Oct. 5, 1965 V. M. BOYETT, SR., ETAL 3,209,372

MASSAGE AND BATH APPARATUS

Filed Aug. 5, 1963 2 Sheets-Sheet 1

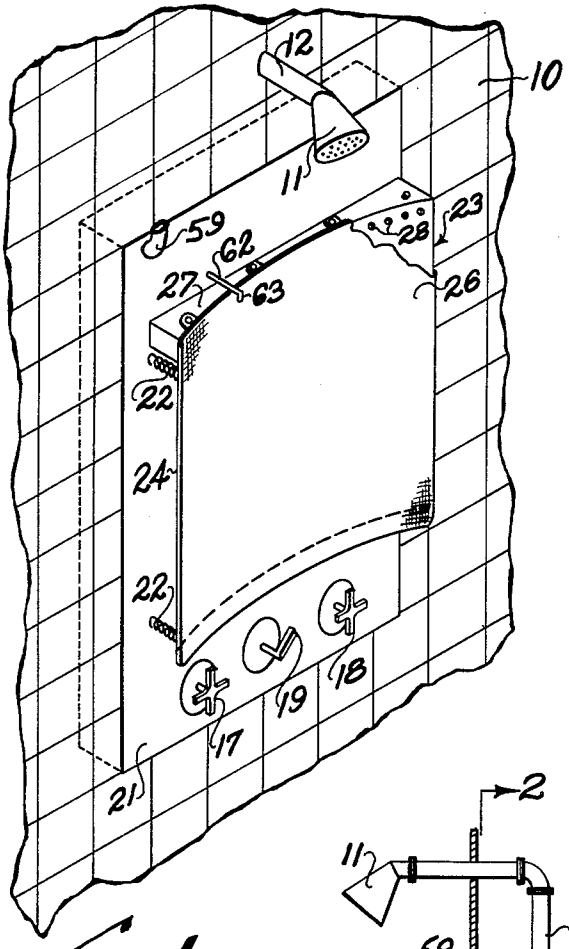


Fig. 1

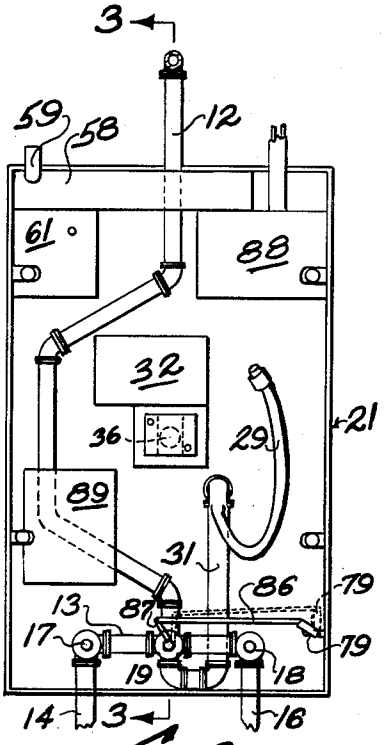


Fig. 2

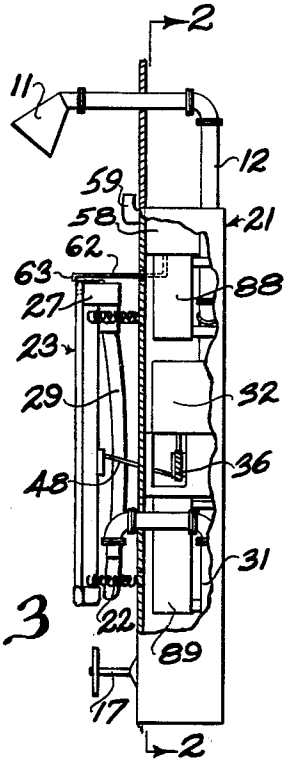


Fig. 3

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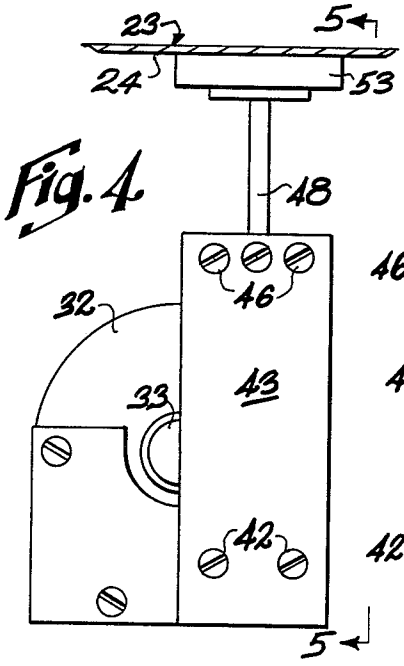


Fig. 4

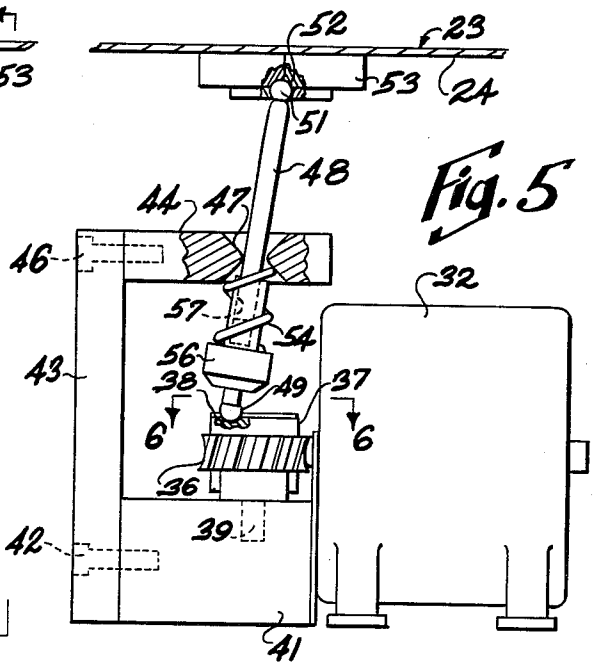


Fig. 5

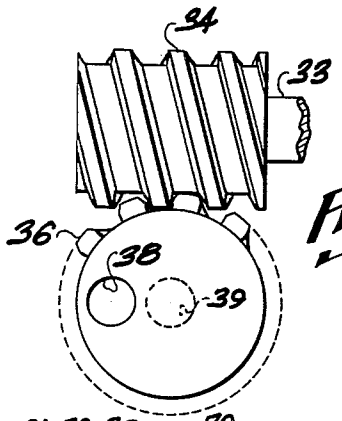


Fig. 6

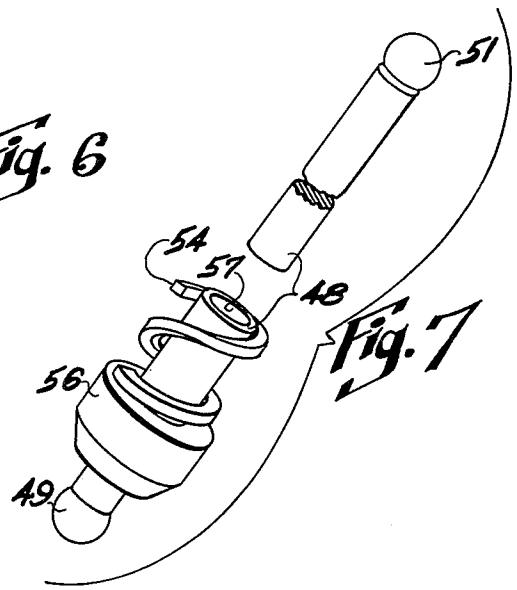


Fig. 7

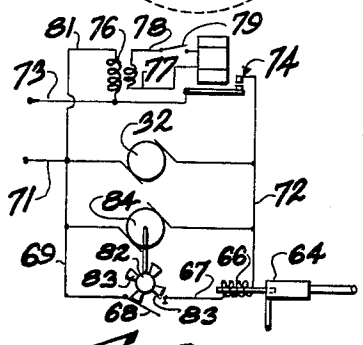


Fig. 8

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MASSAGE AND BATH APPARATUS

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7 Claims. (Cl. 4—158)

This invention relates to massage and bath apparatus and more particularly to such apparatus which is adapted to be mounted within a shower-like stall whereby the body of a user is massaged at the time it is bathed.

An object of our invention is to provide massage and bath apparatus which shall include a massage member which is adapted for lateral oscillating movement relative to the body concomitantly with the introduction of bath water onto the body.

Another object of our invention is to provide massage and bath apparatus of the character designated in which means is provided to dispense soap onto the body at predetermined intervals.

Another object of our invention is to provide massage and bath apparatus which is provided with a concavely curved exterior surface which conforms generally to the body of the user, thereby providing massage apparatus which is comfortable and covers a maximum area of the body of the user.

A further object of our invention is to provide massage and bath apparatus of the character designated which is simple and economical to manufacture and one which may be installed in conventional shower stalls and the like with a minimum of effort.

A still further object of our invention is to provide massage and bath apparatus of the character designated which takes up a minimum of space and one which is sanitary and is neat in appearance.

Briefly, our improved apparatus comprises a massage member which is mounted within a shower stall or the like in position to engage the body of a user. The massage member is adapted for lateral oscillating movement relative to the body and also carries water dispensing means whereby water is dispensed onto the body of the user as it is massaged by the massage member. The means for imparting lateral movement of the massage member includes an elongated member which is operatively connected at one end to the massage member and eccentrically connected at its other end to a rotatable member which in turn is connected to a power unit. Means is provided to limit lateral movement of the intermediate portion of the elongated member whereby the massage member is oscillated laterally.

Apparatus embodying features of our invention is illustrated in the accompanying drawings, forming a part of this application, in which:

FIG. 1 is an isometric view showing the massage and bath apparatus mounted in a shower stall;

FIG. 2 is a sectional view taken generally along the line 2—2 of FIG. 3;

FIG. 3 is a sectional view taken generally along the line 3—3 of FIG. 2;

FIG. 4 is an elevational view of the apparatus for imparting lateral oscillating movement to the massage member;

FIG. 5 is a view taken generally along the line 5—5 of FIG. 4, partly broken away and in section;

FIG. 6 is an enlarged, fragmental view taken generally along the line 6—6 of FIG. 5;

FIG. 7 is an enlarged, isometric view, partly broken away and in section, showing the elongated member which connects the rotatable member to the massage member; and,

FIG. 8 is a wiring diagram for the apparatus.

Referring now to the drawings for a better understanding of our invention, we show the massage and bath apparatus mounted in a conventional shower stall indicated at 10. The shower stall is provided with the usual shower head 11 which is in communication with a supply conduit 12. As shown in FIG. 2, the supply conduit 12 communicates with a branch conduit 13 which is connected to hot and cold water supply conduits 14 and 16, respectively. Suitable control handles 17 and 18 are provided for controlling the flow of hot and cold water, respectively. Also, an operating handle 19 is provided for controlling the flow of water through the conduit 12 to the shower head 11 in the usual manner.

Our improved apparatus comprises a housing 21 which is mounted in the wall of the shower stall 10 beneath the shower head 11, as shown in FIG. 1. Projecting outwardly from the housing 21 are resilient support members 22 which are adapted to support a massage member indicated generally at 23. As shown in FIG. 1, the massage member 23 is provided with a vertical plate 24 which is concavely curved to receive a portion of the body of a user. The vertical plate 24 is covered by a flexible sheet of material 26, such as cloth or the like, which is in position to engage the body of a user.

Extending transversely across the upper rear portion of the vertical plate 24 is a water tank 27 having a plurality of discharge openings 28 along the upper edge thereof in position to discharge water along the upper forward portion of the plate 24 whereupon it flows downwardly between the plate 24 and the flexible sheet of material 26 to thus apply water to the body of a user. Water is supplied to the tank 27 by a flexible conduit 29 which communicates with the conduit 12 by a branch conduit 31 whereupon water is supplied to the tank 27 upon actuating the handle 19 to cause flow of water through the conduit 12 and the shower head 11. By providing a flexible conduit 29, the massage member 23 is free to be moved laterally in a manner to be described hereinafter.

Mounted within the housing 21 is a power unit, such as a motor 32 having a shaft 33. Mounted on the shaft 33 is a worm 34 which is adapted to mesh with a worm gear 36, as shown in FIGS. 5 and 6. Secured to one face of the worm gear 36 is a disc-like member 37 having a socket 38 therein which is off-center relative to the wormgear 36. That is, the socket 38 is mounted eccentrically on the disc member 37. The worm gear 36 is supported by a shaft 39 which is in turn supported by a bracket 41.

Secured to the bracket 41 by suitable means, such as cap screws 42 is a forwardly extending support member 43 which in turn is connected to a transverse plate-like member 44 by cap screws 46. An opening 47 is provided in the plate-like member 44 for receiving an elongated actuating member 48 with a relatively close fit whereby lateral movement of the intermediate portion of the elongated member 48 is limited. Preferably, the sides of the opening 47 converge toward the elongated member 48, as shown in FIG. 5 whereby the elongated member 48 is adapted for pivotal movement relative to the plate-like member 44 but lateral movement thereof is limited. Preferably, the elongated member 48 is constructed in two parts, as shown in FIG. 5.

Formed integrally with one end of the elongated member 48 is a ball member 49 which is adapted to ride in the socket 38 whereby upon rotation of the rotatabe disc-like member 37, lateral oscillating movement is imparted to the adjacent end of the elongated member 48. A ball-like member 51 is carried by the other end of the elongated member 48 in position to ride in a socket 52 which is provided in a bearing block 53 carried by the vertical plate 24, as shown in FIG. 5. Preferably, the bearing

block 53 is formed in two parts whereby assembly of the ball 51 in the socket 52 is facilitated. A spring 54 is interposed between the plate-like member 44 and a spring abutment 56 which is carried adjacent the end of the elongated member 48 near the ball member 49. Accordingly, the ball 49 is urged into firm engagement with the socket 38 to thereby prevent separation of the ball 49 from the socket.

As shown in FIG. 5, the portion of the elongated member 48 adjacent the ball 49 is provided with an opening 57 for receiving the other portion of the elongated member 48 with a sliding fit whereby the effective length of the elongated member 48 may be varied as the rotatable member 37 rotates. That is, the compression spring 54 urges the portion of the elongated member 48 carrying the ball 49 away from the other portion thereof whereby the effective length of the elongated member may be varied to provide for smooth operation of the apparatus as the ball 49 moves about the shaft 39. As shown in FIG. 5, the ball 51 is held within the socket 52 by forming the bearing member 53 in two pieces, as shown.

Mounted within the housing 21 at an elevation above the water tank 27 is a tank for holding liquid soap or other suitable detergent. The soap is introduced into the tank through a filling opening 59. The soap solution is discharged from the tank 58 by a suitable soap dispensing assembly indicated generally at 61 through a discharge conduit 62 having a downturned end portion 63. The soap dispensing assembly 61 is provided with soap dispensing means, such as a pump 64, as shown in FIG. 8. The pump 64 is actuated by a solenoid 66 which is connected at one side to a lead 67 which in turn is connected to one side of a normally closed switch element 68. The other side of the switch element 68 is connected to a lead 69 that is connected to a line 71. The other side of the solenoid 66 is connected to a lead 72 which in turn is connected to a line 73 by a relay switch indicated generally at 74. The relay switch 74 is energized by an electromagnet which is connected to the low voltage side of a transformer 76 by leads 77 and 78. A switch element 79 is provided in the lead 78 whereby circuit to the electromagnet is deenergized. The high voltage side of the transformer 76 is connected to a lead 81 which in turn is connected to the line 71.

The normally closed switch 68 is closed at predetermined intervals by rotation of a rotatable member 82 having a plurality of cam elements 83 thereon. The rotatable member 82 is rotated by a clock motor 84 which is in circuit with the leads 69 and 72, as shown in FIG. 8. Also, the motor 32 is in circuit with the leads 69 and 72, as shown in FIG. 8.

The switch element 79 is preferably in the form of a mercury switch which is operatively connected to the operating handle 19 by a link 86, as shown in FIG. 2. That is, one end of the link 86 is pivotally connected to the mercury switch 79 while the other end thereof is pivotally connected to a short link member 87 which is carried by the operating member 19. Accordingly, upon actuation of the operating member 19 to introduce water through the conduit 12 and the conduit 29, the mercury switch 79 is closed to complete the circuit to the motors 32 and 84.

Preferably, the electrical control assembly is encased in a suitable housing 88 while the timing mechanism for the soap dispenser is enclosed within a suitable housing 89, as shown in FIG. 2.

From the foregoing description, the operation of our improved apparatus will be readily understood. The control members 17 and 18 are regulated in the usual manner to introduce hot and cold water through the conduits 14 and 16. Upon moving the operating member 19 to a position to cause the flow of water through the conduit 12 and through the conduits 31 and 29, the mercury switch 79 is moved to the dotted line position whereupon it is closed to complete the circuit to the electromagnet for the relay. Upon closing the relay switch 74, circuit is completed through line 73 and lead 72 to the motors 32 and 84 and the solenoid 66. Accordingly, the motor 32 imparts rotation to the rotatable member 37 through the worm 34 and worm gear 36 whereby the socket 38 revolves around the shaft 39 to thus cause lateral oscillation of the ball members 49 and 51 whereupon lateral oscillating motion is imparted to the massage member 23. That is to say, the intermediate portion of the elongated member 48 is held against lateral movement by the converging side walls of the opening 47. The amount of oscillation imparted to the massage member 23 may be varied by providing the socket 38 at various positions relative to the center of the rotatable member 37.

As the mercury switch 79 is closed, the timing motor 84 is also energized to thereby cause rotation of the rotatable member 82 whereby the cam members 83 permit closing of the switch 68 at predetermined intervals to thus supply current to the solenoid 66 whereupon soap is dispensed through the conduit 62 onto the massage member 23 at predetermined intervals. In view of the fact that water is continuously discharged through the openings 28 in the vertical concavely curved plate 24, the soap and water are thoroughly mixed prior to being discharged onto the body of a user.

From the foregoing, it will be seen that we have devised improved massage and bath apparatus in which a portion of the body is massaged at the same time it is bathed. By providing a massage member which is adapted for lateral oscillation in spaced relation to the power means for actuating the same, our massage member is not only completely removed from all electrical contact surfaces, but the massage member is adapted for free lateral movement on the resilient spring members 22. Also, by providing control means which actuates the massage member, the soap dispenser and the water supply concomitantly, our improved apparatus is extremely simple of operation. Furthermore, by connecting the water supply tank to the main supply of water by a flexible conduit, water is supplied continuously to the apparatus without having to provide large supply tanks on the massage member itself.

While we have shown our invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof, and we desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claims.

What we claim is:

1. Massage and bath apparatus comprising:
   (a) a massage member mounted on resilient support members in position to engage a body and adapted for lateral movement relative thereto,
   (b) a power unit,
   (c) a rotatable member connected to said power unit by a worm and gear assembly and disposed to be rotated thereby,
   (d) an elongated member operatively connected at one end by a ball and socket joint to said massage member and connected eccentrically at its other end by a ball and socket joint to said rotatable member whereby said other end moves laterally upon rotation of said rotatable member,
   (e) means limiting lateral movement of said elongated member intermediate the ends thereof whereby lateral movement of said other end thereof imparts lateral oscillating movement to said one end of the elongated member and the massage member carried thereby, and
   (f) a flexible water supply conduit communicating with said massage member to supply water thereto which is discharged from said massage member as it is moved relative to a body.

2. Massage and bath apparatus as defined in claim 1

in which a water supply tank is carried by said massage member and is in communication with said flexible member, there being a plurality of water discharge passageways in said tank in position to dispense water from said massage member.

3. Massage and bath apparatus as defined in claim **1** in which means is provided to dispense soap onto said massage member.

4. Massage and bath apparatus as defined in claim **3** in which a control unit is operatively connected to the soap dispensing means to actuate said dispensing means at predetermined intervals.

5. Massage and bath apparatus as defined in claim **1** in which the outer surface of the massage member is concavely curved laterally thereof and a flexible member covers said curved surface.

6. Massage and bath apparatus comprising:

(a) a massage member mounted on resilient support members in position to engage a body and adapted for lateral movement relative thereto,

(b) a power unit,

(c) a rotatable member connected to said power unit by a worm and gear assembly and disposed to be rotated thereby,

(d) an elongated member operatively connected at one end by a ball and socket joint to said massage member and connected eccentrically at its other end by a ball and socket joint to said rotatable member whereby said other end moves laterally upon rotation of said rotatable member,

(e) a transverse member extending transversely of said elongated member,

(f) there being a passageway through said transverse member to receive said elongated member intermediate the ends thereof and limit lateral movement thereof,

(g) a spring abutment on said elongated member adjacent said other end thereof,

(h) a spring member interposed between said spring abutment and said transverse member disposed to urge said other end toward said rotatable member, and,

(i) a flexible water supply conduit communicating with said massage member to supply water thereto which is discharged from said massage member as it is moved relative to a body.

7. Apparatus as defined in claim **6** in which the sides of said passageway through the plate-like member converge toward said elongated member.

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