A device for heating cooking utensils includes a stove, a food heating cover coupled with the stove, and a cover position mechanism for selectively covering and uncovering the stove by the food heating cover. The food heating cover is enabled to heat the cooking utensils when covering the stove, and the food heating cover is disabled to heat when uncovering the stove. The stove is enabled to heat the cooking utensils when uncovered by the food heating cover, and the stove is disabled to heat when covered by the food heating cover.
STOVE COMBINED WITH A FOOD HEATING COVER

FIELD OF THE DISCLOSED TECHNIQUE

[0001] The disclosed technique relates to stoves in general, and to methods and systems for cooking food or keeping prepared food in a warm condition, in particular.

BACKGROUND OF THE DISCLOSED TECHNIQUE

[0002] Stoves for heating a pot or a frying pan are known in the art. Such a stove generally includes a plurality of gas burners (or electric heating elements), and a grate upon which the pot is placed. The stove often includes a retractable cover which can freely rotate about two hinges located at each side of the stove at the rear portion of the stove. The user rotates the retractable cover up to a vertical position toward the rear portion, when using the stove, thus exposing the gas burners. The user rotates the retractable cover down toward the gas burners, such that the retractable cover covers the gas burners, when the stove is not in use. In this position of the retractable cover shields the stove against dust and food debris.

[0003] Devices for keeping precooked food in a warm condition for a substantially long period of time without the intervention of the user, are also known in the art. Such a device includes a hollow metal plate, an electric heating element, and a thermostat. The electric heating element is located within the hollow space of the hollow metal plate. The electric heating element is connected to the mains through the thermostat, thereby heating the hollow metal plate and maintaining the hollow metal plate at a desired temperature. Such devices are used to keep the food warm in compliance with a Jewish Orthodox religious custom, during Sabbath and religious holidays (Yom-Tov).

[0004] U.S. Pat. No. 6,066,837 issued to McCormick et al., and entitled “Method and Apparatus for Sabbath Compliance Cooking Process”, is directed to a cooking appliance which enables operation in Sabbath mode. The cooking appliance includes an oven, and a control panel. The oven includes a thermal cooking source, a door, and a light. The control panel includes a plurality of touch sensitive switches, and a display. When a user activates the Sabbath mode on the control panel, the word “Sabb” is displayed on the display, and furthermore, the light and the thermal cooking source remain on irrespective of the position of the door.

[0005] U.S. Pat. No. 6,823,859 B2 issued to Yamada et al., and entitled “Flat Heating Surface Type Gas Stove”, is directed to a closed type gas stove. The closed type gas stove includes an outer casing, a pipe burner, a top plate, an inner casing, a gas-permeable porous body, a rectifying plate, an air blower, and an exhaust pipe. The pipe burner includes a plurality of vertical pipes. The inner casing includes a plurality of vertical pipes. The inner casing is located within the outer casing. The pipe burner includes a plurality of flame ports in a periphery thereof. The inner casing includes a plurality of flame supply ports at portions facing each of the flame ports, in order to enable the flame to be directed toward a center of the outer casing. The bottom portion of each of the vertical pipes is engaged with a gas nozzle through an opening.

[0006] A bottom surface of the outer casing is connected with an outlet of the air blower. The gas-permeable porous body is disposed within the inner casing, at a level somewhat below the flame ports. The rectifying plate includes a plurality of holes, and is disposed below the gas-permeable porous body. The exhaust pipe is disposed below the rectifying plate, in such a way that the exhaust pipe pierces through a wall of the inner casing.

[0007] The air supplied by the air blower to a space between the inner casing and the outer casing, flows into the vertical pipes to be mixed with the fuel gas and to form a mixed gas. The mixed gas is ejected from the flame ports to form a flame. The flame passes through the flame supply ports to spread throughout a combustion chamber between the gas-permeable porous body and the top plate. Part of the air supplied by the air blower enters the combustion chamber together with the flame ejected from the flame supply ports, to assist the secondary combustion of the flame.

[0008] The combustion heat produced by the combustion gas, is thermally conducted to the top plate, in order to heat a heating substance which is placed on the top plate. The combustion gas transfers to the exhaust pipe via the gas-permeable porous body. The gas-permeable porous body radiates heat toward the top plate. The rectifying plate prevents the combustion gas to generate a drift current as it transfers from the combustion space to the exhaust pipe.

[0009] U.S. Pat. No. 6,263,869 B1 issued to Abernethy and entitled “Stove Cover Device”, is directed to a stove cover device to create an additional counter space. The stove cover device includes a stove and a covering member. The covering member includes a peripheral edge, and a securing means. The stove includes a panel located at a back portion thereof. A peripheral wall extends from the peripheral edge. The peripheral wall defines a first wall, a second wall, a third wall, and a fourth wall. The first wall and the second wall are a first pair of opposing walls, and the third wall and the fourth are a second pair of opposing walls. The first wall and the second wall are located at each side of the stove. The third wall is located at the back portion of the stove, and the fourth wall is located at a front portion of the stove.

[0010] The securing means includes a first arm and a second arm. The first arm is positioned at a junction of the first wall and the third wall. The second arm is positioned at another junction of the second wall and the third wall. The first arm and the second arm include a first gripping means and a second gripping means, respectively. A user can place the stove cover device over a top surface of the stove, when the stove is not in use, by gripping the first gripping means and the second gripping means, and attaching the securing means to the panel.

SUMMARY OF THE DISCLOSED TECHNIQUE

[0011] It is an object of the disclosed technique to provide a novel method and system for cooking food or keeping food warm using two alternate heat sources.

[0012] In accordance with the disclosed technique, there is thus provided a device for heating cooking utensils. The device includes a stove, a food heating cover coupled with the stove, and a cover position mechanism for selectively covering and uncovering the stove by the food heating cover. The food heating cover is enabled to heat the cooking utensils when covering the stove, and is disabled to heat when uncovering the stove. The stove is enabled to heat the cooking utensils when uncovered by the food heating cover, and is disabled to heat when covered by the food heating cover.

[0013] In accordance with another aspect of the disclosed technique, there is thus provided a device for heating cooking utensils, to be coupled with a stove. The device includes a
food heating cover, and a cover position mechanism for coupling the food heating cover with the stove and for selectively covering and uncovering the stove by the food heating cover. The food heating cover is enabled to heat the cooking utensils when covering the stove, and the food heating cover is disabled to heat when uncovering the stove. The stove is enabled to heat the cooking utensils when uncovered by the food heating cover, and the stove is disabled to heat when covered by the food heating cover.

[0014] In accordance with a further aspect of the disclosed technique, there is thus provided a device for heating cooking utensils. The device includes a stove including at least one heat source, a food heating cover coupled with the stove, and a cover position mechanism for selectively covering and uncovering the stove by the food heating cover. The food heating cover includes a heat absorbing substance having a substantially large heat capacity. The heat absorbing substance stores heat there within, when heated by the at least one heat source, and when the food heating cover covers the at least one heat source. The food heating cover heats the cooking utensils when the heat absorbing substance releases the heat to the cooking utensils.

[0015] In accordance with another aspect of the disclosed technique, there is thus provided a device for heating cooking utensils, to be coupled with a stove having at least one heat source. The device includes a food heating cover, and a cover position mechanism for coupling the food heating cover with the stove and for selectively covering and uncovering the stove by the food heating cover. The food heating cover includes a heat absorbing substance having a substantially large heat capacity. The heat absorbing substance stores heat there within, when heated by the heat source, and when the food heating cover covers the heat source. The food heating cover heats the cooking utensils when the heat absorbing substance releases the heat to the cooking utensils.

[0016] In accordance with a further aspect of the disclosed technique, there is thus provided a device for heating cooking utensils. The device includes a stove including at least one heat source, a food heating cover coupled with the stove, and a cover position mechanism for selectively covering and uncovering the stove by the food heating cover. The food heating cover heats the cooking utensils when covering the stove and heated by the heat source.

[0017] In accordance with another aspect of the disclosed technique, there is thus provided a device for heating cooking utensils, to be coupled with a stove having at least one heat source. The device includes a food heating cover, and a cover position mechanism for coupling the food heating cover with the stove and for selectively covering and uncovering the stove by the food heating cover. The food heating cover heats the cooking utensils when covering the stove and heated by the heat source.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The disclosed technique will be understood and appreciated more fully from the following detailed description taken in conjunction with the drawings in which:

[0019] FIG. 1A is a schematic illustration of a device for heating cooking utensils with a food heating cover in an open position, constructed and operative in accordance with an embodiment of the disclosed technique;

[0020] FIG. 1B is a schematic illustration of the device of FIG. 1A, with the food heating cover in a closed position;

[0021] FIG. 2A is a schematic illustration of an electric circuit of the device of FIG. 1A, constructed and operative in accordance with another embodiment of the disclosed technique;

[0022] FIG. 2B is a schematic illustration of the food heating cover controller of the electric circuit of FIG. 2A;

[0023] FIG. 3 is a schematic illustration of an electric circuit of the device of FIG. 1A, constructed and operative in accordance with a further embodiment of the disclosed technique;

[0024] FIG. 4A is a schematic illustration of a top view of a device for heating cooking utensils, with a food heating cover of the device in a retracted position, constructed and operative according to another embodiment of the disclosed technique;

[0025] FIG. 4B is a schematic illustration of a side view (view I) of the device of FIG. 4A, with the food heating cover of the device in the retracted position;

[0026] FIG. 4C is a schematic illustration a side view of the device of FIG. 4A, with the food heating cover in an extended position;

[0027] FIG. 5A is a schematic illustration of a side view of a device for heating cooking utensils, incorporated with arollable food heating cover, constructed and operative according to a further embodiment of the disclosed technique;

[0028] FIG. 5B is a schematic illustration of a top view (view II) of the device of FIG. 5A;

[0029] FIG. 6 is a schematic illustration of a device for heating cooking utensils, incorporated with a food heating cover constructed and operative according to another embodiment of the disclosed technique;

[0030] FIG. 7 is a schematic illustration of a food heating cover, constructed and operative according to a further embodiment of the disclosed technique; and

[0031] FIG. 8 is a schematic illustration of a device for heating cooking utensils, constructed and operative according to another embodiment of the disclosed technique.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0032] The disclosed technique overcomes the disadvantages of the prior art by providing a stove which is combined with a food heating cover including an embedded heating element. The gas burners of the stove can be used to cook food when the food heating cover is open. By lowering the food heating cover and turning on its heating element, the food heating cover can be used for keeping a prepared food in a warm condition, for a long period. In this mode cooking utensils can be heated or kept warm while complying with Jewish Orthodox religious custom requiring to refrain from performing certain tasks during Sabbath and religious Jewish holiday (Yom-Tov) (i.e., restrictions such as forbidding cooking, lighting fire, and turning electrical appliances on and off).

[0033] Optionally, if sufficient electric power is allowed to be supplied to the heating element of the food heating cover, then the food heating cover can be used as an ordinary cooking surface for cooking or frying food. However, such cooking may be deemed non-compliant with Jewish religious requirements.

[0034] The term “active food heating cover” herein below, refers to a food heating cover which includes a cover heating element embedded therein. The active food heating cover generates heat when the cover heating element is turned on, and ceases to generate heat, when the cover heating ele-
The term “passive food heating cover” herein below, refers to a food heating cover which is made of a solid having a substantially high heat capacity (i.e., a heat absorbing substance), such as marble, brick, granite, limestone, and the like. Alternatively, the passive food heating cover can be in form of an enclosure (e.g., made of a metal), which contains a substance having a substantially large heat capacity, such as water, paraffin wax, borax, coal, cork, humus, sandstone, vulcanite, fir wood, oak wood, pine wood, and the like. The term “cooking” also refers to mere warming of food or liquids. The term “utensil” refers to a vessel, container, receptacle, pot, pan, dish, and the like, and even a mere wrapper or bag, in which solid food or a liquid can be contained. Accordingly, the term “cooking utensil” also refers, for example, to food bag or wrapper that can withstand only warming, not actual cooking.

Reference is now made to FIGS. 1A, 1B, 2A, 2B, and 3. FIG. 1A is a schematic illustration of a device for cooking utensils with a food heating cover in an open position, generally referenced 100, constructed and operative in accordance with an embodiment of the disclosed technique. FIG. 1B is a schematic illustration of the device of FIG. 1A, with the food heating cover in a closed position. FIG. 2A is a schematic illustration of an electric circuit of the device of FIG. 1A, constructed and operative in accordance with another embodiment of the disclosed technique. FIG. 2B is a schematic illustration of the food heating cover controller of the electric circuit of FIG. 2A. FIG. 3 is a schematic illustration of an electric circuit of the device of FIG. 1A, constructed and operative in accordance with a further embodiment of the disclosed technique.

Device 100 includes a stove 102, a food heating cover 104, a cover position mechanism 150, a food heating cover controller 114, and a main gas valve solenoid 116. Cover position mechanism 150 includes a right hinge 110, and a left hinge 112. Food heating cover 104 includes a cover heating element 118, and a handle 120. Stove 102 includes a plurality of stove heating elements 106 (i.e., stove heat source), and a plurality of grates 108. Right hinge 110 includes a right bracket 122, and a right bearing element 124. Left hinge 112 includes a left bracket 126, and a left bearing element 128. Food heating cover controller 114 (FIG. 2B) includes a switch 130, a temperature control module 132, a timer 134, and a power level control module 136.

Each of stove heating elements 106 can be a gas burner, electric heating element, infrared heating element, halogen heating element and the like. Cover heating element 118 can be an electric heating element, infrared heating element, halogen heating element, and the like. A first end (not shown) of right bracket 122 is firmly coupled with a right rear portion (not shown) of stove 102, and a second end (not shown) of right bracket 122 is coupled with a right portion (not shown) of food heating cover 104, through right bearing element 124. A third end (not shown) of left bracket 126 is firmly coupled with a left rear portion (not shown) of stove 102, and a fourth end (not shown) of left bracket 126 is coupled with a left portion (not shown) of food heating cover 104, through left bearing element 128. In this manner, food heating cover 104 can freely rotate on right bearing element 124 and left bearing element 128. A user (not shown) can lower food heating cover 104 onto a stove top surface 138 of stove 102, from an open position illustrated in FIG. 1A, to a closed position illustrated in FIG. 1B, by gripping handle 120. Likewise, the user can raise food heating cover 104, from the closed position to the open position by gripping handle 120.

With reference to FIG. 2A, food heating cover controller 114 is electrically coupled with an electric power source 140, a main gas valve solenoid 116, and with cover heating element 118. Electric power source 140 can be the mains of a room (not shown) in which device 100 is located. Main gas valve solenoid 116 is an electromagnetically operated fluid valve having a fluid input and a fluid output. When an electromagnet (not shown) of main gas valve solenoid 116 is in an un-energized state, gas can flow from the input to the output. When the electromagnet is energized, substantially no gas can flow from the input to the output (i.e., main gas valve solenoid 116 is a normally open solenoid valve).

Main gas valve solenoid 116 is coupled between a main gas valve (not shown), and a plurality of stove heating element controllers 142, which control the operation of each of stove heating elements 106 (in this case gas burners). Stove heating element controllers 142 are located on a stove front surface 152. The input of the main gas valve solenoid 116 is coupled with a gas source (not shown—such as a pressure vessel containing liquid butane), and the output of main gas valve solenoid 116 is coupled with stove heating element controllers 142. When main gas valve solenoid 116 is in a closed position, no gas flows from the gas source to the gas burners, no matter whether stove heating element controllers 142 are in a closed position or an open position.

When switch 130 is in an off state, cover heating element 118 is disconnected from electric power source 140, and main gas valve solenoid 116 is in an open state. When switch 130 is in an on state, cover heating element 118 is connected to electric power source 140, and main gas valve solenoid 116 is switched to a closed state.

Switch 130 includes a first contact (not shown) and a second contact (not shown). When switch 130 is in an off state, the first contact and the second contact are disconnected. When switch 130 is in an on state, the first contact is connected with the second contact.

Temperature control module 132 is a module which substantially maintains the temperature of a body (not shown) at a selected temperature, by controlling the electric current flow to a heating element which transfers heat to the body. Temperature control module 132 can include a temperature sensor (not shown) and a switch (not shown). The user can set the switch at a selected temperature setting. The temperature sensor senses the temperature of the body. The switch is coupled with an electric power source, the heating element, and with the temperature sensor. The switch connects and disconnects the electric power source from the heating element, according to the selected temperature setting, and according to an input from the temperature sensor. Temperature control module 132 can be set within a range which satisfies Jewish religious requirements of keeping food in a warm condition (i.e., refrain from high temperatures which are considered a cooking operation).

Alternatively, temperature control module 132 can be in form of a bimetallic switch. The bimetallic switch includes two different metallic elements having different coefficients of expansion, wherein one metallic element physically deforms relative to the other, due to changes in temperature. The gap between the bimetallic elements can be set at a selected value, which represents a selected temperature setting. The bimetallic switch connects and disconnects
the heating element from the electric power source, according to the gap between the metallic elements, and the relative physical deformation of the metallic elements.

[0046] Timer 134 includes a clock (not shown) and a switch (not shown). The switch is coupled with the electric power source, the clock and with the heating element. When the reading of the clock is less than a selected time, the switch is in an on state, and the switch connects the heating element with the electric power source. When the reading of the clock is equal to or greater than the selected time, the switch reverts to an off state, and the switch disconnects the heating element from the electric power source.

[0047] Timer 134 can be set to an on state for a predetermined time period. Such a time period can be compliant with the Sabbath (or holiday) duration, or with religious requirements allowing its turning on and off during Sabbath and holiday. Timer 134 can also be set to turn on or off, according to a preprogrammed scheme. Such a preprogrammed scheme can be compliant with heating time requirements, for example a few hours before the heated food is to be served. Such a preprogrammed scheme can be compliant with religious requirements allowing turning cover heating element 118 on and off during Sabbath and holiday.

[0048] Power level control module 136 is a variable resistor (not shown), whose resistance can be varied, thereby controlling the electric current which passes through the variable resistor. The variable resistor is coupled with the electric power source and with the heating element. Power level control module 136 controls the electric current supplied to the heating element, thereby controlling the heat which the heating element generates. Power level control module 136 can be set within a range which satisfies Jewish religious requirements of keeping food in a warm condition (i.e., refrain from high temperatures which are considered a cooking operation).

[0049] Food heating cover controller 114 controls the operation of main gas valve solenoid 116 and cover heating element 118. Following is a description of the operation of device 100.

[0050] With reference to FIG. 1A, the user turns off the gas burners, via stove heating element controllers 142 and turns on switch 130. Thus, electric power is supplied to cover heating element 118, and simultaneously main gas valve solenoid 116 is switched to a closed state. With reference to FIG. 2A, the user lowers food heating cover 104 onto stove top surface 138. A stove cover bottom surface 144 of food heating cover 104 rests on grates 108, and the user can place one or more cooking utensils (not shown), which contain food, on a food heating cover top surface 146 of food heating cover 104. The heat generated by cover heating element 118 transfers to the cooking utensils by thermal conduction, thermal convection, and thermal radiation, or a combination thereof, thereby heating the cooking utensils.

[0051] Switch 130, temperature control module 132, timer 134, or power level control module 136, is located on cover top surface 146. Alternatively, switch 130, temperature control module 132, timer 134, or power level control module 136, is located on stove front surface 152. Further alternatively, temperature control module 132, timer 134, power level control module 136, and particularly Switch 130, is located on the side of stove 102, either on a cover side periphery or on stove side wall, for eliminating the possibility of a mistaken activation and deactivation. Further alternatively, the device is associated with a remote user interface and control, such as through Home Phoneline Networking Alliance (HPNA) computer network.

[0052] The user can set temperature control module 132 at a selected temperature setting, thereby substantially keeping the temperature of the food at a selected temperature. The user can set timer 134 at a selected on state and a selected off state, according to a selected schedule, such as a Jewish calendar (e.g., Sabbath, Passover, Yom Kippur). This provision enables the user to operate the food heating cover in conformity with the requirements of the Jewish custom.

[0053] When the reading of the clock is substantially equal to the selected on state, electric current flows through timer 134 during the time period between the selected on state and the selected off state, and cover heating element 118 generates heat during this time period. When the reading of the clock is substantially equal to or greater than the selected off state, electric current ceases to flow to cover heating element 118, and cover heating element 118 ceases to generate heat. The user can set the amount of heat which cover heating element 118 generates per unit time, by setting power level control module 136 at a selected value.

[0054] With reference to FIG. 3, in case each of stove heating elements 106 is an electric heating element, device 100 includes a stove heating element switch 148. Food heating cover controller 114 is coupled with electric power source 140, cover heating element 118, and with stove heating element switch 148. When switch 130 of food heating cover controller 114 is turned on, stove heating element switch 148 is turned off and cover heating element 118 is turned on. When switch 130 of food heating cover controller 114 is turned off, stove heating element switch 148 is turned on and cover heating element 118 is turned off. Stove heating element switch 148 is coupled with each of stove heating elements 106. When stove heating element switch 148 is in an on state, electric current flows to each of stove heating elements 106. When stove heating element switch 148 is in an off state, electric current ceases to flow to stove heating elements 106.

[0055] It is noted that switch 130 overrides the operation of each of temperature control module 132, timer 134, and power level control module 136 (i.e., switch 130 supplies electric current to each of temperature control module 132, timer 134, and power level control module 136). It is further noted that food heating cover controller 114 can operate with switch 130 alone, and that temperature control module 132, timer 134, and power level control module 136, are optional elements. It is still further noted that each of main gas valve solenoid 116 (FIG. 2A) and stove heating element switch 148 (FIG. 3), is an optional element of device 100. Hence, main gas valve solenoid 116 is regarded as a safety device which prevents gas leakage if the user forgets to turn off stove heating element controllers 142, before turning on cover heating element 118, and lowering food heating cover 104 on stove top surface 138. Likewise, stove heating element switch 148 disconnects electric power source 140 from stove heating elements 106, in case the user forgets to turn off stove heating elements 106 via stove heating element controllers 142, before turning on switch 130.

[0056] In the example set forth in FIGS. 1A and 1B, food heating cover 104 is an active food heating cover, which includes a cover heating element. Alternatively, a stove similar to device 100 can include a passive food heating cover. In this case, the user lowers the passive food heating cover on the stove top surface and turns on one or more of the stove heating elements, thereby allowing the food heating cover to store the
heat generated by the stove heating elements. Thereafter, the user can either raise the food heating cover, or leave the food heating cover in the lowered condition on the stove top surface. In order to keep the food in a warm condition, the user lowers the food heating cover on the stove top surface, and places the cooking utensil on the stove cover top surface. The heat which was previously stored in the food heating cover transfers to the cooking utensil, thereby keeping the food warm, relative to the room temperature.

Further alternatively, in a stove similar to latter device, the passive food heating cover is kept warm by one or more of the stove heating elements. In this case, the user lowers the passive food heating cover on the stove top surface and turns on one or more of the stove heating elements for a time, power and temperature commensurate with the period of time of which food warming is required. Such time, power and temperature can be controlled by a timer, a power lever control module, a temperature control module, similar to timer 134, power lever control module 136, or temperature control module 132, correspondingly, which control the stove heating elements instead of the cover heating element. Such time, power and temperature can comply with Sabbath and Jewish holidays. However, the stove heating elements cannot include a gas burner if the Jewish religious requirements for Sabbath and Jewish holidays are to be observed by such an arrangement.

Food heating cover 104 is in form of an enclosure for housing cover heating element 118. This enclosure can be made of metal, glass, polymer, and the like. A metal enclosure can be made for example of a stainless steel. Alternatively, the metal enclosure can be made of steel, copper, aluminum, and alloys thereof. The metal can be coated with a substance having certain mechanical characteristics, such as corrosion resistance, surface smoothness, heat conductivity, hardness, and the like.

In case of a food heating cover made of glass, the stove cover heating element may be molded in glass. Such a stove cover heating element can be made of copper, transparent material, such as Titanium Nitride (TiN), and the like. Optionally, the food heating cover may include a heating element, such as an electric infrared element or a halogen lamp sandwiched between a top glass surface and a bottom reflective surface.

Alternatively, food heating cover 104 together with cover position mechanism 150, can be designed as an add-on feature ready to be incorporated with a stove, rather than manufactured with stove 102.

It is noted that device 100 includes also an oven 154. However, oven 154 is integrated with stove 102 in FIGS. 1A and 1B for demonstrative purposes only, as an oven integrated with a stove is very common. The disclosed technique equally relates to a stove without any oven, as illustrated for example in FIG. 8.

Reference is now made to FIGS. 4A, 4B, and 4C. FIG. 4A is a schematic illustration of a top view of a device for heating cooking utensils generally referenced 170, with a food heating cover of the device in a retracted position, constructed and operative according to another embodiment of the disclosed technique. FIG. 4B is a schematic illustration of a side view (view 1) of the device of FIG. 4A, with the food heating cover of the device in the retracted position. FIG. 4C is a schematic illustration a side view of the device of FIG. 4A, with the food heating cover in an extended position.

Device 170 includes a stove 172, a food heating cover 174, and a cover position mechanism 230. Stove 172 includes a stove top surface 180, a stove rear surface 182, and a plurality of cover supports 184. Food heating cover 174 includes a cover heating element 186, and a handle 192. Cover position mechanism 230 includes a right guide 176, a left guide 178, a right pin 188, and a left pin 190. Right guide 176 includes a right vertical groove (not shown) and a right horizontal groove (not shown). Left guide 178 includes a left vertical groove 194, and a left horizontal groove 196. Device 170 is located on a ground surface 198.

A cross section of right guide 176 is in form of the letter "L", whose one leg (i.e., a fastened leg, referenced 200), is firmly coupled with a right side (not shown) of stove rear surface 182. The right vertical groove is formed on the other leg (i.e., a free leg, referenced 202) of right guide 176. Right guide 176 is coupled with stove rear surface 182, such that a longitudinal axis (not shown) of the right vertical groove is substantially perpendicular to ground surface 198. The right horizontal groove is an extension of the right vertical groove, and the right horizontal groove is substantially parallel with ground surface 198. The right horizontal groove is substantially shorter than the right vertical groove, and the right horizontal groove is located at an upper end (not shown) of right guide 176, farthest from ground surface 198.

A cross section of left guide 178 is in form of the letter "L", whose one leg (i.e., a fastened leg, referenced 204), is firmly coupled with a left side (not shown) of stove rear surface 182. Left vertical groove 194 is formed on the other leg (i.e., a free leg, referenced 206) of left guide 178. Left guide 178 is coupled with stove rear surface 182, such that a longitudinal axis (not shown) of left vertical groove 194 is substantially perpendicular to ground surface 198. Left horizontal groove 196 is an extension of left vertical groove 194, and left horizontal groove 196 is substantially parallel with ground surface 198. Left horizontal groove 196 is substantially shorter than left vertical groove 194, and left horizontal groove 196 is located at an upper end 208 of left guide 178, farthest from ground surface 198.

Fastened leg 200 is shorter than free leg 202, and right guide 176 is coupled with rear surface 182, such that an upper edge (not shown) of fastened leg 200 is substantially flush with stove top surface 180. The right horizontal groove is formed in a region of free leg 202 between the upper edge of fastened leg 200, and another upper edge (not shown) of free leg 202. Fastened leg 204 is shorter than free leg 206, and left guide 178 is coupled with rear surface 182, such that an upper edge 210 of fastened leg 204 is substantially flush with stove top surface 180. Left horizontal groove 196 is formed in a region of free leg 206 between upper edge 210, and an upper edge 212 of free leg 206.

Each of right guide 176 and left guide 178 is made of metal, polymer, wood, and the like. Each of right guide 176 and left guide 178 can be coupled with stove rear surface 182 by fastening techniques known in the art, such as welding, an adhesive, mechanical fastener, and the like. Right guide 176 and left guide 178 are coupled with stove rear surface 182, such that free legs 202 and 206 are substantially mutually parallel, and each one is substantially perpendicular to ground surface 198.

Right pin 188 is firmly coupled with an end 214 of food heating cover 174, at a right side 216 of food heating cover 174. Left pin 190 is firmly coupled with end 214, at a
left side 218 of food heating cover 174. Handle 192 is firmly coupled with an end 220 of food heating cover 174 opposite to end 214.

[0069] A width (not shown) of food heating cover 174 is less than a space (not shown) between free legs 202 and 206, such that food heating cover 174 can freely slide within the space between free legs 202 and 206. Right pin 188 can move within the right vertical groove and the right horizontal groove, and left pin 190 can move within left vertical groove 194 and left horizontal groove 196, thereby guiding the movement of food heating cover 174 between right guide 176 and left guide 178.

[0070] Cover supports 184 are coupled with stove top surface 180. With reference to FIG. 4B, right pin 188 and left pin 190 rest against bottom ends (not shown) of the right vertical groove and left vertical groove 194, due to the weight of food heating cover 174, such that food heating cover 174 remains in the retracted position. The user grabs handle 192 and pulls up food heating cover 174 in a direction designated by an arrow 222, until right pin 188 reaches the upper end of right guide 176, and left pin 190 reaches upper end 208. With reference to FIG. 4C, the user pulls up food heating cover 174, while rotating food heating cover 174 in a direction designated by an arrow 226, toward a front side 224 of stove 172. A bottom surface 228 of food heating cover 174 rests against cover supports 184 and at this position, food heating cover 174 is ready for use, as described herein above in connection with FIGS. 2A, 2B, and 2C.

[0071] Food heating cover 174 in the example set forth in FIGS. 4A, 4B, and 4C, is an active food heating cover. Alternatively, food heating cover 174 can be a passive food heating cover. It is noted that food heating cover 174 is concentric in its retracted position whereas food heating cover 104 is exposed in its retracted position (FIG. 1A). It is further noted that the food heating cover can be coupled with the stove right surface as well as the stove left surface of the stove, instead of the stove rear surface.

[0072] Alternatively, food heating cover 174 together with cover position mechanism 230, can be designed as an add-on feature ready to be incorporated with a stove, rather than manufactured together with stove 172.

[0073] Reference is now made to FIGS. 5A, and 5B. FIG. 5A is a schematic illustration of a side view of a device for heating cooking utensils generally referenced 250, incorporated with a rollable food heating cover, constructed and operative according to a further embodiment of the disclosed technique. FIG. 5B is a schematic illustration of a top view (view II) of the device of FIG. 5A.

[0074] Device 250 includes a stove 252, a flexible food heating cover 268, and a cover position mechanism 254. Stove 252 includes a stove front surface 308, a stove rear surface 256, a stove top surface 258, a stove bottom surface 260, a stove right surface 262, a stove left surface 264, a plurality of stove heating elements 266, a front stop 278, a rear stop 280, a cover holder 282, and a perforated cover support 284. Cover position mechanism 254 includes a roller 270, a central shaft 272, a right bracket 274, and a left bracket 276.

[0075] Flexible food heating cover 268 is made of a flexible material, such as polymer, linked elements, and the like, whose heat transfer coefficient is substantially large. Flexible food heating cover 268 includes a covering element (not shown) embedded therein or coupled thereto. Flexible food heating cover 268 has a substantially rectangular contour. A width of flexible food heating cover 268 is herein below defined as a side of the rectangular contour measured along a stove lateral axis (not shown) between stove right surface 262 and stove left surface 264. A length of flexible food heating cover 268 is herein below defined as the length of the other side of the rectangular contour.

[0076] In the example set forth in FIGS. 5A and 5B, flexible food heating cover 268 is an active food heating cover. Alternatively, flexible food heating cover 268 can be a passive food heating cover.

[0077] Right bracket 274 is firmly coupled with an upper rear side of stove right surface 262. Left bracket 276 is firmly coupled with an upper rear side of stove left surface 264.

[0078] Central shaft 272 passes through roller 270 along a longitudinal axis (not shown) of roller 270, and is firmly coupled therewith. Central shaft 272 protrudes from both ends (not shown) of roller 270. Instead of central shaft 272, cover position mechanism 254 can include a right pin (not shown) firmly coupled with a right end (not shown) of roller 270, and a left pin (not shown) firmly coupled with a left end (not shown) of roller 270. Each of right bracket 274 and left bracket 276 is provided with a bearing (not shown) to receive a right end 286 and a left end 288, respectively, of central shaft 272.

[0079] Thus, roller 270 can freely rotate in the bearings clockwise (designated by an arrow 300) as well counterclockwise (designated by an arrow 302). Central shaft 272 is coupled with either one or both of right bracket 274 and left bracket 276, by one or more elastic elements (not shown). The elastic element can be in form of a spiral metal spring, an elastic band made of a polymer, and the like. The elastic element applies a tangential force to central shaft 272, to rotate roller 270 counterclockwise in the direction of arrow 302.

[0080] Rear stop 280 is in form of a plate or a sheet, having a substantially rectangular contour. Rear stop 280 is provided with a slot (not shown). A slot axis (not shown) of the slot, is substantially parallel with a longitudinal axis (not shown) of the substantially rectangular contour. A length of this slot is equal to or greater than the width of flexible food heating cover 268, and a gap of this slot is equal to or greater than a thickness of flexible food heating cover 268. Rear stop 280 is coupled with a rear side (not shown) of stove top surface 258, such that the slot axis is substantially parallel with the stove lateral axis.

[0081] One end of flexible food heating cover 268 is rolled around roller 270, and cover holder 282 is firmly coupled with the opposite end of flexible food heating cover 268. Flexible food heating cover 268 passes through the slot of rear stop 280, and flexible food heating cover 268 can freely move along a stove longitudinal axis (not shown) between stove front surface 308 and stove rear surface 256, within the slot. Due to the tangential force which the elastic element applies to roller 270 along arrow 302, flexible food heating cover 268 tends to move in a direction designated by an arrow 304, along the stove longitudinal axis.

[0082] Food heating cover holder 282 is in form of a substantially slender body, whose thickness is greater than the gap of the slot of rear stop 280. Hence, flexible food heating cover 268 moves within the slot in direction 304, due to the tangential force of the elastic element, until food heating cover holder 282 makes contact with rear stop 280, thereby preventing flexible food heating cover 268 to move any further. In this condition, the elastic element tightly holds flexible food heating cover 268 against rear stop 280.
Perforated cover support 284 can be in form of a screen, a wire mesh, and the like, which is strong enough to support the weight of cooking utensils (not shown). Perforated food heating cover support 284 is coupled with stove top surface 258. Alternatively, perforated cover support 284 is in form of a grate of stove 252 which rests on stove top surface 258. Preferably, perforated cover support 284 has large openings 310 allowing free space above stove heating elements 266. A cover support height (not shown) of perforated cover support 284 from stove top surface 258, is substantially equal to a slot height (not shown) of the slot of rear stop 280 from stove top surface 258.

Front top 278 is in form of sheet or plate having a rectangular contour, which mates with cover holder 282. Front top 278 is coupled with a front side (not shown) of stove top surface 258 along the lateral axis of stove 252.

Normally, flexible food heating cover 268 is pulled back toward stove rear surface 256, due to the tangential force of the elastic element, and remains in this position (i.e., retracted position), by cover holder 282. The user can roll out flexible food heating cover 268 from roller 270 in a direction designated by an arrow 306, along the stove longitudinal axis, over perforated cover support 284, and tightly lock cover holder 282 with front top 278, in order to maintain flexible food heating cover 268 in this position (i.e., extended position), on perforated cover support 284. In this extended position, the user can use flexible food heating cover 268 as described herein above in connection with FIGS. 2A, 2B, and 2C. In this position, flexible food heating cover 268 is stretched over perforated cover support 284, and unrolled from roller 270. In order to retract flexible food heating cover 268, the user releases cover holder 282 from front top 278, in which case flexible food heating cover 268 rolls back on to roller 270, due to the tangential force of the elastic element.

It is noted that flexible food heating cover 268 occupies substantially less room than food heating cover 104 (FIG. 1A). It is further noted that the cover position mechanism can be coupled with the stove right surface as well as the stove left surface of the stove.

Alternatively, flexible food heating cover 268 together with a rolling mechanism similar to that of device 250, can be designed as an add-on feature ready to be incorporated with a stove, rather than manufactured with stove 252.

Reference is now made to FIG. 6, which is a schematic illustration of a device for heating cooking utensils generally referenced 330, incorporated with a food heating cover constructed and operative according to another embodiment of the disclosed technique. Device 330 includes a stove 332, a food heating cover 344, and a cover position mechanism 334. Stove 332 includes a stove right surface (not shown), a stove left surface 336, a stove top surface 338, a plurality of stove heating elements 340, and a plurality of grates 342. Food heating cover 344 includes a handle 346. Cover position mechanism 334 includes a right hinge 348, and a left hinge 350.

Food heating cover 344 is in form of a rigid wire mesh whose wires are actually the cover heating elements (i.e., wire mesh electric heating element). Right hinge 348 and left hinge 350 are similar to right hinge 110 (FIG. 1A), and left hinge 112, respectively, as described herein above. Right hinge 348 is coupled with a top rear portion of the stove right surface, and with food heating cover 344, as described herein above in connection with FIG. 1A. Left hinge 350 is coupled with a top rear portion of stove left surface 336, and with food heating cover 344, as described herein above in connection with FIG. 1A.

Handle 346 is coupled with food heating cover 344. The user grips handle 346 to lower food heating cover 344 toward stove top surface 338. Food heating cover 344 rests on grates 342, and the user can place a cooking utensil on top of food heating cover 344, and operate food heating cover mechanism 334, as described herein above in connection with FIGS. 2A, and 2B.

Alternatively, food heating cover 344 together with food heating cover mechanism 334, can be designed as an add-on feature ready to be incorporated with a stove, rather than manufactured with stove 332.

Reference is now made to FIG. 7, which is a schematic illustration of a food heating cover generally referenced 370, constructed and operative according to a further embodiment of the disclosed technique. Food heating cover 370 is in form of a shallow pan and includes a cover heating element 372, embedded within a bottom surface 374 thereof. The user can operate food heating cover 370 as described herein above in connection with FIGS. 2A, and 2B, to fry food, as well cook food or keep a prepared food in a warm condition, by placing a cooking utensil on bottom surface 374.

Reference is now made to FIG. 8, which is a schematic illustration of a device for heating cooking utensils generally referenced 400, constructed and operative according to another embodiment of the disclosed technique. Device 400 includes a built-in stove 402, a food heating cover 414, and a cover position mechanism 404. Built-in stove 402 includes a stove top surface 406, a stove right surface (not shown), a stove left surface 408, a control panel 410, and a plurality of stove heating elements 412. Food heating cover 414 includes a cover heating element 420, and a handle 422. Cover position mechanism 404 includes a right hinge 416, and a left hinge 418.

Control panel 410 is used to operate stove heating elements 412, and is located at a side of stove top surface 406. A width and length of food heating cover 414 is substantially equal to those of stove top surface 406. Alternatively, the width of food heating cover 414 is substantially equal to a width of stove top surface 406, and the length of food heating cover 414 is substantially equal to a sum of the length of stove top surface 406 and a width of control panel 410.

Right hinge 416 and left hinge 418 are similar to right hinge 110 (FIG. 1A), and left hinge 112, respectively, as described herein above. Right hinge 416 is coupled with a rear side of the stove right surface and with food heating cover 414, as described herein above in connection with FIG. 1A. Left hinge 418 is coupled with a rear side of stove left surface 408, and with food heating cover 414 as described herein above in connection with FIG. 1A. Handle 422 is coupled with food heating cover 414. Built-in stove 402 is built in a cooking work surface (not shown) for example, of a kitchen (not shown). In the example set forth in FIG. 8, food heating cover 414 is an active food heating cover. Alternatively, the food heating cover is a passive food heating cover.

The user can grip handle 422 to lower food heating cover 414 on stove top surface 406 to rest food heating cover 414 on grates (not shown) of stove 402. The user can place a cooking utensil (not shown) on a stove cover top surface (not shown) of food heating cover 414, and operate food heating cover 414 as described herein above in connection with FIGS. 2A, 2B, and 2C.
Alternatively, food heating cover 414 together with cover position mechanism 404, can be designed as an add-on feature ready to be incorporated with a built-in stove, rather than manufactured with built-in stove 402.

It will be appreciated by persons skilled in the art that the disclosed technique is not limited to what has been particularly shown and described hereinabove. Rather the scope of the disclosed technique is defined only by the claims, which follow.

1. Device for heating cooking utensils, the device comprising:
   a stove;
   a food heating cover coupled with said stove; and
   a cover position mechanism for selectively covering and uncovering said stove by said food heating cover,
   wherein said food heating cover is enabled to heat said cooking utensils when covering said stove, and said food heating cover is disabled to heat when uncovering said stove, and
   wherein said stove is enabled to heat said cooking utensils when uncovered by said food heating cover, and said stove is disabled to heat when covered by said food heating cover.

2. The device according to claim 1, wherein said food heating cover comprises a stove cover electric heating element embedded there within.

3. The device according to claim 2, wherein said stove comprises at least one gas burner,
   wherein said device further comprises:
   a main gas valve solenoid coupled with said at least one gas burner, said main gas valve solenoid being coupled with a gas source; and
   a food heating cover controller coupled with said main gas valve solenoid, said stove cover electric heating element, and with an electric power source, said food heating cover controller comprising a switch,
   wherein said food heating cover controller disconnects said stove cover electric heating element from said electric power source, and opens said main gas valve solenoid, to enable gas to flow from said gas source to said at least one gas burner, when said switch is in an off state, and
   wherein said food heating cover controller connects said stove cover electric heating element with said electric power source, and closes said main gas valve solenoid, to prevent said gas to flow from said gas source to said at least one gas burner, when said switch is in an on state.

4. The device according to claim 1, further comprising a temperature control module to control the temperature of said electric heating element.

5. The device according to claim 4, wherein said temperature control module is set to control the temperature of said food heating cover in compliance with Sabbath and holiday religious requirements.

6. The device according to claim 1, further comprising a timer to control the on and off time of said electric heating element, according to a preprogrammed scheme.

7. The device according to claim 6, wherein said preprogrammed scheme is set to comply with Sabbath and holiday religious requirements.

8. The device according to claim 1, further comprising a power level control module to control the electric power provided to said electric heating element.

9. The device according to claim 8, wherein said power level control module is set to control the heat of said food heating cover in compliance with Sabbath and holiday religious requirements.

10. The device according to claim 2, wherein said stove comprises at least one stove electric heating element, wherein said device further comprises:
   a stove heating element switch coupled with said at least one stove electric heating element; and
   a food heating cover controller coupled with said stove heating element switch, said at least one stove cover electric heating element, and with an electric power source, said food heating cover controller comprising a switch,
   wherein said food heating cover controller disconnects said stove cover electric heating element from said electric power source, and turns on said stove heating element switch, to enable the operation of said at least one stove electric heating element, when said switch is in an off state, and
   wherein said food heating cover controller connects said stove cover electric heating element with said electric power source, and turns off said stove heating element switch, to disable the operation of said at least one stove electric heating element, when said switch is in an on state.

11. The device according to claim 1, further comprising:
   a first guide coupled with said stove; and
   a second guide coupled with said stove,
   wherein said food heating cover is operative to move within said first guide and said second guide, between a first position exposing said stove and a second position covering said stove.

12. The device according to claim 1, further comprising a roller coupled with said stove,
   wherein said food heating cover is in form of a flexible sheet rollable around said roller, and
   wherein said flexible sheet is operative to move between a first position exposing said stove and a second position covering said stove.

13. The device according to claim 1, wherein said food heating cover is in form of a wire mesh electric heating element.

14. The device according to claim 1, wherein said food heating cover is in form of a substantially shallow pan.

15. The device according to claim 1, wherein said stove is built in to a cooking work surface.

16. Device for heating cooking utensils, for coupling with a stove, the device comprising:
   a food heating cover; and
   a cover position mechanism for coupling said food heating cover with said stove and for selectively covering and uncovering said stove by said food heating cover,
   wherein said food heating cover is enabled to heat said cooking utensils when covering said stove, and said food heating cover is disabled to heat when uncovering said stove, and
   wherein said stove is enabled to heat said cooking utensils when uncovered by said food heating cover, and said stove is disabled to heat when covered by said food heating cover.

17. Device for heating cooking utensils, the device comprising:
a stove including at least one heat source; a food heating cover coupled with said stove; and a cover position mechanism for selectively covering and uncovering said stove by said food heating cover, wherein said food heating cover comprises a heat absorbing substance having a substantially large heat capacity, wherein said heat absorbing substance stores heat there within, when heated by said at least one heat source, and when said food heating cover covers said at least one heat source, and wherein said food heating cover heats said cooking utensils when said heat absorbing substance releases said heat to said cooking utensils.

18. Device for heating cooking utensils, for coupling with a stove having at least one heat source, the device comprising: a food heating cover; and a cover position mechanism for coupling said food heating cover with said stove and for selectively covering and uncovering said stove by said food heating cover, wherein said food heating cover comprises a heat absorbing substance having a substantially large heat capacity, wherein said heat absorbing substance stores heat there within, when heated by said at least one heat source, and when said food heating cover covers said at least one heat source, and wherein said food heating cover heats said cooking utensils when said heat absorbing substance releases said heat to said cooking utensils.

19. Device for heating cooking utensils, the device comprising:
a stove including at least one heat source; a food heating cover coupled with said stove; and a cover position mechanism for selectively covering and uncovering said stove by said food heating cover, wherein said food heating cover heats said cooking utensils when covering said stove and heated by said at least one heat source.

20. Device for heating cooking utensils, for coupling with a stove having at least one heat source, the device comprising: a food heating cover; and a cover position mechanism for coupling said food heating cover with said stove and for selectively covering and uncovering said stove by said food heating cover, wherein said food heating cover heats said cooking utensils when covering said stove and heated by said at least one heat source.

21. (canceled)