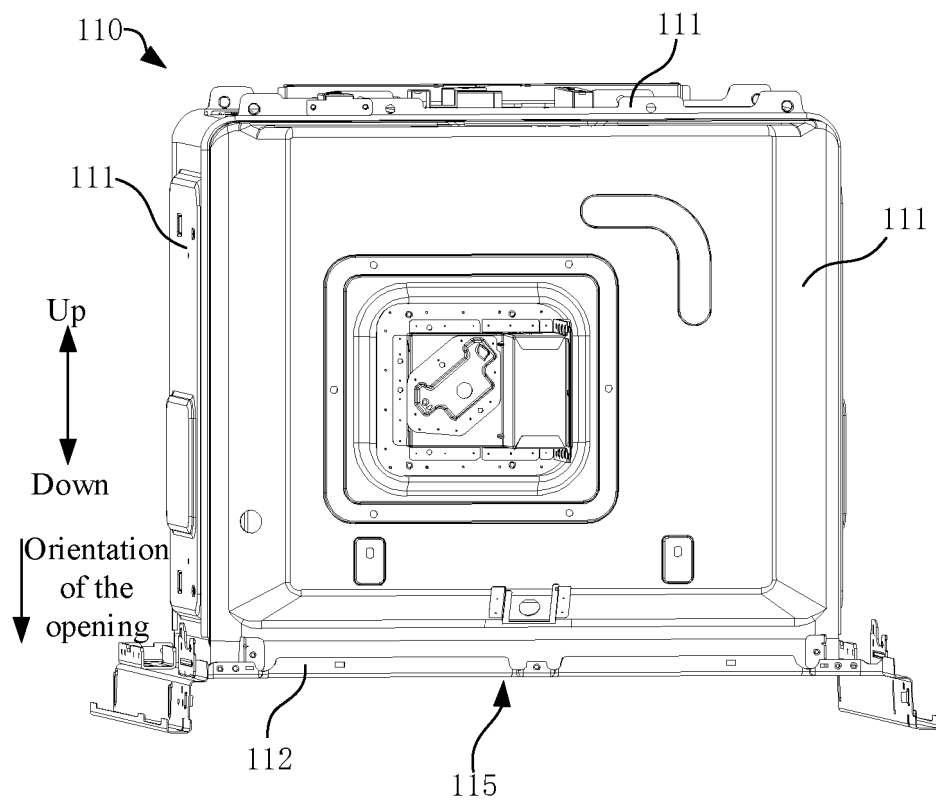


FIG. 3

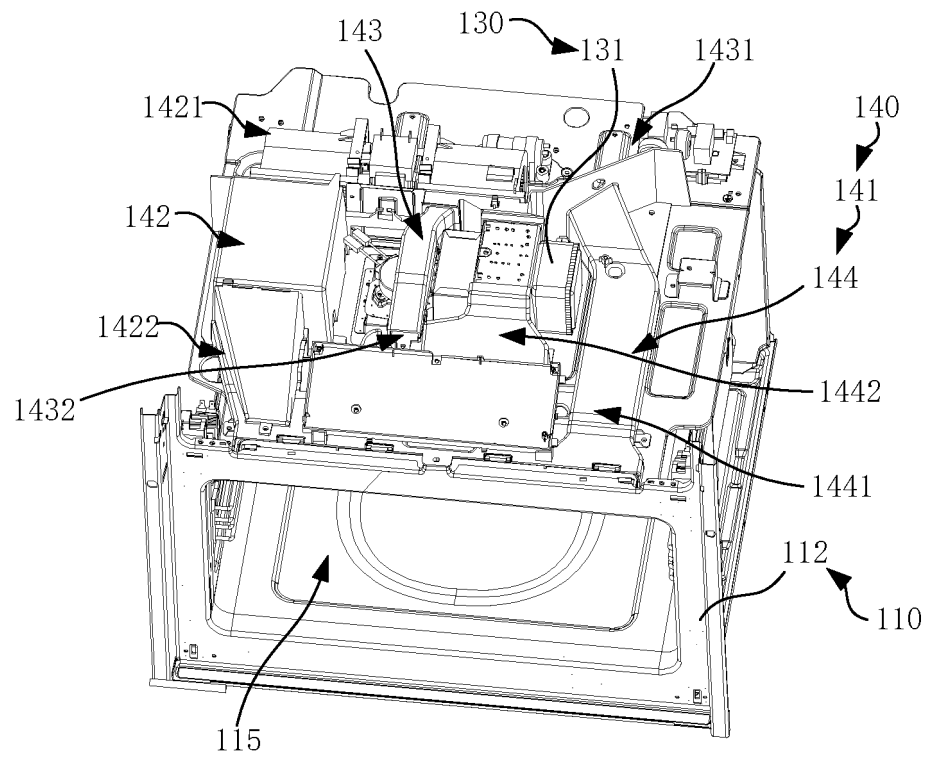


FIG. 4

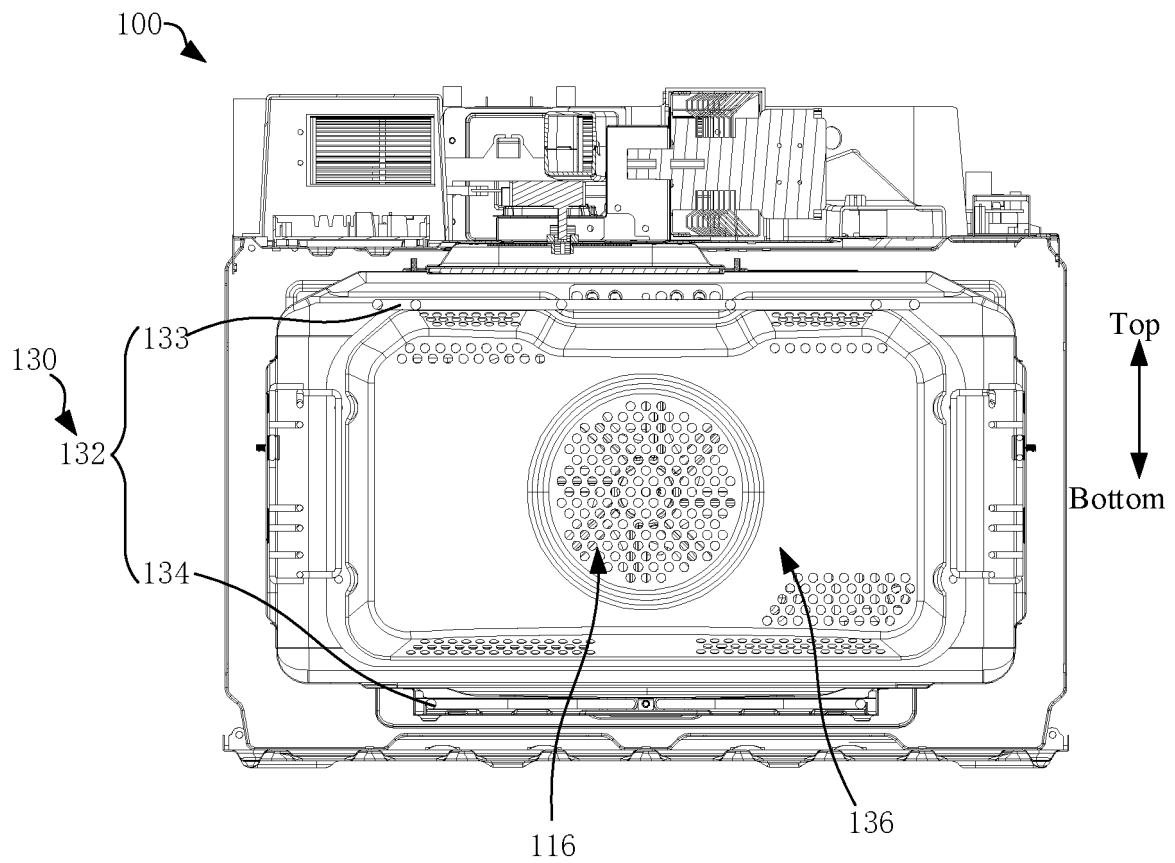


FIG. 5

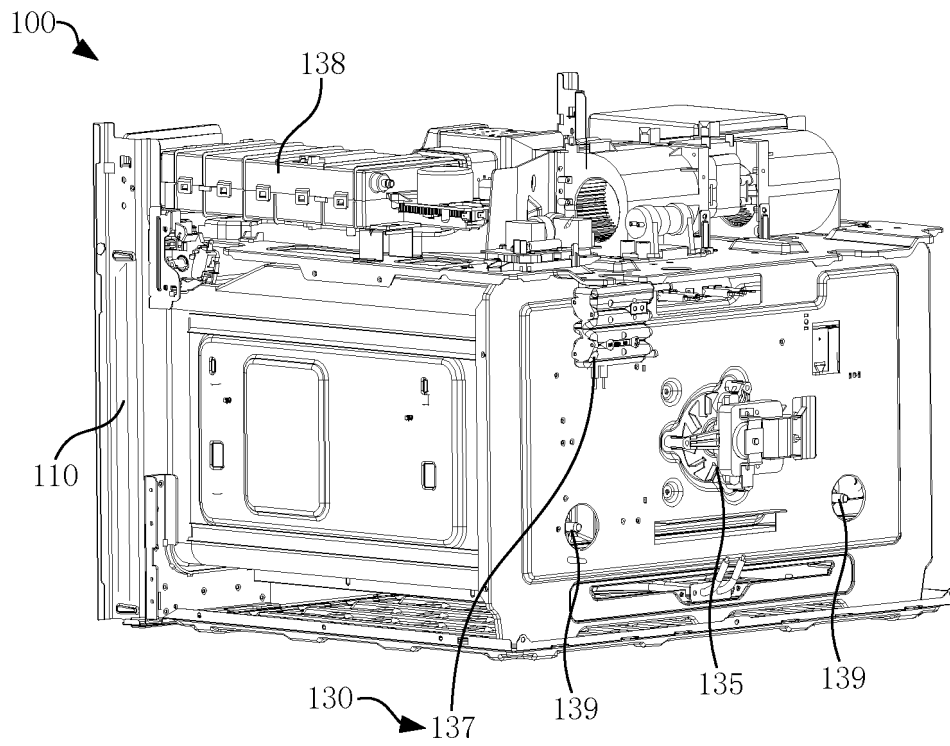


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/076696

A. CLASSIFICATION OF SUBJECT MATTER

A47J36/02(2006.01)i; A47J27/00(2006.01)i

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)

IPC:A47J

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)

CNPAT; EPODOC; WPI; CNKI; ENTXTC; WPABSC: 厚, 搪瓷, 微波, 微米, density, enamel, microwave, micrometer, micrometre, micron

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 2933354 A2 (MIELE & CIE. KG) 21 October 2015 (2015-10-21) description, paragraphs [0012] and [0038]-[0051], and figures 1-3	1-10
Y	CN 208192766 U (JOYOUNG CO., LTD.) 07 December 2018 (2018-12-07) description, paragraphs [0029]-[0041], and figures 1-4	1-10
PX	CN 114711614 A (GUANGDONG MIDEA KITCHEN APPLIANCES MANUFACTURING CO., LTD. et al.) 08 July 2022 (2022-07-08) claims 1-10	1-10
PX	CN 217447358 U (GUANGDONG MIDEA KITCHEN APPLIANCES MANUFACTURING CO., LTD. et al.) 20 September 2022 (2022-09-20) claims 1-10	1-10
A	CN 209047876 U (WUHAN SUPOR COOKWARE CO., LTD.) 02 July 2019 (2019-07-02) entire document	1-10
A	JP 11-46986 A (MITSUBISHI ELECTRIC CORP. et al.) 23 February 1999 (1999-02-23) entire document	1-10

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"D" document cited by the applicant in the international application	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

16 June 2023

Date of mailing of the international search report

19 June 2023

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/076696

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4453064 A (SHARP K. K.) 05 June 1984 (1984-06-05) entire document	1-10

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/076696

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		DE 102014105257 A1	15 October 2015
CN 208192766 U	07 December 2018	None	
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CN 209047876 U	02 July 2019	None	
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		JPS 5829361 Y2	28 June 1983
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		DE 2741221 C2	15 April 1982

Form PCT/ISA/210 (patent family annex) (July 2022)

REFERENCES CITED IN THE DESCRIPTION

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