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2,492,913

BATH SYSTEM

Filed April 2, 1945

2 Sheets-Sheet 1

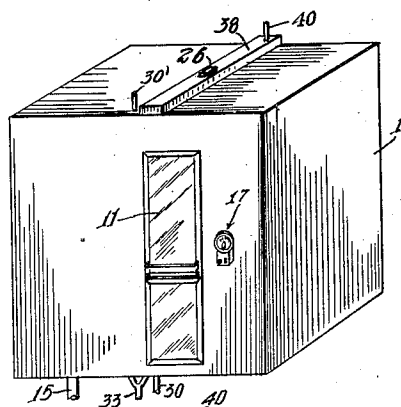


Fig. 1

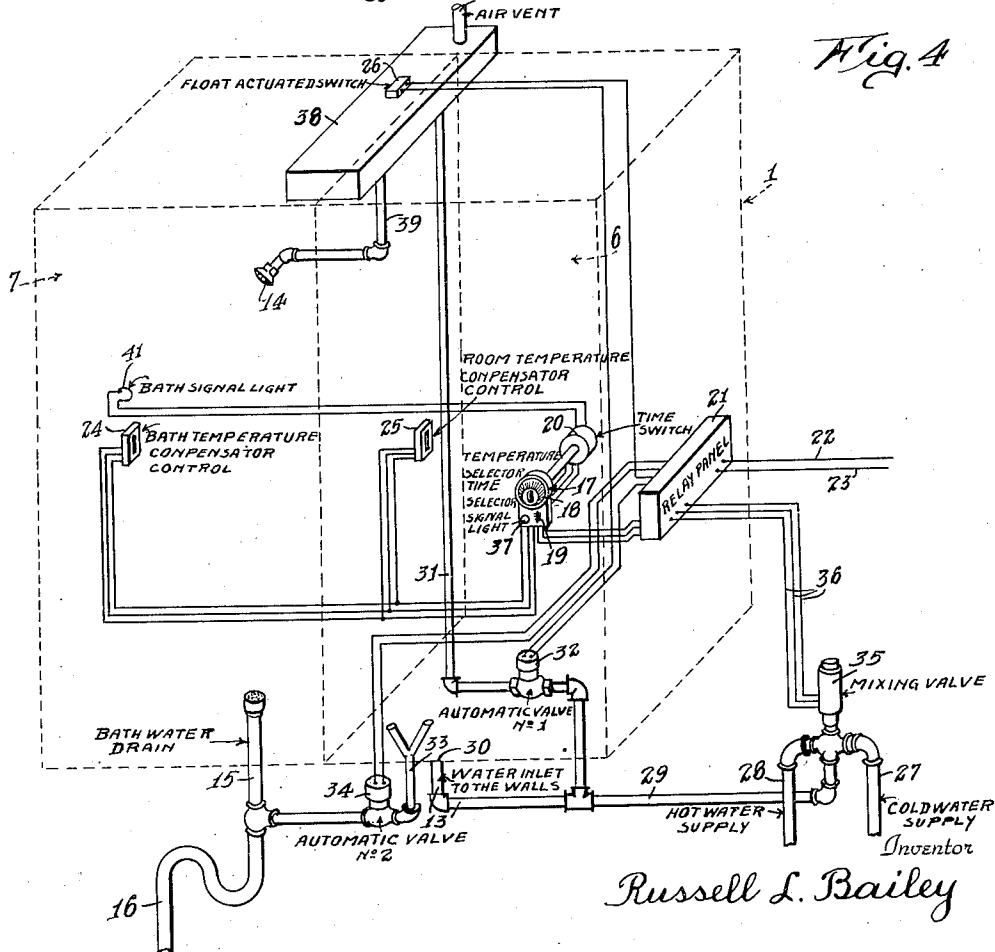


Fig. 4

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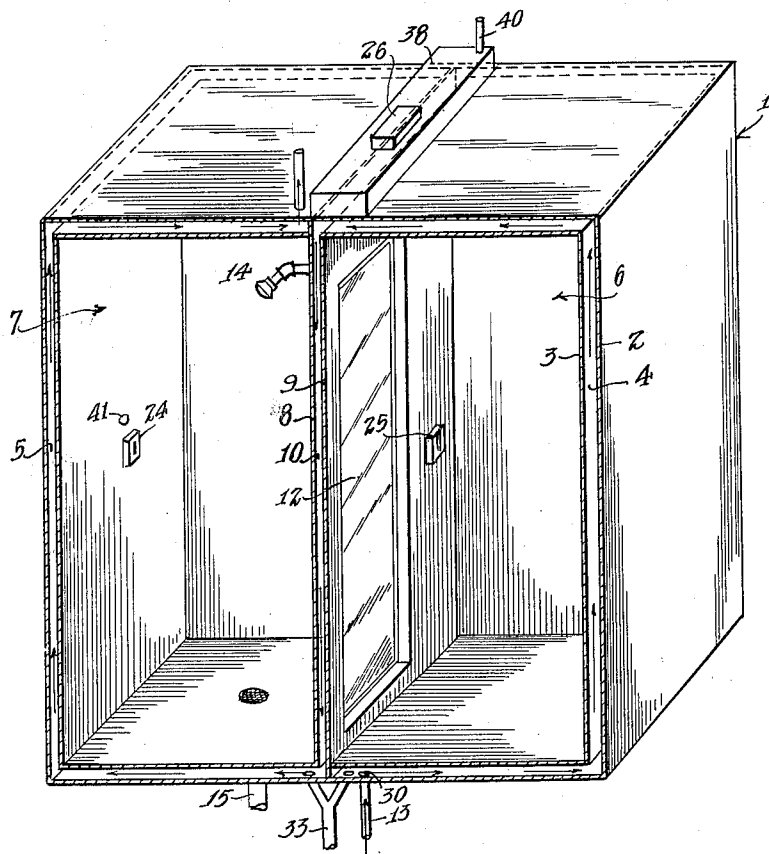


Fig. 2

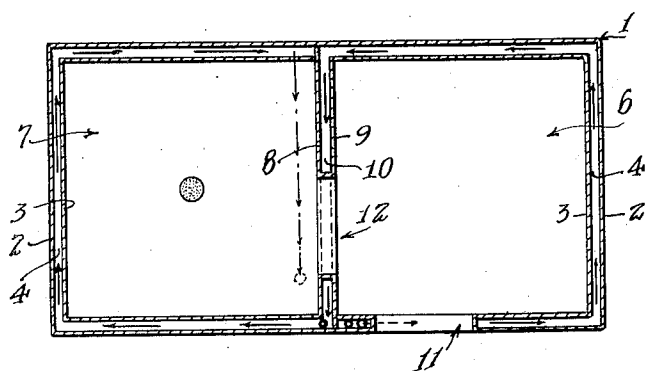


Fig. 3

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UNITED STATES PATENT OFFICE

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BATH SYSTEM

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5 Claims. (Cl. 4-146)

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This invention relates to a bathing system and an apparatus by which the system may be practiced, and more particularly to a system of bathing of such character that the bather is protected from the usual discomforts and dangers to health arising from too sudden changes of temperature and humidity.

In the present day practice, the bather enters a bath room which is at a temperature lower than is generally comfortable when disrobed, although heat is usually introduced into the room. However, the temperature of the room is ordinarily many degrees lower than the temperature of the water which the bather will use. This is also true of the temperature of the tiling, metal, porcelain or other parts of the room, and as a result of the difference in temperature, condensation and fog are immediately created when the water of higher temperature is turned on. Upon leaving the bath, the bather is again subjected to the lower temperature of the room during the act of drying and dressing. The humid condition created by the different temperatures, as well as the fact that the pores of the body have been opened by the higher temperature bath water, may directly affect the bather with resultant undesirable effect on the health.

One object of this invention is to provide a system of bathing, and an apparatus by which such system may be practiced, wherein the bather will be subjected to the same temperature as that of the bath water throughout the entire act of bathing, which includes disrobing, entering the bath, leaving the bath, drying and dressing.

Another object of this invention is to provide an apparatus which permits such like temperatures to be accomplished and to be maintained.

Another object is to provide such a system and apparatus for practicing such system which will permit a gradual change from the higher temperature to which the bather has been subjected during the act of bathing to a temperature the same or substantially the same as that to which the bather will be subjected upon completion of the bath.

Another object of this invention is to provide means which automatically regulate and control the temperatures to accomplish the above mentioned objects.

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Various other objects and advantageous features of this invention may be had from the following description, and may be seen in the accompanying drawings wherein similar characters of reference designate corresponding parts, and wherein:

Figure 1 is a perspective view of the outside of the complete apparatus by which this system is practiced.

Figure 2 is a perspective view, partly in elevation and partly in section, showing the arrangement of the apparatus into various compartments, one utilized for disrobing before and dressing after the bath, and the other for the actual accomplishment of the bath, such figure also illustrating the means for varying the temperatures of the compartments.

Figure 3 is a sectional view showing the flow path of the water which is, in the embodiment herein illustrated, utilized to control the temperatures within the compartments of the apparatus.

Figure 4 is a schematic view illustrating the means for controlling and regulating the flow of water, both for the purpose of controlling the temperature of the interior of the compartments or cabinet and for supplying water for the bath.

As shown in the drawings, the apparatus consists of a double walled, two-room cabinet 1, the walls 2 and 3 of the cabinet forming flow spaces 4 and 5 therearound. Such cabinet is separated into two rooms 6 and 7, the room 6 being a conditioning and/or drying room, and the room 7 being a shower or bathing room, by partitioned walls 8 and 9 which are separated to form a flow space 10 therebetween connecting the flow spaces 4 and 5 around the cabinet 1. A door 11 leads from the outside of the cabinet into the conditioning or drying room 6, and a door 12 connects the conditioning or drying room 6 with the shower or bathing room 7.

Automatically operating means are provided, controlling the temperature of water flowing into and through the flow spaces 4, 5 and 10 between the outside walls 2 and 3 and the partitioned walls 8 and 9 from the inlet pipe 13, and also for controlling the temperature and amount of water which will flow to and out of the showerhead 14 in the shower or bathing compartment 7, such showerhead 14 being preferably of the type that

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is adjustable to regulate the amount of water flowing from the showerhead, or close off the showerhead against flow entirely. A drain pipe 15 leads from the shower or bathing compartment to a suitable waste pipe 16.

The automatic control means includes a temperature selector 17, a time selector 18, a temperature compensator 19, a time switch 20, and a relay panel 21 from which conducting wires 22 and 23 lead to a suitable source of electrical energy. Such control means also includes a bath temperature compensator control 24, a room temperature compensator control 25 and a float actuated switch 26. All such control parts may be of any well-known type, and all of such parts are suitably interconnected together by proper electrical wiring.

The water supply is provided for by a cold water supply pipe 27 and a hot water supply pipe 28 connected to a pipe 29 leading to the flow spaces between the walls of the cabinet through an inlet 30 and to the showerhead 14 through a pipe 31, flow being controlled through such latter pipe by an automatically operated valve 32. A pipe 33 for draining the water from between the spaced walls of the apparatus is provided, and flow through this pipe is under the control of an automatically operated valve 34.

In the operation of this apparatus, the temperature and time period of the bath are selected at the master control unit which includes the temperature selector 17, temperature compensator 19, time selector 18 and time switch 20. The temperature and time of the bath having been selected by proper setting of the just explained parts of the master control unit by moving parts thereof to selected positions, the mixing valve 35, which controls the flow of cold and hot water from the pipes 27 and 28 to the pipe 29, is actuated electrically, through the relay panel 21 and through wires 36, to the proper position to admit water at the desired temperature to the pipe 29. Such water from this pipe flows through the water inlet 30 to the spaces 4, 5 and 10 between the walls 2, 3, 8 and 9 as indicated by the arrow, and out through a waste pipe 30', and heat from the water dissipated through the inside wall 3 and the partitioned walls 8 and 9 is effective to bring the temperature of the rooms 6 and 7 to the same temperature as the water, and the temperature will be the same as the water ultimately to flow from the showerhead 14. A signal light 37 is provided in the master control mechanism to indicate when the water is flowing through the spaces between the walls of the compartment.

The room temperature compensator 25 in the room 6 and the bath temperature compensator 24 in the room 7 react to temperature change within the rooms 6 and 7, and upon the temperature in such rooms arriving at that selected, the valve 32 controlling flow from the pipe 29 to the showerhead 14 is moved to open position. As shown, the pipe 29 leads to a tank 38 disposed on top of the cabinet and a pipe 39 leads from such tank to the showerhead 14. The purpose of this tank is to prevent a change in the temperature of the bath water which might come about through the opening of a valve in some other part of the main water supply line, and ahead of the mixing valve 35, and also to avoid air pressure at the showerhead, an air vent 40 being provided in the tank 38. A suitable float

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actuates the switch 26 to energize and close the valve 32, thus cutting off flow of water to the tank 38. Since water does not flow to the tank 38 until considerable water at the same temperature has flowed around between the walls of the cabinet, proper temperature of the water in the tank 38 is assured.

Upon sufficient time having elapsed for the water flowing through the spaces 4, 5 and 10 between the walls 2, 3, 8 and 9 to bring the temperature of the rooms 6 and 7 either substantially to or the same as the temperature of the water, the bather enters the door 11 in the cabinet into the room 6. After disrobing, the bather then enters the room 7 which is at a temperature the same as that of the room 6 and the same as that of the water for the bath. Water from the tank 38 may pass through the showerhead 14 by suitably adjusting the showerhead, and the bath taken. A signal light 41 on the wall of the room 7 is interconnected with the timer 20, and is so arranged as to indicate that the supply of water in the tank 38 is practically exhausted. This is done by selecting the time period of the bath on the time selector 18. When the time period selected has elapsed, the time will cause actuation of the automatic valve 32 to close off flow of water through the pipe 31 to the tank 38.

Upon completion of such part of the bath, the bather enters the drying room 6 through the door 12, and means are provided for gradually reducing the temperature of the room 6 to that of the temperature outside the cabinet. To do this, the timer switch 20 is so arranged as to transfer control of the mixing valve 35 from the bath temperature compensator 24 to the adjoining room temperature compensator 25, and at the same time acts to open the automatic valve 34 whereby water from between the walls of the cabinet will drain out through the pipe 33. The room temperature compensator 25 continues to act to cause the mixing valve 35 to send water of lower temperature through the pipe 29 and the inlet 30 to the spaces between the walls of the cabinet, and so continues to send such lower temperature water between the walls of the cabinet until the temperature of the room 6 reaches that of the outside temperature, at which time the mixing valve is closed shutting off all flow to the cabinet, the valve 34 remaining open until all of the water has drained out of the spaces between the walls of the cabinet.

Referring to the drawings and the preceding description, it will be seen that there is provided a system for bathing, and an apparatus for practicing such system, in which the time period of a bath will be selected, and according to which system the bather, throughout the initial period of the bath, is subjected to the same temperature as to both the atmosphere and the water, and after the bath has been taken and the bather reaches the stage of drying and dressing, such bather is brought gradually again to the temperature of the atmosphere outside the apparatus. Thus, there is at no time a rapid or sharp change in temperatures to which the bather is subjected. Another feature of the invention resides in the fact that since the interior of the bath cabinet and the bath water are at the same temperatures, there will be no undesirable steam or condensation formed.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

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I claim:

1. In a bath system, a cabinet formed by spaced walls, a dividing partition in said cabinet also formed of spaced walls, the spaced walls of the cabinet and dividing partition being interconnected to form a continuous passage around the cabinet walls and through the partition wall, means for causing water at selected temperatures to flow through the spaces formed by the cabinet and partition walls to bring the interior of the cabinet to a temperature substantially equal to that of the water, and means for supplying bath water of like temperatures to one of the sections of the cabinet formed by the partition.

2. In a bath system, a cabinet formed by spaced walls, a dividing partition in said cabinet also formed of spaced walls, the spaced walls of the cabinet and dividing partition being interconnected to form a continuous passage around the cabinet walls and through the partition wall, means for causing water at selected temperatures to flow through the spaces formed by the cabinet and partition walls to bring the interior of the cabinet to a temperature substantially equal to that of the water, and means for supplying a preselected amount of bath water of like temperatures to one of the sections of the cabinet formed by the partition.

3. In a bath system, a cabinet formed by spaced walls, a dividing partition in said cabinet also form of spaced walls, the spaced walls of the cabinet and dividing partition being interconnected to form a continuous passage around the cabinet walls and through the partition wall, means for causing water at selected temperatures to flow through the spaces formed by the cabinet and partition walls to bring the interior of the cabinet to a temperature substantially equal to that of the water, means for supplying a preselected amount of bath water of like temperatures to one of the sections of the cabinet formed by the partition, and means arranged to produce a flow of water through said spaces for reducing the temperature of the other of the sections of the cabinet formed by the partition to that of the outside atmosphere.

4. In a bath system, a cabinet formed by spaced walls, a dividing partition in said cabinet also formed of spaced walls, the spaced walls of the cabinet and dividing partition being intercon-

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nected to form a continuous passage around the cabinet walls and through the partition wall, means for causing water at selected temperatures to flow through the spaces formed by the cabinet and partition walls to bring the interior of the cabinet to a temperature substantially equal to that of the water, means for supplying a preselected amount of bath water of like temperatures to one of the sections of the cabinet formed by the partition, means arranged to produce a flow of water through said spaces for reducing the temperature of the other of the sections of the cabinet formed by the partition to that of the outside atmosphere, and automatic regulating means for controlling such temperatures.

5. In a bath system, a cabinet formed by spaced walls, a dividing partition in said cabinet also formed of spaced walls, the spaced walls of the cabinet and dividing partition being interconnected to form a continuous passage around the cabinet walls and through the partition wall, means for causing water at selected temperatures to flow through the spaces formed by the cabinet and partition walls to bring the interior of the cabinet to a temperature substantially equal to that of the water, means for supplying a preselected amount of bath water of like temperatures to one of the sections of the cabinet formed by the partition, means arranged to produce a flow of water through said spaces for reducing the temperature of the other of the sections of the cabinet formed by the partition to that of the outside atmosphere, and automatic regulating means for controlling such temperatures and the flow of water.

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