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BARBECUE/COOKING STOVE

Background of the Invention

1. Field of the Invention

The present invention relates to a barbecue/cooking stove that has a device for guiding and collecting grease and that provides synchronous and equal heating in both of a cooking area and a barbecue area.

2. Description of the Related Art

Fig. 1 of the drawings illustrates a conventional barbecue/cooking stove 1 that allows the user to cook and barbecue food at the same time. The barbecue/cooking stove 1 comprises a stove body 11 having an annular electric heating member 13 mounted therein. An annular barbecue plate 12 is mounted on the stove body 11 and a pot 121 is provided on a bulge in a center of the barbecue plate 12. When applied with electricity, the heating member 13 heats the pot 121 for cooking and heats the barbecue plate 12 for barbecue purpose. It was, however, found that the grease of food tends to be accumulated in the barbecue area defined by the barbecue plate 12. The grease rapidly deteriorates due to continuous heating. When taking too much grease, the eater will suffer from cholesterohistechia, over-pressure in vessels, hardening of vessels, heart diseases, and stroke. If a tissue paper is used to absorb the grease, it is inconvenient and sometimes insecure, as the tissue paper might contain chemical substances that are harmful to human bodies after thermal-dissociation. In addition, after the meal, one might be injured by the high-temperature barbecue plate 12 when cleaning. Further, it was found that the heating member 13 couldn't provide uniform heating to both of the cooking area where the pot 121 locates and the barbecue area where the



barbecue plate 12 locates. As a result, the food in the barbecue area is overcooked while the food in the cooking area is still somewhat raw.

Summary of the Invention

It is a primary object of the present invention to provide an improved barbecue/cooking stove that has a device for guiding and collecting grease and that provides synchronous and equal heating in both of a cooking area and a barbecue area.

A barbecue/cooking stove in accordance with the present invention comprises an electric heating means including an electric outer heating member for heating an annular barbecue area of a disc and an electric inner heating member for heating a central cooking area of the disc. The heating means further comprises a connector device having plural slots for mounting the ends of the heating members, thereby providing uniform and synchronous heating to both of the barbecue area and the cooking area. Plural ribs are formed on an upper side of the disc that extends radially outward and downward from the central cooking area. A dripping hole is defined in the disc for guiding grease into a grease-collecting cup that can be removed for disposal of grease.

Other objects, advantages, and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

Brief Description of the Drawings

Fig. 1 is a perspective view of a conventional barbecue/cooking stove.

Fig. 2 is an exploded perspective view of a barbecue/cooking stove in accordance with the present invention.

Fig. 3 is a perspective view of a barbecue/cooking stove in accordance with the present invention.

Fig. 4 is a perspective view, partly exploded, of a connector seat of the barbecue/cooking stove in accordance with the present invention.

Fig. 4A is an enlarged view of a circled portion in Fig. 4.

Fig. 5 is a perspective view illustrating use of the barbecue/cooking stove in accordance with the present invention.

Fig. 6 is a perspective view illustrating a modified embodiment of a disc of the barbecue/cooking stove in accordance with the present invention.

Detailed Description of the Preferred Embodiments

Referring to Figs. 2 through 6 and initially to Figs. 2 and 3, in accordance with the present invention generally comprises a stove body 26, a disc 22 mounted above the stove body 22, an electric heating means 23, an auxiliary heating disc 24, a mounting disc 25, and a grease-collecting means 27.

The disc 22 comprises two handles 227 thereon for easy handling. A planar cooking area 221 is provided in a central portion of the disc 22. As illustrated in Fig. 5, a pan or pot 21 having a flat underside can be placed on the cooking area 221 to allow cooking, frying, deep flat frying, sautéing, etc. The disc 22 further comprises an annular barbecue area 222 locating around the cooking area 221 and extending radially outward and downward from the cooking area 221. Plural ribs 223 are formed on an upper side of the barbecue area 222 and extend radially outward and downward, thereby defining a grease-guiding groove 224 in each two adjacent ribs 223. In an alternative embodiment, as illustrated in Fig. 6, plural parallel transverse ribs 223a are formed on the upper side of the barbecue area 222, and an grease-guiding

groove 224 is defined between two ribs 223a that are adjacent to each other. Referring to Fig. 2, a separation rib 224a may be formed in each grease-guiding groove 224 to thereby define two smaller grease-guiding grooves 224 for guiding liquid grease on an outer surface of the respective rib 223. An annular grease-accumulating groove 226 is defined in an outer annular edge of the disc 22 and has a dripping hole 225.

The electric heating means 23 is mounted in a space between the disc 22 and the auxiliary heating disc 24 located below the disc 22. The electric heating means 23 comprises a relatively larger, outer electric heating member 231 and a relatively smaller, inner electric heating member 232 located inside the relatively larger, outer electric heating member 231. The relatively larger, outer electric heating member 231 comprises two threaded ends 233 each extending through a collar 235. The threaded ends 233 with the collars 235 mounted thereon are extended through holes 237 in an electrically insulating seat 236. Then, a conductive terminal 238 is coupled to an exposed distal end of each threaded end 233. Similarly, the relatively smaller, inner electric heating member 232 comprises two threaded ends 234 each extending through a collar 235. The threaded ends 234 with the collars 235 mounted thereon are extended through holes 237 in the insulating seat 236. Then, a conductive terminal 238 is coupled to an exposed distal end of each threaded end 234.

Referring to Figs. 1, 4, and 4A, the electric-heating means 23 further comprises a connector device 239 embedded in a wall of the stove body 26. The connector device 239 comprises an electrically insulating frame and plural slots 230 for connection with the conductive terminals 238 of the heating members 231 and 232. The wall of the electrically insulating frame is higher than the slots 230 to prevent the slots 230 from being exposed when the disc

22 is removed, thereby preventing injury to the user as a result of touching the slots 230 and the conductive terminals 238.

The auxiliary heating disc 24 is located below the electric heating members 23 to collect heat and then transmit heat back to the disc 22, thereby improving the heating efficiency. Screws 241 are mounted to a bottom of the auxiliary heating disc 24 to secure the latter to the stove body 26. Each screw 241 has a heat-insulating sleeve 242, 242a mounted therearound, and one of the heat-insulating sleeves, i.e., sleeve 242a, has a recessed intermediate portion 243 that extends through a bottom of a mounting disc 25 and then force-fitted into an associated engaging hole 266 in a bottom of the stove body 26.

The mounting disc 25 is mounted in a space in the stove body 26 and located below the auxiliary heating disc 24 for mounting the auxiliary heating disc 24 and the electric heating means 23. A heat-insulating gasket 251 is mounted to a bottom of the mounting disc 25 to prevent heat conduction to the stove body 26.

The stove body 26 is substantially a hollow bowl having an opening for receiving the disc 22. Temperature control switches 261 and 262 for adjusting the temperature of the electric heating members 231 and 232 and an indication lamp 263 are mounted to the wall of the stove body 26. Thus, the user may set the temperature for cooking/barbecuing in a manner that the electric heating members 231 and 232 are turned off when the actual temperature for cooking/barbecuing is higher than the pre-set temperature and that the electric heating members 231 and 232 are turned on when the actual temperature for cooking/barbecuing is lower than the pre-set temperature. Thus, the food can be cooked or barbecued in a desired manner. In addition, a breaker 264 is

mounted in the stove body 26 for cutting off power supply to the electric heating members 231 and 232 when they are overheated. Further, a connector 265 for providing electric connection between the connector seat 239 and an external power source (not shown) is mounted in the stove body 26.

The grease-collecting means 27 comprises a grease-guiding cup 271 and a grease-collecting cup 272. The grease-guiding cup 271 is securely mounted to the stove body 26 at an appropriate location and aligned with the dripping hole 225 to thereby define a grease passage. An end of the grease-guiding cup 271 is communicated with the grease-collecting cup 272 that is removably accommodated in a space in the stove body 26 to thereby allow disposal of the grease in the grease-collecting cup 272.

Referring to Fig. 5, after connection with the external power source via the connector 265, the food can be placed in the pot 21 and/or the barbecue area 222. The electric heating means 23 heats the barbecue area 222 and the cooking area 221. The connector device 239 comprises plural slots 230 for electrical connection with the ends 233 and 234 of the heating members 231 and 232, respectively.

The food in the pot 21 and the food in the barbecue area 222 are heated synchronously and equally due to the concentric arrangement of the heating members 231 and 232. Thus, heat is evenly distributed to a bottom of the disc 22.

With regard to the food in the barbecue area 222, particularly meat having a large amount of grease, the grease accumulated in the barbecue area 222 will fall into the grease-collecting cup 272 via the grease-guiding grooves 224 between the ribs 223 of the disc 22, the annular grease-accumulating groove 226, the dripping hole 225, and the grease-guiding cup 271. The

grease-collecting cup 272 can be removed from the stove body 26 for removal of the grease.

According to the above description, it is appreciated that the barbecue/cooking stove of the present invention comprises the following advantages:

1. The grease of food in the barbecue area 222 can be effectively guided, as the disc 22 is inclined downward and grease-guiding grooves 224 are provided.

2. The grease in the barbecue area 222 can be efficiently collected and disposed.

3. The heat provided by the heating members 231 and 232 allows uniform heat distribution to the cooking area 221 and the barbecue area 222.

4. The connector device 239 of the heating means 23 allows electric connection with the ends 233 and 234 of the heating members 231 and 232 to thereby provide heat by electricity.

5. The electrically insulating frame of the connector device 239 is higher than the slots 230 to thereby prevent inadvertent touch of the slots 230 and the conductive terminals 238.

6. The disc 22 can be lifted and carried by grasping at the handles 227 thereof.

7. The breaker 264 in the stove body 26 may prevent overheating of the heating members 231 and 232, thereby providing a safer stove.

8. Each of two ends 233, 234 of each heating member 231, 232 is threaded and engaged with a collar 235. In addition, after extending through a respective hole 237 in an electrically insulating seat 236, each exposed end

233, 234 is coupled with a conductive terminal 238, thereby providing a more stable and safer arrangement while achieving the heating purpose.

Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the scope of the invention as hereinafter claimed.

1

What is claimed is:**1. A barbecue/cooking stove comprising:**

a stove body;

a disc mounted on a top of the stove body, the disc comprising two handles mounted thereon, the disc further comprising a central cooking area and an inclined annular barbecue area, plural ribs being formed on an upper side of the annular barbecue area, thereby defining a grease-guiding groove between each two adjacent said ribs, the disc further comprising an annular grease-collecting groove defined in an outer edge thereof and communicated with the grease-guiding grooves, a dripping hole being defined in the annular grease-collecting groove;

an electric heating means mounted below the disc for heating the disc, the electric heating means comprising an outer electric heating member, an inner electric heating member, an electrically insulating seat having plural holes, and a connector seat, the outer electric heating member being located below the annular barbecue area for heating the annular barbecue area, the inner electric heating member located inside the outer electric heating member and below the cooking area for heating the cooking area, each of the inner electric heating member and the outer electric heating member comprising two ends, a collar being mounted to each of the ends of the inner electric heating member and the outer electric heating member, a conductive terminal being mounted to each of the ends of the inner electric heating member and the outer electric heating member that extends through an associated one of the plural holes of the electrically insulating seat, the connector seat being mounted to a wall of the stove body and comprising an electrically insulating frame and plural slots for

respectively engaging with the ends of the outer electric heating member and the inner electric heating member, thereby providing electric connection with the outer electric heating member and the inner electric heating member;

an auxiliary heating member mounted below the electric heating means for collecting heat and transmitting heat back to the disc;

a mounting disc mounted in the stove body and located below the auxiliary heating member for mounting the auxiliary heating member and the electric heating means, the mounting disc comprising a heat-insulating gasket mounted to a bottom thereof to prevent heat conduction to the stove body;

the stove body comprising an opening for mounting the disc, a first temperature control switch and a second temperature control switch being respectively, electrically connected with the outer electric heating member and the inner electric heating member for adjusting a temperature of the outer electric heating member and a temperature of the inner electric heating member, an indication lamp being mounted to the stove body, a breaker being mounted to the stove body for cutting off power supply to the outer electric heating member and the inner electric heating member when at least one of the outer electric heating member and the inner electric heating member are over-heated, a connector being mounted to the stove body and electrically connected to the connector device, the connector being adapted to be electrically connected with an external power source; and

a grease-collecting means comprising a grease-guiding cup and a grease-collecting cup, the grease-guiding cup being securely mounted to

the stove body and communicated with the dripping hole of the disc, thereby defining a grease passage, the grease-guiding cup having an end communicated with the grease-collecting cup, the stove body comprising a space for accommodating the grease-collecting cup and allowing removal of the grease-collecting cup for disposal of grease in the grease-collecting cup.

2. The barbecue/cooking stove as claimed in claim 1, wherein the electrically insulating frame of the connector device is higher than the slots of the connector device to thereby prevent injury as a result of touching the slots and the conductive terminals.
3. The barbecue/cooking stove as claimed in claim 1, wherein the annular barbecue area extends radially outward and downward from the central cooking area.
4. The barbecue/cooking stove as claimed in claim 1, wherein the ribs on the annular barbecue area extend radially outward and downward from the central cooking area.
5. The barbecue/cooking stove as claimed in claim 1, wherein the electrically insulating frame of the connector device is higher than the slots of the connector device to thereby prevent injury as a result of touching the conductive terminals and the slots that are exposed when the disc is removed from the stove body.
6. The barbecue/cooking stove as claimed in claim 1, wherein the auxiliary heating disc has a bottom that is fixed to the stove body by plural screws, a heat-insulating sleeve being mounted around each of the plural screws, one of the heat-insulating sleeves having a recessed intermediate portion

that extends through the mounting disc and then force-fitted in an engaging hole defined in a bottom of the stove body.

7. The barbecue/cooking stove as claimed in claim 1, further comprising a separation rib in each of the grease-guiding grooves to thereby define two smaller grease-guiding grooves for guiding grease on an outer surface of the ribs between which the separation rib is formed.