US 20090191500A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2009/0191500 A1**

(43) **Pub. Date: Jul. 30, 2009**

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(54) **ENERGY SAVING STOVE WATER HEATER**

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(21) Appl. No.: **12/383,195**

(22) Filed: **Mar. 19, 2009**

Related U.S. Application Data

(63) Continuation-in-part of application No. 12/310,789, filed as application No. PCT/CN2008/000211 on Jan. 29, 2008.

Publication Classification

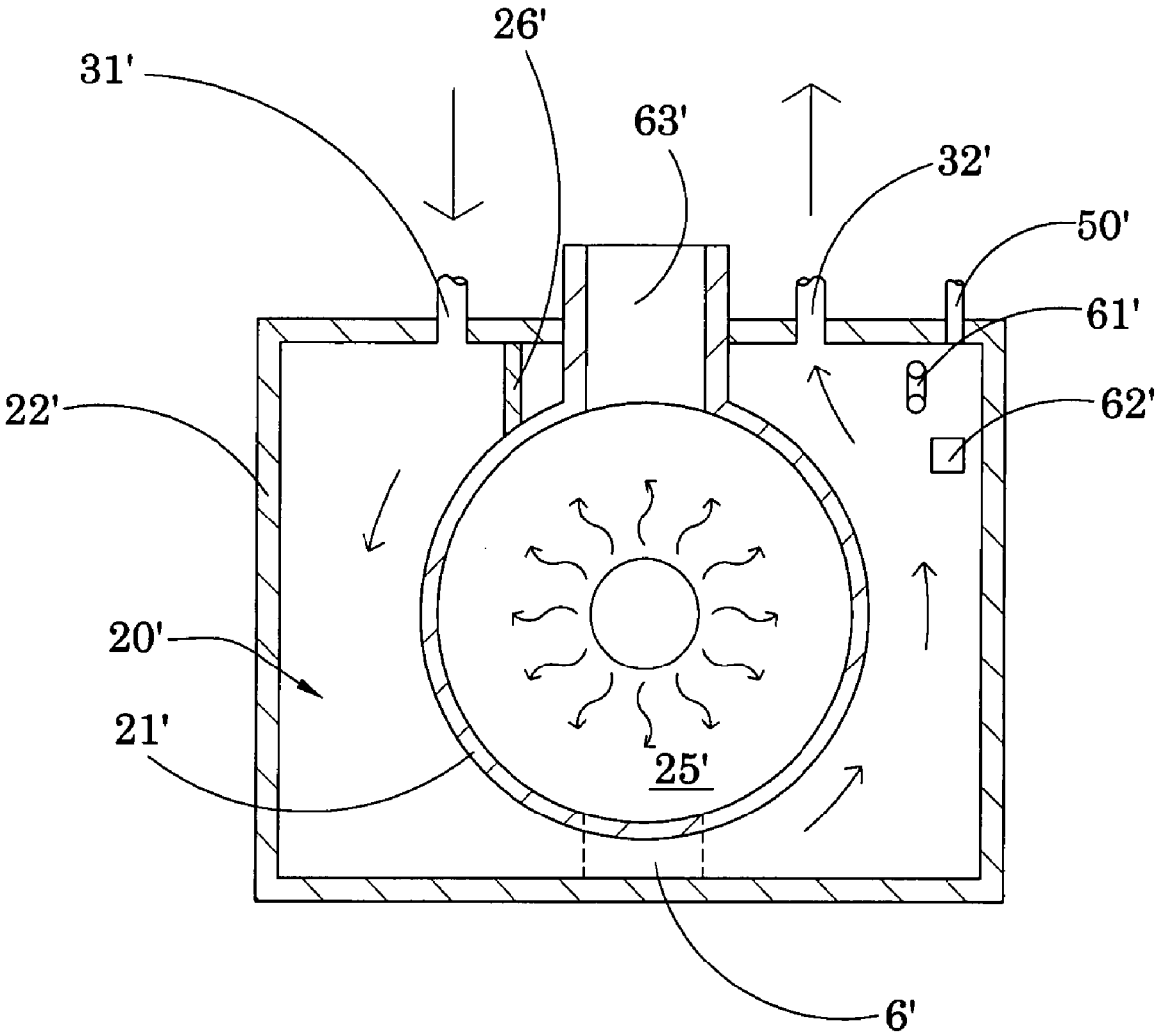
(51) **Int. Cl.**

F23L 15/00	(2006.01)
F24H 1/00	(2006.01)
F24C 13/00	(2006.01)

(52) **U.S. Cl.** **432/29**; 126/344; 126/4

(57) **ABSTRACT**

The energy saving stove water heater includes a heat collecting body, with a tubular shape, having a water chamber surrounding with a heat source of the cooking stove, a water pipeline operatively communicating with the water chamber, and a top opening aligning with the heat source. Therefore, when a cooking tool supports on the heat collecting body at the top opening thereof, the heat source of the cooking stove is arranged to generate relatively high heat energy thermally transferring not only towards the cooking tool at the top opening but also towards the water chamber to heat up the water therewithin.



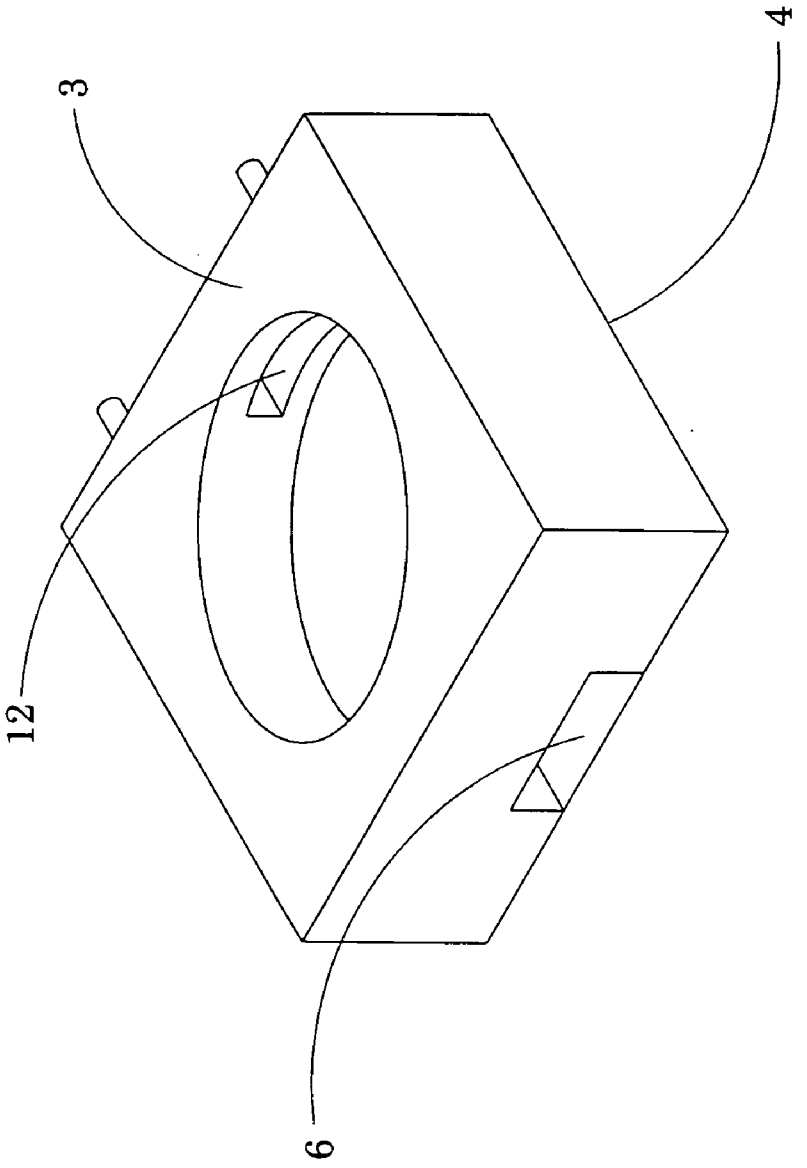


FIG. 1

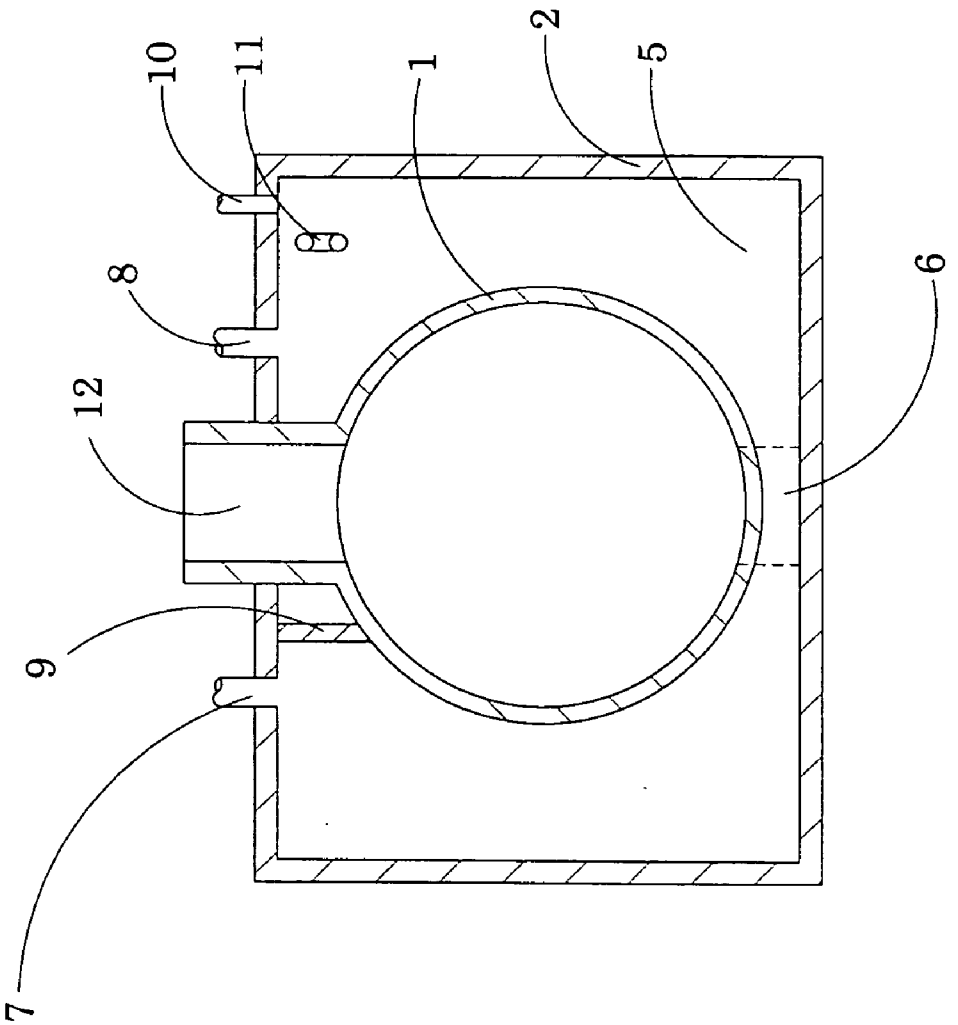


FIG.2

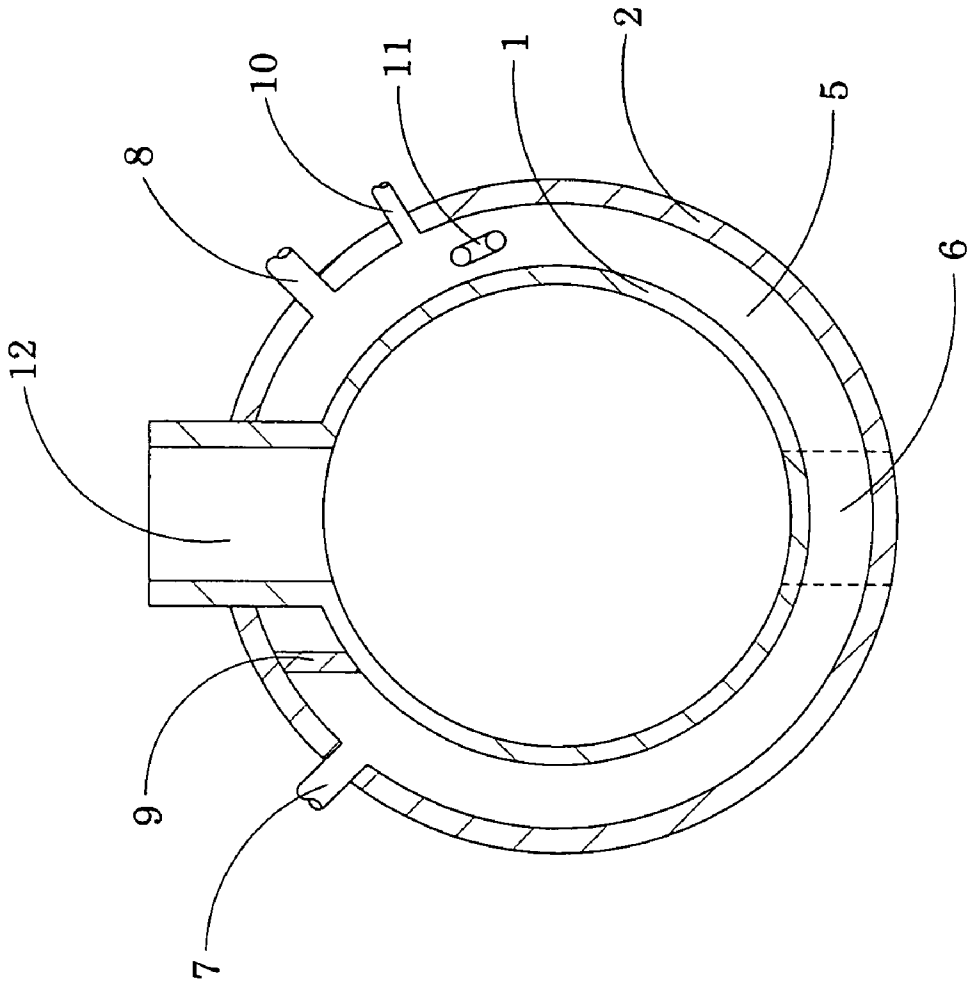


FIG.3

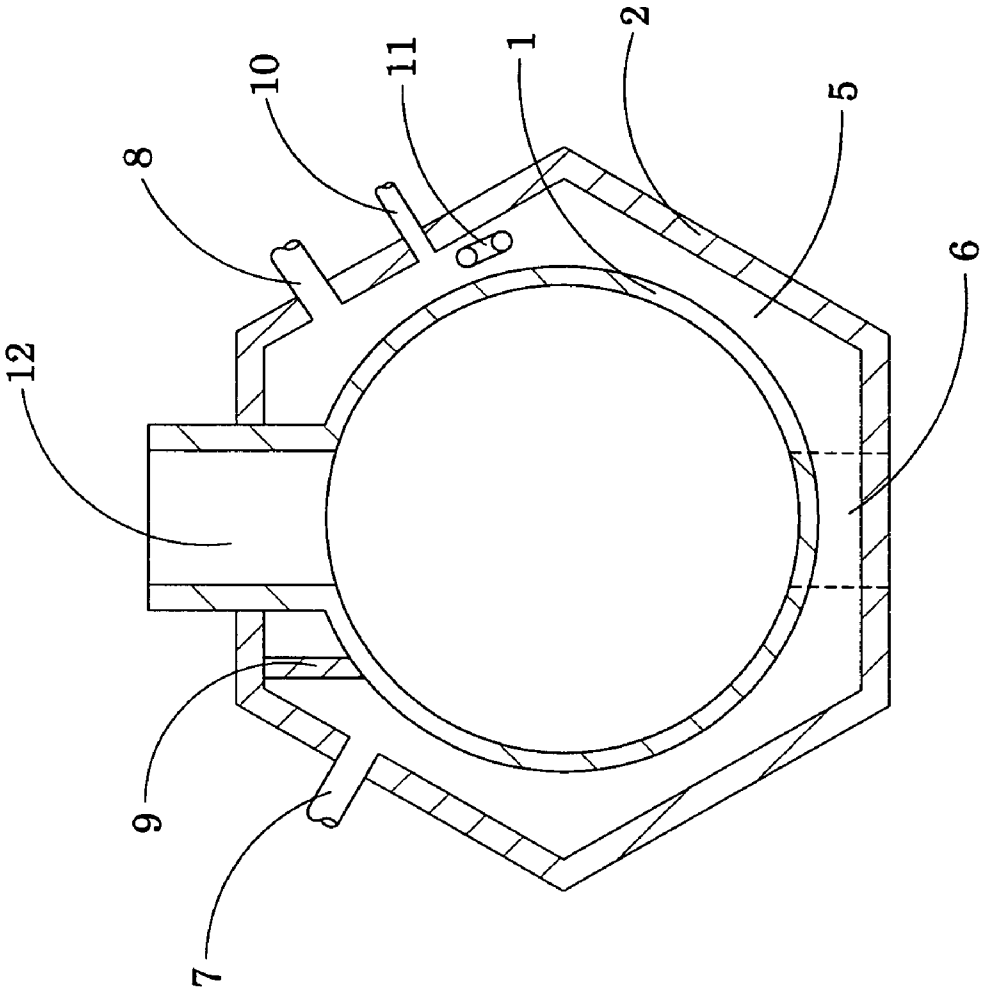


FIG.4

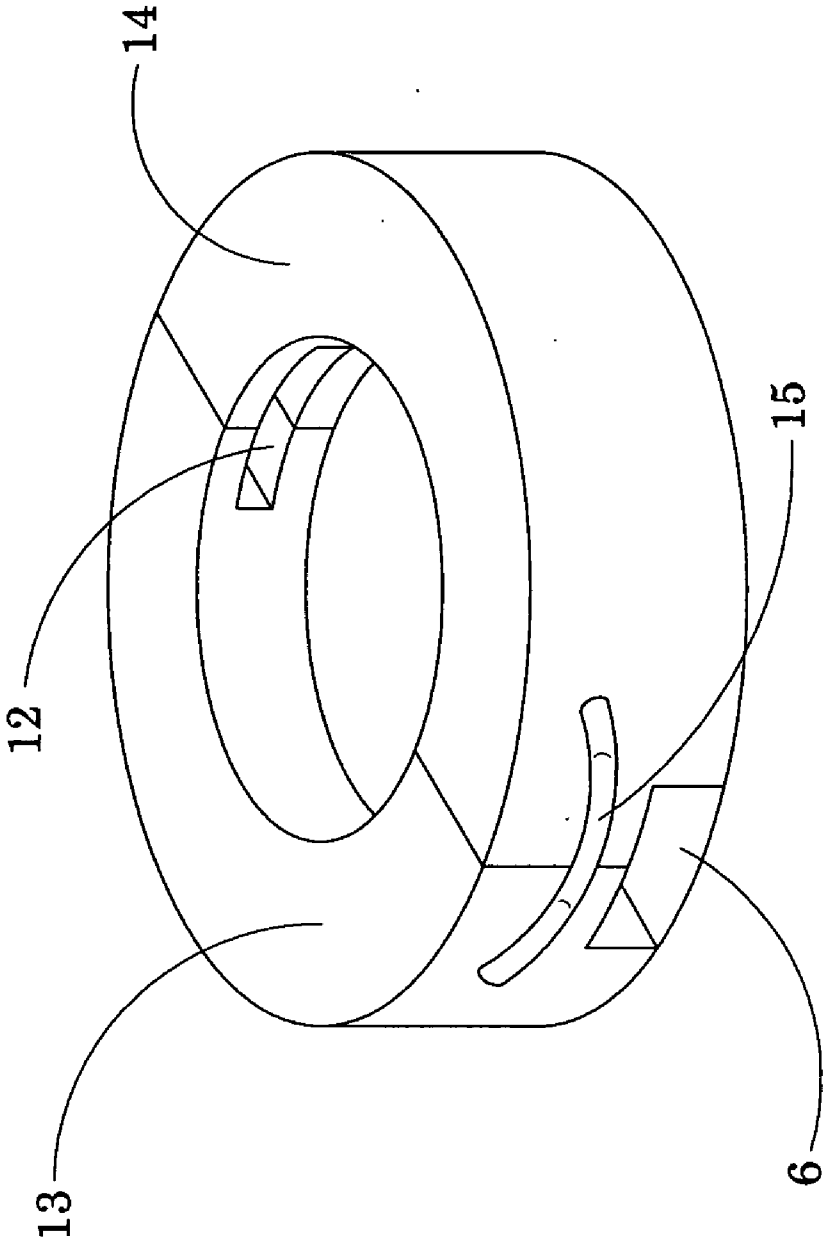


FIG.5

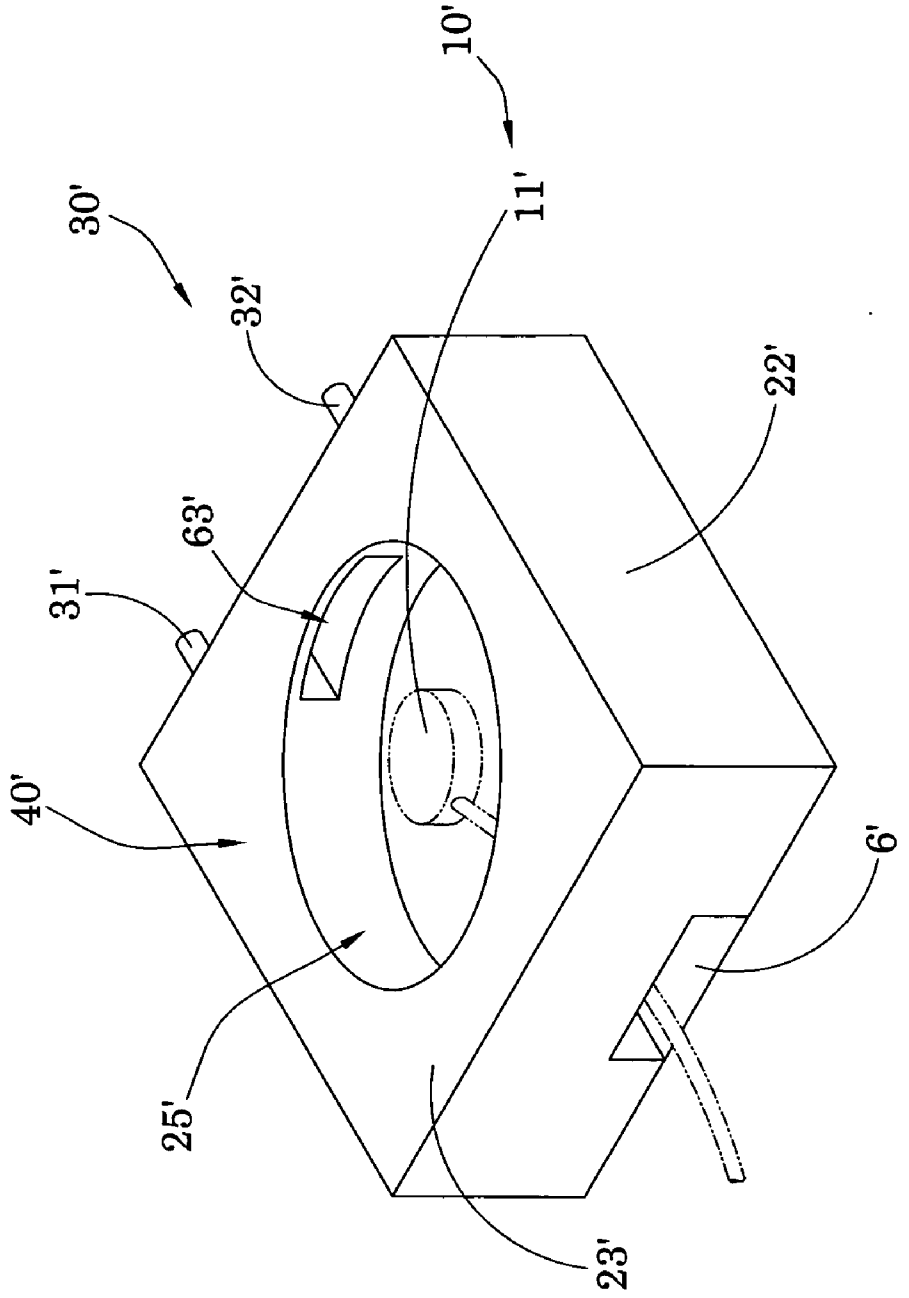


FIG.6

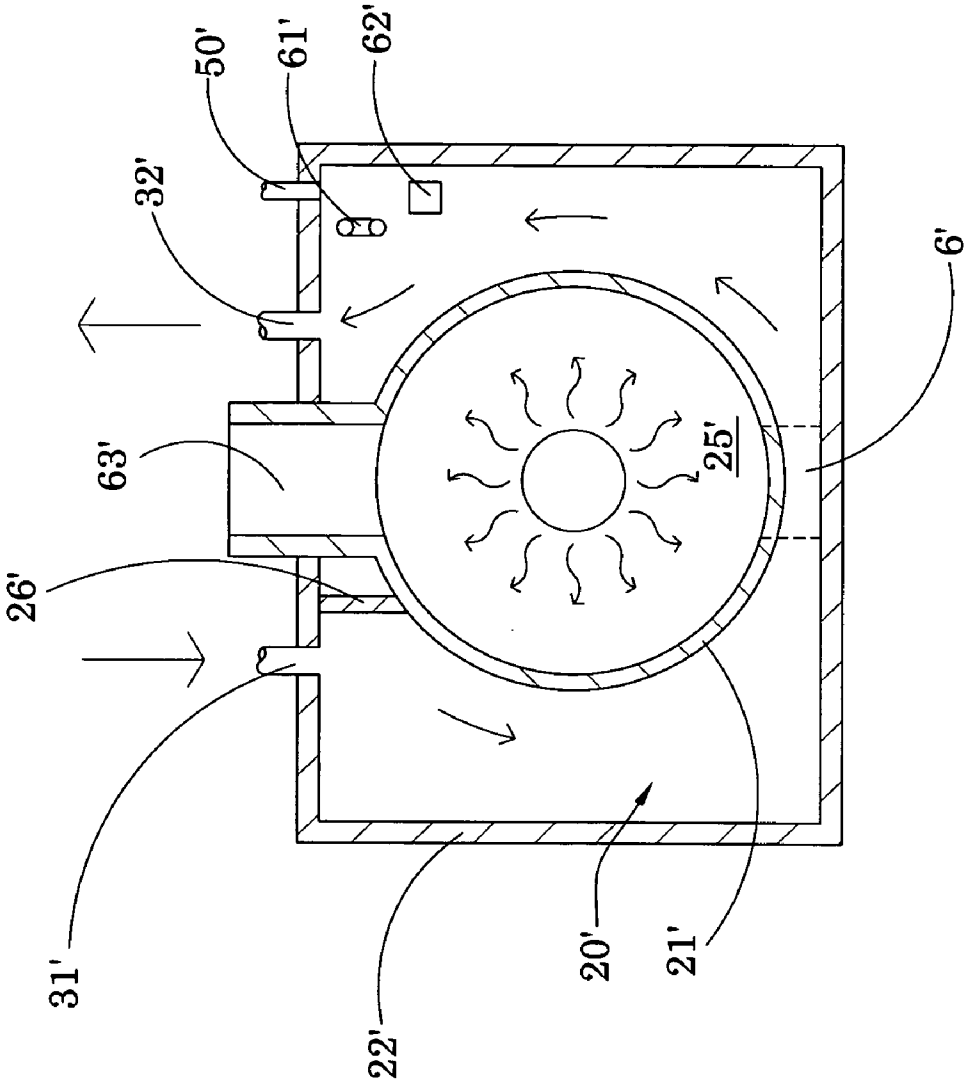


FIG.7

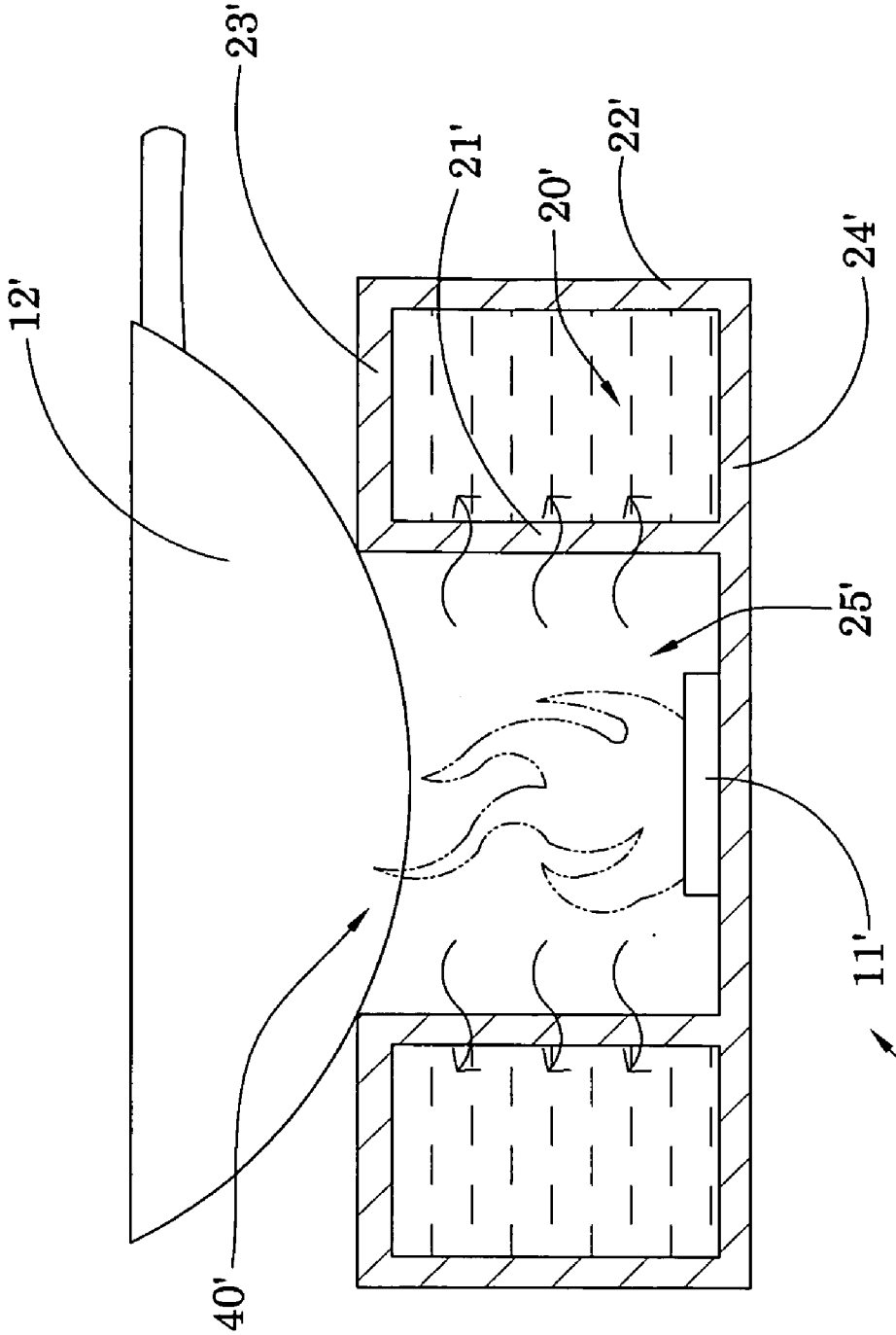


FIG.8

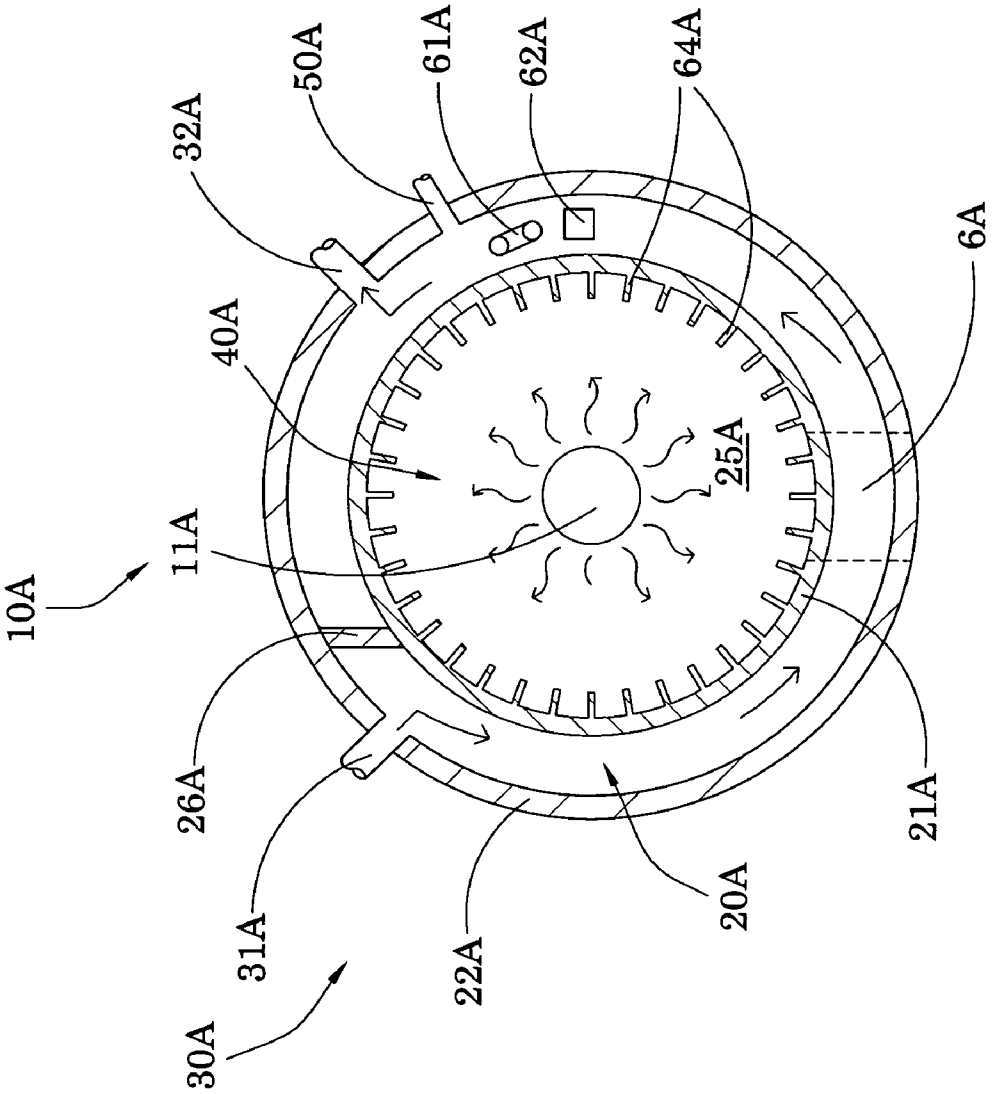


FIG.9

ENERGY SAVING STOVE WATER HEATER

CROSS REFERENCE OF RELATED APPLICATION

[0001] This is a Continuation-In-Part application of a non-provisional application having an application Ser. No. 12/310,789, and a filing date of Mar. 5, 2009.

BACKGROUND OF THE PRESENT INVENTION

[0002] 1. Field of Invention

[0003] This present invention relates to a water heater use in cooking stove, and more particularly to an energy saving stove water heater which is capable of heating up water by means of the cooking stove.

[0004] 2. Description of Related Arts

[0005] Nowadays, many people like to go out and eat because they don't have time to prepare the food cook and to clean up the dishes after the meal. Therefore, more and more food restaurants are provided on the market. In order to provide those foods, those companies and restaurants need to find proper appliance to assist them to cook. The kitchen in the traditional restaurant usually comprises one or more cooking stoves and water heaters. The cooking stove is used for providing heat to cook the food. Meanwhile, the water heater is used for providing hot water.

[0006] However, the boundary wall of the stove cavity of conventional cooking stove used in family or restaurant is constructed with fireproof bricks. When cooking the food, the cooking stove usually generates huge amount of heat. Once the temperature of flame is too high, the fireproof brick of the cooking stove will be overheated and broken very easily. As a result, the cooking stove is needed to maintained, repaired, or replaced frequency. In addition, such stove cavity structure of the traditional cooking stove can't efficiently utilize the excessive heat during operation. Therefore, it is a waste of thermal.

[0007] On the other hand, as everyone knows, the water heater is essential equipment in restaurants not only providing hot water, hot soups or drinks for their customers, but also forming a cooking apparatus to cook the food. Therefore, people have invented various kinds of heater to heat up water and keep the water at a predetermined temperature. The size of the water heater is usually huge to fulfill the hot water demand for the restaurant.

[0008] In order to heat up the water from room temperature to around 100° C., the water heater has to consume huge amount of energy, such as gas or electric. On the other hand, since the water conducts and radiates its heat, the water temperature is kept decreasing at the same time. The water heater not only needs to heat water at high temperature, but also needs to keep it warm. For example, if the user wants to heat and keep 100 gallons of water at 100° C. for 24 hours, 50 W of power is the minimum electrical energy to be consumed. Not to mention if the water heater is not an energy saving device, it consumes more energy to maintain water at high temperature. To sum up, the heat output from the cooking stove and the energy transform and heat input for the water heater at the same room are a big waste of thermal energy.

SUMMARY OF THE PRESENT INVENTION

[0009] The major object of the present invention is to provide an energy saving stove water heater, wherein the heat source of the cooking stove is arranged to generate relatively high heat energy thermally transferring not only towards the cooking tool at the top opening but also towards the water chamber to heat up the water therewithin. It fully utilizes the heat generated by a cooking stove for heating up the water in the water tank so as to save energy, and protect the environment. Furthermore, the energy saving hydrant can protect the fireproof brick of the cooking stove from being overheated or burnt by the heat.

[0010] Another object of the present invention is to provide an energy saving stove water heater, which is designed to assure its operation safety.

[0011] Another object of the present invention is to provide an energy saving stove water heater, wherein the energy saving stove water heater combines the cooking stove and water heater into a unity in such a manner that the volume of the whole appliance is much smaller and the material cost of the appliance is much lower either.

[0012] Another object of the present invention is to provide an energy saving stove water heater, which has a simple structure and is convenient for set up and use. Also, it can achieve the goal of reducing exhaust and saving energy.

[0013] The energy saving stove water heater is capable of heating up water by fully utilizing the excessive heat from the cooking stove such that there is no need to consume any other energy to have hot water to save energy. In addition, the independent water heater has a compact structure that is easier for set up and usage.

[0014] Accordingly, in order to accomplish the above object, the present invention provides an energy saving stove water heater for heating water with a cooking stove which comprise a heat collecting body, with a tubular shape, having a water chamber surrounding with a heat source of the cooking stove, and a water pipeline operatively communicating with the water chamber. The heat collecting body further has a top opening aligning with the heat source and arranged in such a manner that when a cooking tool supports on the heat collecting body at the top opening thereof, the heat source of the cooking stove is arranged to generate relatively high heat energy thermally transferring not only towards the cooking tool at the top opening but also towards the water chamber to heat up the water therewithin.

[0015] These and other objectives, features, and advantages of the present invention will become apparent from the following detailed description, the accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. **1** is a perspective view of an energy saving stove water heater according to a preferred embodiment of the present invention.

[0017] FIG. **2** is a sectional view of the energy saving stove water heater according to the above preferred embodiment of the present invention.

[0018] FIG. **3** is a sectional view of the energy saving stove water heater according to the second preferred embodiment of the present invention.

[0019] FIG. **4** is a sectional view of the energy saving stove water heater according to the third preferred embodiment of the present invention.

[0020] FIG. **5** is a sectional view of the energy saving stove water heater according to the fourth preferred embodiment of the present invention.

[0021] FIG. **6** is a perspective view of an energy saving stove water heater according to a fifth preferred embodiment of the present invention.

[0022] FIG. **7** is a side sectional view of the energy saving stove water heater according to the above fifth preferred embodiment of the present invention.

[0023] FIG. **8** is a top sectional view of the energy saving stove water heater according to the above fifth preferred embodiment of the present invention.

[0024] FIG. **9** illustrates an alternative mode of the energy saving stove water heater according to the above fifth preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] Referring to FIGS. **1** to **2** of the drawing, an energy saving stove water heater according to a preferred embodiment of the present invention is illustrated, which comprises a water tank communicatively equipped with a cooking stove. The energy saving stove water heater is constructed by an inner tank body **1**, an outer tank body **2**, a top panel **3**, and a bottom panel **4**. The inner tank body **1** and the outer tank body **2** define a ring-shape sealed water chamber **5** therebetween. The top panel **3** and the bottom panel **4** are connected on to a top side and a bottom side of the water chamber **5** respectively so as to sealedly enclose the water chamber **5** to form the water tank. The inner and outer tank bodies **1**, **2** are provided with a channel **6** extending through the water chamber **5** for disposing the fuel line. The outer tank body **2** further has a water inlet **7** and a water outlet **8**.

[0026] In order to prevent the incoming cool water from the water inlet **7** from immediately exiting at the water outlet **8**, an isolated wall **9** is built between the water inlet **7** and the water outlet **8** in the water chamber **5** for separating incoming cool water and the exiting heated water within the water chamber **5**.

[0027] For security and safety purpose, a safety valve **10** is installed to the outer tank body **2**. The safety valve is communicated with the water chamber **5** for releasing the internal pressure and steam within the water chamber **5** while the water being heated up therein.

[0028] The energy saving stove water heater further comprises an electric heater **11** installed near the water outlet **8** within the water chamber **5** for generating electrical heat to heat up the water in the water chamber **5**, wherein when the temperature of water is detected lower than the usage requirement, the electric heater **11** is switched to heat up the water to be exited through the water outlet **8** so as to ensure the temperature of the water supply from the stove water heater of the present invention.

[0029] As a reasonable design, the inner and outer tank bodies **1**, **2** are provided with a ventilation channel **12** extending through the water chamber **5**, wherein the ventilation channel **12** can be extended to the bottom panel **4** in a vertical direction to form a groove to make a detour with the exhaust line of the stove.

[0030] In view of above, a stove can be installed inside the cavity surrounded by the inner tank body **1** while the fuel pipe of the stove extends through the channel **6** and the exhaust line passes through the ventilation channel **12**, not shown in FIGURES. In other words, the boundary bricks of the traditional stove are replaced by the stove water heater of the present invention as shown in FIGS. **1** to **8** to use the excessive heat generated from the stove to heat up the water flown in the water chamber **5** of the stove water heater of the present invention.

[0031] Referring to FIG. **3** of the drawing, a second preferred embodiment of the present invention is illustrated, wherein the difference between the second preferred embodiment and the above preferred embodiment is that the cross section of the outer tank body **2** is in circular shape instead of the rectangular shape as shown in FIGS. **1** to **2**.

[0032] Referring to FIG. **4** of the drawing, a third preferred embodiment of the present invention is illustrated, wherein the difference between the third preferred embodiment and the above preferred embodiment is that the cross section of the inner tank body **2** in the third preferred embodiment is in hexagonal shape.

[0033] According to the fourth embodiment as shown in FIG. **5**, the energy saving stove water heater of the present invention can be constructed by a left half body **13** and a right half body **14**. The left half body **13** and the right half body **14** has a communicating tube **15** to connect with each other, wherein each of the left and right half body **13**, **14** is provided with the water inlet **7** and the water outlet **8** respectively.

[0034] It is worth to mentioning that a cross section of the inner tank body **1** of the energy saving stove water heating is in circular shape.

[0035] As shown in FIGS. **6** to **8**, an energy saving stove water heater of a fifth embodiment illustrates an alternative mode of the first embodiment of the present invention.

[0036] According to the fifth embodiment, the energy saving stove water heater, which is incorporating with a cooking stove **10'**, comprises a heat collecting body, with a tubular shape, having a water chamber **20'** surrounding with a heat source **11'** of the cooking stove **10'**, and a water pipeline **30'** operatively communicating with the water chamber **20'**. The heat collecting body further has a fuel line channel **6'** extending through the water chamber **20'** for disposing the fuel line.

[0037] The heat collecting body further has a top opening **40'** aligning with the heat source **11'** and arranged in such a manner that when a cooking tool **12'** supports on the heat collecting body at the top opening **40'** thereof, the heat source **11'** of the cooking stove **10'** is arranged to generate relatively high heat energy thermally transferring not only towards said cooking tool **12'** at the top opening **40'** but also towards the water chamber **20'** to heat up the water therewithin.

[0038] In other words, the heat source **11'**, such as flame, of the energy saving stove water heater adapts for not only perpendicular generating heat to the cooking stove **10'** but also providing heat to the water heater during operation. Therefore, the energy saving stove water heater fully utilizes the heat generated by the heat source **11'** of the cooking stove **10'** for heating up the water in the water chamber **20'** so as to save energy, and protect the environment. Accordingly, the cooking stove **10'** can electric stove, or gas stove in which they are commonly utilized in the kitchen. Preferably, the gas-type cooking stove **10'** is preferred because the heat source **11'** can generate relative high heat energy at few hundred degrees Celsius.

[0039] As shown in FIGS. **7** and **8**, the heat collecting body comprises an inner tank body **21'**, an outer tank body **22'**, a top panel **23'**, and a bottom panel **24'**. The inner tank body **21'** is spacedly supported within the outer tank body **22'** to define the sealed water chamber **20'** therebetween. The top panel **23'** and the bottom panel **24'** are connected on to a top side and a bottom side of the water chamber **20'** respectively so as to

sealedly enclose the water chamber **20'** to form the water tank. The top opening **40'** is formed at the top panel **23'** of the heat collecting body. In addition, a heat cavity **25'** is formed within the inner tank body **21'** to align with the top opening **40'** for retaining the heat source **11'** within the heat chamber **25'**. Accordingly, the fuel line channel **6'** is extended from the outer tank body **22'** through the inner tank body **21'** to communicate with the heat cavity **25'**. In other words, the heat source **11'** is disposed within the heat cavity **25'** at a position that the fuel line of cooking stove **10'** is extended from the heat source **11'** to the fuel source through the fuel line channel **6'**.

[0040] Accordingly, the outer tank body **22'** is made of thermally insulated material for effectively maintaining the heat energy to heat up the water within the water chamber **20'**, while the inner tank body **21'** is made of thermally conductive material for effectively conducting the heat energy from the heat chamber **25'** to the water chamber **20'**.

[0041] The water pipeline **30'** comprises a water inlet **31'** operatively extended from the heat collecting body for controlling an incoming cool water into the water chamber **20'** and a water outlet **32'** operatively extended from the heat collecting body for exiting heated water from the water chamber **20'**. Accordingly, the water inlet **31'** and the water outlet **32'** are spacedly extended from the outer tank body **22'**. The incoming cool water enters into the water chamber **20'** through the water inlet **31'**. After the water is heated up within the water chamber **20'**, the heated water will exit the water chamber **20'** through the water outlet **32'**.

[0042] Accordingly, the user is able to adjustably control the flow rate of the water through the water chamber **20'** via the water inlet **31'**. When a lot of hot water is needed, especially during the peak-cooking hours of the day, the user is able to increase the flow rate of water via the water inlet **31'** to let more water entering into the water chamber **20'**. It is worth mentioning that during the peak-cooking hours, the heat source **11'** of the cooking stove **10'** will be fully operated. Therefore, even though the flow rate of water is increased, the heat source **11'** is adapted to effectively heat up the water through the heat collecting body. Likewise, the user is able to reduce the flow rate of water via the water inlet **31'** to reduce the amount of water entering into the water chamber **20'**. During the non-peak-cooking hours of the day, the heat source **11'** of the cooking stove **10'** may not be fully operated. Therefore, the water with the reduced flow rate will have enough time to be heated up by the heat source **11'** of the cooking stove **10'**.

[0043] As shown in FIG. **7**, the heat collecting body further comprises an isolated wall **26'** supported within the water chamber **20'** at a position between the water inlet **31'** and the water outlet **32'** for separating the incoming cool water with the exiting heated water in the water chamber **20'** so as to ensure the water being effectively heated up within the water chamber **20'**. Accordingly, the isolated wall **26'** is extended between the wall of the inner tank body **21'** and the wall of the outer tank body **22'**.

[0044] As shown in FIG. **7**, the water inlet **31'** and the water outlet **32'** are spacedly extended from the rear wall of the outer tank body **22'**. Therefore, the incoming cool water entering into the water chamber **20'** at the water inlet **31'** may directly exit the water chamber **20'** at the water outlet **32'**. In order to prevent the incoming cool water from the water inlet **31'** from immediately exiting at the water outlet **32'**, the isolated wall **26'** is built between the water inlet **31'** and the water outlet **32'** in the water chamber **20'** for separating incoming cool water and the exiting heated water within the water chamber **20'**. In other words, the incoming cool water must flow around the water chamber **20'** from the water inlet **31'** to the water outlet **32'** such that the heat from the heat source **11'** will have enough time to heat up the water within the water chamber **20'**.

[0045] The energy saving stove water further comprises a safety valve **50'** provided at the heat collecting body to operatively communicate with the water chamber **20'** for releasing internal pressure and steam within the water chamber **20'** whiling heating up the water therewithin. Accordingly, the internal pressure of the heat collecting body gradually increases when the water is heated up within the water chamber **20'**. Therefore, the safety valve **50'** will be automatically actuated to release excessive internal pressure for preventing the expansion or explosion of the heat collecting body.

[0046] It is worth to mention that the energy saving stove water heater further comprises a supplemental heater **61'** supported within the water chamber **20'** for generating additional heat energy therewithin for heating up the water passing through the water chamber **20'**, and a water temperature sensor **62'** operatively linked to the supplemental heater **61'** to activate the supplemental heater **61'** when the water temperature of the water is below a preset temperature. When the water passes into the water chamber **20'** through the water inlet **31'**, the water is heated by the heat within the heat cavity **25'**. In other words, the water chamber **20'** and the heat cavity **25'** are thermally communicated with each other for heat exchange so as to heat up the water within the water chamber **20'**.

[0047] The water temperature sensor **62'** is adapted to detect the water temperature of the water chamber **20'**. When the water is not heated up within the water chamber **20'** by the heat source **11'** at a predetermined temperature, the water temperature sensor **62'** will automatically activate the supplemental heater **61'** for heat generation to heat up the water until the water temperature of the water within the water chamber **20'** reaches the predetermined temperature, so as to ensure the hot water flowing out at the water outlet **32'**. Accordingly, the water should be heated up at 95° C.

[0048] For example, the water temperature sensor **62'**, which is connected between the supplemental heater **61'** and the water outlet **32'**, comprises a preset temperature controller within the water temperature sensor **62'** with 80° C. for turning on and cutting off the power supply of the supplemental heater **61'**. The temperature sensor **62'** monitors the temperature of water in the water chamber **20'** in real-time. When the temperature of water is lower than the preset temperature 80° C., the supplemental heater **61'** turns on the power supply of the supplemental heater **61'** to heat up water till 95° C. On the contrary, once the temperature of water is higher than the preset temperature 95° C., the supplemental heater **61'** automatically deactivates the power switch of the supplemental heater **61'**. Moreover, the user is able to set the saving energy mode other than the office hour to turns off the supplemental heater **61'** for save more energy.

[0049] On the other hand, according to the energy conservation law, when the water temperature within the water chamber **20'** is higher than the preset temperature 95° C., the supplemental heater **61'** is automatically shut down. More water coming in and more water coming out will lead to the water temperature drop down dramatically. Therefore, the energy consumed by the supplemental heater **61'** will be substantially reduced.

[0050] The heat collecting body further has a ventilation channel **63'** extending through the water chamber **20'** for forming a detour with exhaust line of the cooking stove **10'**, wherein the ventilation channel **63'** allows the excessive heat exiting from the heat cavity **25'** for preventing the heat collecting body from being overheated.

[0051] Accordingly, the present invention further provides a method for heating water with the cooking stove **10'** which comprises the following steps.

[0052] (1) Position the heat source **11'** of the cooking stove **10'** within the heat cavity **25'** of heat collecting body at a position that the water chamber **20'** of the heat collecting body is surrounding with the heat source **11'**.

[0053] (2) Guide the water flow through the water chamber **20'** via the water pipeline **30'** that the water enters into the water chamber **20'** at the water inlet **31'** and exits the water chamber **20'** at the water outlet **32'**.

[0054] (3) Operate the heat source **11'** to generate relatively high heat energy. Therefore, when the cooking tool **12'** supports on the heat collecting body at a top opening **40'** thereof to align with the heat source **11'**, the heat energy thermally transfers not only towards cooking tool **12'** at the top opening **40'** but also towards the water chamber **20'** to heat up the water therewithin.

[0055] The step (2) further comprises a step of separating the incoming cool water with the exiting heated water in the water chamber **20'** via the isolated wall **26'** extended between the inner and outer tank bodies **21'**, **22'** within the water chamber **20'** at a position between the water inlet **31'** and the water outlet **32'**.

[0056] The method further comprises a step of releasing the internal pressure and steam within the water chamber **20'** whiling heating up said water therewithin via the safety valve **50'**.

[0057] The method comprises a step of generating additional heat energy within the water chamber **20'** via the supplemental heater **61'** for heating up the water passing through the water chamber **20'** when the water temperature of the water is below a preset temperature.

[0058] FIG. **9** illustrates an alternative mode of the energy saving stove water heater which comprises a heat collecting body, with a tubular shape, having a water chamber **20**A surrounding with a heat source **11**A of the cooking stove **10**A, and a water pipeline **30**A operatively communicating with the water chamber **20**A. The heat collecting body further has a fuel line channel **6**A extending through the water chamber **20**A for disposing the fuel line.

[0059] The heat collecting body further has a top opening **40**A aligning with the heat source **11**A and arranged in such a manner that when a cooking tool **12'** supports on the heat collecting body at the top opening **40**A thereof, the heat source **11**A of the cooking stove **10**A is arranged to generate relatively high heat energy thermally transferring not only towards said cooking tool **12'** at the top opening **40**A but also towards the water chamber **20**A to heat up the water therewithin.

[0060] The heat collecting body comprises an inner tank body **21**A and an outer tank body **22**A, wherein the inner tank body **21**A is spacedly supported within the outer tank body **22**A to define the sealed water chamber **20**A therebetween. In addition, a heat cavity **25**A is formed within the inner tank body **21**A to align with the top opening **40**A for retaining the heat source **11**A within the heat chamber **25**A. Accordingly, the outer tank body **22**A is made of thermally insulated material for effectively maintaining the heat energy to heat up the water within the water chamber **20**A, while the inner tank body **21**A is made of thermally conductive material for effectively conducting the heat energy from the heat chamber **25**A to the water chamber **20**A.

[0061] The water pipeline **30**A comprises a water inlet **31**A operatively extended from the heat collecting body for controlling an incoming cool water into the water chamber **20**A and a water outlet **32**A operatively extended from the heat collecting body for exiting heated water from the water chamber **20**A. Accordingly, the water inlet **31**A and the water outlet **32**A are spacedly extended from the outer tank body **22**A.

[0062] The heat collecting body further comprises an isolated wall **26**A supported within the water chamber **20**A at a position between the water inlet **31**A and the water outlet **32**A for separating the incoming cool water with the exiting heated water in the water chamber **20**A so as to ensure the water being effectively heated up within the water chamber **20**A. Accordingly, the isolated wall **26**A is extended between the wall of the inner tank body **21**A and the wall of the outer tank body **22**A.

[0063] The energy saving stove water further comprises a safety valve **50**A provided at the heat collecting body to operatively communicate with the water chamber **20**A for releasing internal pressure and steam within the water chamber **20**A whiling heating up the water therewithin. Accordingly, the internal pressure of the heat collecting body gradually increases when the water is heated up within the water chamber **20**A.

[0064] The energy saving stove water heater further comprises a supplemental heater **61**A supported within the water chamber **20**A for generating additional heat energy therewithin for heating up the water passing through the water chamber **20**A, and a water temperature sensor **62**A operatively linked to the supplemental heater **61**A to activate the supplemental heater **61**A when the water temperature of the water is below a preset temperature. When the water passes into the water chamber **20**A through the water inlet **31**A, the water is heated by the heat within the heat cavity **25**A. In other words, the water chamber **20**A and the heat cavity **25**A are thermally communicated with each other for heat exchange so as to heat up the water within the water chamber **20**A.

[0065] Accordingly, the alternative mode of the energy saving stove water heater has the same structural configuration of the fifth embodiment. The differences between the alternative mode and the fifth embodiment are that the shape of the heat collecting body.

[0066] As shown in FIG. **7**, the outer tank body **22'** of the fifth embodiment has a rectangular shape, wherein the outer tank body **22**A of the alternative mode has a circular shape.

[0067] In addition, the heat collecting body further comprises a plurality of heat conductive elements **64**A, embodied as fin structure, inwardly and radially extended from the inner tank body **21**A within the heat cavity **25**A, wherein the heat conductive elements **64**A are made of heat conductive material and are adapted to effectively transmit the heat within the heat cavity **25**A to the water chamber **20**A through the inner tank body **21**A. Therefore, the water within the water chamber **20**A can be effectively heated up by the heat of the heat source **11**A.

[0068] It is worth to mention that since the heat within the heat cavity **25**A can be effectively transmitted to the water chamber **20**A via the heat conductive elements **64**A, the ventilation channel **63'** as shown in FIG. **7** can be omitted.

[0069] One skilled in the art will understand that the embodiment of the present invention as shown in the drawings and described above is exemplary only and not intended to be limiting.

[0070] It will thus be seen that the objects of the present invention have been fully and effectively accomplished. The embodiments have been shown and described for the purposes of illustrating the functional and structural principles of the present invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

What is claimed is:

1. An energy saving stove water heater for heating water with a cooking stove, comprising a heat collecting body, with a tubular shape, having a water chamber surrounding with a heat source of said cooking stove, a water pipeline operatively communicating with said water chamber, and a top opening aligning with said heat source and arranged in such a manner that when a cooking tool supports on said heat collecting body at said top opening thereof, said heat source of said cooking stove is arranged to generate relatively high heat energy thermally transferring not only towards said cooking tool at said top opening but also towards said water chamber to heat up said water therewithin.

2. The energy saving stove water heater, as recited in claim **1**, wherein said heat collecting body comprises an outer tank body and an inner tank body spacedly supported within said outer tank body to define said water chamber between said outer tank body and said inner tank body and to form a heat chamber within said inner tank body for retaining said heat source within said heat chamber.

3. The energy saving stove water heater, as recited in claim **2**, wherein said outer tank body is made of thermally insulated material for effectively maintaining said heat energy to heat up said water within said water chamber, while said inner tank body is made of thermally conductive material for effectively conducting said heat energy from said heat chamber to said water chamber.

4. The energy saving stove water heater, as recited in claim **2**, wherein said water pipeline comprises a water inlet operatively extended from said heat collecting body for controlling an incoming cool water into said water chamber and a water outlet operatively extended from said heat collecting body for exiting heated water from said water chamber.

5. The energy saving stove water heater, as recited in claim **3**, wherein said water pipeline comprises a water inlet operatively extended from said heat collecting body for controlling an incoming cool water into said water chamber and a water outlet operatively extended from said heat collecting body for exiting heated water from said water chamber.

6. The energy saving stove water heater, as recited in claim **4**, wherein said heat collecting body further comprises an isolated wall extended between said inner and outer tank bodies within said water chamber at a position between said water inlet and said water outlet for separating said incoming cool water with said exiting heated water in said water chamber so as to ensure said water being effectively heated up within said water chamber.

7. The energy saving stove water heater, as recited in claim **5**, wherein said heat collecting body further comprises an isolated wall extended between said inner and outer tank bodies within said water chamber at a position between said water inlet and said water outlet for separating said incoming cool water with said exiting heated water in said water chamber so as to ensure said water being effectively heated up within said water chamber.

8. The energy saving stove water heater, as recited in claim **1**, further comprising a safety valve provided at said heat collecting body to operatively communicate with said water chamber for releasing internal pressure and steam within said water chamber whiling heating up said water therewithin.

9. The energy saving stove water heater, as recited in claim **7**, further comprising a safety valve provided at said heat collecting body to operatively communicate with said water chamber for releasing internal pressure and steam within said water chamber whiling heating up said water therewithin.

10. The energy saving stove water heater, as recited in claim **1**, further comprising a supplemental heater supported within said water chamber for generating additional heat energy therewithin for heating up said water passing through said water chamber, and a water temperature sensor operatively linked to said supplemental heater to activate said supplemental heater when said water temperature of said water is below a preset temperature.

11. The energy saving stove water heater, as recited in claim **9**, further comprising a supplemental heater supported within said water chamber for generating additional heat energy therewithin for heating up said water passing through said water chamber, and a water temperature sensor operatively linked to said supplemental heater to activate said supplemental heater when said water temperature of said water is below a preset temperature.

12. The energy saving stove water heater, as recited in claim **11**, wherein said heat collecting body further has a ventilation channel extending through said water chamber for forming a detour with exhaust line of said cooking stove.

13. The energy saving stove water heater, as recited in claim **11**, wherein said heat collecting body further comprises a plurality of heat conductive elements inwardly and radially extended from said inner tank body within said heat cavity, wherein said heat conductive elements are made of heat conductive material and are adapted to effectively transmit said heat within said heat cavity to said water chamber through said inner tank body.

14. A method of heating water with a cooking stove, comprising the steps of:

(a) positioning a heat source of said cooking stove in a heat collecting body at a position that a water chamber of said heat collecting body is surrounding with said heat source;

(b) guiding a water flow through said water chamber via a water pipeline; and

(c) operating said heat source to generate relatively high heat energy, wherein when a cooking tool supports on said heat collecting body at a top opening thereof to align with said heat source, said heat energy thermally transfers not only towards said cooking tool at said top opening but also towards said water chamber to heat up said water therewithin.

15. The method, as recited in claim **14**, wherein said heat collecting body comprises an outer tank body and an inner tank body spacedly supported within said outer tank body to define said water chamber between said outer tank body and said inner tank body and to form a heat chamber within said inner tank body for retaining said heat source within said heat chamber.

16. The method, as recited in claim **15**, wherein said outer tank body is made of thermally insulated material for effectively maintaining said heat energy to heat up said water within said water chamber, while said inner tank body is made of thermally conductive material for effectively conducting said heat energy from said heat chamber to said water chamber.

17. The method, as recited in claim **16**, wherein the step (b) comprises the steps of controlling an incoming cool water into said water chamber via a water inlet and exiting heated water from said water chamber via a water outlet.

18. The method, as recited in claim **17**, wherein the step (b) further comprises a step of separating said incoming cool water with said exiting heated water in said water chamber via an isolated wall extended between said inner and outer tank bodies within said water chamber at a position between said water inlet and said water outlet.

19. The method, as recited in claim **18**, further comprising a step of releasing internal pressure and steam within said water chamber whiling heating up said water therewithin via a safety valve.

20. The method, as recited in claim **18**, further comprising a step of generating additional heat energy within said water chamber for heating up said water passing through said water chamber when a water temperature of said water is below a preset temperature.

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