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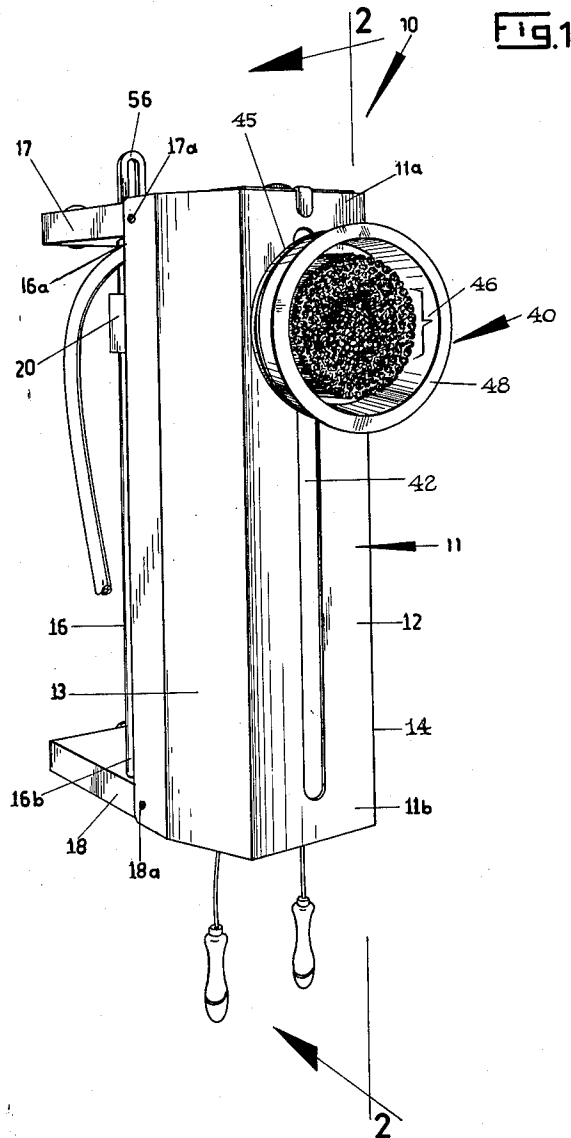
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ROTARY SHOWER BRUSH

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2 Sheets-Sheet 1



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ROTARY SHOWER BRUSH

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5 Claims. (Cl. 15—21)

This invention relates generally to bathroom equipment and more particularly to an apparatus adapted to scrub those areas of the body which ordinarily are difficult to reach and clean effectively, mainly the shoulders and upper areas of the back.

Numerous devices have been proposed to accomplish the scrubbing of the back while taking a bath or shower and, while certain of these devices accomplish the object with varying degrees of efficiency, there are, nevertheless, many disadvantageous features inherent in their designs, the most prevalent being perhaps complexity of construction and consequent cost of manufacture. Furthermore, a majority of the devices heretofore proposed have relied on electrically operated power means as a prime mover for the various moving parts, this constituting a security hazard as the life of the equipment becomes extended, particularly as the equipment is in the proximity of steam and water spray.

It is, therefore, a main object of my invention to provide a back cleansing brush for use by a person taking a bath or shower, which is referred to hereinafter as a roto-brush and which will enable a bather to scrub effectively those areas of the body which are difficult to reach with conventional handbrushes.

It is another important object of my invention to provide a roto-brush which may be moved vertically upwardly and downwardly thus ensuring that the complete back is thoroughly scrubbed.

It is a further object of my invention to provide a roto-brush which will during its operation revolve about its axis, thus imparting a rotary scrubbing action to the user's back.

It is still another object of my invention to provide a roto-brush which will be rotated during operation by the action of water ducted from either a hot, cold or combination main tap, or by adaptor means from a conventional shower discharge pipe.

It is a further object of my invention to provide a roto-brush, the brush member of which is charged with the water used in actuating the rotary means.

It is still another object of my invention to provide a roto-brush, which will dispense an admixture of soap and water through the brush member thereof, thus further aiding the cleansing process.

It is yet a further object of my invention to provide a roto-brush which is simply and securely affixed to a required position on a wall adjacent the bath or shower.

It is also an object of my invention to provide a roto-brush which is of simple construction and relatively low cost, thereby making it compatible with wide ownership.

These and other objects and features of this invention will become apparent when taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of a roto-brush embodying the present invention.

FIG. 2 is a sectional side elevation of the illustration depicted in FIG. 1, taken on the line 2—2 and showing particularly the assembly of the brush member and its relationship with the motivating means.

FIG. 3 is a rear view of the illustration depicted in FIG. 1.

Referring now to FIGS. 1 and 2, a roto-brush generally designated by the arrow 10 includes a substantially rectangular outer casing 11 having a front wall 12 and side walls 13 and 14.

Two vertical, parallel, spaced apart guide rods 15 and

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16 are rigidly affixed at their ends 15a and 15b, and 16a and 16b respectively, within two mounting blocks 17 and 18, said blocks being attached by conventional screw means 17a and 18a within outer casing 11 and projecting perpendicularly outwardly therefrom, block 17 being located at the top end 11a and block 18 being located at the lower end 11b of casing 11.

Referring also to FIG. 3, a bracket 19 located transversely between guide rods 15 and 16 has two guide members 20 and 21 extending outwardly therefrom, each of said members having guide holes 20a and 21a respectively, formed longitudinally and substantially centrally therethrough. Guide holes 20a and 21a are adapted to slidably receive guide rods 16 and 15 respectively so that upon assembly bracket 19 may be slidably raised or lowered on guide rods 16 and 15.

Two stretch cords 22 and 23 made of a suitably elasticized material have their lower ends 22a and 23a attached by conventional hook means 24 and 25 respectively to eyebolts 26 and 27, said bolts being affixed within mounting block 18. Cords 22 and 23 are adapted to travel substantially longitudinally upwardly within casing 11, passing rearwardly of bracket 19 and thence through two semi-circular guide rings 28 and 29 respectively, said rings being firmly affixed to mounting block 17. Upper ends 22b and 23b of cords 22 and 23 respectively are attached by hooks 30 and 31 to the top edge 19a of bracket 19 in a spaced apart relationship.

Two pull cords 32 and 33 have their upper ends 32a and 33a attached to the lower edge 19b of bracket 19 in a spaced apart relationship, thereafter extending longitudinally downwardly within casing 11, lower ends 32b and 33b terminating in, and being firmly attached to, two handle members 34 and 35 respectively.

Two pulleys 36 and 37 are rigidly affixed in a spaced apart relationship to the bottom of mounting block 18, extending longitudinally outwardly therefrom, cords 32 and 33 respectively passing over said pulleys 36 and 37.

A conventional water turbine unit 38 is rigidly mounted on bracket 19 by conventional nut and bolt means 39 and is adapted to rotate a brush unit 40 by means of a drive shaft 41, said shaft passing through a slot 42 formed centrally and longitudinally in front wall 12 of casing 11. Turbine unit 38 is powered by water from a main tap or other conventional source of water supply, including the supply pipe of a shower attachment, a flexible water hose 43 being connected to an inlet port 44 on turbine 38.

Referring particularly to FIGS. 1 and 2, brush unit 40 includes a circular back plate 45 having a forwardly projecting peripheral flange 45a. A circular brush 46 having a backing disc 46a is located centrally within back plate 45, being retained thereon by conventional nut and bolt means 47. Integral with and extending outwardly from backing disc 46a is a concentric flange 46b, flange 46b passing through an orifice 45b formed centrally through back plate 45. Flange 46b is adapted to achieve a press on fit over a reduced section 41a of drive shaft 41, the complete assembly of brush unit 40 being seamed to drive shaft 41 by a lock nut 41b screwed onto the threaded end of a drive shaft extension rod 41c, rod 41c which has a rectangular cross section being adapted to press through a rectangular orifice 46c formed centrally through backing disc 46a.

A circular wall of suitable sponge or foam rubber material 48 is affixed to the edge of back plate 46 by a water impervious adhesive and has its outer surface 48a defined by flange 45a of plate 45. Circular sponge wall 48 is adapted to project outwardly from plate 45a to a distance slightly in excess of the outward projection of the bristles of brush 46.

A soap dispensing unit 49 includes a substantially rectangular tank 50 located at the top of casing 11, having a

filling port 50a and screwed cap seal 51. Tank 50, which is adapted to receive and dispense a liquid soap solution 52, has a discharge port 53 located within its lower portion, said port 53 being adapted to receive a first end 54a of a flexible tube 54 and to introduce soap solution 52 therein. Opposite end 54b of tube 54 is connected to an inlet port 55 in turbine 38. It should be noted that any conventional method of soap control may be included in the system such as, for instance, a simple on-off tap located in a convenient position.

Wall mounting means for roto-brush 10 includes a yoke member 56 which is rigidly attached to mounting block 17 in a substantially central location, projecting upwardly therefrom and adapted to receive conventional screw means for securing roto-brush 10 to a wall adjacent the bath or shower. A plurality of rubber suction cups 57, affixed by conventional screw means to mounting blocks 17 and 18 are adapted to achieve a suction attachment between roto-brush 10 and the wall upon which it is to be mounted.

In operation, roto-brush 10 is mounted at an optimum height on the wall as heretofore described and hose 43 connected to a main water tap or shower outlet pipe. Soap dispensing unit 49 having been charged with liquid soap 52 is actuated by adjusting its control means to dispense, and main tap turned on to a required delivery pressure. Water from the tap is then ducted via hose 43 to turbine 38 wherein it operates the impellers, rotates the driveshaft 41 and consequently brush unit 40, causing brush 46 to rotate. The water with its admixture of liquid soap is then ducted through driveshaft 41 and discharged into brush 46, via a plurality of orifices 60 formed through backing disc 46a. It will be apparent that due to the action of centrifugal force the water and soap solution discharged into rotating brush 46 will be flung outwardly, circular sponge 48 preventing the solution from being sprayed outwardly beyond the limits of brush unit 40.

Upon a person taking a bath or shower and desiring to scrub his back and shoulder regions, he presents his back to roto-brush 10 and, grasping handles 34 and 35, one in each hand, he pulls cords 32 and 33 respectively in a downwardly and forwardly direction thus causing bracket 19 to slide down guide rods 15 and 16. Brush unit 40 may then be lowered to whatever position is required and the bather's back pressed against rotating brush 46 thereby receiving a brisk rotary scrub with said brush and its charge of water and soap solution. Circular sponge 48 which is sufficiently resilient to conform to the contours of a back will ensure that substantially all the water and soap is confined to the applied back areas. By releasing the downward pressure on cords 32 and 33 bracket 19 is automatically elevated by stretch cords 22 and 23 which are sufficiently tensioned to hold bracket 19, turbine 38 and brush unit 40 in their top position in casing 11.

Thus it will be seen that roto-brush 10 may have its brush 46 moved vertically upwardly or downwardly of slot 42 according to the will of the bather. By lateral movement of his body the bather may position himself so that his complete back area is treated in the manner described.

An alternative form of mounting roto-brush 10 is to reverse the complete assembly so that cords 32 and 33 and their respective handles 34 and 35 are pulled forwardly and downwardly over the shoulders of a bather. In this alternative position soap unit 49 must of necessity be located within the opposite end of casing 11 to the one specified in this application.

The general design of the individual parts of the invention as explained above may be varied according to requirements in regards to manufacture and production thereof, while still remaining within the spirit and prin-

ciple of the invention, without prejudicing the novelty thereof.

The embodiments of this invention in which an exclusive property or privilege is claimed are defined as follows:

1. A rotary shower brush including a rectangular casing including a front wall; said front wall having a vertical slot formed therethrough for substantially the length thereof; a mounting bracket vertically slidable within said casing; selective positioning means for raising and lowering said bracket; a brush rotatable in a substantially vertical plane parallel with, and external of said front wall; a drive shaft rotatably supported by said mounting bracket and extending forwardly therefrom through said slot to support said brush; said shaft extending rearwardly into said casing; a water turbine including impellor means attached to said bracket within said casing; said rearwardly extending portion of said shaft being drivable by said impellor means; water pressure supply means attached to said turbine; said shaft having a forwardly extending duct formed therein to conduct water from said turbine to said brush after activating said impellor means; and attachment means for mounting said casing on a bathroom wall.

2. A rotary shower brush as defined in claim 1 in which said mounting bracket is slidably located upon two vertically mounted guide rods, said rods being affixed in a parallel spaced apart relationship within said casing, said mounting bracket including two parallel spaced apart guide blocks projecting perpendicularly outwardly therefrom; each of said guide blocks having a guide hole formed vertically therethrough, said guide rods passing through said guide holes in slidable relationship thereto.

3. A rotary shower brush as defined in claim 1 in which said selective positioning means include at least one resilient stretch cord having a first end connected to an upper edge of said mounting bracket and passing through a guide ring located above said bracket within said casing, said cord thereafter passing downwardly within said casing and terminating at its second end in a hook, said hook being affixed to an eye bolt located within said casing; said resilient cord being tensioned sufficient to retain said bracket in an upper location within said casing; at least one non-resilient pull cord having a first end affixed to a lower edge of said bracket, said pull cord depending downwardly within said casing and passing through a pulley located at the lower end of said casing, thereafter terminating at its second end below, and exteriorly of said casing, said second end being attached to a handle.

4. A rotary shower brush as defined in claim 1 in which said brush includes a backing disc; a multiplicity of bristles projecting outwardly from said backing disc; said disc having a perforated centre section and a concentric, rearwardly projecting flange; said backing disc being located centrally within a circular back plate and retained thereon by nut and bolt means; said back plate having an orifice formed centrally therethrough; said orifice receiving said flange; said backing disc having a square sectioned hole formed through its transverse axis; a resilient wall of foam rubber material attached to the edge of said back plate by water impervious adhesive means; said wall projecting perpendicularly forwardly a distance sufficient to project beyond the limits of said bristles.

5. A rotary shower brush as defined in claim 1 including container means for liquid soap mounted at the top of said casing; and pipe means ducting said liquid soap from said container to the interior of said turbine.

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