

【DESCRIPTION】

【Invention Title】

HEATING COOKER OPERABLE TO DEODORIZE/DESMOKE

【Technical Field】

The present invention relates to a heating cooker having a closed cooking chamber, and more particularly, to a heating cooker suitable for cooking fish, meat, or the like, which causes plenty of smell and smoke, and preventing smell or smoke from being emitted when the closed cooking chamber is open.

【Background Art】

Heating cookers with a closed cooking chamber may be classified into roasters, grills, bakers, electric ovens, and so on. Such heating cookers generate plenty of smoke and smell while heating and cooking food. In particular, if a closed cooking chamber is open after cooking is completed, smell and smoke generated in the closed cooking chamber leaks at once, which may give a user inconvenience. Particularly, such inconvenience is more serious when the food is fish or meat.

Fig. 10 shows a conventional heating cooker designed suitable for cooking fish or meat.

Referring to Fig. 10, the conventional heating cooker includes a container 3 and a lid 4, which are connected to each other by a hinge 2. When an upper portion of the container 3 is covered with the lid 4, a closed cooking chamber is defined therebetween. A lower heater 5a and an upper heater 5b are respectively installed to lower and upper portions of the cooking chamber, i.e., the container 3 and the lid 4. Also, the container 3 is provided with a grill 9 or the like for supporting food. In addition, a deodorizing filter 6 is installed to the lid 4, wherein the deodorizing filter 6 includes substance for adsorbing and eliminating gas or vapor containing smell or smoke, deodorant, or catalyst.

However, the conventional heating cooker is insufficient for eliminating the smoke or smell components generated substantially in proportion to an increase in cooking time, due to a limited capability of the deodorizing filter. In addition, since gas or vapor having smell or smoke generated during cooking is condensed in the deodorizing filter within a short time, the capability of the deodorizing filter exceeds its limit instantly. Also, the deodorizing filter cannot deodorize/adsorb smell or smoke generated thereafter.

Further, according to a prior art, a heating cooker is used with a cooking chamber filled with water to a certain depth from a bottom thereof. In this case, oil and heated vapor generated while cooking fish or meat may partially contact with the water due to internal convection and then dissolved therein, which may decrease smell to some extent. However, most of smell or smoke generated during cooking has a high temperature and thus is collected in an upper portion of the cooking chamber, rather than its lower portion. Therefore, a very small amount of smell or smoke is absorbed and dissolved in the water, and most smell or smoke is discharged to the air. In addition, in a case where a gas containing smell or smoke is discharged to the outside of the cooking chamber, heat is discharged together with the discharged gas, which may cause energy loss.

【Disclosure】

【Technical Problem】

In this regards, the applicant has suggested a technique for performing deodorization by forcibly putting a gas containing smell or smoke generated during cooking into water. However, this technique is not effective in that the deodorizing efficiency is poor and noise is also generated.

Thus, embodiments seek to provide a heating cooker having a ventilating chamber connected to a closed cooking chamber to ensure air circulation therebetween so that only smell and smoke in the air introduced into the ventilating chamber is intercepted by a water curtain formed by sprayed water.

【Technical Solution】

A heating cooker according to an aspect comprises a closed cooking chamber having a heating means for heating food contained in closed cooking chamber; a ventilating chamber having an inlet passage and an outlet passage and connected to the cooking chamber through the inlet and outlet passages so that air circulates between the ventilating chamber and the cooking chamber; a rotating fan for circulating air between the cooking chamber and the ventilating chamber; a reservoir disposed adjacent to the ventilating chamber; and a spraying unit for spraying water in the reservoir to the ventilating chamber. The water sprayed by the spraying unit forms a water curtain successively in the middle of the ventilating chamber, so that smell or smoke in the air does not pass through the water curtain but is intercepted in the middle of the ventilating chamber.

The reservoir is disposed adjacent to a lower portion of the ventilating chamber so that the sprayed water is retrieved.

The spraying unit is a rotating spraying body for radially spraying water by centrifugal force, and the rotating spraying body includes a sending passage partially dipped into the water of the reservoir and a plurality of spray holes formed in a sidewall thereof to be connected with the sending passage.

The rotating fan may be positioned at an upper side of the rotating spraying body between the inlet and outlet passages of the ventilating chamber.

The ventilating chamber may be defined in an inner tank surrounding the rotating fan and the rotating spraying body, an outer tank defining an inlet chamber and an outlet chamber by a barrier connected to the inner tank may be formed outside of the inner tank, the inlet passage may be defined by the inlet chamber and an outer inlet of the outer tank and an inner inlet of the inner tank which are connected to the inlet chamber, and the outlet passage may be defined by the outlet chamber and an outer outlet of the outer tank and an inner outlet of the inner tank which are connected to the outlet chamber.

According to one embodiment, the reservoir may be detachably coupled to the lower portion of the ventilating chamber.

According to one embodiment, the rotating fan and the rotating spraying body may be connected to a motor in common to make concentric rotating motion.

According to one embodiment, the inner inlet may be a cutout formed at a lower end of the inner tank, and the inner outlet may be a cutout formed at an upper end of the inner tank.

According to one embodiment, the rotating spraying body may include a plurality of disks which are adjacent to the spray holes and radially protrude from the sidewall. Further, the rotating spraying body may include an enlarging structure the diameter of which is

increased from a lower side to an upper side. In addition, the sending passage may be configured to have an inner diameter that is increased from a lower portion dipped in the water of the reservoir to an upper side.

According to one embodiment, the heating cooker may further comprise a controller for receiving a signal from an input unit to control the heating unit, the rotating fan and the spraying unit. At this time, the controller may receive a signal from the input unit to cooperatively control the heating means, the rotating fan and the spraying unit in such a manner that the controller operates only the heating means at an initial stage, operates the heating means, the rotating fan and the spraying unit together, and then, after stopping the heating means, further operates the rotating fan and the spraying unit.

According to one embodiment, the heating cooker may further comprise a moisture removing filter for filtering off moisture contained in the air moving from the ventilating chamber to the cooking chamber. More preferably, the reservoir is detachably coupled adjacent to a lower portion of the ventilating chamber, and the filter is supported on a wall of the reservoir and disposed in the outlet passage of the ventilating chamber. At this time, it is preferred that the moisture removing filter be detachably installed to the wall of the reservoir.

According to one embodiment, a plurality of ribs may be formed in a lower portion of the sending passage, the ribs being shaped to guide water to an upper portion of the sending passage when the rotating spraying body is rotated.

【Advantageous Effects】

According to embodiments of the present invention, a ventilating chamber is further provided to be connected to a closed cooking chamber to ensure air circulation therebetween, and smell or smoke contained in the air introduced into the ventilating chamber is intercepted and absorbed by droplets in the form of a water curtain made by radially sprayed water. Thus, there is an effect in that smell or smoke generated during cooking is eliminated in the ventilating chamber without discharging the smell or smoke to the outside.

【Description of Drawings】

Fig. 1 is a view generally illustrating a heating cooker according to one embodiment of the present invention;

Fig. 2 is an exploded perspective view showing components of a ventilating chamber of the heating cooker according to the embodiment of the present invention;

Fig. 3 is a partially cutaway perspective view showing the ventilating chamber shown in Fig. 2;

Fig. 4 is a sectional view illustrating the operation of a rotating fan and a spraying unit of the ventilating chamber of the heating cooker according to the embodiment of the present invention;

Figs. 5 (a) and (b) are views illustrating inlet and outlet passages of the ventilating chamber;

Fig. 6 is a block diagram illustrating a control logic of the heating cooker according to one example of the present invention;

Fig. 7 is a block diagram illustrating a control logic of the heating cooker according to another example of the present invention;

Fig. 8 is a block diagram illustrating a control logic of the heating cooker according to a further example of the present invention;

Fig. 9 is a sectional view illustrating a moisture removing filter provided in the ventilation room according to another embodiment of the present invention; and

Fig. 10 is a perspective view illustrating a conventional heating cooker.

【Best Mode】

Hereinafter, preferred embodiments of the present invention will be described in detail with reference to the accompanying drawings. The following embodiments are provided only for illustrative purposes so that those skilled in the art can fully understand the spirit of the present invention. Therefore, the present invention is not limited to the following embodiments but may be implemented in other forms. In the drawings, the widths, lengths, thicknesses and the like of elements may be exaggerated for convenience of illustration. Like reference numerals indicate like elements throughout the specification and drawings.

Fig. 1 is a view generally illustrating a heating cooker according to the present invention, Fig. 2 is an exploded perspective view showing components of a ventilating chamber of the heating cooker according to the embodiment of the present invention, and Fig. 3 is a partially cutaway perspective view showing the ventilating chamber shown in Fig. 2. Also, Fig. 4 is a sectional view illustrating the operation of a rotating fan and a spraying unit of the ventilating chamber, and Figs. 5 (a) and (b) are views illustrating inlet and outlet passages of the ventilating chamber.

As shown in Fig. 1, a heating cooker 1 of this embodiment includes a closed type cooking chamber 10, in which food such as fish or meat is heated and cooked. In this embodiment, the cooking chamber 10 has a space defined between a container 10a and a lid 10b when the container 10a with an open upper end is covered with the lid 10b. However, the present invention is not limited thereto, but the cooking chamber may have any configuration if food can be put into the closed cooking chamber 10 and then taken from the cooking chamber 10.

However, in the configuration where the cooking chamber 10 is defined by the container 10a and the lid 10b, an inflow channel and an outflow channel for connecting the cooking chamber 10 and a ventilating chamber 20 may be located at the lid 10b together, at the container 10a together, or at the container 10a and the lid 10b separately.

In the cooking chamber 10, a lower heater 12a and an upper heater 12b as means for heating foods are installed to face each other. In this embodiment, the lower heater 12a is installed to the container 10a, and the upper heater 12b is installed to the lid 10b. A support 13 for supporting food, such as a grill, a cooking plate or a heating plate, may be disposed between the lower heater 12a and the upper heater 12b in such a manner that the support 13 is mounted on steps formed on the container 10a.

Also, a detachable water receiver 16 is installed to the bottom of the container 10a adjacent to a lower portion of the cooking chamber 10. Water in the water receiver 16 contacts with a portion of oil or heated vapor generated during cooking and moving downward by internal convection, thereby partially removing smell or smoke components. However, in a case where food should be cooked

with moisture controlled, it may be advantageous that the water receiver 16 is not provided. Thus, a heating cooker from which the water receiver 16 is intentionally excluded is also included in the scope of the present invention.

According to this embodiment, the heating cooker 1 further includes a ventilating chamber 20, which is connected to the cooking chamber 10 by a rotating fan 40, which will be described later, such that air may circulate therebetween. To this end, the ventilating chamber 20 and the cooking chamber 10 are connected to each other through an inlet passage I (see Fig. 5a) and an outlet passage O (see Fig. 5b). The air generated from the cooking chamber 10, i.e., the air containing smell and smoke, is introduced into the ventilating chamber 20 through the inlet passage I. Thereafter, the smell or smoke is removed from the air in the ventilating chamber 20, and then, the air free from smell and smoke comes out of the ventilating chamber 20 through the outlet passage O and enters the cooking chamber 10 again.

As shown in Figs. 2 to 4, the heating cooker includes a reservoir 30 disposed adjacent to a lower portion of the ventilating chamber 20. Accordingly, the air in the ventilating chamber 20 interfaces with the water in the reservoir 30. The air in the ventilating chamber 20 is contaminated by smell or smoke generated in the cooking chamber 10. The present invention includes a spraying unit for pulling water from the reservoir 30 and then radially spraying the ventilating chamber 20 with the water in the form of droplets. The radially sprayed droplets form a water curtain W in the middle of the ventilating chamber 20 as shown by a dashed line block in Fig... 4. The water curtain W intercepts smell or smoke in the air in the middle of the ventilating chamber 20. The intercepted smell or smoke components are absorbed in the droplets and then fall into the reservoir 30. The reservoir 30 is detachably installed, so that it is easy to exchange water in the reservoir 30 and/or clean the interior of the reservoir 30.

Hereinafter, the configuration and operation of the major components in the ventilating chamber of the heating cooker according to the embodiment of the present invention will be described in more detail.

As shown in Figs. 3 and 4, the spraying unit according to the present invention comprises a rotating spraying body 50 that operates by centrifugal force. According to one preferred embodiment, the rotating spraying body 50 is configured to spray droplets (or, water particles) by centrifugal force while rotating. However, the spraying unit having other structures or spraying methods may also be included in the scope of the present invention.

The rotating spraying body 50 includes a sending passage 52 (see Fig. 4) extending in the center thereof, and a plurality of spray holes 54 (see Fig. 4) formed in a sidewall thereof to be connected with the sending passage 52. A lower portion of the sending passage 52 is dipped into the water of the reservoir 30. Here, a plurality of ribs 51 are formed in the lower portion of the sending passage 52. The rotating spraying body 50 is rotated by a motor 60 (see Figs. 2 and 4). Due to the rotation and its centrifugal force, the water in the reservoir 30 is forcibly carried upward through the sending passage 52, and the forcibly carried water is sprayed to the outside through the spray holes 54 by the centrifugal force. The plurality of ribs 51 are formed to slantingly protrude from

the lower end of the sending passage 52 to a certain height. Also, the plurality of ribs 51 are shaped to guide water from the lower end of the sending passage to an upper side thereof while the rotating spraying body 50 rotates, thereby causing the water to be more easily pulled up through the sending passage 52. In addition, the sending passage 52 is configured such that its inner diameter is increased from the lower portion dipped in the water of the reservoir 30 to the upper side.

Also, the rotating spraying body 50 is integrally provided with a plurality of disks 56 which are adjacent to the spray holes 54 and radially protrude from the sidewall. At least one spray hole 54 is formed between adjacent disks. The plurality of disks 56 helps the sprayed water droplets to scatter more widely and fall. Also, the rotating spraying body 50 has an enlarging structure the diameter of which is increased from a lower side to an upper side. Accordingly, the plurality of disks 56 are arranged such that an upper disk has a diameter greater than a lower one.

In this embodiment, the rotating spraying body 50 and the rotating fan 40 are connected to a single motor 60 to make concentric rotation. Accordingly, by operating only one motor 60, the rotating fan 40 and the rotating spraying body 50 are rotated at the same time, thereby circulating air between the cooking chamber 10 (see Fig. 2) and the ventilating chamber 20 and also eliminating smell and smoke in the ventilating chamber 20. At this time, the rotating fan 40 is positioned above the rotating spraying body 50 and located between the inlet passage I and the outlet passage O of the ventilating chamber 20. Differently from the figures, the rotating fan 40 and the rotating spraying body 50 may be respectively connected to and rotated by different motors.

Meanwhile, the ventilating chamber 20 is defined in an inner tank 21 surrounding the rotating fan 40 and the rotating spraying body 50. Also, an outer tank 22 defining an inlet chamber 221 and an outlet chamber 222 by a barrier 23 (see Figs. 2, 3 and 5) connected to the inner tank 21 is formed outside of the inner tank 21.

As shown in Figs. 2, 3, 4 and 5 (a), the inlet passage I of the ventilating chamber is defined by the inlet chamber 221 and an outer inlet 22a of the outer tank 22 and an inner inlet 21a of the inner tank 21 which are connected to the inlet chamber. Also, as shown in Figs. 2, 3, 4 and 5 (b), the outlet passage O of the ventilating chamber is defined by the outlet chamber 222 and an outer outlet 22b of the outer tank 22 and an inner outlet 21b of the inner tank 21 which are connected to the outlet chamber. Here, the inner inlet 21a is formed by a cutout at a lower end of the inner tank 21, and the inner outlet 21b is formed by a cutout at an upper end of the inner tank 21.

In Figs. 3, 4 and 5, an air moving path in the ventilating chamber is represented by arrows. Referring to the figures, when the rotating fan 40 is rotated by the motor 60, the contaminated air in the cooking chamber 10 (see Fig. 2) is introduced into the ventilating chamber 20 through the inlet passage I. At this time, the rotating spraying body 50 is rotated together with the rotating fan 40, and accordingly, the rotating spraying body 50 pulls up the water from the reservoir 30 and sprays the water to the contaminated air in the ventilating

chamber 20. The sprayed water absorbs smell and smoke in the air and then falls into the reservoir 30.

The air in the ventilating chamber 20 flows out to the cooking chamber 10 through the outlet passage O of the ventilating chamber by the successive rotation of the rotating fan 40. The smell and smoke components removed from the air are dissolved or immersed in the water and then collected in the reservoir 30 adjacent to the lower portion of the ventilating chamber 20. The reservoir 30 may be detachably coupled to the lower portion of the ventilating chamber 20, and accordingly, the reservoir 30 may be separated from the lower portion of the ventilating chamber 20 for exchanging water. At this time, the detaching manner of the reservoir 30 may be changed in various ways.

The heating cooker 1 is advantageous in that the air heated in the cooking chamber 10 passes through the ventilating chamber 20 and then enters the cooking chamber 10 again without great heat loss. However, if the temperature of water in the reservoir 30 excessively increases, the feature or performance of the heating cooker may be varied undesirably. In order to prevent it, a cooling device (not shown) for controlling the water temperature in the reservoir 30 below a certain level may be installed in the reservoir 30. The cooling device may be a thermoelectric element or a pipe through which a cooling material flows. The cooling device may prevent the performance or feature of the heating cooker from being undesirably changed by an excessive increase in water temperature of the reservoir.

Fig. 6 is a block diagram illustrating a control logic of the heating cooker according to one example of the present invention. Referring to Fig. 6, the heating cooker 1 includes an input unit 2 and a controller 4. The input unit 2 includes a switch 2 having a cooking/ventilating switching function to provide an input for cooperatively performing the cooking and ventilating operations. Although not shown, the input 2 may further include switches for performing other operations of the heating cooker, in addition to the switch 2. Also, the controller 4 is signal-connected to a timer 5 and may use time information obtained from the timer 5 to determine an operation or stop timing of the rotating fan 40 for ventilation.

For example, in a case where a user makes an input using the switch 2 of the input unit 2, the controller 4 operates only the heater 14 in the cooking chamber during an initial heating period of predetermined some minutes, thereby increasing the temperature in the cooking chamber. The controller 4 receives the information of the timer 5, and then, if the initial heating period elapses, the controller 4 operates the motor 60 to further drive the rotating fan 40 and the rotating spraying body 50 in a state where the heater 14 is in operation. Accordingly, smell and smoke generated during cooking is eliminated. Even when the heater 14 stops its operation, the controller 4 receives the time information of the timer 5 and then further operates the motor 60 for predetermined some minutes. In this way, the rotating fan 40 and the rotating spraying body 50 operate to eliminate smell and smoke remaining after the cooking.

Fig. 7 is a block diagram illustrating a control logic of the heating cooker

according to another example of the present invention.

Referring to Fig. 7, the control logic of this example is substantially similar to that of the previous example. However, there is a difference in that the controller 4 uses a temperature sensor 5 instead of the timer employed in the previous example. The controller 4 is signal-connected to the temperature sensor 5 and may use the temperature information obtained from the temperature sensor 5 to determine an operation or stop timing of the rotating fan 40 for ventilation.

For example, in a case where a user makes an input using the cooperation switch 2 in the input unit 2, the controller 4 operates only the heater 14 in the cooking chamber to increase the temperature in the cooking chamber. For example, the controller 4 receives temperature information from the temperature sensor 5 and then, if the temperature in the cooking chamber exceeds a predetermined value, the controller 4 operates the motor 60 to drive the rotating fan 40 and the rotating spraying body 50 in a state where the heater 14 is in operation. Accordingly, smell and smoke generated during cooking is eliminated. In a case where the heater 14 stops its operation, the controller 4 may further operate the rotating fan 40 and the rotating spraying body 50 until the temperature in the cooking chamber decreases below a predetermined value, thereby further eliminating remaining smell and smoke. Alternatively, the temperature sensor of this example may be adopted together with the timer of the previous example. In this case, the time information obtained from the timer and the temperature information in the cooking chamber obtained from the temperature sensor may be used together. For example, after the heater 14 is solely operated for initially increasing the temperature in the cooking chamber, the timing for operating the rotating fan 40 and the rotating spraying body 50 is determined using the temperature information obtained from the temperature sensor. However, after the heater 14 stops its operation, the time for operating the rotating fan 40 and the rotating spraying body 50 may be determined by means of the timer.

Fig. 8 is a block diagram illustrating a control logic of the heating cooker according to a further example of the present invention. Referring to Fig. 8, the heating cooker 1 includes an input unit 2 and a controller 4. The input unit 2 includes a first switch 2a for inputting an ON/OFF signal of the heater 14 that is a heating means in the cooking chamber, and a second switch 2b for operating the motor 60 that rotates the rotating fan 40 and the rotating spraying body 50 in the ventilating chamber together.

The controller 4 receives a signal from the first switch 2a to operate the heater 14, thereby heating food in the cooking chamber. Also, the controller 4 receives a signal from the second switch 2b to operate the motor 60, and the operation of the motor 60 cause the rotating fan 40 and the rotating spraying body 50 to rotate together. The rotating fan 40 allows air to circulate between the cooking chamber and the ventilating chamber, and the rotating spraying unit 50 pulls the water from the reservoir 30 and sprays the water to the air introduced into the ventilating chamber. This example is different from the previous examples in that a switch for operating the heater to cook and a switch for operating the rotating fan for ventilation and/or the rotating spraying body are provided independently.

Fig. 9 shows a moisture removing filter that may be disposed in the ventilating

chamber according to an embodiment of the present invention.

Referring to Fig. 9, a moisture removing filter 90 for separating and removing moisture from air is disposed to close the outlet passage O of the ventilating chamber 20. More specifically, the moisture removing filter 90 includes a frame 92 detachably coupled to an inner wall of the reservoir 30 and thus supported by the inner wall of the reservoir 30, and a filtering unit 94 connected to the frame 92 and disposed to close the outlet passage O.

Accordingly, the reservoir 30 having the moisture removing filter 90 installed thereto is mounted to the lower portion of the ventilating chamber 20, more specifically to a lower portion of the outer tank 22, whereby the filtering unit 94 of the moisture removing filter 90 closes the outlet passage O, particularly the outer outlet 22b of the outer tank. Here, the filtering unit 94 may be a resin filter with micro pores, which is made, for example, of polypropylene, polyvinyl chloride, polyethylene, or similar hydrophobic material, or a metal net with micro pores. The moisture removing filter 90 allows air to pass therethrough but intercepts moisture in the air. The intercepted moisture may be formed into water drops and falls into the reservoir 30. Alternatively, the moisture removing filter 90 may be modified into different shapes allowing moisture to be formed into water drops, besides the net structure. Alternatively, a moisture removing filter containing a dehumidifying material such as zeolite may be considered.

The detachable structure of the aforementioned moisture removing filter 90 allows the moisture removing filter 90 to be selectively used. For example, when food in the cooking chamber needs plenty of moisture for cooking, the moisture removing filter 90 may be excluded. However, in a case where food in the cooking chamber may be cooked more advantageously with less moisture, the moisture removing filter 90 may be mounted.

【CLAIMS】

【Claim 1】

A heating cooker, comprising:

a closed cooking chamber having a heating means for heating food contained in closed cooking chamber;

a ventilating chamber having an inlet passage and an outlet passage and connected to the cooking chamber through the inlet and outlet passages so that air circulates between the ventilating chamber and the cooking chamber;

a rotating fan for circulating air between the cooking chamber and the ventilating chamber;

a reservoir disposed adjacent to the ventilating chamber; and

a spraying unit for spraying water in the reservoir to the ventilating chamber to intercept smell or smoke contained in air in the middle of the ventilating chamber, wherein the reservoir is disposed adjacent to a lower portion of the ventilating chamber so that the sprayed water is retrieved,

wherein the spraying unit is a rotating spraying body for radially spraying water by centrifugal force, and the rotating spraying body includes a sending passage partially dipped into the water of the reservoir and a plurality of spray holes formed in a sidewall thereof to be connected with the sending passage,

wherein the rotating fan is positioned at an upper side of the rotating spraying body between the inlet and outlet passages of the ventilating chamber,

wherein the ventilating chamber is defined in an inner tank surrounding the rotating fan and the rotating spraying body, an outer tank defining an inlet chamber and an outlet chamber by a barrier connected to the inner tank is formed outside of the inner tank, the inlet passage is defined by the inlet chamber and an outer inlet of the outer tank and an inner inlet of the inner tank which are connected to the inlet chamber, and the outlet passage is defined by the outlet chamber and an outer outlet of the outer tank and an inner outlet of the inner tank which are connected to the outlet chamber.

【Claim 2】

The heating cooker as claimed in claim 1, wherein the reservoir is detachably coupled to the lower portion of the ventilating chamber.

【Claim 3】

The heating cooker as claimed in claim 1 or 2, wherein the rotating fan and the rotating spraying body are connected to a motor in common to make concentric rotating motion.

【Claim 4】

The heating cooker as claimed in any of the preceding claims, wherein the inner inlet is a cutout formed at a lower end of the inner tank, and the inner outlet is a cutout formed at

an upper end of the inner tank.

【Claim 5】

The heating cooker as claimed in any of the preceding claims, wherein the rotating spraying body includes a plurality of disks which are adjacent to the spray holes and radially protrude from the sidewall.

【Claim 6】

The heating cooker as claimed in any of the preceding claims, wherein the rotating spraying body includes an enlarging structure the diameter of which is increased from a lower side to an upper side.

【Claim 7】

The heating cooker as claimed in any of the preceding claims, wherein the sending passage has an inner diameter that is increased from a lower portion dipped in the water of the reservoir to an upper side.

【Claim 8】

The heating cooker as claimed in any of the preceding claims, wherein the heating means includes an upper heater and a lower heater arranged to vertically face each other.

【Claim 9】

The heating cooker as claimed in any of the preceding claims, further comprising a controller for receiving a signal from an input unit to control the heating unit, the rotating fan and the spraying unit.

【Claim 10】

The heating cooker as claimed in claim 7, wherein the controller receives a signal from the input unit to cooperatively control the heating means, the rotating fan and the spraying unit in such a manner that the controller operates only the heating means at an initial stage, operates the heating means, the rotating fan and the spraying unit together, and then, after stopping the heating means, further operates the rotating fan and the spraying unit.

【Claim 11】

The heating cooker as claimed in any of the preceding claims, further comprising a moisture removing filter for filtering off moisture contained in the air moving from the ventilating chamber to the cooking chamber.

【Claim 12】

The heating cooker as claimed in claim 11, wherein the reservoir is detachably coupled adjacent to a lower portion of the ventilating chamber, and the moisture removing filter is supported on a wall of the reservoir and disposed in the outlet passage.

【Claim 13】

The heating cooker as claimed in claim 12, wherein the moisture removing filter is detachably installed to the wall of the reservoir.

【Claim 14】

The heating cooker as claimed in any of the preceding claims, wherein a plurality of ribs are formed in a lower portion of the sending passage, the ribs being shaped to guide water to an upper portion of the sending passage when the rotating spraying body is rotated.

【Claim 15】

The heating cooker as claimed in any of the preceding claims, wherein the rotating fan and the rotating

spraying body are respectively connected to and rotated by different motors.