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(54) **A COOKING APPLIANCE**

KOCHGERÄT

ARTICLE DE CUISSON

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(56) References cited:
DE-A1- 19 710 444 FR-A- 2 505 987

• **PATENT ABSTRACTS OF JAPAN** vol. 009, no. 172
(M-397), 17 July 1985 (1985-07-17) & JP 60 044730
A (MATSUSHITA DENKI SANGYO KK), 9 March
1985 (1985-03-09)

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Description

[0001] The present invention relates to a cooking appliance which provides the cooling of foods in the containers placed on the heating unit.

[0002] In state of the art cooking appliances, the container left or forgotten on the heating unit while the appliance is off, starts to cool depending on the ambient temperature. When the temperature of the container is approximately between 6-60°C, the microorganisms in the food inside the containers multiply and lead to the formation of toxic substances depending on the species of the microorganisms. Research has shown that the rate of microorganisms or toxic substances in a container standing for 3 hours within the temperature range of 6-60°C reaches a dangerous level for human health. The microorganisms multiply geometrically, doubling their number in every 20 minutes. When the food is heated again, even if the amount of the microorganisms decrease, the toxic substance remains unchanged and can harm the consumer. Therefore the containers left on the heating unit by the user should be kept under 4°C wherein the metabolism of microorganisms slow down.

[0003] In the European Patent no. EP1475583, a cooking apparatus is described that comprises a separate cooling unit for cooling the food heated on the heat generating unit. In this application, a Peltier element is utilized as the cooling unit. The user takes the container to be cooled from the heat generating unit and puts it on the cooling unit.

[0004] In the German Patent no. DE19710444, a commercial display counter is described which comprises both a heating element and a cooling element. The food heated on the hot plates on the counter are cooled by the chilled air blown from a cooling unit under the counter. Consequently the heating counters and the cooling counters have been coupled within the same body.

[0005] The object of the present invention is to design a cooking appliance that provides the food in the containers on the heating unit to be cooled and the food in the containers left on the heating unit is prevented from being spoiled.

[0006] The cooking appliance designed to fulfill the object of the present invention is illustrated in the attached figures, where:

Figure 1 - is the perspective view of a cooking appliance.

Figure 2 - is the schematic view of an embodiment of the cooking appliance.

Figure 3 - is the top view of the heating unit.

Figure 4 - is the A-A sectional view of the heating unit.

Figure 5 - is the schematic view of another embodiment of the cooking appliance.

Figure 6 - is the view of detail C of a cooking appliance.

Figure 7 - is the B-B sectional view of an embodiment of the heating unit.

Figure 8 - is the B-B sectional view of another embodiment of the heating unit.

[0007] Elements shown in the figures are numbered as follows:

1. Cooking appliance
2. Body
3. Cook-top
4. Heating unit
5. Control unit
6. Cooling unit
7. Proximity sensor
8. Temperature sensor
9. Cool air duct
10. Compressor
11. Evaporator
12. Capillary tube
13. Condenser
14. Fan
15. Cabin
16. Gas duct
17. Valve
18. Injector
19. Igniter
20. Mixing chamber
21. Deflector
22. Burner hole
23. Grill
24. Cap
25. Knob
26. Hotplate
27. Heater
28. Alarm

[0008] The cooking appliance (1) of the present invention comprises a body (2), a cook-top (3) situated on the body (2), at least one heating unit (4) positioned on the cook-top (3), on which the container (K) containing the food item is placed and generating the heat necessary for cooking the food items in the containers, and a cooling unit (6) integrated within the heating unit (4) such that when the heating unit (4) is off, provides cooling of the container (K) on the heating unit (4) (Figure 1).

[0009] In one embodiment of the present invention, cooling is accomplished by passing refrigerant fluid under the heating unit (4) that the container (K) stands on (Figure 2). The cooling unit (6) comprises a compressor (10) that compresses the refrigerant fluid, a condenser (13) that provides condensing of the refrigerant fluid coming out of the compressor (10), one or more capillary tubes (12) positioned downstream of the condenser (13) providing the expansion of the refrigerant fluid, and an evaporator (11) into which the condensed refrigerant fluid is delivered, and which provides cooling by absorbing heat. This embodiment of the present invention is utilized especially together with the electrical heating units (4) (Figure 3, Figure 4 and Figure 5). The heating unit (4) com-

prises preferably a circular hotplate (26) on which the container (K) is placed, and at least one heater (27), for example a resistor, situated just under the hotplate (26), generating the heat necessary for heating the container (K). The evaporator (11), preferably formed of a ring shaped bent pipe, is positioned preferably under the cook-top (3) so as to surround the hotplate (26).

[0010] In another embodiment of the present invention, gas heating units (4) are utilized. This type of gas heating unit (4) comprises a gas duct (16) for delivering the gas, an injector (18) at one end of this duct (16), a mixing chamber (20) wherein the gas is mixed with the air and into which the injector (18) extends, a deflector (21) which guides the gas-air mixture, a cap (24) positioned over this deflector (21) having burner holes (22) where the gas-air mixture is ejected and flames are formed, and a grill (23) situated at a certain height from the cook-top (3), where the container (K) is placed on so that it is over the cap (24).

[0011] In yet another embodiment of the present invention, the cooling of the container (K) is achieved by blowing cool air towards the container (K) from the heating unit (4) or the cook-top (3) (Figure 6). In this embodiment, the cooling unit (6) comprises a fan (14) that moves the air, and at least one cool air duct (9) that guides the air moved by the fan (14) towards the container (K). However in the preferred embodiment, the cooling unit (6) comprises, besides the components of the cooling cycle described in the above embodiment, a cabin (15) positioned inside the body (2) of the cooking appliance (1), inside which the evaporator (11) and the fan (14) are contained, and connected to the cool air duct (6). Air (A) is blown through (via) the cool air duct (9), from the center of the heating unit (4) to the base of the container (K) or from the cook-top (3) towards the side surface of the container (K) (Figure 7).

[0012] Cool air blowing is used especially with the gas heating units (4) (Figure 9 and Figure 10).

[0013] In one embodiment of the cooking appliance (1) comprising a gas heating unit (4), the orifice of the cool air duct (9) is just next to the heating unit (4) on the cook-top (3), and the cool air (A) is blown towards the side surfaces of the container (K).

[0014] In another embodiment of the cooking appliance (1) comprising a gas heating unit (4), the orifice of the cool air duct (9) extends into the mixing chamber (20) (Figure 9) or into the gas duct (16) (Figure 10), and the cool air (A) is blown from the burner holes (22) towards the base of the container (K). In this embodiment, since the gas and the cool air partly share the same conduit, even though at different time intervals, the cooking appliance (1) comprises a valve (17) that provides to direct either the cool air or the combustible gas to the burner holes (22) as required. This valve (17) is preferably a bistable solenoid valve with preferably two inlets and one outlet.

[0015] The cooking appliance (1) comprises a control unit (5) that allows a certain time period to elapse be-

tween consecutive heating and cooling processes or to provide the cooling unit (6) and the heating unit (4) to function with low power for a certain time period, in order to protect the heating unit (4) and the cooling unit (6) from thermal shocks. For example, when the user wants to turn on the heating unit (4) while the cooling unit (6) is functioning, the control unit (5) prevents the heating unit (4) from functioning in full power for a certain period of time, meanwhile allowing the refrigerant fluid in the evaporator (11) to be absorbed.

[0016] In an embodiment of the present invention, the cooking appliance (1) comprises a knob (25) allowing the user to turn on the cooling unit (6) and/or to determine the temperature value to which the container (K) should be cooled.

[0017] In yet another embodiment of the present invention, the cooking appliance (1) comprises a proximity sensor (7) that detects whether or not there is a container (K) on the heating unit (4) and/or a temperature sensor (8) for detecting the temperature of the container (K). When there is a container (K) on the heating unit (4), when the temperature of the container (K) is within the range (T1-T2) wherein the formation of the microorganisms accelerates, and when the heating unit (4) is off, then the control unit (5) turns on the cooling unit (6) automatically to provide the cooling of the container (K) at its present location, to a temperature ($<T_2$) wherein the metabolism of the microorganisms slow down and turns it off after the necessary cooling is achieved.

[0018] The proximity sensor (7) is preferably a weight/pressure sensor situated at the heating unit (4) where the container (K) is seated, or it can be an optic/infrared sensor situated at another point of the cooking appliance (1). If the proximity sensor (7) does not detect a container (K) on the heating unit (4), then the cooling unit (6) is not turned on.

[0019] The temperature sensor (8) can be any kind of sensor that can measure the temperature, preferably positioned so that it is in contact with the base of the container (K). When the temperature sensor (8) detects that the temperature of container (K) is below a certain temperature (T1), for example 60°C, the cooling unit (6) is turned on.

[0020] The control unit (5) decides on whether or not the heating unit (4) is on, one of the prerequisites necessary for turning on the cooling unit (6), by controlling the data received from various units of the cooking appliance (1).

[0021] In one embodiment of the present invention, the control unit (5) receives this information from the circuit supplying electric current to the plate (26) in the heating unit (4) comprising a hotplate (26).

[0022] In another embodiment of the present invention, the gas heating unit (4) comprises an igniter (19) that enables the gas received from the burner holes (22) to be ignited with an electric arc. The control unit (5) detects whether there is a flame or not, that is, whether the heating unit (4) is turned on or not, by controlling the

current of the igniter (19).

[0023] In yet another embodiment of the present invention, the control unit (5) comprises audio and/or visual alarms (28) to indicate to the user that the temperature of the container (K) is within the range (T1-T2) wherein the formation of microorganisms accelerates.

[0024] In the cooking appliance (1) of the present invention, when the temperature of the container (K) drops below 60°C (T1) after the heating unit (4) is turned off, the cooling unit (6) is turned on. When the temperature of the container (K) drops below 4°C (T2), the cooling unit (6) stops, and functions intermittently so as to keep the temperature around 4°C after this phase. Lifting of the container (K) from the heating unit (4) by the user is detected via the proximity sensor (7) and the control unit (5) stops the cooling unit (6).

[0025] With the cooking appliance (1) of the present invention, the user can cool the food in a container (K) on the heating unit (4) when desired. Thus the spoiling of the food in the containers left or forgotten on the heating unit (4) is prevented.

Claims

1. A cooking appliance (1) comprising a body (2), a cook-top (3) situated on the body (2), at least one heating unit (4) positioned on the cook-top (3), on which the container (K) containing the food item is placed and generating the heat necessary for cooking the food items in the container, and **characterized by** a cooling unit (6) integrated within the heating unit (4) that provides the cooling of the container (K) at its present location on the heating unit (4) when the heating unit (4) is off.
2. A cooking appliance (1) according to Claim 1, **characterized by** a heating unit (4) having a hotplate (26) on which the container (K) is placed, and a heater (27), situated just under this hotplate (26), generating the heat necessary for heating the container (K), and a cooling unit (6) having an evaporator (11), formed of a ring shaped bent pipe, positioned preferably under the cook-top (3) so as to surround the hotplate (26).
3. A cooking appliance (1) according to Claim 1, **characterized by** a cooling unit (6) comprising a gas duct (16) for delivering the combustible gas, an injector (18) at one end of this duct (16), a mixing chamber (20) wherein the gas is mixed with the air and into which the injector (18) extends, a deflector (21) which directs the gas-air mixture in the mixing chamber (20), a cap (24) positioned over this deflector (21) having burner holes (22) wherein the gas-air mixture is ejected out and the flames are formed, a grill (23) situated at a certain height from the cook-top (3), where the container (K) is placed so that it

is over the cap (24) and an evaporator (11) assembled to the heating unit (4) so as to contact the container.

4. A cooking appliance (1) according to Claim 1, **characterized by** a cooling unit (6) comprising a fan (14) such that it can blow the cool air towards the container (K) from inside the heating unit (4) or the cook-top (3), and at least one cool air duct (9) that guides the air (A) moved by the fan (14) towards the container (K).
5. A cooking appliance (1) according to Claim 4, **characterized by** a cooling unit (6) comprising an evaporator (11) inside which the refrigerant is circulated so as to cool air and a cabin (15) positioned inside the body (2) inside which the evaporator (11) and the fan (14) are contained, and connected to the cool air duct (6).
6. A cooking appliance (1) according to Claim 5, **characterized by** a cooling unit (6) comprising a cool air duct (9) the orifice of which is situated on the cook-top (3), near the heating unit (4).
7. A cooking appliance (1) according to Claim 5, **characterized by** a cooling unit (6) comprising a cool air duct (9), the orifice of which extends into the mixing chamber (20) or into the gas duct (16) so that the cool air (A) is blown from the burner holes (22) towards the base of the container (K).
8. A cooking appliance (1) according to Claim 7, **characterized by** a valve (17) that provides to direct the cool air or the combustible gas to the burner holes (22) as required.
9. A cooking appliance (1) according to any one of the previous claims, **characterized by** a knob (25) that allows the user to turn on the cooling unit (6) when desired and/or to set the temperature for cooling the container.
10. A cooking appliance (1) according to any one of the previous claims, **characterized by** a temperature sensor (8) that measures the temperature of the container (K) on the heating unit (4).
11. A cooking appliance (1) according to Claim 10, **characterized by** at least one audio and/or visual alarm (28) to inform the user that the temperature of the container (K) is within the temperature range (T1-T2) favoring the formation of microorganisms.
12. A cooking appliance (1) according to any one of the previous claims, **characterized by** a proximity sensor (7) which detects whether or not there is a container (K) on the heating unit (4).

13. A cooking appliance (1) according to Claim 10 and 12, **characterized by** a control unit (5) which turns on or off the cooling unit (6) according to the information received from the proximity sensor (7) and the temperature sensor (8) and by controlling whether or not the heating unit (4) is on.

Patentansprüche

1. Kochvorrichtung (1), umfassend ein Gehäuse (2), eine Kochoberfläche (3), die auf dem Gehäuse (2) angeordnet ist, wenigstens eine Heizeinheit (4), die an der Kochoberfläche (3) angeordnet ist, und auf die ein Behälter (K) mit dem Nahrungsmittel gestellt wird, und die die zum Kochen der Nahrungsmittel im Behälter benötigte Wärme erzeugt, und **gekennzeichnet durch** eine Kühleinheit (6), die in die Heizeinheit (4) integriert ist, und die das Kühlen des Behälters (K) an seiner vorbestimmten Position auf der Heizeinheit (4) vorsieht, wenn die Heizeinheit (4) ausgeschaltet ist.
2. Kochvorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Heizeinheit (4) eine Heizplatte (26) aufweist, auf die der Behälter (K) gestellt wird, und eine Heizeinrichtung (27), die unmittelbar unter dieser Heizplatte (26) angeordnet ist, und die die zum Erwärmen des Behälters (K) benötigte Wärme erzeugt, und **dadurch**, dass die Kühleinheit (6) einen Verdampfer (11) aufweist, der aus einem ringförmig gebogenen Rohr gebildet ist, und der vorzugsweise unter der Kochoberfläche (3) angeordnet ist, derart, dass er die Heizplatte (26) umgibt.
3. Kochvorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Kühleinheit (6) eine Gasleitung (16) zum Zuführen von brennbarem Gas umfasst, eine Einspritzvorrichtung (18) an einem Ende dieser Leitung (16), eine Mischkammer (20), in der das Gas mit Luft gemischt wird und in die sich die Einspritzvorrichtung (18) erstreckt, einen Deflektor (21), der das Gas-Luft-Gemisch in der Mischkammer (20) lenkt, eine Kappe (24), die über diesem Deflektor (21) angeordnet ist und Brenneröffnungen (22) aufweist, wodurch das Gas-Luft-Gemisch ausgestoßen und Flammen gebildet werden, einen Rost (23), der in einer bestimmten Höhe über der Kochoberfläche (3) angeordnet ist, und auf den der Behälter (K) gestellt wird, derart, dass er über der Kappe (24) angeordnet ist, und einen Verdampfer (11), der derart an die Heizeinheit (4) montiert ist, dass er in Kontakt mit dem Behälter (K) gelangt.
4. Kochvorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Kühleinheit (6) ein Gebläse (14) umfasst, derart, dass sie aus dem Inneren der

Heizeinheit (4) oder der Kochoberfläche (3) kühle Luft zum Behälter (K) blasen kann, und wenigstens eine Kühlluftleitung (9), die die Luft (A), die vom Gebläse (14) bewegt wird, zum Behälter (K) führt.

5. Kochvorrichtung (1) nach Anspruch 4, **dadurch gekennzeichnet, dass** die Kühleinheit (6) einen Verdampfer (11) umfasst, in dem Kühlmittel zirkuliert, derart, dass die Luft gekühlt wird, und ein Fach (15), das im Inneren des Gehäuses (2) angeordnet ist, und in dem der Verdampfer (11) und das Gebläse (14) aufgenommen sind, und das mit der Kühlluftleitung (9) verbunden ist.
6. Kochvorrichtung (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** die Kühlluftleitung (9) der Kühleinheit (6) eine Mündung aufweist, die an der Kochoberfläche (3) in der Nähe der Heizeinheit (4) angeordnet ist.
7. Kochvorrichtung (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** die Kühlluftleitung (9) der Kühleinheit (6) eine Mündung aufweist, die sich in die Mischkammer (20) oder in die Gasleitung (16) erstreckt, derart, dass die kühle Luft (A) aus den Brenneröffnungen (22) zum Boden des Behälters (K) geblasen wird.
8. Kochvorrichtung (1) nach Anspruch 7, **gekennzeichnet durch** ein Ventil (17), das vorsieht, nach Bedarf die kühle Luft oder das brennbare Gas zu den Brenneröffnungen (22) zu lenken.
9. Kochvorrichtung (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** einen Knopf (25), der es dem Benutzer erlaubt, die Kühleinheit (6) einzuschalten, wenn es gewünscht wird, und/oder die Temperatur zum Kühlen des Behälters einzustellen.
10. Kochvorrichtung (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** einen Temperatursensor (8), der die Temperatur des Behälters (K) auf der Heizeinheit (4) misst.
11. Kochvorrichtung (1) nach Anspruch 10, **gekennzeichnet durch** wenigstens eine akustische und/oder optische Alarmeinrichtung (28), die den Benutzer darüber informiert, dass die Temperatur des Behälters (K) innerhalb des Temperaturbereichs (T1-T2) liegt, der die Bildung von Mikroorganismen begünstigt.
12. Kochvorrichtung (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** einen Näherungssensor (7), der detektiert, ob ein Behälter (K) auf der Heizeinheit (4) steht oder nicht.

13. Kochvorrichtung (1) nach den Ansprüchen 10 und 12, **gekennzeichnet durch** eine Steuerungseinheit (5), die die Kühleinheit (6) anhand von Informationen, die sie vom Näherungssensor (7) und vom Temperatursensor (8) empfängt, und **durch** Steuern, ob die Heizeinheit (4) eingeschaltet ist, ein- oder ausschaltet.

Revendications

1. Un appareil de cuisson (1) comprenant un corps (2), une table de cuisson (3) située sur le corps (2), au moins une unité de chauffage (4) positionnée sur la table de cuisson (3), sur laquelle le récipient (K) contenant l'aliment est placé et produisant la chaleur nécessaire pour le cuisson des aliments dans le récipient, et **caractérisé par** une unité de refroidissement (6) intégrée dans l'unité de chauffage (4) qui permet le refroidissement du récipient (K) à son emplacement présent sur l'unité de chauffage (4) lorsque l'unité de chauffage (4) est éteinte.
2. Un appareil de cuisson (1) selon la Revendication 1, **caractérisé par** l'unité de chauffage (4) ayant une plaque chauffante (26) sur laquelle le récipient (K) est placé, et un appareil de chauffage (27), situé juste sous cette plaque chauffante (26), produisant la chaleur nécessaire pour le chauffage du récipient (K), et l'unité de refroidissement (6) ayant un évaporateur (11), formé d'un tuyau courbé en forme de bague, positionné sous la table de cuisson (3) de manière à entourer la plaque chauffante (26).
3. Un appareil de cuisson (1) selon la Revendication 1, **caractérisé par** l'unité de refroidissement (6) comprenant une conduite de gaz (16) pour fournir du gaz combustible, un injecteur (18) à l'extrémité de cette conduite (16), une chambre de mélange (20) dans laquelle le gaz est mélangé avec l'air et dans laquelle l'injecteur (18) s'étend, un déflecteur (21) qui dirige le mélange de gaz/air vers la chambre de mélange (20), un capuchon (24) positionné sur ce déflecteur (21) ayant des trous du brûleur (22) à travers desquels le mélange de gaz/air est expulsé et les flammes se sont formées, une grill (23) située à une certaine hauteur de la table de cuisson (3), où le récipient (K) est placé de sorte qu'il est sur le capuchon (24) et l'évaporateur (11) monté à l'unité de chauffage (4) de manière à toucher le récipient (K).
4. Un appareil de cuisson (1) selon la Revendication 1, **caractérisé par** l'unité de refroidissement (6) comprenant un ventilateur (14) de sorte qu'il peut souffler l'air frais vers le récipient (K) de l'intérieur de l'unité de chauffage (4) ou de la table de cuisson (3), et au moins une conduite d'air frais (9) qui guide l'air (A) soufflé par le ventilateur (14) vers le récipient

(K).

5. Un appareil de cuisson (1) selon la Revendication 4, **caractérisé par** l'unité de refroidissement (6) comprenant l'évaporateur (11) à l'intérieur duquel le réfrigérant est circulé de manière à refroidir l'air et une cabine (15) positionnée à l'intérieur du corps (2) à l'intérieur duquel l'évaporateur (11) et le ventilateur (14) sont placés et relié à la conduite d'air frais.
6. Un appareil de cuisson (1) selon la Revendication 5, **caractérisé par** l'unité de refroidissement (6) comprenant la conduite d'air frais (9) dont l'orifice est situé sur la table de cuisson (3), près de l'unité de chauffage (4).
7. Un appareil de cuisson (1) selon la Revendication 5, **caractérisé par** l'unité de refroidissement (6) comprenant la conduite d'air frais (9), dont l'orifice s'étend dans la chambre de mélange (20) ou la conduite de gaz (16) de sorte que l'air frais (A) est soufflé des trous du brûleur (22) vers la base du récipient (K).
8. Un appareil de cuisson (1) selon la Revendication 7, **caractérisé par** une soupape (17) qui permet l'air frais ou le gaz combustible d'être dirigé aux trous du brûleur (22) tel que requis.
9. Un appareil de cuisson (1) selon l'une quelconque des revendications précédentes, **caractérisé par** un bouton (25) qui permet à l'utilisateur d'allumer l'unité de refroidissement (6) lorsque désiré et/ou à régler la température pour le refroidissement du récipient (K).
10. Un appareil de cuisson (1) selon l'une quelconque des revendications précédentes, **caractérisé par** un capteur de température (8) qui mesure la température du récipient (K) sur l'unité de chauffage (4).
11. Un appareil de cuisson (1) selon la Revendication 10, **caractérisé par** au moins une alarme audio et/ou visuelle (28) pour informer l'utilisateur que la température du récipient (K) est dans la plage de température (T1-T2) en favorisant la formation des micro-organismes.
12. Un appareil de cuisson (1) selon l'une quelconque des revendications précédentes, **caractérisé par** un capteur de proximité (7) qui détecte s'il y a un récipient (K) sur l'unité de chauffage (4).
13. Un appareil de cuisson (1) selon l'une quelconque des revendications de 10 à 12, **caractérisé par** une unité de contrôle (5) qui allume ou éteint l'unité de refroidissement (6) selon l'information reçue du capteur de proximité (7) et du capteur de température

(8) et en contrôlant si l'unité de chauffage est éteinte
(4).

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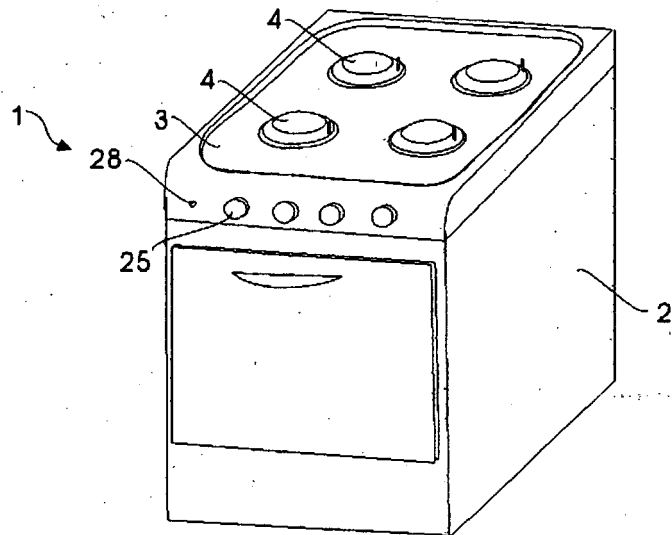
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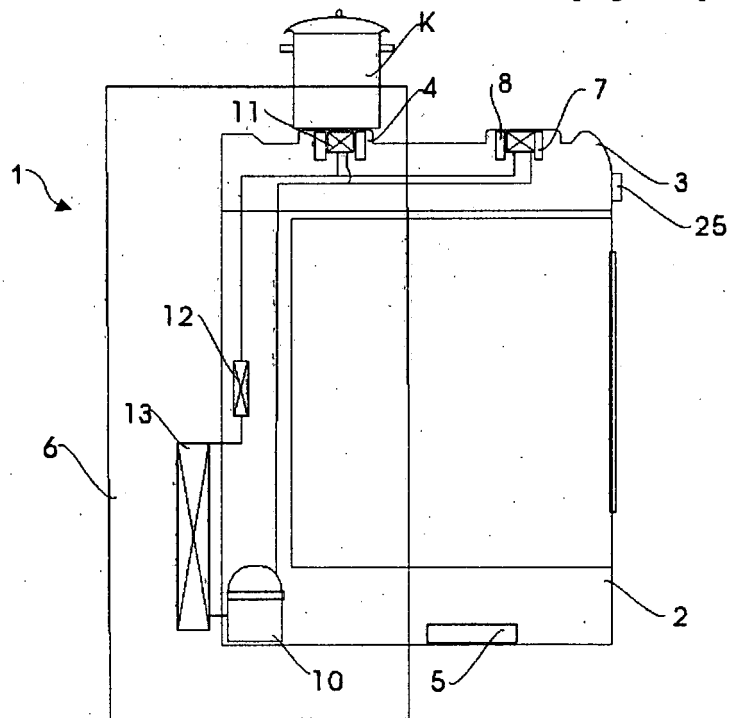
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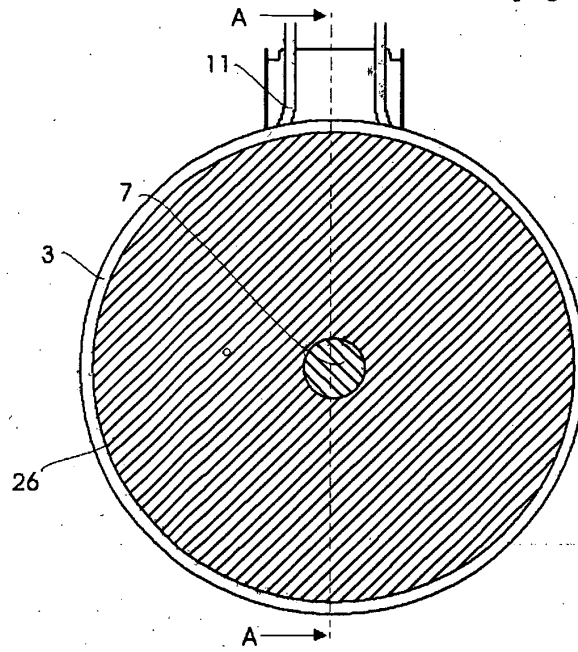
{Fig. 001}



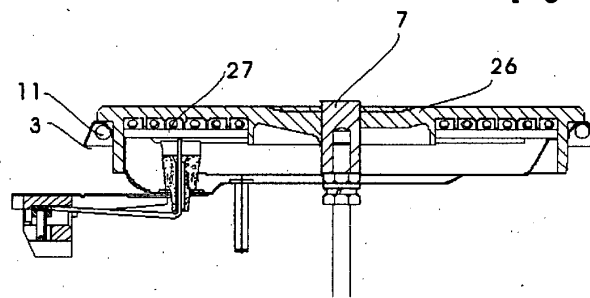
{Fig. 002}



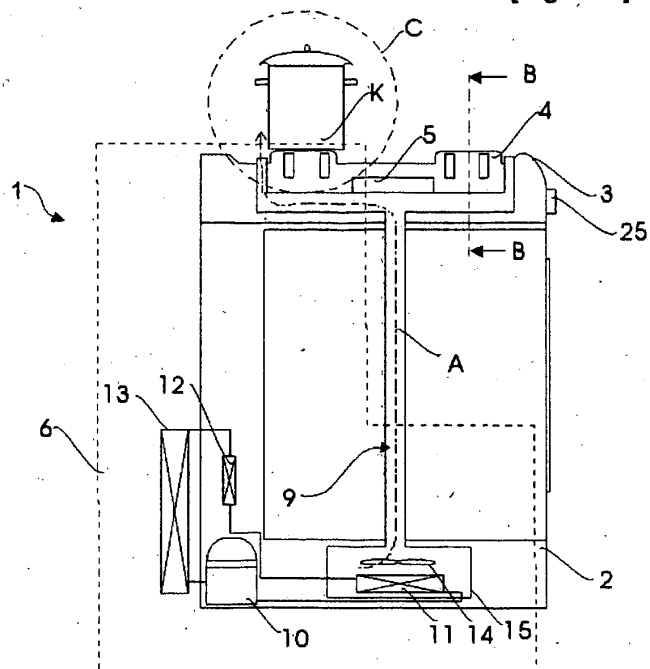
[Fig. 003]



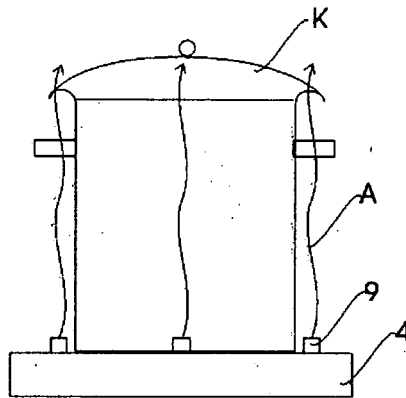
[Fig. 004]



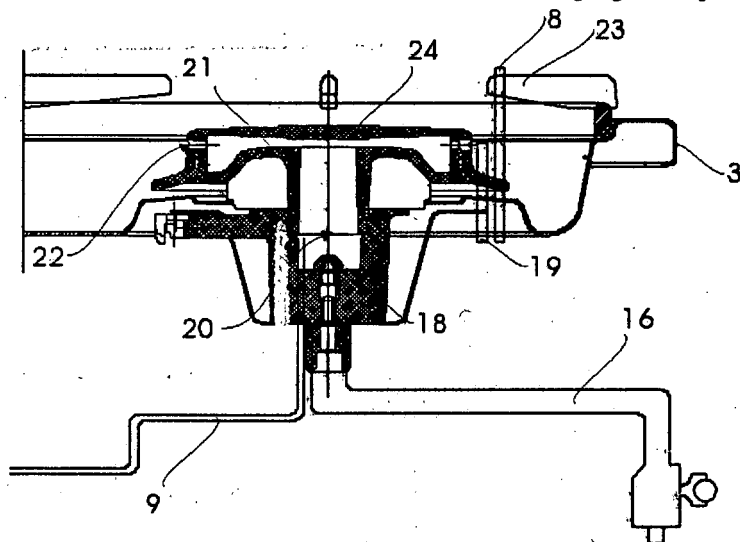
[Fig. 005]



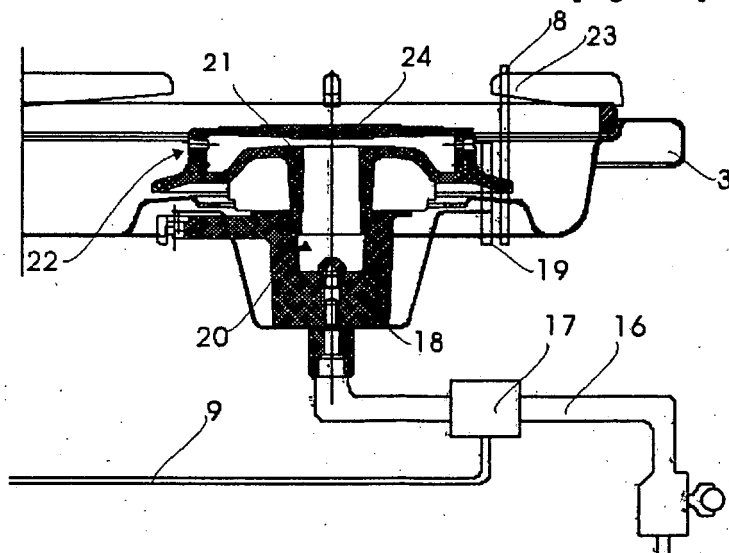
[Fig. 006]



[Fig. 007]



[Fig. 008]



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1475583 A [0003]
- DE 19710444 [0004]