

**Feb. 3, 1942.**

I. M. JAYNES

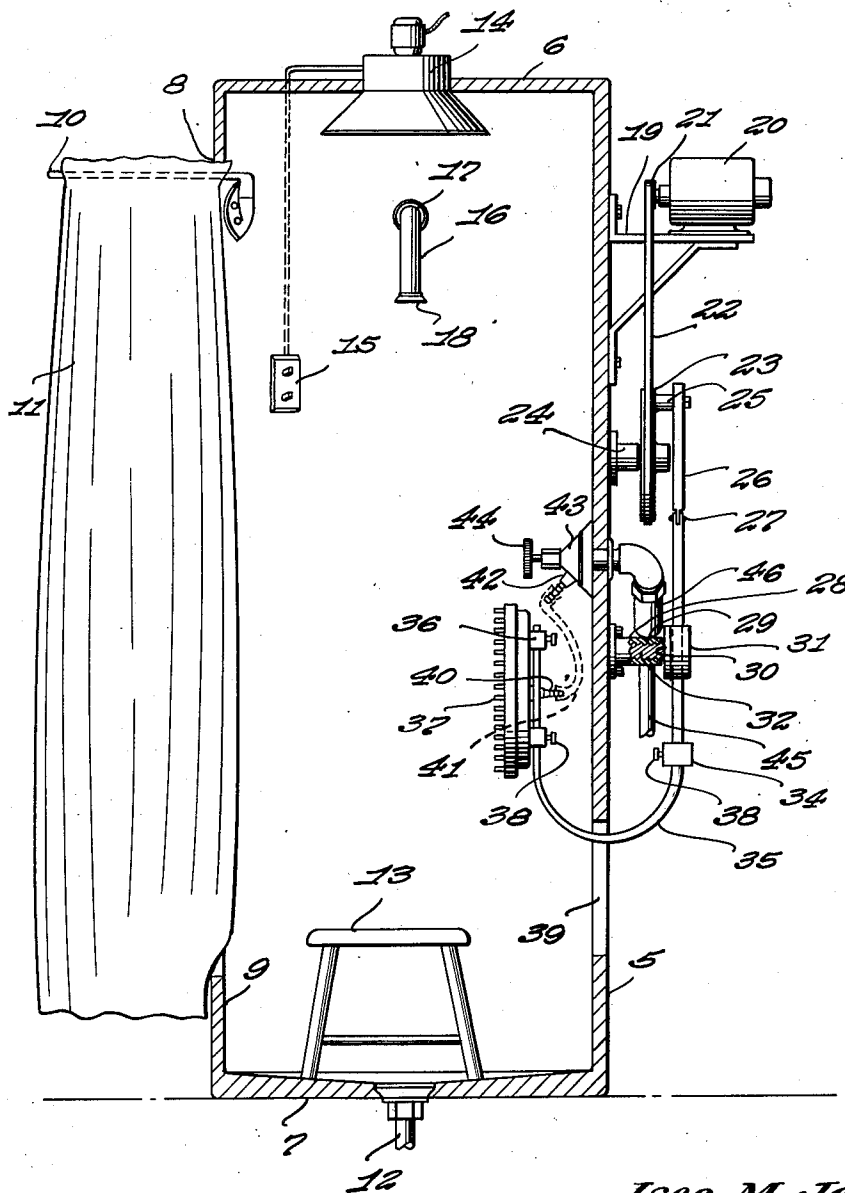
**2,271,644**

## THERMOSTATIC VALVE

Filed Jan. 14, 1941

2 Sheets-Sheet 1

*Fig. 1.*



Inventor

*Isac M. Jaynes*

My Lacy, Lacy.

Attorneys

Feb. 3, 1942.

I. M. JAYNES

2,271,644

THERMOSTATIC VALVE

Filed Jan. 14, 1941

2 Sheets-Sheet 2

*Fig. 2.*

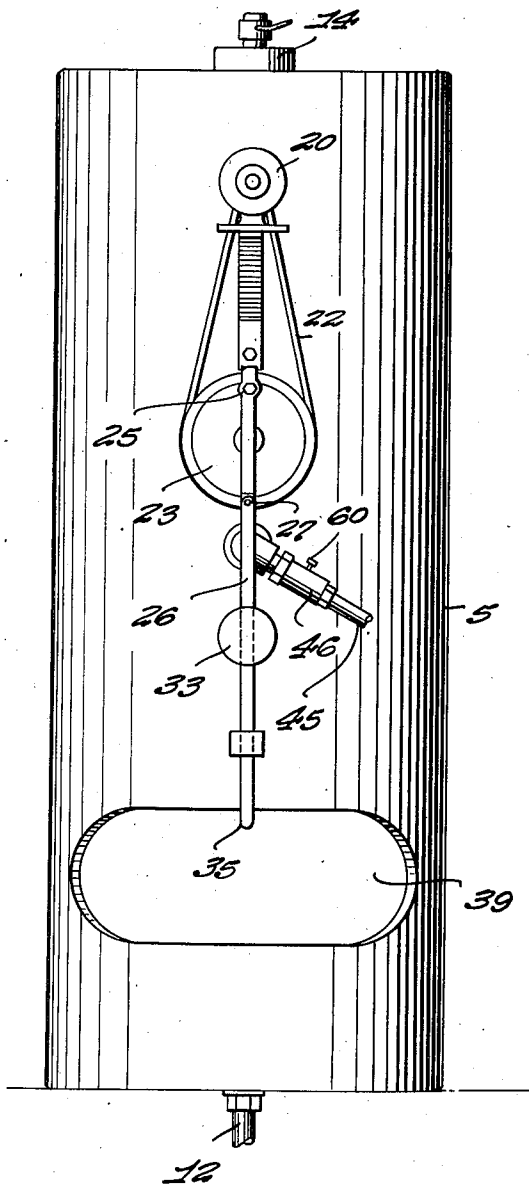


*Fig. 3.*

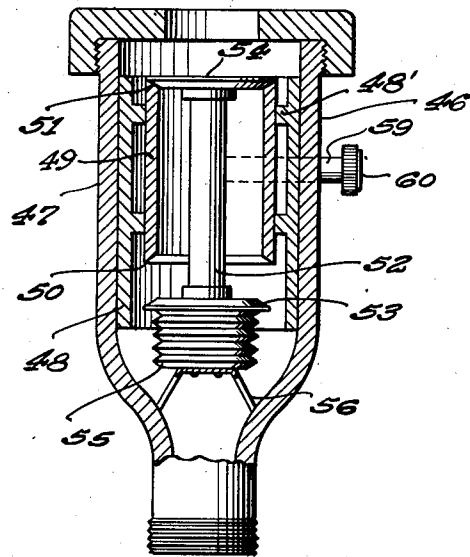
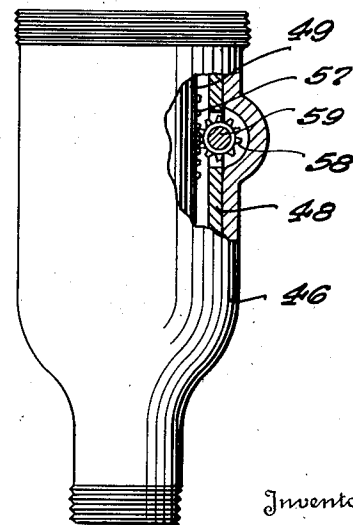


*Fig. 4.*



Inventor

*Isaac M. Jaynes*

By *Lacey & Lacey*

Attorneys

## UNITED STATES PATENT OFFICE

2,271,644

## THERMOSTATIC VALVE

Isac M. Jaynes, Jackson, Tenn.

Application January 14, 1941, Serial No. 374,386

4 Claims. (Cl. 236—93)

This invention relates to bathing apparatus and more particularly to a combined circular shower bath and mechanical massage device.

The object of the invention is to provide a combined device of the character described of simple and inexpensive construction capable of being readily installed in a bath room or other desired place and which can be used with equally good results either as a shower or Turkish bath or for massaging the body.

A further object of the invention is to provide a bath of circular contour with the mechanism for operating the massage element disposed on the outside of the tub so as not to interfere with the bathing operation and with the valve and electric switch for controlling the water and heat arranged within convenient reach of the bather.

A further object is to provide a novel form of thermostatic control valve interposed in the hot and cold water supply line and so constructed as to automatically cut off the supply of water to the tub in case the temperature of the water becomes too hot thereby effectually to prevent accidental scalding of the bather and render the bath perfectly safe for children as well as grown-ups.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

In the accompanying drawings forming a part of this specification and in which similar numerals of reference indicate corresponding parts in all the figures of the drawings:

Figure 1 is a vertical sectional view of a combined circular bath and mechanical massage device embodying the present invention,

Figure 2 is a rear elevation,

Figure 3 is a vertical sectional view of the thermostatic control valve, and

Figure 4 is a side elevation of the valve, a portion thereof being broken away to show the construction of the operating means.

The improved circular shower bath and mechanical massage apparatus forming the subject-matter of the present invention comprises a vertically disposed tank or tub 5 preferably circular in cross section and closed at its top and bottom, as indicated at 6 and 7, the front wall of the tub being provided with an entrance opening 8 defining an upstanding lip 9 at the base of the tub to prevent the escape of water therefrom.

Secured to the inner wall of the tub 5 is an arcuate supporting rod 10 on which is slidably mounted one or more curtains 11 formed of any suitable material and which curtains, when

drawn, serve to close the opening 8 and prevent splashing of the water when taking a shower bath and confine the heat therein when taking a Turkish bath.

5 The bottom 7 of the tub is provided with a drain pipe 12 leading to a suitable point of discharge and arranged directly above the drain pipe is a stool 13 on which the bather may sit when bathing.

10 Disposed at the top 6 of the tub is a heater 14 of conventional construction and which may be used either for drying the hair after taking a bath or for heating the interior of the tub when the device is used as a Turkish bath. Connected with the electric heater 14 is an electric switch 15 having one or more push buttons operatively connected with suitable resistance coils (not shown) within the heater so that by pushing one or the other of said buttons the intensity of heat generated can be controlled at will. Arranged beneath the heater is a shower attachment 16, said attachment comprising a pipe swiveled at 17 within the wall of the tub and provided with a terminal perforated head 18 through which the water is sprayed onto the bather.

Arranged on the outside of the tub or tank 5 and secured thereto in any suitable manner is a bracket 19 on which is mounted an electric motor 20 having a relatively small pulley 21 for engagement with a drive belt 22. The belt 22 extends over a relatively large ball bearing disk or pulley 23 mounted for rotation on a supporting stud 24 secured to the tub in vertical alignment with the motor 20. Extending laterally from the disk or pulley 23 is a crank pin 25 and pivotally mounted on said pin is a connecting rod 26 preferably formed in two sections having their adjacent ends pivotally united at 27. Secured to the tub below the disk or pulley 23 is a bracket or support 28 having a threaded socket 29 formed therein and provided with a terminal laterally extending flange 30. Coacting with the bracket 28 is a guide member 31 preferably in the form of a circular disk having a threaded shank 32 for engagement with the threads 29 on said bracket. The member 31 is provided with a vertically disposed slot 33 through which the lower section of the connecting rod 26 passes, and this guide member 33 may be adjusted either to cause the lower section of the connecting rod to reciprocate in a vertical plane or to oscillate therein according to whether the member 33 is clamped in contact with the

flange 30 or allowed to turn freely on the threads 29.

The lower section of the connecting rod 21 is provided with a terminal socket 34 which receives the adjacent end of a curved spring 35, the opposite end of which extends through spaced loops 36 on a massage head, indicated at 37, the spring being retained in position within the socket 34 and loops 36 by suitable clamping screws 38. It will thus be seen that by loosening the clamping screws 38 the massage head 37 may be adjusted vertically of the spring 35 and locked in adjusted position by tightening said screws. The spring 35 passes through a transverse opening 39 formed in the rear wall of the tub 5 so as to permit oscillating or surging movement of the massage head when the guide member 33 is adjusted to permit oscillation of the lower section of the connecting rod 26.

The massage head 37 is hollow and projecting from the rear thereof is a nipple 40 to which is connected one end of a flexible tube 41, the other end of which is connected to a corresponding nipple 42 extending from a valve 43. The valve 43 is also operatively connected with the shower nozzle 16 and is provided with an operating handle 44 by means of which the flow of heated water to the shower attachment and massage head may be controlled at will. Connected with the valve 43 is a pipe 45 which, in turn, is connected by a T (not shown) with branch pipes leading to a hot water heater and cold water supply, and connected in the pipe 45 is a thermostatic control valve 46 which will now be described.

The valve 46 comprises a casing 47 having a lining 48 disposed therein and provided with spaced solid circumferential guide ribs 48' and disposed in contact with said guide ribs and slidably mounted within the lining 48 is a vertically movable housing 49 having its opposite ends beveled to form valve seats 50 and 51. Arranged within the housing 49 is a valve stem 52 provided with oppositely disposed valves 53 and 54 for controlling the passage of water through the casing 46 to the tub.

Connected with the lower valve 53 is a thermostatic element 55, the lower end of which is anchored to the casing 46 by a brace 56. The function of the element 55 is to automatically open or close the valves according to the temperature of the water and thus prevent scalding of the bather.

The exterior of the housing 49 is provided with a rack 57 and cooperating with said rack is a pinion 58 carried by a stem 59, to the end of which is secured a suitable finger-piece 60 so that by rotating the finger-piece 60 the housing 49 may be adjusted vertically of the valve casing to vary the opening and closing movement of the valves. Under normal conditions the valves 53 and 54 will be unseated so as to allow the free flow of water from a source of supply through the valve casing and housing 49 to the valve 43 within the tub. Should the water become excessively hot, however, the thermostatic element 55 will expand and close the valve 53 and open the valve 54, thereby automatically cutting off the flow of water to the tub and preventing accidental scalding of the bather, as previously stated. Should the water be too cold, the thermostatic element 55 will contract and open the valve 53 and close the valve 54 so as to likewise cut off the flow of water. If the water is at the desired temperature, however, both valves will be moved to open position so as to allow the free

passage of water through the valve, as previously stated. The seating of the valves 53 and 54 may be adjusted to a nicety by rotating the finger-piece 60 which, in turn, raises or lowers the bushing 49 thereby rendering the valve very sensitive in operation. It will thus be seen that the water controlling valve 44 and electric switch 15 are in convenient reach of the bather and the mechanism for imparting either a vertical movement to the massage element or an oscillating or surging movement thereto is arranged outside the tub so as to occupy very little space and permit the bather free use of his or her limbs during the bathing operation. If it is desired to take a Turkish bath, it is merely necessary to turn on the heater 14 and close the curtains 11 so as to confine the heat within the tub, as will be readily understood.

The devices may be made in different sizes and shapes and constructed of any suitable material without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. In a device of the class described, a valve including a casing, a lining disposed within the casing and provided with guide ribs, a housing slidably mounted on said guide ribs and provided with oppositely disposed valve seats, a valve stem mounted for vertical movement within the housing and provided with valves cooperating with the valve seats, means operatively connected with the housing for adjusting said housing relative to the valves, and a thermostat operatively connected with one of said valves.

2. In a device of the class described, a valve including a casing having means for connection with a water supply, a lining disposed within the casing, a housing slidably mounted on said lining and provided with oppositely disposed valve seats, a valve stem extending through the housing, valves carried by the opposite ends of the stem and coacting with said seats, a thermostat secured to one of the valves, and means for adjusting the housing longitudinally of the lining to vary the distance between the valves and their seats.

3. In a device of the class described, a valve including a casing having means for connection with a water supply, a lining disposed within the valve, a housing slidably mounted within the lining and provided with oppositely disposed valve seats, said housing being provided with a rack, a valve stem extending through the housing, valves secured to the opposite ends of the stem and coacting with the adjacent seats, a thermostat operatively connected with one of said valves, a pin journaled in the casing, a pinion carried by one end of the pin and engaging the teeth of the rack, and a finger-piece carried by the other end of the pin for rotating the pinion to adjust the housing relative to the adjacent valves.

4. In a device of the class described, a valve including a casing having means for connection with a fluid supply, a housing slidably mounted within the casing and provided with oppositely disposed valve seats, a stem extending through the housing, valves carried by the opposite ends of the stem and coacting with said seats, a thermostat operatively connected with one of the valves, and means for adjusting the housing with respect to the casing to vary the distance between the valves and their seats.

ISAC M. JAYNES.