March 31, 1925. 1,531,833

M. V. BAUER

BATHING APPARATUS

Filed July 24, 1920 3 Sheets-Sheet 1

Fig. 1.

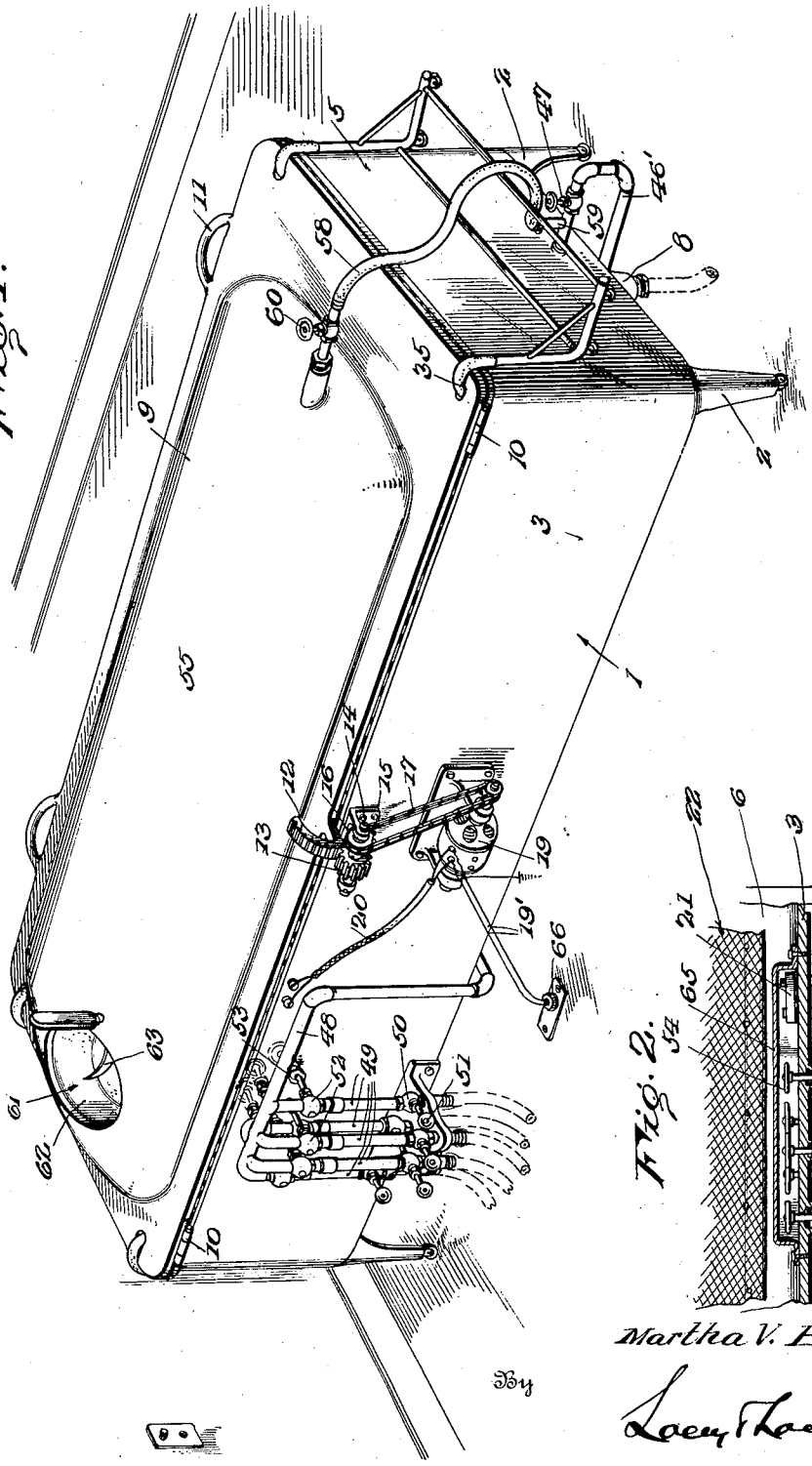


Fig. 2.

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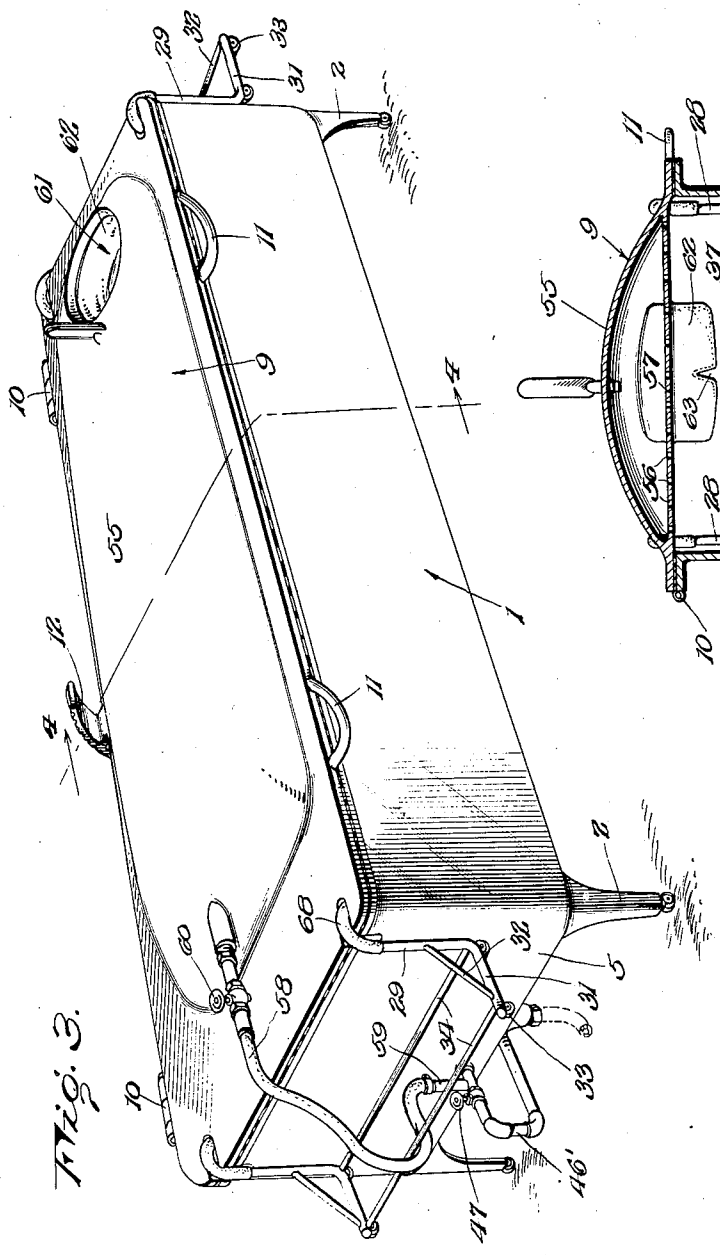


Fig. 3.

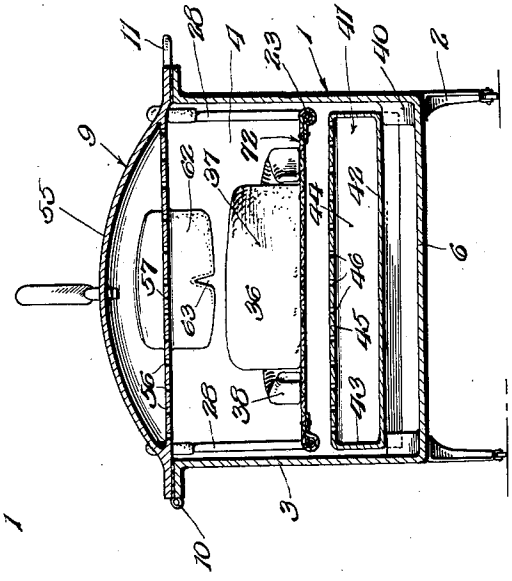


Fig. 4.

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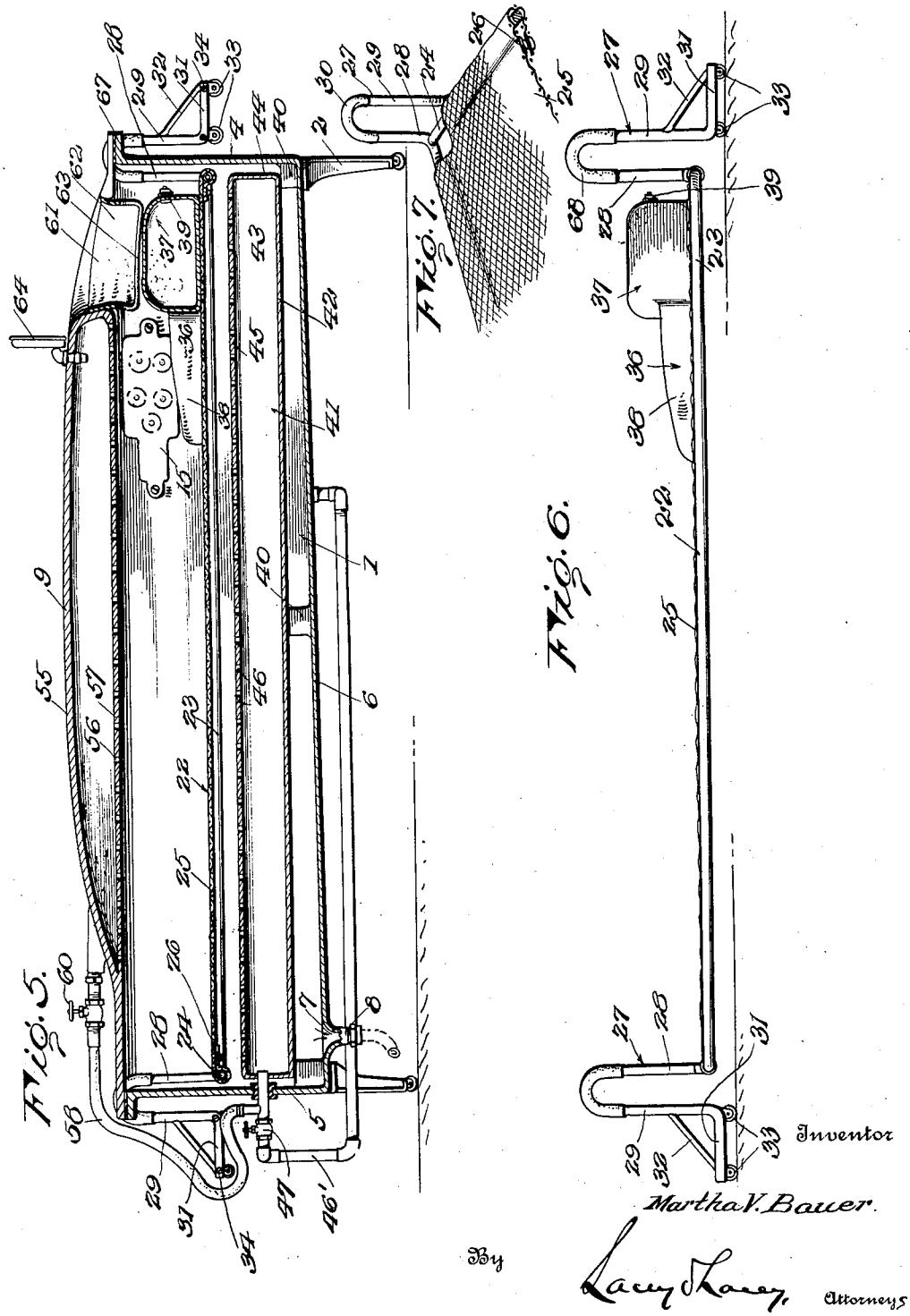


Fig. 5.

Fig. 6.

Fig. 7.

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Patented Mar. 31, 1925. 1,531,833

UNITED STATES PATENT OFFICE.

MARTHA V. BAUER, OF WASHINGTON, DISTRICT OF COLUMBIA.

BATHING APPARATUS.

Application filed July 24, 1920. Serial No. 398,627.

To all whom it may concern:

Be it known that I, MARTHA V. BAUER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Bathing Apparatus, of which the following is a specification.

This invention relates to improvements in bathing apparatus and has as one of its primary objects the construction of a bathing apparatus provided in its lower portion with a liquid receiving and distributing member or trunk so designed and constructed that it will be adapted to discharge a shower of liquid in an upward direction toward and from below the occupant of the apparatus who may be in a reclining posture.

Another object is to construct a bathing apparatus provided with supporting means adapted to support a person in the tub, said apparatus being also provided with a cover constituting a liquid receiving and distributing member adapted to discharge a shower of liquid over the entire area of the supporting means.

A further object is to construct a bathing apparatus provided with means for supporting a person therein, said apparatus being also provided both above and below the supporting means with a liquid receiving and distributing member or trunk each of which trunks are adapted to discharge a shower of liquid toward the supporting means.

Another object is to construct a bathing apparatus provided with a plurality of liquid supply pipes designed and constructed to supply liquid receiving and distributing trunks in the apparatus with a combination or mixture of various liquids.

A further object of the invention is to construct a bathing apparatus having a plurality of liquid supply pipes each separately provided with means both within and without the apparatus for independently controlling the flow of liquid therethrough in order that the occupant or an attendant may thus cause the desired quantities of the liquids employed to be delivered into the apparatus.

Another object is to construct a bathing apparatus provided with means whereby the liquid employed in the apparatus may be excluded from the face and head of the occupant.

A further object is to provide a bathing apparatus so constructed that the occupant thereof, with the exception of the face and head, may be enclosed therewithin and thus not only be protected from the varying temperature of the atmosphere, but also be better subjected to the action of the various kinds of liquid employed.

In the accompanying drawings:

Figure 1 is a perspective view of the apparatus embodying the invention,

Figure 2 is a horizontal sectional view through one side of the apparatus illustrating the arrangement of the valved pipes which are to supply different fluids to the apparatus,

Figure 3 is a view similar to Figure 1 but viewing the apparatus from another angle,

Figure 4 is a vertical transverse sectional view on the line 4—4 of Figure 3,

Figure 5 is a vertical longitudinal sectional view through the apparatus,

Figure 6 is a side elevation of the structure which is to support the occupant, the view illustrating the manner in which this portion of the apparatus may be employed as a wheeled stretcher, and

Figure 7 is a detail fragmentary perspective view of a portion of the structure shown in Figure 6.

The apparatus embodying the present invention includes a tub which is indicated in general by the numeral 1 and which may be supported in any suitable manner as for example by legs 2 located at its corners. This tub is preferably of general rectangular form and includes side walls 3, end walls 4 and 5 and a bottom 6. The bottom of the tub is preferably inclined from the end wall 4 to the end wall 5 so as to insure the carrying off of the waste fluid in the use of the apparatus, the said bottom being provided near its lower or last mentioned end with a drain opening 7 from which leads an outlet pipe or hose 8, which may be of a flexible detachable type. The open top of the tub is designed to be closed, when required, by a lid or closure 9 which will presently be more specifically described, this lid being hinged or pivotally mounted at one side of the tub as indicated by the numeral 10 and being provided with one or more handles 11 at its opposite side whereby it may be manually swung open or closed.

In order that the lid closure 9 may be mechanically swung to open and closed posi-

tions, electro-mechanical means are provided which will now be described. A segmental or arcuate rack 12 is fixedly mounted upon the lid closure 9 at the hinged side of the latter and this rack meshes with a pinion 13 which is fixed upon a shaft 14 journaled in a suitable bearing bracket 15 upon the adjacent side wall of the tub body. A sprocket gear 16 is also fixed upon the shaft 14 and a sprocket chain 17 is trained about this gear and about a similar gear 18 fixed upon the shaft of an electric motor 19. The numeral 19′ indicates electric current supply wires which lead to the motor 19 and are connected with the terminals of an electric switch located at any convenient point outside of the tub, thus enabling an attendant to control the flow of current to the motor 19 and thereby cause the lid to be mechanically swung to open and closed positions. The current supply wires 19′ are preferably led from an electrical connection or plug 66 located adjacent the tub. Wires 20 lead from the motor 19 to the terminals of any suitable type of electric switch indicated by the numeral 21 located within the tub, in order that the occupant of the apparatus may also control the flow of current to the motor 19 and thereby cause the lid to be mechanically swung to open and closed positions. It will be understood, however, that any other suitable electro-mechanical means may be employed for opening and closing the lid, without departing from the scope of the present invention.

The occupant of the apparatus is to be supported within the tub in a reclining posture upon the supporting surface of a wheeled stretcher which is best illustrated in Figures 6 and 7 of the drawings. This stretcher comprises a rectangular frame which is indicated in general by the numeral 22 and which comprises side rails 23 and end rails 24. The supporting surface of the stretcher comprises a webbing 25 which preferably consists of a rectangular sheet of any suitable open mesh material and preferably of material having relatively large meshes so that the occupant of the apparatus will be freely subjected to the spraying action of the liquid discharged toward the under side of the supporting surface of the stretcher when it is in position within the tub. The webbing 25 preferably is connected with the frame of the stretcher by engaging its edges over the side and end members of the frame and securing the said edges by means of suitable fasteners indicated by the numeral 26 so that the webbing may be readily removed whenever required and thoroughly cleansed, although it will be understood that any other suitable means for attaching the webbing to the frame of the stretcher may be employed if found desirable. Inasmuch as it is one of the objects of the invention that the occupant of the apparatus may be as comfortably supported as possible, it is preferable that a pneumatic pillow 36 be provided, said pillow having a head rest portion 37 as well as shoulder and arm rest portions 38 and being provided with any suitable inflating valve 39. It will readily be observed that the occupant of the apparatus will be suported entirely upon the webbing and the pneumatic pillow and therefore will not rest upon any portion of the enamel or metal of the apparatus. In order that the supporting surface of the stretcher may be suspended within the tub of the apparatus and also in order that the stretcher may be employed as a means for transferring a person to and from the apparatus, the stretcher frame 22 is provided at each of its corners with an upwardly arched suspension member indicated in general by the numeral 27 and comprising a portion 28 extending vertically from the respective corner of the stretcher frame, a portion 29 extending downwardly to a plane below said stretcher frame, and an arched connecting portion 30. Each downwardly extending portion 29 is provided with an outwardly turned lower end 31 and a handle 32, said handle being provided for use in lifting the stretcher when placing the supporting surface thereof in the tub or when removing the same from the tub. Each portion 31 carries wheels or rollers 33 which are located in a plane below the main frame 22 of the stretcher in order that when these rollers rest upon a floor surface, the frame 22 and the webbing 25 secured thereto will be supported a suitable distance above the floor and thus the stretcher may be readily wheeled from place to place conveniently. Rods 34 are preferably provided for connecting the portions 31 of the suspension members at each end of the stretcher so as to relatively brace these members. It will be observed by reference to Figures 5 and 6 of the drawings, that when the stretcher is to be arranged so that the supporting surface thereof will be suspended within the tub of the apparatus, the stretcher is disposed with its frame 22 housed within the tub and with the arched connecting portions 30 of the suspension members engaged over the upper edges of the end walls of the tub. The lid 9 is slotted as indicated by the numeral 35 in order that it may fit closely about the arched portions 30 of the stretcher, but it is understood that said lid may be otherwise provided with means adapted to closely engage said arched portions, in order that a tight closure may be obtained. In order that a fluid-tight seal may be provided between the lid of the tub and the upper edges of the walls thereof, any suitable packing means 67 may be provided either upon the under side of the lid at the margin thereof

or upon the upper edges of the walls of the tub. It is preferable that the arched portions 30 in the suspension members 27 each be provided with a covering 68 of rubber or any other suitable material which will prevent injury to the finish of the upper edges of the walls of the tub when the suspension members are engaged thereover, which covering will likewise cushion the contact of the suspension members with the upper edges of the walls of the tub when the supporting surface of the stretcher is lowered into position within the tub.

Supported in horizontal position upon suitable bosses 40 formed or otherwise provided within the bottom of the tub 1, is a fluid pressure compartment or liquid receiving and distributing trunk which is indicated in general by the numeral 41. This trunk conforms generally in shape with the shape of the bottom of the tub but is of less dimensions so that the sides and ends of the trunk are somewhat spaced from the corresponding walls of the tub so as to permit of the passage of waste fluid about the trunk and to the bottom of the tub where it may run off through the drain opening 7. The trunk 41 is in the nature of a hollow body which may be made of any suitable material and which includes a bottom 42, side walls 43, end walls 44, and a top wall 45. The said top wall 45 is formed with a large number of orifices or perforations 46, and the said top wall is located immediately beneath and suitably spaced from the webbing 25 of the stretcher. The liquid discharged into the trunk under pressure will issue through the perforations 46 in fine jets or sprays and be directed against the under side of the occupant reclining upon the stretcher.

A plurality of liquid supply pipes 49 are detachably connectible with various sources of supply and communicate with a main mixing pipe 48. A mixing pipe 46′, which is a continuation of main mixing pipe 48, leads through the end wall 5 of the tub and discharges into the liquid receiving and distributing trunk 41 and this pipe is provided with any suitable type of cut-off valve 47. Thus it is possible with the apparatus of the present invention to employ hot and cold water, liquid soap or soap solution, salt water, liquid solutions of various kinds, as well as vapors such, for example, as steam, so that the apparatus is admirably adapted for use in giving Turkish-baths and various special baths which require the use of different kinds of liquid or vapor. In each of the pipes 49 there is interposed a cut off valve 50, and these valves are located exteriorly of the tub and are each provided with an operating handle 51. Other valves 52 are interposed in the pipes 49 and have their stems 53 led through the adjacent side wall of the tub 1 and are provided within the tub with operating handles 54 whereby the valves may be opened and closed by the occupant of the tub. It will now be understood that the valves 50 and 52 are adapted to be independently operated to open and closed positions and that therefore the supply of various liquids from the pipes 49 to the main mixing pipe 48 and thence to the pipe 46′, may be controlled either by an attendant or by the occupant of the apparatus.

In order that the various liquids employed may be directed against the upper side of the reclining occupant of the tub, the lid or closure 9 is of hollow formation and includes an imperforate upper wall 55 and a perforated lower wall 56, the perforations in this wall being indicated by the numeral 57. Thus, the lid also constitutes a fluid pressure compartment or liquid receiving and distributing trunk, and in order that liquid may be delivered to this trunk, a flexible conduit 58, which may be a pipe or hose, is led from a branch 59 of the pipe 46′ and communicates with said trunk, a valve 60 being interposed therein so that the supply may be cut off when desired. Owing to the fact that the conduit 58 is flexible and is of a suitable length, the lid 9 may be swung to open and closed positions without liability of disconnecting this conduit.

It will be seen by the foregoing description that the present bathing apparatus is especially designed and constructed to project a shower of liquid both from above and below the screen upon which the bather is supported and thus the shower of liquid is simultaneously directed towards and directly impinges upon every portion of the bather.

In order that the face of the occupant of the tub may be protected from the action of the liquids discharged into the tub from the distributing trunks, the lid 9 is formed in its upper side near the end wall 4 with a face opening which is indicated by the numeral 61. Arranged within this opening is a closure or shield 62 which may be of rubber or any other flexible waterproof material suitable for the purpose, and this shield depends within the interior of the tub and is provided with a longitudinal slit 63 through which the face and head of the occupant may protrude.

It is preferable that a thermometer 64 be arranged upon the lid 9 immediately in front of the face opening 61 so that the occupant of the apparatus may readily note the temperature of the liquids being employed.

Any suitable type of guard 65 may be provided and may be detachably secured in any suitable manner and by any suitable means over the handles 54 of the valves 52 and over the switch 21, this guard being employed when an attendant is to operate the valve handles and the switch located exteriorly of the apparatus.

While I have disclosed the nature of my invention and described an operative manner of constructing and using the same, it is understood that my invention is not limited to the structure shown but that the inventive idea is susceptible of various modifications in construction and form within the scope of the appended claims without departing from the spirit of my invention.

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

1. In a bathing apparatus, a tub and a closure therefor said closure being of hollow formation and forming a compartment adapted to receive and distribute liquid under pressure, said compartment having a liquid distributing surface substantially equal in area with that of the closure and adapted to project a shower of liquid over the entire adjacent side of the bather.

2. In a bathing apparatus, a tub, means associated with the tub adapted to receive and distribute liquid under pressure, said means having a liquid distributing surface substantially equal in area to a wall of the tub, and a closure for the tub said closure being provided with a compartment adapted to receive and distribute liquid under pressure, said compartment having a liquid distributing surface substantially equal in area to that of the closure.

3. In a bathing apparatus, a tub, and a closure therefor having a hollow formation provided with orifices in its inner surface, said hollow formation being substantially co-extensive with the closure and adapted to receive and distribute liquid under pressure.

4. In a bathing apparatus, a tub, a liquid receiving and distributing compartment associated therewith having a liquid distributing surface substantially equal in area to a wall of the tub, a cover for the tub, a liquid receiving and distributing compartment in the closure having a liquid distributing surface substantially equal in area to that of the closure, a plurality of liquid supply pipes, a mixing pipe communicating with the plurality of supply pipes and adapted to supply the liquid to said compartments, and means whereby the flow of liquid through said pipes may be independently controlled.

In testimony whereof I affix my signature.

MARTHA V. BAUER. [L. S.]