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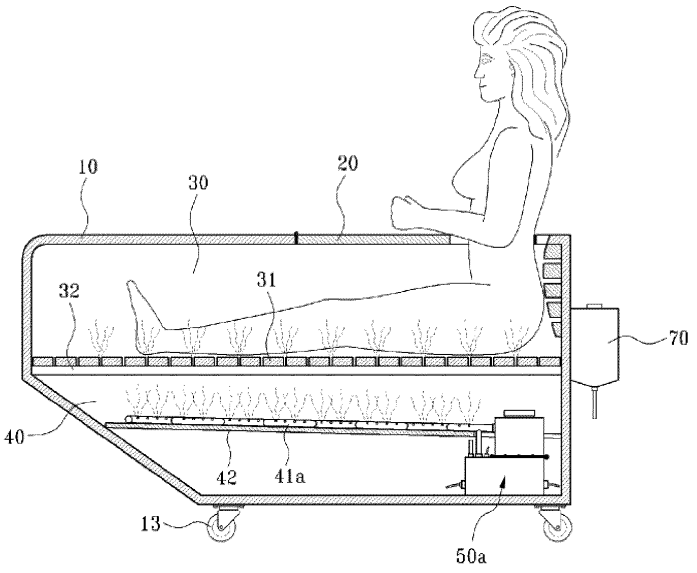
(54) STEAM WARMING HALF-BODY BATH/SAUNA MACHINE

(57) The present invention relates to a half-body bath/sauna machine for activating blood circulation and metabolism by warming the lower half of the human body by means of steam, and more particularly, to a steam warming half-body bath/sauna machine for warming the lower half of the human body with medicated steam to prevent and treat blood circulation disorders, metabolic functional disorders, gynecological disorders, stress, poor circulation, geriatric diseases, skin disorders and the like, by providing a sauna compartment that enables a user to sit comfortably with the lower half of his or her body (the legs) straightened, while medicated steam is being uniformly fed into the sauna compartment from a steam device through a steam pipe, and by providing a cover panel integrally formed with an entrance/exit door for the sauna compartment.

FIG.3



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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a half-body bath/sauna machine for activating blood circulation and metabolism by warming the lower half of the human body by means of steam, and more particularly, to a steam warming half-body bath/sauna machine for warming the lower half of the human body with medicated steam to prevent and treat blood circulation disorders, metabolic functional disorders, gynecological disorders, stress, poor circulation, geriatric diseases, skin disorders and the like, by providing a sauna compartment that enables a user to sit comfortably with the lower half of his or her body (the legs) straightened, while medicated steam is being uniformly fed into the sauna compartment from a steam device through a steam pipe, and by providing a cover panel integrally formed with an entrance/exit door for the sauna compartment.

Background of the Related Art

[0002] Generally, half-body bath is one of bath methods wherein a user keeps his or her head cool, while maintaining the lower half of his or her body in hot water, so as to improve his or her health. Through the half-body bath, the balance of the body temperature can be fixed, and the blood circulation of the body can be activated to accelerate the metabolism. As the original functions of the bath, through the half-body bath, the waste matters existing in the skin surface and pores can be removed and the muscles can be relaxed, and additionally, shoulder pains, low back pains, menstrual pains, colds and the like can be released and treated.

[0003] If a body temperature is measured by means of a body heat measurer, mostly, the temperature of the lower half of the body is lower than that of the upper half of the body, which in the field of oriental medicine is called poor circulation occurring when the blood circulation in the lower half of the body is not gently carried out, and the poor circulation is actually acted as causes of a variety of diseases. To overcome the poor circulation, accordingly, the half-body bath is proposed to keep the lower half of the body in hot water, so that the whole body is balanced in temperature and the blood circulation disorders and the poor circulation are all removed. According to Korean medical records (in the end of Chosen Dynasty), the half-body bath is introduced into oriental medicine, which is also utilized as an auxiliary therapy in the modern oriental medicine.

[0004] So as to perform the half-body bath, first, warm water having a temperature in a range between 37°C and 39°C, which is higher than the body temperature, is prepared in a bath tub, and then, a user's feet and legs are showered with hot water to a little bit adjust the temperature difference between the upper half and the lower half of his or her body. Next, the user sits in the warm water up to just above the belly button, and in this state, the half-body bath is performed for about 10 to 20 minutes. If the water is cool, hot water is added, and at this time, it is important that his or her shoulders or arms are not put into the water. So as to more enhance the half-body bath effects, very hot water, which is endurable, is added to the bath tub before the completion of the bath, and in the hot water, he or she stays for 7 to 8 minutes.

[0005] It is desirable that the half-body bath is regularly performed 2 to 3 times per one week, and if citrus peel, pine leaf, green tea and the like are put in the bath water, the user feels that the hot temperature of the water looks like being reduced, enjoys the flavors of the added materials during the bath, and prevents the user from feeling a chill after the completion of the bath.

[0006] On the other hand, through the half-body bath wherein the upper half of the body is kept cooler and the lower half of the body is kept warmer, the poor circulation making the blood circulation disorders can be removed to maintain the body in the state to keep the head cool and the feet warm, to expand the contracted blood vessels, and to activate the blood circulation, so that the blood pressure is lowered and the waste matters existing in the body through sweat and the toxins accumulated in the body are eliminated, thereby preventing and treating gynecological disorders like menstrual pains or menstrual irregularity, cold, mental strain, stress, diabetes, shoulder pains, joint pains, fatigues, poor circulation, geriatric diseases, skin disorders, prostatitis, and so on.

[0007] However, the half-body bath in the conventional practice has some inconveniences that the water having a higher temperature than the body temperature should be prepared and the bath should be carried out for a relatively long time, thereby making it hard for people who are tired from their heavy work load and daily schedule to regularly have the half-body bath two to three times per one week.

[0008] Especially, the hot water used for the half-body bath is needed by about 100 liters to 120 liters, which consumes a relatively large amount of water and thus causes economical loss.

[0009] Accordingly, there have been recently proposed a variety of half-body bath machines for warming the lower half of the body through steam, and as an representative example of them, Korean Utility Model Registration No.20-0357727 discloses a half-body bath device.

[0010] According to the prior art, the steam and heat produced from a heating box are fed into a sauna compartment through a plurality of hoses, but in this case, the configuration is very complicated. Actually, the steam and heat are not supplied evenly to the sauna compartment, thereby undesirably causing the advantageous effects of the half-body bath to be decreased.

SUMMARY OF THE INVENTION

[0011] Accordingly, the present invention has been made in view of the above-mentioned problems occurring in the prior art, and it is an object of the present invention to provide a steam warming half-body bath/sauna machine that is provided with a sauna compartment that enables a user to sit comfortably with the lower half of his or her body (the legs) straightened and a steam device and a steam pipe having an excellent configuration for steam generation that enable medicated steam to be supplied uniformly into the sauna compartment, and suitably adjusts the amount of steam generated by the steam device through exact control of the amount to water supplied to the steam device.

[0012] To accomplish the above object, according to the present invention, there is provided a steam warming half-body bath/sauna machine including: a half-body bath tub having an open upper one side and an entrance/exit formed at one side thereof; a cover panel adapted to open/close the space open on the upper portion of the half-body bath tub and having an entrance/exit door formed at one side thereof so as to open/close the entrance/exit of the half-body bath tub; a sauna compartment formed on the upper portion of the internal space in the half-body bath tub and having floor materials disposed to allow a user to sit therein with the lower half of his or her body straightened; a steam compartment formed under the sauna compartment within the half-body bath tub and having a steam pipe disposed on a support plate; and a steam device disposed at one side floor in the internal space of the half-body bath tub and adapted to supply steam to the steam pipe, wherein the steam pipe disposed on the steam compartment has equally spaced exhaust holes punched on both sides of the upper portion thereof so as to emit steam therefrom, and is positioned in such a manner as to be inclined higher at a portion above which the user's feet are located than the other portion thereof, while having a zig-zag form.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The above and other objects, features and advantages of the present invention will be apparent from the following detailed description of the preferred embodiments of the invention in conjunction with the accompanying drawings, in which:

[0014] FIG.1 is a perspective view showing a steam warming half-body bath/sauna machine according to a first embodiment of the present invention;

[0015] FIG.2 is a perspective view showing the steam warming half-body bath/sauna machine according to the first embodiment of the present invention, wherein a cover panel is open;

[0016] FIG.3 is a sectional view showing the steam warming half-body bath/sauna machine according to the first embodiment of the present invention;

[0017] FIG.4 is a sectional view showing a steam warming half-body bath/sauna machine according to a second embodiment of the present invention;

[0018] FIG.5 is a side sectional view showing the steam warming half-body bath/sauna machine according to the first embodiment of the present invention;

[0019] FIG.6 is a partially sectional view showing a steam pipe of the steam warming half-body bath/sauna machine according to the first embodiment of the present invention;

[0020] FIGS.7a and 7b are partially sectional views showing a steam pipe of the steam warming half-body bath/sauna machine according to the second embodiment of the present invention;

[0021] FIG.8 is a partially sectional view showing a steam device of the steam warming half-body bath/sauna machine according to the first embodiment of the present invention;

[0022] FIG.9 is a sectional view showing a steam device, a main water tank, and an auxiliary water tank of the steam warming half-body bath/sauna machine according to the second embodiment of the present invention;

[0023] FIG.10 is a sectional view showing the main water tank and the auxiliary water tank of the steam warming half-body bath/sauna machine according to the second embodiment of the present invention; and

[0024] FIG.11 is a sectional view showing the steam device of the steam warming half-body bath/sauna machine according to the second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] The present invention relates to a half-body bath/sauna machine for activating blood circulation and metabolism by warming the lower half of the human body by means of steam, and the steam warming half-body bath/sauna machine includes: a half-body bath tub having an open upper one side and an entrance/exit formed at one side thereof; a cover panel adapted to open/close the space open on the upper portion of the half-body bath tub and having an entrance/exit door formed at one side thereof so as to open/close the entrance/exit of the half-body bath tub; a sauna compartment formed on the upper portion of the internal space in the half-body bath tub and having floor materials disposed to allow a user to sit therein with the lower half of his or her body straightened; a steam compartment formed under the sauna compartment within the half-body bath tub and having a steam pipe disposed on a support plate; and a steam device disposed at one side floor in the internal space of the half-body bath tub and adapted to supply steam to the steam pipe, wherein the steam pipe disposed on the steam compartment has equally spaced exhaust holes punched on both sides of the upper portion thereof so as to emit steam therefrom, and is positioned in such a man-

ner as to be inclined higher at a portion above which the user's feet are located than the other portion thereof, while having a zig-zag form.

[0026] Hereinafter, an explanation on a steam warming half-body bath/sauna machine according to the preferred embodiments of the present invention will be in detail given with reference to the attached drawing.

[0027] As shown in FIGS.1 to 4, first, a steam warming half-body bath/sauna machine according to a first embodiment of the present invention is provided with a half-body bath tub 10 having a sauna compartment 30 and a steam compartment 40 formed on the upper and lower portions of the internal space thereof, while having an open upper one side so as to allow a user to get into/out of the sauna compartment 30, having an entrance/exit 11 formed at one side thereof in such a manner to communicate with the open upper one side thereof, and having casters 13 attached on the underside surface thereof so as to easily perform the movement of the half-body bath tub 10. Further, the half-body bath tub 10 has length and width enough to allow a user to sit comfortably with the lower half of his or her body straightened in the sauna compartment 30 formed in the internal space thereof, and desirably is made of wood not harmful to the human body. Also, the half-body bath tub 10 has a ventilating window 12 formed at one side thereof so as to ventilate the internal space thereof and a controller 14 disposed on the upper side thereof so as to control the operation of a steam device mounted at the inside thereof.

[0028] Moreover, the steam warming half-body bath/sauna machine according to the first embodiment of the present invention is provided with a cover panel 20 that is adapted to open/close the space open on the upper portion of the half-body bath tub 10 and has an entrance/exit door 22 formed at one side thereof so as to open/close the entrance/exit 11 of the half-body bath tub 10 and an open hole 21 formed to accommodate the user's body thereinto. The cover panel 20 is adapted to open/close the sauna compartment 30 to form the entrance/exit space when the user goes and comes into/out of the sauna compartment 30, while closing the open space as much as possible. So as to open/close the cover panel 20, thus, hinges are mounted on the open upper portion of the half-body bath tub 10 to allow the cover panel 20 to be turned therethrough.

[0029] The cover panel 20 has the open hole 21 formed on the end portion adjacent to the upper surface of the half-body bath tub 10 so as to accommodate the user's body thereinto and the entrance/exit door 22 formed unitarily with one side surface thereof so as to open/close the entrance/exit 11 of the half-body bath tub 10. In this case, the entrance/exit door 22 is formed unitarily with the cover panel 20, and thus, if the cover panel 20 is turned and open, the upper space and the entrance/exit 11 formed on the side of the half-body bath tub 10 are at the same time open to enable the user to conveniently go and come into/out of the sauna compartment 30 through the entrance/exit 11 and the upper space.

[0030] The open hole 21 of the cover panel 20 accommodating the user's body thereinto has a larger space than the user's body, and so as to permit the space between the user's body and the open hole 21 to be closed as much as possible in a state where the user sits in the sauna compartment 30, the open hole 21 desirably has a cover (not shown) made of cloth or synthetic resin film, so that the cover panel 20 serves to close the open upper space and the entrance/exit 11 of the half-body bath tub 10 as much as possible, thereby preventing steam within the sauna compartment 30 from being emitted to the outside.

[0031] The sauna compartment 30, which is formed in the internal space of the half-body bath tub 10, is a space where while the user is comfortably sitting with the lower half of his or her body straightened, the lower half of his or her body becomes warm by means of medicated steam to enable him or her to enjoy the half-body bathing. Desirably, the sauna compartment 30 is formed on the upper portion of the half-body bath tub 10 and has an upper and lower space in which the user can sit comfortably with the lower half of his or her body straightened and the floor materials 31 separably mounted thereon.

[0032] The floor materials 31 of the sauna compartment 30 are desirably made of wood not harmful to the human body and are equally spaced apart from each other in such a manner as to form fine gaps therebetween. The floor materials 31 are separably mounted on a support 32 fixedly disposed horizontally on both side inner surfaces of the internal space of the sauna compartment 30.

[0033] The steam compartment 40, which is formed in the internal space of the half-body bath tub 10, is a space where the steam fed from the steam device 50a or 50b is emitted through a steam pipe 41a or 41b. The steam compartment 40 is formed under the sauna compartment 30 in the internal space of the half-body bath tub 10 and has the steam pipe 41a or 41b attached on a support plate 42, through which the steam is fed from the steam device 50a or 50b.

[0034] The steam compartment 40 has a given upper and lower space in which the steam emitted through the steam pipe 41a or 41b is uniformly distributed under the sauna compartment 30 and is then fed into the internal space of the sauna compartment 30, and the steam pipe 41a or 41b has equally spaced exhaust holes punched on both sides of the upper portion thereof so as to emit steam therefrom, and is positioned in such a manner as to be inclined higher by an angle of 1° to 3° at a portion above which the user's feet are located than the other portion thereof. Also, as shown in FIG.6, the steam pipe 41a is disposed in a zig-zag form to evenly distribute and emit the steam therefrom, and further, it is positioned in such a manner as to be inclined higher at a portion above which the user's feet are located than the other portion thereof, thereby enabling the temperature at a portion of the sauna compartment 30 where the user's feet are located to be raised. As a result, the temperature of the

user's feet becomes higher than the other regions of the lower half of his or her body.

[0035] On the other hand, as shown in FIGS.7a and 7b, the steam pipe 41b is disposed in a linear form on a portion connected to the steam device 50a or 50b and on a portion at which the user's feet are positioned, without any bending thereon. In this case, the steam pipe 41b is disposed in such a manner that the portion above which the user's feet are located is higher than the user's body is located, so that the temperature of the user's feet is raised to increase the effects of the half-body bathing. Furthermore, when the steam generated from the steam device 50a or 50b is passed through the steam pipe 41b with a few bent portions, the steam moving to the portion above which the user's feet are positioned is not frozen in the middle portion thereof during the movement. Moreover, as shown in FIG.7b, a plurality of steam pipes 41b and 41b' are disposed in a linear form, which enables steam to be fed uniformly to the entire internal space of the sauna compartment 30. Accordingly, if the medicated steam supplied from the steam device 50a or 50b is emitted to the internal space of the steam compartment 40 through the steam pipe 41a or 41b, the steam is uniformly distributed under the sauna compartment 30 and is evenly supplied to the sauna compartment 30 through the fine gaps formed between the floor materials 31, as shown in FIGS.3 and 4, so that while the user is comfortably sitting with the lower half of his or her body straightened, the lower half of his or her body becomes warm by means of the medicated steam to enable him or her to enjoy the half-body bathing.

[0036] One of the main parts of the steam warming half-body bath/sauna machine according to the first embodiment of the present invention is the steam device 50a adapted to supply the medicated steam to the steam pipe 41a, and as shown in FIG.8, the steam device 50a includes: a preheating chamber 51a having a heater 59a adapted to preheat water retained thereinto, a water supply pipe 91 adapted to supply water to the internal space thereof, and a water level sensor 55 adapted to sense the level of the retained water thereinto; a heating chamber 53a formed at one side of the preheating chamber 51a and having a heater 69b adapted to heat the water retained thereinto, an introduction hole 58a formed to be passed through the preheating chamber 51a and adapted to supply water therethrough, and a plurality of emission holes 66 through which steam is emitted; a steam chamber 54a formed on the top portion of the emission holes 66 of the heating chamber 53a and having the steam pipe 41a or 41b through which the steam is emitted and a cover 61a adapted to open/close the internal space thereof; and a medicine casing 65 disposed in the internal space of the steam chamber 54a and having medicine accommodated thereinto.

[0037] Further, a collecting pipe 56a is connected between the preheating chamber 51a and the steam pipe 41a so as to introduce the condensed water produced in the steam pipe 41a into the preheating chamber 51a, and a water tank 70 is disposed at one side of the half-body bath tub 10 in such a manner as to be connected to the water supply pipe 91 for the preheating chamber 51a.

[0038] Furthermore, an electronic valve (not shown) is mounted on the water supply pipe 91 connected to the water tank 70 in such a manner as to be open/closed by receiving the signal of the water level sensor 55 from the controller 14, thereby supplying water at a constant level to the internal space of the preheating chamber 51a. Also, the heater 59a is disposed on the lower portion of the internal space of the preheating chamber 51a so as to preheat the water stored in the preheating chamber 51a, and the water supply pipe 91, the water level sensor 55 and the collecting pipe 56a are disposed on the top portion of the preheating chamber 51a.

[0039] Moreover, the heating chamber 53a is desirably formed integrally with one side of the preheating chamber 51a, and the water introduction hole 58a is formed on the lower portion of the heating chamber 53a so as to introduce the preheated water in the preheating chamber 51a into the internal space of the heating chamber 53a. Also, the heater 59b is disposed on the lower portion of the internal space of the heating chamber 53a so as to heat the water stored in the heating chamber 53a and to produce the steam from the heated water. Further, the emission holes 66 are formed on the top portion of the heating chamber 53a so as to emit the produced steam therethrough.

[0040] The steam chamber 54a is formed on the top of the emission holes 66 so as to allow the steam produced from the heating chamber 53a to be introduced thereinto by means of the emission holes 66, and has the steam pipe 41a disposed in the steam compartment 40 connected to the upper portion thereof so as to emit the steam to the steam compartment 40. Also, the steam chamber 54a has the cover 61a mounted on the top portion thereof so as to open/close the internal space thereof and has an introduction hole 58b formed to be passed through the preheating chamber 51a so as to allow the condensed water produced in the internal space thereof to be introduced into the preheating chamber 51a.

[0041] The medicine casing 65, which is disposed in the internal space of the steam chamber 54a, is desirably formed of a mesh material into which the steam is permeated into the internal space thereof. Desirably, the medicine casing 65 accommodates a variety of materials good for human body such as wormwood, herbs, citrus peel, oriental medicine, phytoncide, and the like thereinto, and it is exchanged with another medicine casing by opening the cover 61a of the steam chamber 54a. After the use, alternatively, the medicine accommodated in the medicine casing 65 can be changed with new one.

[0042] Accordingly, the heater 59b in the steam device 50a is operated by the control of the controller 14 to adjust the temperature of the steam, and the steam heated to a high temperature is permeated into the medicine casing 65 and is mixed with the medicine components good for human body. Next, the steam is emitted to the steam

compartment 40 through the steam pipe 41a, and in this case, the steam pipe 41a is disposed higher at the portion above which the user's feet are located than the other portion thereof, so that the steam produced from the steam pipe 41a is introduced into the preheating chamber 51a through the collecting pipe 56a.

[0043] According to the second embodiment of the present invention, the steam device 50b, which is disposed at one side floor of the internal space of the half-body bath tub 10 so as to supply steam to the steam pipe 41b, includes: a water supply chamber 51b adapted to retain the water supplied from an auxiliary water tank 80 thereinto; a collecting chamber 51c formed at one side of the water supply chamber 51b and having a water level sensor 55 adapted to sense a level of water retained thereinto, a collecting pipe 56b connected to the steam pipe 41b so as to introduce the condensed water produced in the steam pipe 41b thereinto, and an introduction hole 58d formed above a water stopping wall 57b so as to supply the water in the water supply chamber 51b thereto; a heating chamber 53b formed at one side of the collecting chamber 51c and having a heater 59c adapted to heat the water retained thereinto and produce the steam from the heated water and an introduction hole 58e formed under a water stopping wall 57c so as to supply the water in the collecting chamber 51c thereto; a steam chamber 54b formed on the top portion of the heating chamber 53b and having the steam pipe 41b through which the steam is emitted and a cover 61b adapted to open/close the internal space thereof; and a medicine casing support plate 60 seated into the steam chamber 54b and having a medicine casing 65 disposed on the top surface thereof.

[0044] In more detail, as shown in FIG.9, the water supply chamber 51b is a place in which the water supplied from the auxiliary water tank 80 is primarily retained to introduce the water in the water supply chamber 51b into the collecting chamber 51c by means of the introduction hole 58d formed above the water stopping wall 57b defining the water supply chamber 51b and the collecting chamber 51c. At this time, the water supply chamber 51b separates the water supplied from the auxiliary water tank 80 and not heated yet from the water in the collecting chamber 51c and the heating chamber 53b, thereby enhancing the water heating efficiency through the steam device 50b, and further, the water supply chamber 51b has the introduction hole 58d formed above the water stopping wall 57b to introduce the water retained therein into the collecting chamber 51c, so that the water in the collecting chamber 51c having a higher temperature than the water in the water supply chamber 51c is introduced into the water supply chamber 51b, thereby preventing the water retained in the collecting chamber 51c from being lowered in the temperature.

[0045] Further, the collecting chamber 51c to which the water is supplied from the water supply chamber 51b is formed at one side of the water supply chamber 51b and has the water level sensor 55 adapted to sense the level of water retained thereinto and the collecting pipe 56b connected to the steam pipe 41b so as to introduce the condensed water produced in the steam pipe 41b thereinto. At this time, the water level sensor 55 senses the level of water retained in the collecting chamber 51c, generates a signal for the sensed level of water and transmits the signal to an electronic valve or a water pump in a water supply pipe connected to the main water tank 70, so that the water is supplied to the water supply chamber 51b and the water supplied to the water supply chamber 51b is then supplied to the collecting chamber 51c. Also, the collecting pipe 56b is connected to the steam pipe 41b so as to introduce the condensed water produced in the steam pipe 41b into the collecting chamber 51c, thereby reusing the condensed water. As shown in FIG.8, the collecting pipe 56a is disposed at one side of the linear type steam pipe 41a, and as shown in FIG.9 or 11, the collecting pipe 56b is disposed in the linear form to the steam pipe 41b in such a manner as to be connected to the steam pipe 41b bent to a given angle. The configuration where the collecting pipe 56b is disposed in the linear form to the steam pipe 41b prevents the condensed water from being introduced into the steam chamber 54b, thereby allowing the condensed water to be introduced into the collecting pipe 56b.

[0046] Accordingly, as shown in FIG.9, one side end of the collecting pipe 56b of the collecting chamber 51c is disposed at a lower position than the surface of water retained in the collecting chamber 51c, so that the steam supplied from the steam chamber 54b to the steam pipe 41b is introduced directly into the collecting chamber 51c, thereby preventing the steam efficiency from being deteriorated.

[0047] Moreover, as shown in FIG.9 or 11, the heating chamber 53b is disposed at one side of the collecting chamber 51c and receives the water of the collecting chamber 51c by means of the introduction hole 58e formed under the water stopping wall 57c and heats the supplied water by means of the heater 59c to produce steam from the heated water. At this time, the introduction hole 58e, which is formed under the water stopping wall 57c defining the collecting chamber 51c and the heating chamber 53b, serves to prevent the steam produced in the heating chamber 53b from being introduced into the collecting chamber 51c and at the same time to allow the water retained in the collecting chamber 51c to be introduced effectively into the heating chamber 53b.

[0048] Further, the steam chamber 54b is formed on the top portion of the heating chamber 53b, from which the steam is emitted, and has the steam pipe 41b connected thereto and the cover 61b adapted to open/close the internal space thereof. Also, the steam chamber 54b has the medicine casing support plate 60 seated thereinto so as to mount the medicine casing 65 into which a variety of medicine materials such as wormwood, herbs, citrus peel, oriental medicine, phytoncide, and the like are accommodated thereonto. At this time, as shown in FIG.9, so as to seat the medicine casing support plate

60 into the steam chamber 54b, a support projection 62 is formed along the inner peripheral surface thereof. Moreover, as shown in FIG.9, the medicine casing support plate 60 is formed of a porous plate 64 having a plurality of protruded bars 63 having a given height formed on the top surface thereof, so that the medicine casing 65 accommodating the medicine thereinto and made of a mesh material into which the steam is permeated can be mounted on the top surface thereof (that is, on the protruded bars 63). Under the above-mentioned configuration, the formation of the protruded bars 63 makes a space having a given height between the top surface of the porous plate 64 and the underside surface of the medicine casing 65, thereby effectively permeating the steam into the internal space of the medicine casing 65 made of the mesh material.

[0049] Accordingly, the main water tank 70 serves to supply the water to the steam device 50a or 50b by means of a water pump 90 and the auxiliary water tank 80, which is disposed between the main water tank 70 and the steam device 50b (which includes the steam device 50a), serves to control the amount of water supplied to the steam device 50b, so that the amount of water supplied from the main water tank 70 to the water supply chamber 51b (includes the preheating chamber 51a of the steam device 50a) of the steam device 50b can be accurately adjusted.

[0050] That is, the main water tank 70 serves to supply the water corresponding to the amount of steam produced by means of the heater 59c operated by the controller 14 and supplied to the sauna compartment 30, and according to the conventional practice, the supply of water from the main water tank to the water supply chamber is performed just by means of the water pump, so that even though a water supply stopping signal from the water level sensor 55 is transmitted to the water pump 90, the water charged into the water pump and the water supply pipe is introduced undesirably into the water supply chamber because of a given water pressure applied during the operation of the water pump and applied to the interior of the water supply pipe. According to the present invention, however, as shown in FIG.9 or 11, the auxiliary water tank 80 is disposed between the main water tank 70 and the water supply chamber 51b, thereby solving the above-mentioned problem.

[0051] According to the present invention, in more detail, the water is supplied from the main water tank 70 to the auxiliary water tank 80 by means of a water supply pipe 71 for the auxiliary water tank 80, and the water is from the auxiliary water tank 80 to the water supply chamber 51b by means of a water supply pipe 81 for the water supply chamber 51b. As shown in FIG.9, the auxiliary water tank 80 is disposed at a higher position than the steam device 50b and the main water tank 70, while inserting one side end of the water supply pipe 71 for the auxiliary water tank 80 thereinto and one side end of the water supply pipe 81 for the water supply chamber 51b thereinto. In this case, one side end of the water supply pipe 81 for the water supply chamber 51b is disposed at a higher position than one side end of the water supply pipe 71 for the auxiliary water tank 80. That is, in the state where the operation of the water pump 90 stops, the auxiliary water tank 80 does not supply the water capable of being discharged by means of the water pressures in the water pump 90 and the water supply pipe 71 therefrom to the water supply chamber 51b, but suppresses the amount of water to be supplied to the water supply chamber 51b by means of the amount of water retained in the auxiliary water tank 80 (that is, a given amount of water retained in the auxiliary water tank 80 by the height difference between one side end of the water supply pipe 71 for the auxiliary water tank 80 and one side end of the water supply pipe 81 for the water supply chamber 51b). On the other hand, in the state where the water pump 90 starts to operate, the water is supplied to the auxiliary water tank 80 by means of the water supply pipe 71 for the auxiliary water tank 80, and the water retained to exceed one side end of the water supply pipe 81 for the water supply chamber 51b inserted into the auxiliary water tank 80 is naturally introduced into the water supply pipe 81 for the water supply chamber 51b and is then fed to the water supply chamber 51b, so that the exact amount of water can be supplied from the main water tank 70 to the water supply chamber 51b. Accordingly, the amount of water to be supplied to the steam device 50b can be exactly adjusted to suitably control the amount of steam produced from the steam device 50b. At this time, desirably, the auxiliary water tank 80 has a ventilation hole 82 having a given size formed on the top portion thereof so as to adjust the pressure applied to the interior of the auxiliary water tank 80.

[0052] As described above, the steam warming half-body bath/sauna machine is provided with the sauna compartment that enables a user to sit comfortably with the lower half of his or her body (the legs) straightened and a steam device and a steam pipe having an excellent configuration for steam generation that enable medicated steam to be supplied uniformly into the sauna compartment, and suitably adjusts the amount of steam generated by the steam device through exact control of the amount to water supplied to the steam device.

[0053] While the present invention has been described with reference to the particular illustrative embodiments, it is not to be restricted by the embodiments but only by the appended claims. It is to be appreciated that those skilled in the art can change or modify the embodiments without departing from the scope and spirit of the present invention.

Claims

1. A steam warming half-body bath/sauna machine comprising:

   a half-body bath tub 10 having an open upper

one side and an entrance/exit 11 formed at one side thereof;
a cover panel 20 adapted to open/close the space open on the upper portion of the half-body bath tub 10 and having an entrance/exit door 22 formed at one side thereof so as to open/close the entrance/exit 11 of the half-body bath tub 10;
a sauna compartment 30 formed on the upper portion of the internal space in the half-body bath tub 10 and having floor materials 31 disposed to allow a user to sit therein with the lower half of his or her body straightened;
a steam compartment 40 formed under the sauna compartment 30 within the half-body bath tub 10 and having a steam pipe 41a disposed on a support plate 42; and
a steam device 50a disposed at one side floor in the internal space of the half-body bath tub 10 and adapted to supply steam to the steam pipe 41a,
wherein the steam pipe 41a disposed on the steam compartment 40 has equally spaced exhaust holes punched on both sides of the upper portion thereof so as to emit steam therefrom, and is positioned in such a manner as to be inclined higher at a portion above which the user's feet are located than the other portion thereof, while having a zig-zag form.

2. The steam warming half-body bath/sauna machine according to claim 1, wherein the steam device 50a comprises:

a preheating chamber 51a having a heater 59a adapted to preheat water retained thereinto, a water supply pipe 91 adapted to supply water to the internal space thereof, and a water level sensor 55 adapted to sense the level of the retained water thereinto;
a heating chamber 53a formed at one side of the preheating chamber 51a and having a heater 69b adapted to heat the water retained thereinto, an introduction hole 58a formed to be passed through the preheating chamber 51a and adapted to supply water therethrough, and a plurality of emission holes 66 through which steam is emitted;
a steam chamber 54a formed on the top portion of the emission holes 66 of the heating chamber 53a and having the steam pipe 41a or 41b through which the steam is emitted and a cover 61a adapted to open/close the internal space thereof; and
a medicine casing 65 disposed in the internal space of the steam chamber 54a and having medicine accommodated thereinto.

3. The steam warming half-body bath/sauna machine according to claim 2, wherein between the preheating chamber 51a and the steam pipe 41a is connected a collecting pipe 56a so as to introduce the condensed water produced in the steam pipe 41a into the preheating chamber 51a.

4. A steam warming half-body bath/sauna machine comprising:

a half-body bath tub 10 having an open upper one side and an entrance/exit 11 formed at one side thereof;
a cover panel 20 adapted to open/close the space open on the upper portion of the half-body bath tub 10 and having an entrance/exit door 22 formed at one side thereof so as to open/close the entrance/exit 11 of the half-body bath tub 10;
a sauna compartment 30 formed on the upper portion of the internal space in the half-body bath tub 10 and having floor materials 31 disposed to allow the user to sit therein with the lower half of his or her body straightened;
a steam compartment 40 formed under the sauna compartment 30 within the half-body bath tub 10 and having a steam pipe 41b disposed on a support plate 42;
a steam device 50b disposed at one side floor in the internal space of the half-body bath tub 10 and adapted to supply steam to the steam pipe 41b;
a main water tank adapted to supply water to the steam device 50b by means of a water pump 90; and
an auxiliary water tank 80 disposed between the main water tank and the steam device 50b so as to control the amount of water supplied to the steam device 50b.

5. The steam warming half-body bath/sauna machine according to claim 4, wherein the steam device 50b comprises:

a water supply chamber 51b adapted to retain the water supplied from an auxiliary water tank 80 thereinto;
a collecting chamber 51c formed at one side of the water supply chamber 51b and having a water level sensor 55 adapted to sense a level of water retained thereinto, a collecting pipe 56b connected to the steam pipe 41b so as to introduce the condensed water produced in the steam pipe 41b thereinto, and an introduction hole 58d formed above a water stopping wall 57b so as to supply the water in the water supply chamber 51b thereto;
a heating chamber 53b formed at one side of the collecting chamber 51c and having a heater 59c adapted to heat the stored water and pro-

duce the steam from the heated water and an introduction hole 58e formed under a water stopping wall 57c so as to supply the water in the collecting chamber 51c thereto;
a steam chamber 54b formed on the top portion of the heating chamber 53b and having the steam pipe 41b through which the steam is emitted and a cover 61b adapted to open/close the internal space thereof; and
a medicine casing support plate 60 seated into the steam chamber 54b and having a medicine casing 65 disposed on the top surface thereof.

6. The steam warming half-body bath/sauna machine according to claim 5, wherein the steam pipe 41b is bent to a given angle and the collecting pipe 56a connected to the steam pipe 41b is disposed in the linear form to the steam pipe 41b.

7. The steam warming half-body bath/sauna machine according to claim 4, wherein the medicine casing support plate 60 is formed of a porous plate 64 having a plurality of protruded bars 63 having a given height formed on the top surface thereof.

8. The steam warming half-body bath/sauna machine according to claim 4, wherein the auxiliary water tank 80 is disposed at a higher position than the steam device 50b and the main water tank 70, while inserting one side end of a water supply pipe 71 for the auxiliary water tank 80 thereinto and one side end of the water supply pipe 81 for the water supply chamber 51b thereinto, one side end of the water supply pipe 81 for the water supply chamber 51b being disposed at a higher position than one side end of the water supply pipe 71 for the auxiliary water tank 80.

9. The steam warming half-body bath/sauna machine according to claim 4, wherein the steam pipe 41b has equally spaced exhaust holes punched on both sides of the upper portion thereof so as to emit steam therefrom and is positioned in such a manner as to be inclined higher at a portion above which the user's feet are located than the other portion thereof, and the portion of the steam pipe 41b connected to the steam device 50b and the portion above which the user's feet are located are in a linear form to each other.

FIG.1

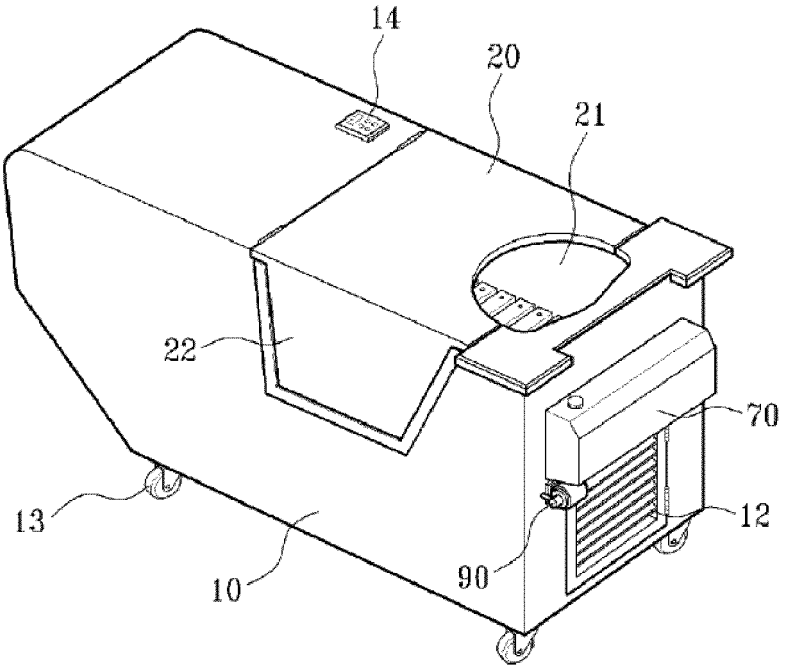


FIG.2

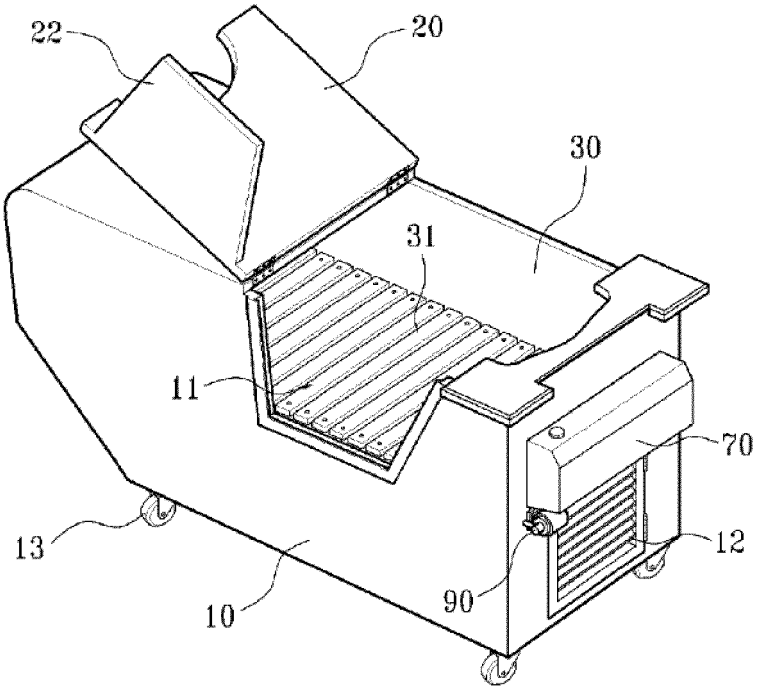
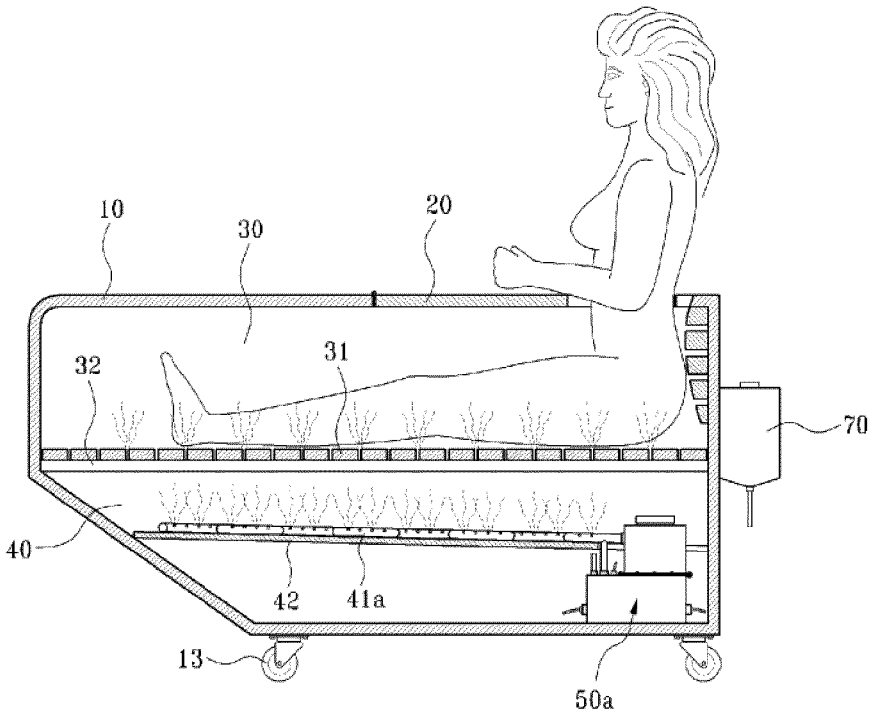


FIG.3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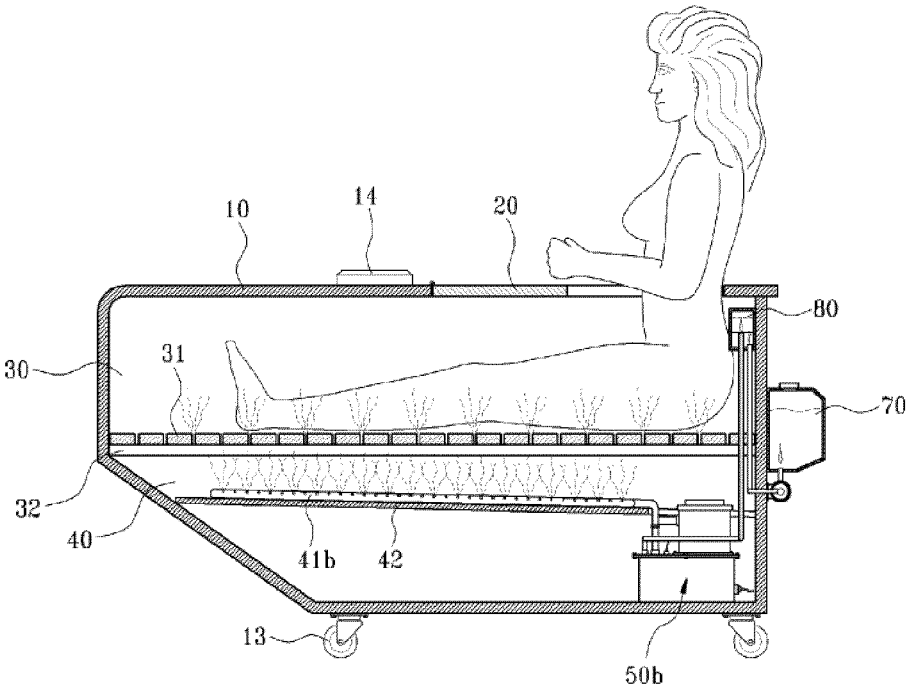
30
20
32
31
70
40
42
41a
13
50a

FIG.4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14
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80
30
31
70
32
40
41b
42
13
50b

FIG.5

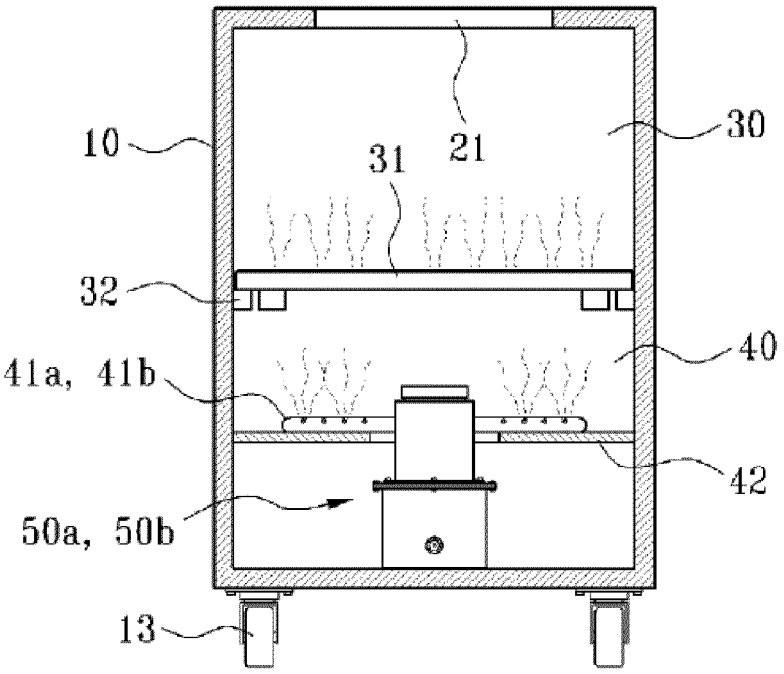


FIG.6

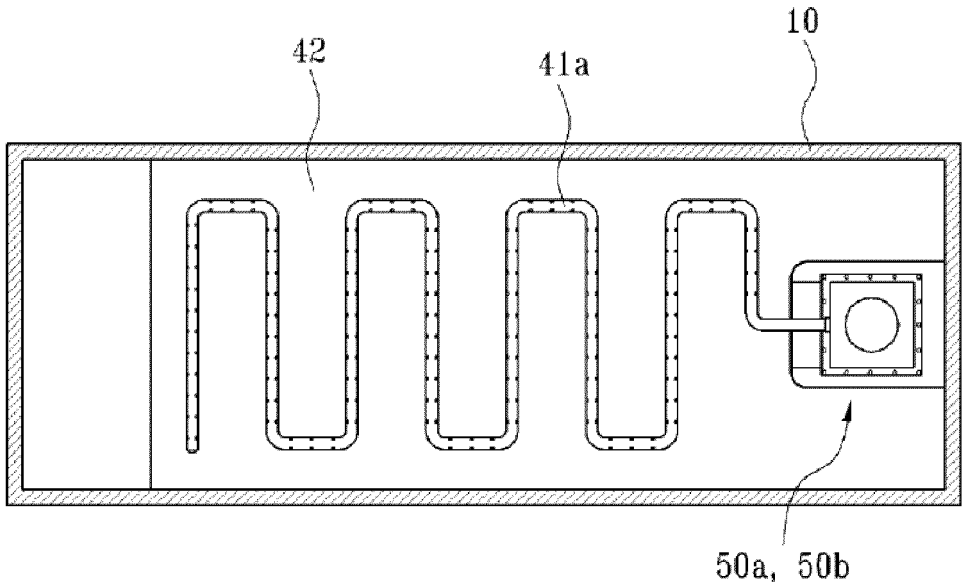
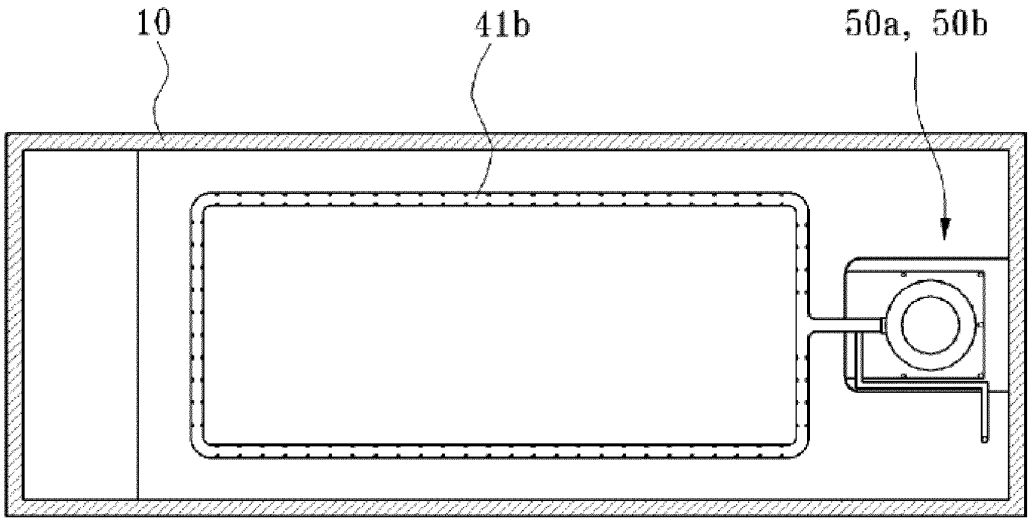


FIG.7

(a)



(b)

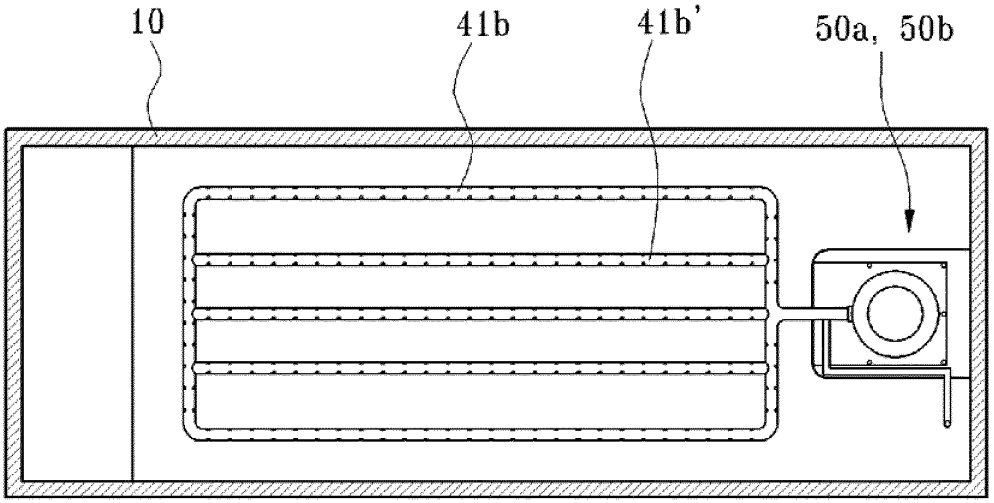


FIG.8

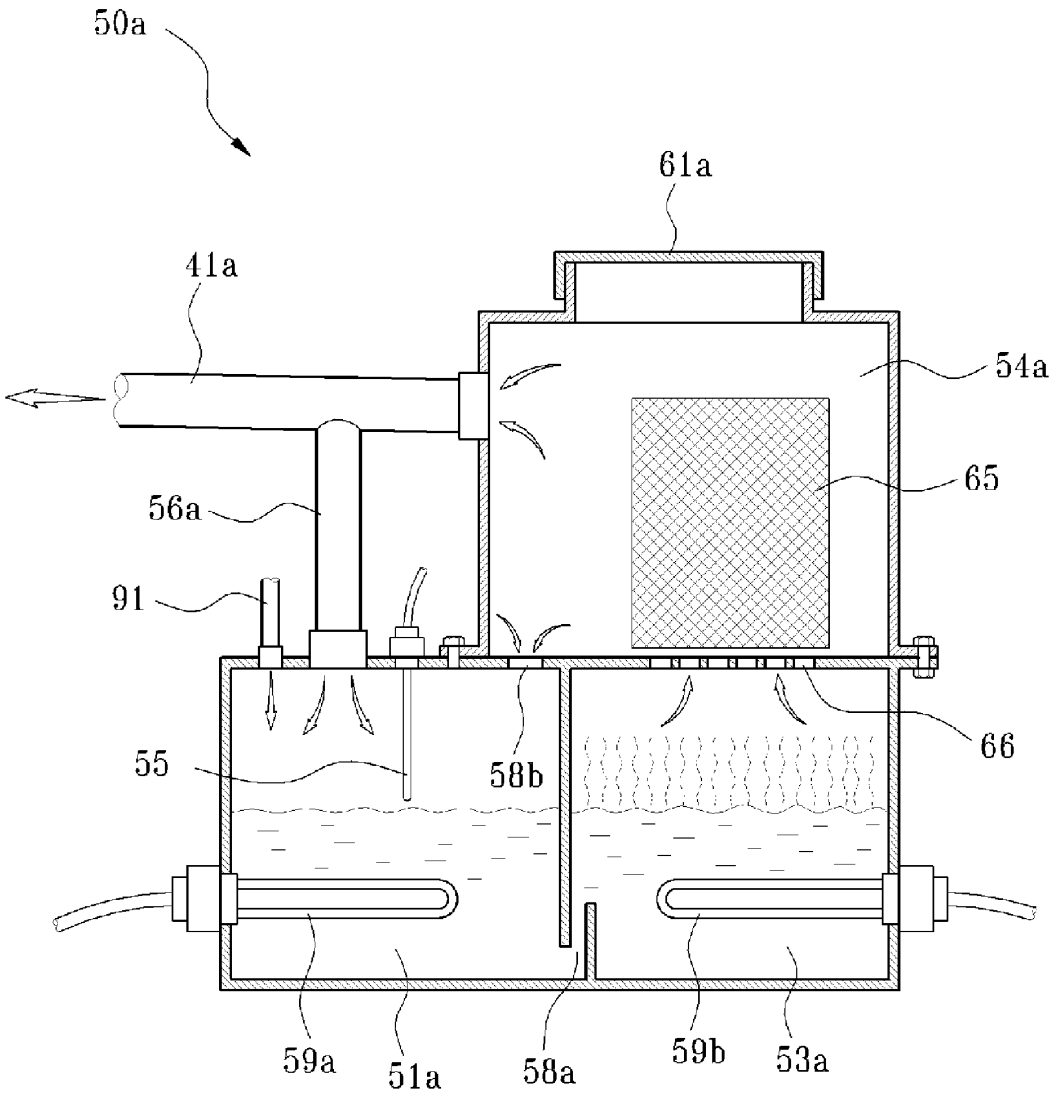
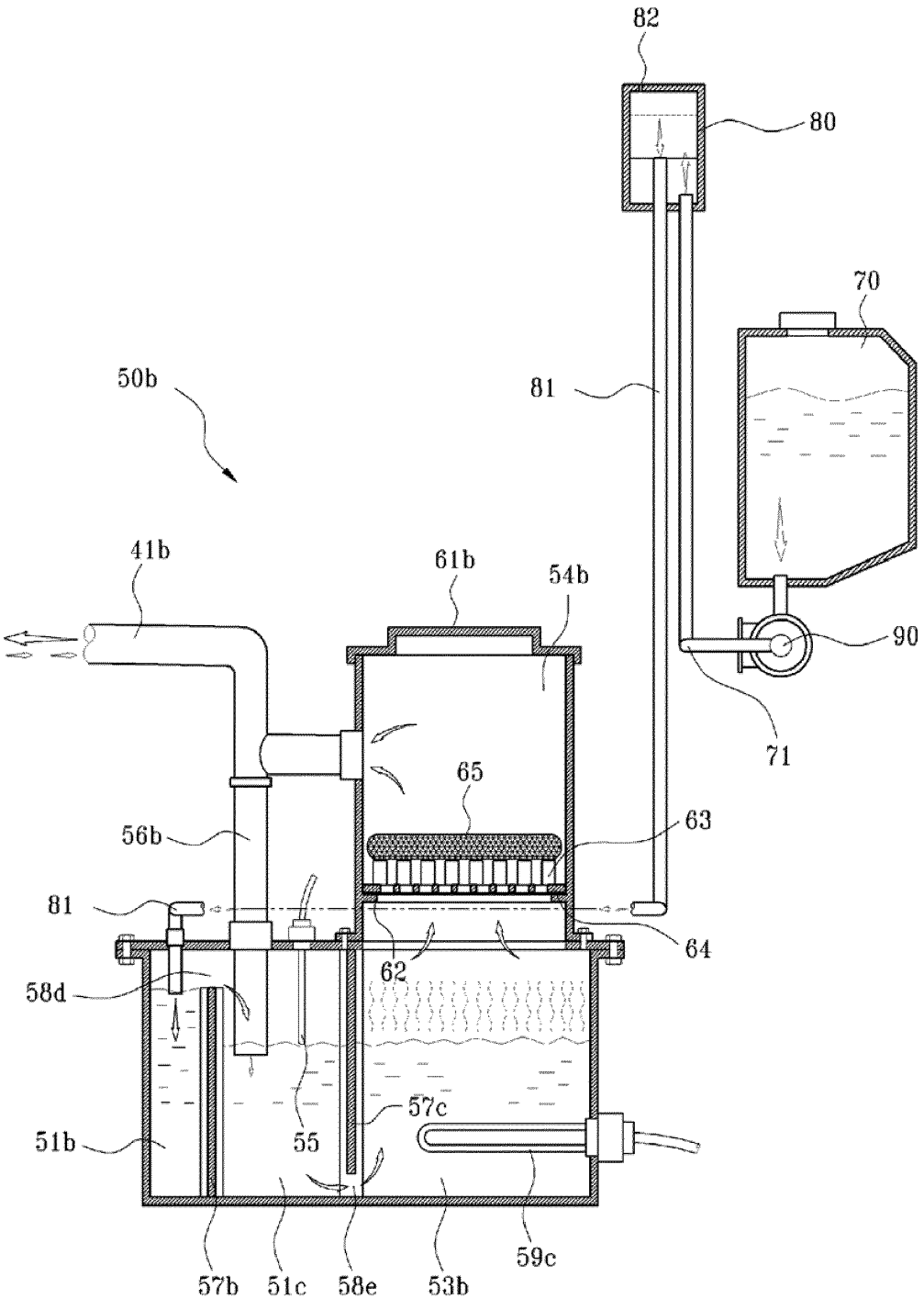


FIG.9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81
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53b

FIG.10

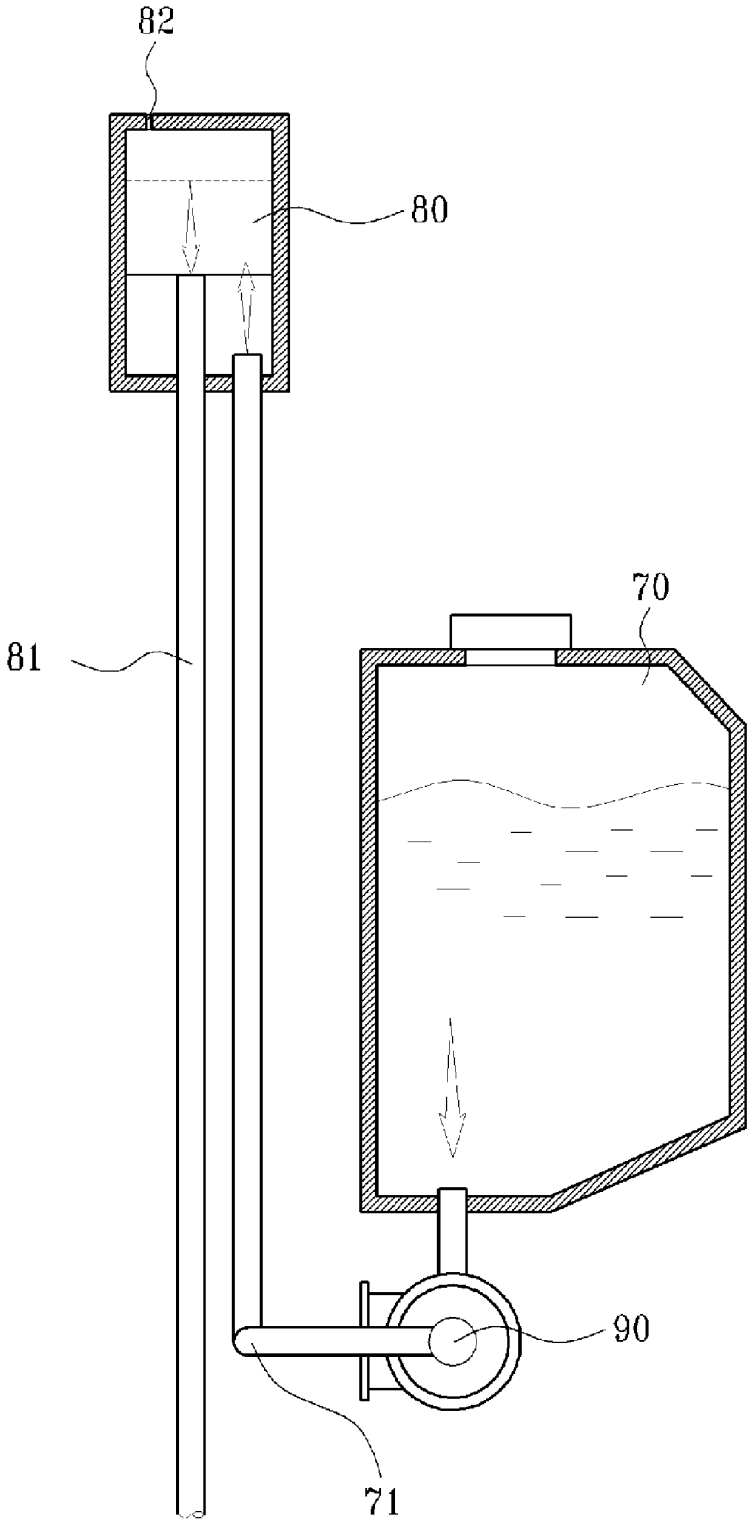
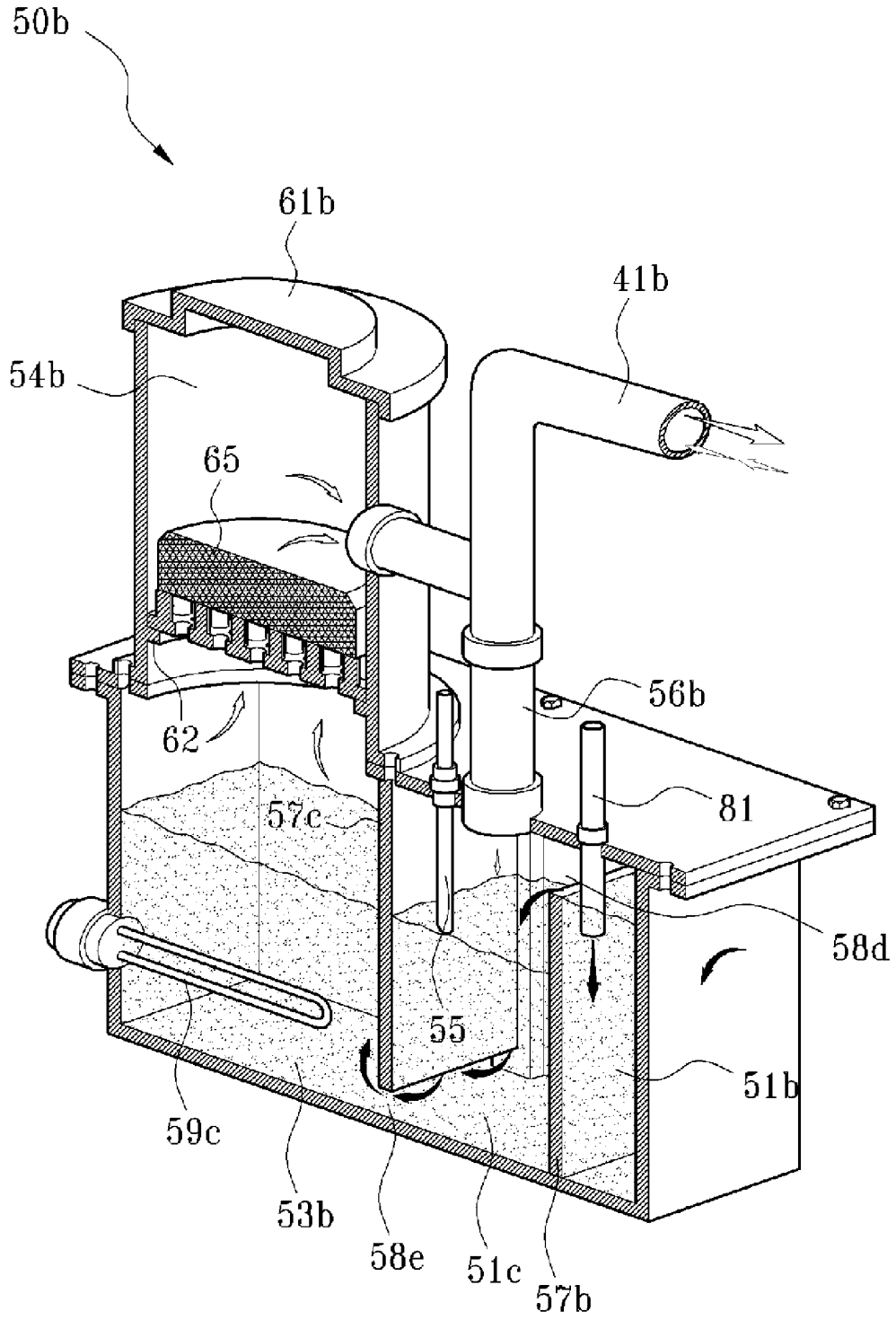


FIG.11



REFERENCES CITED IN THE DESCRIPTION

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