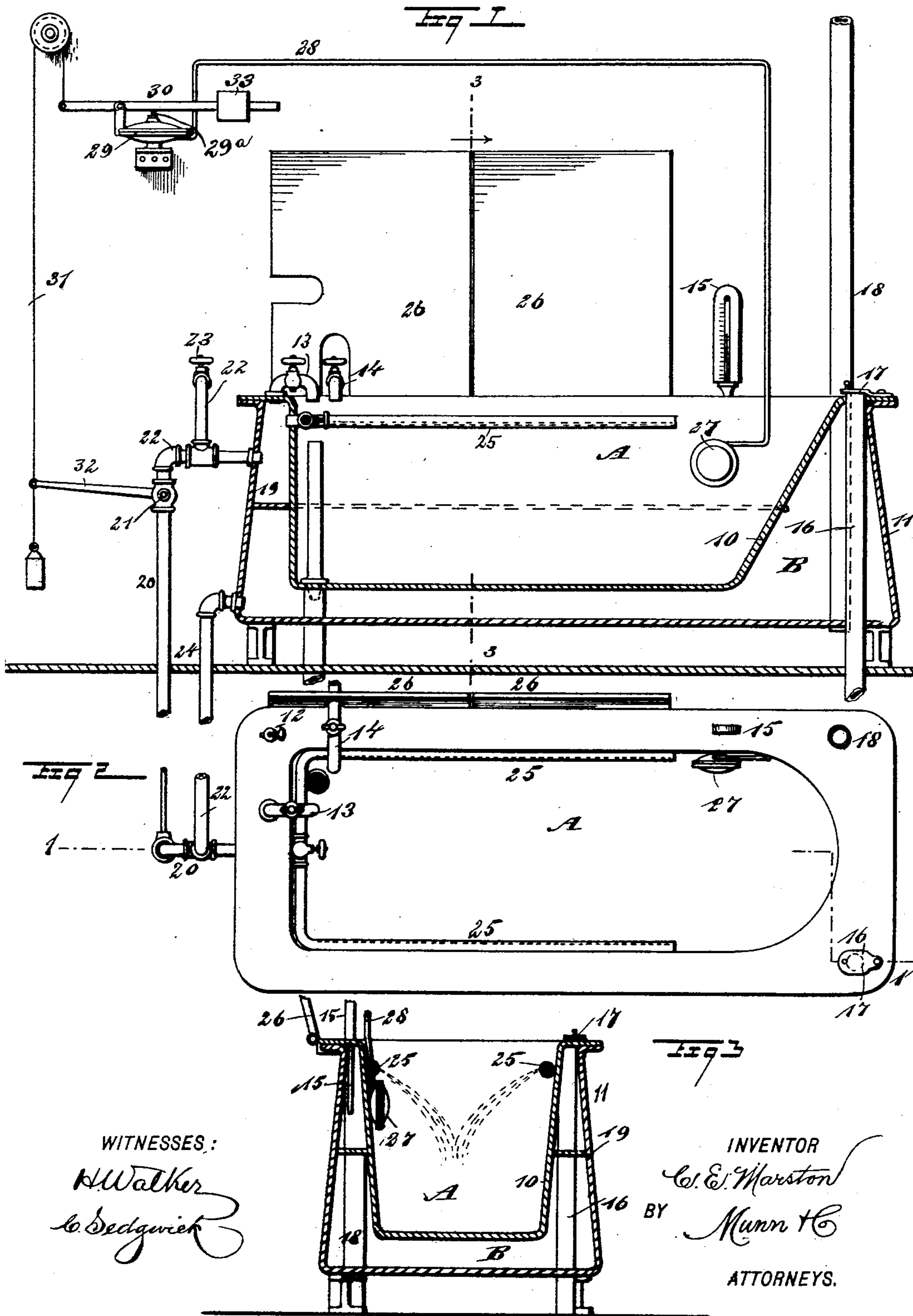


(No Model.)

C. E. MARSTON.  
BATH OR OTHER TUB.

No. 541,371.

Patented June 18, 1895.





# UNITED STATES PATENT OFFICE.

CHARLES E. MARSTON, OF DOVER, NEW HAMPSHIRE.

## BATH OR OTHER TUB.

SPECIFICATION forming part of Letters Patent No. 541,371, dated June 18, 1895.

Application filed April 1, 1892. Serial No. 427,357. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. MARSTON, of Dover, in the county of Strafford and State of New Hampshire, have invented a new and useful Improvement in Bath or other Tubs, of which the following is a full, clear, and exact description.

My invention relates to an improvement in tubs either for bath or other purposes, and also to an improvement in like receptacles, as ordinary tubs; and has for its object to provide a means whereby water when placed within the tub or receptacle may be maintained at a uniform temperature for whatever length of time it may be desired, and also to provide a means whereby the temperature of the water contained in the tub may be raised or lowered conveniently and expeditiously, and whereby also when the temperature has attained a predetermined degree, either of heat or cold, the supply of hot or cold water will be automatically cut off when necessary.

It is another object of the invention, in bath and in other tubs, to provide a shower or spraying device capable of supplying, when desired, sprays from the sides or in direction of the center of the tubs, and further, to utilize the tub to heat the air surrounding the bather and to maintain the required temperature in the room in which the tub is placed, the tub acting as a radiator, and also to provide a means for supplying fresh air in the immediate vicinity of the tub and of removing foul air therefrom.

It is a further object of the invention to construct a tube or like receptacle possessing all the features above set forth, and which will not only be simple and durable in construction, but also exceedingly economic and of great utility.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal vertical section through a bath-tub, illustrating the application of the invention thereto, the section be

ing taken practically on the line 1 1 of Fig. 2. Fig. 2 is a plan view of the tub; and Fig. 3 is a vertical transverse section taken essentially on the line 3 3 of Fig. 1.

The tub A consists of an inner jacket 10 and an outer jacket 11, the two jackets being so connected at the top that an inner circulating and heating chamber B, is formed, capable of receiving hot air, steam or preferably hot water, and in making the connection between the inner and outer jackets of the tub, the inner jacket, which is really the tub proper or the receiving section of the tub, is provided with a flange, and through the medium of this flange the connection between the two jackets is effected. Thus the upper marginal face of the tub, as shown in Fig. 2, may be practically flat or otherwise.

A vent or air cock 12, is usually placed at any convenient point and connected with the chamber B of the tub; and a faucet 13, is also placed in direct connection with the inner chamber B, and this faucet is adapted, when desired, for supplying water to the bathing or washing chamber of the tub which is formed by the inner jacket 10; but if in practice it is found desirable, an independent hot or cold water faucet 14, or a faucet supplying both hot and cold water may be used in connection with the tub, the latter faucet receiving its supply from a source foreign to the interior chamber 10 of the tub. It will be understood that the water circulating through the boiler, pipes 20, 24 and chamber B will be under pressure from the water main or other source and hence will flow through the faucet 13.

In order that the temperature of the interior chamber B may be ascertained, a thermometer 15, is so placed that its bulb enters the said chamber, and the scale may be read by any one adjacent to or within the tub. Fresh air is ordinarily introduced adjacent to the bathing or washing compartment of the tub by means of a tube 16, in communication with the outside of the compartment, which tube extends vertically through the two jackets of the tub, and terminates at the top of the outer jacket preferably, the top being provided with a cover 17, capable of being removed to permit a flow of fresh air into the room in which the tub is located, or the cover may be



closed over the pipe or tube to cut off such supply.

The air-supply pipe or tube is usually located at one end of the tub, as shown in Fig. 2; and at the opposite side of the same end an offtake pipe 18, is placed, which extends downward from the tub and takes the air from beneath the bottom of the tub and conveys it from the room in which the tub is located.

Preferably the inner compartment B of the tub is sub-divided into two compartments by means of a partition 19. This partition, however, does not extend from end to end of the tub, as it is necessary that communication should be established between the two sub-compartments. This partition will cause the heating medium to flow from one end of the chamber to the other and then return, since both pipes 20 and 24 are at the same end. Therefore the partition is usually stopped at one end of the inner jacket.

Above the partition 19 a pipe 20, is made to enter the compartment B in the tub, and this pipe is adapted to supply hot water to that compartment, the hot water supply being controlled by a valve 21, and usually above the valve a cold water pipe 22, is connected with the hot water supply pipe, the cold-water pipe being also provided with a valve 23. Thus hot or cold water, or both commingled, may be supplied to the compartment B of the tub as desired.

The water from the compartment B, is returned to its source of supply through the medium of a return pipe 24, which enters the compartment B at or near its bottom.

At opposite sides of the tub, in the bathing or washing compartment either at the top or bottom, a sprinkling or shower tube 25 is located. When the tubes are located near the tops of the tubs they throw the water in the direction of its center, as shown in Fig. 3. These sprinkling tubes are preferably connected and are valve-controlled, and they also preferably receive their supply of water from the compartment B of the tub. The tub is also provided, when it is designed for use as a bath tub, with covers 26, capable of being shut down so as to cover the major portion of the bath and permit the occupant to obtain all the benefit possible from the steam or hot vapor arising from the water in taking a bath.

It is very desirable that the water in the bath should be maintained at an even temperature; and in the event that the bath should become too warm, the temperature becoming too high, the supply of hot water may be automatically cut off. This is preferably effected through the medium of a thermostat, of any approved construction located within the bathing or washing compartment of the bath in a manner to be operated upon by the heat.

The thermostat shown in the drawings comprises a bulb or box 27, a tube 28 leading

therefrom and a casing 29 connected with the opposite end of the tube and provided with the usual flexible diaphragm having a short rod 29<sup>a</sup> extending through the upper end of the said casing and contacting with the lower side of the weighted end of the lever 30. The short arm of the lever 30 is connected with the arm 32 of the hot water valve by a cord 31 passing over a suitable guide pulley and provided at its lower end with a weight.

The lever 30 is provided with a weight 33 and normally extends in a horizontal position, but when the temperature of the contents of the tub rises above a predetermined degree the air or other fluid in the bulb or box 27 will be expanded and force the column of fluid in the tube 28 against the lower side of the diaphragm, thereby causing the latter to move the rod 29<sup>a</sup> upward against lever 30. As the weighted end of lever 30 rises the weighted cord 31 descends and moves the arm 32 to operate the valve 21 and partially or entirely cut off the supply of hot water. When the temperature lowers the parts will automatically turn to their normal positions.

It will be noticed that the ventilating pipes 16, 18, will be heated by the contents of the chamber B and thereby cause a proper circulation.

When the tub is used as a laundry or kitchen tub the heat in the circulating chamber will be communicated to the contents of the tub proper and controlled preferably under the boiling point so that clothing can be thoroughly cleansed without setting stains or discolorations, by letting it remain a comparatively long time in the tub with a gentle heat applied instead of by boiling.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A combined bath tub and radiator, comprising the bath tub proper, a jacket inclosing the same and forming the closed chamber B, hot water circulating pipes communicating with the said chamber, and a faucet communicating with the said chamber and with the tub proper, substantially as set forth.

2. The combination with the jacketed tub, the internal chamber of which is divided horizontally and longitudinally into two compartments, which communicate at one end, of the hot water flow and return pipes communicating respectively with the non-communicating ends of said compartments, substantially as set forth.

3. The combination with the jacketed tub having the flow and return circulating pipes communicating with the closed circulating chamber, and a faucet delivering from said chamber into the tub, of a thermometer visible from the exterior of the tub and having its bulb within the said chamber in contact with the heating medium therein, substantially as set forth.

4. The combination with a bath tub having a jacket forming a closed surrounding circu-



lating chamber, hot water circulating pipes communicating with said chamber, the supply pipe having a valve and a faucet delivering from said chamber into the tub proper, of a  
5 thermostat entering the tub proper, and connections between the thermostat and the hot water valve to automatically operate the same to maintain a predetermined temperature of the water circulating through said chamber,  
10 substantially as set forth.

5. The combination with the tub and the

hot water supply pipe having a valve 21 provided with a lever arm 32, of the thermostatic fluid bulb within the tub proper and having suitable connections with the said lever arm 15 for operating the valve, substantially as described.

CHARLES E. MARSTON.

Witnesses:

ROBERT G. PIKE,

THOMAS J. LANG.