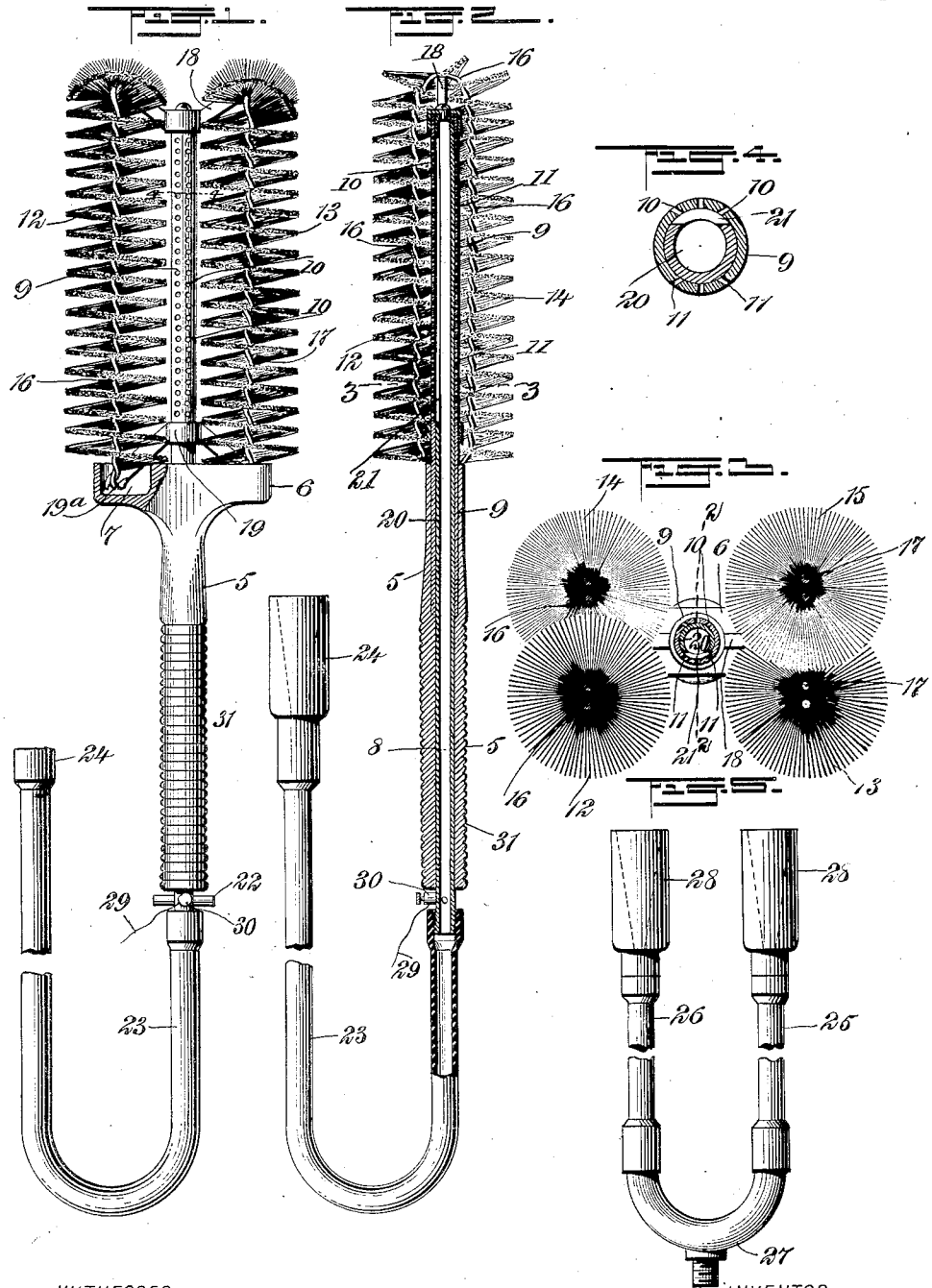
H. HERTZBERG.

ELECTRIC NEEDLE SPRAY BATH BRUSH.

APPLICATION FILED JULY 5, 1902. RENEWED SEPT. 10, 1903.

929,947. Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.



WITNESSES:

Julius H. Hart

H. C. Bunkay

INVENTOR

Harry Hertzberg

BY Munn & Co

ATTORNEYS.

H. HERTZBERG.

ELECTRIC NEEDLE SPRAY BATH BRUSH.

APPLICATION FILED JULY 5, 1902. RENEWED SEPT. 10, 1903.

**929,947.** Patented Aug. 3, 1909.

2 SHEETS—SHEET 2.

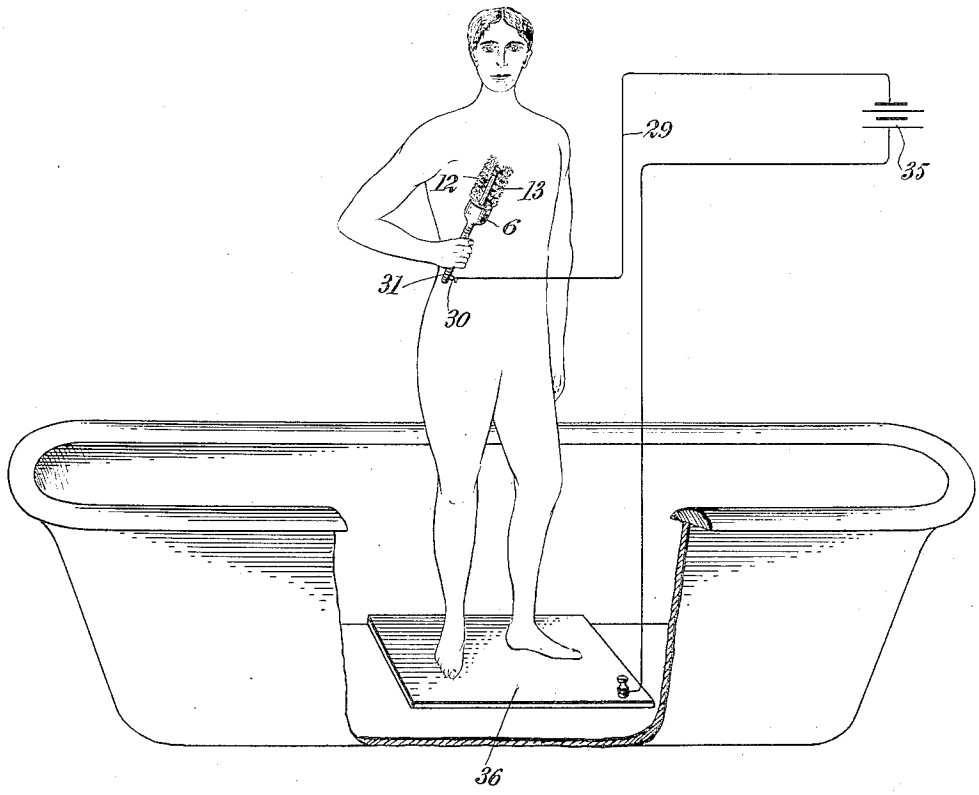



FIG. 6.

WITNESSES:

Julius H. Kuhn

H. J. Bernhard

INVENTOR

Harry Hertzberg

BY

Munn & Co

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

HARRY HERTZBERG, OF NEW YORK, N. Y.

## ELECTRIC NEEDLE-SPRAY BATH-BRUSH.

No. 929,947. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed July 5, 1902, Serial No. 114,482. Renewed September 10, 1903. Serial No. 172,695.

*To all whom it may concern:*

Be it known that I, HARRY HERTZBERG, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Electric Needle-Spray Bath-Brushes, of which the following is a full, clear, and exact description.

My invention relates to improvements in bath brushes, in which I aim to produce an improved structure that is capable of securing the two-fold effect of friction due to rubbing the human skin by a bristle brush and the pricking effect of jets of water (either hot or cold).

My invention includes various novel features. According to my invention a spray tube is provided having jet perforations facing the bristles or fluid absorptive rubbing portion so as to direct a spray upon the fluid absorptive rubbing portion. According to my invention this spray tube is located exteriorly of the fluid absorptive rubbing portion and directs its spray toward the surface of the fluid absorptive rubbing portion. According to my invention, the spray tube and valve are combined, comprising two tubular parts, one within the other and one rotatable axially relatively to the other, and the valve operation is effected by such rotation of one of the parts, a cross-bar or gripping piece being located in proximity to the handle. According to my invention soft and rough rubbing surfaces are provided to be used as required.

The improved brush is especially well adapted to restore or establish good circulation in any part of the human body, and in use the brush is kept in a clean sanitary condition by the water being supplied to the bristles and to the skin of the user, thus making the water flow over the body of the user when the brush is rubbed against the skin, and also preventing splashing of the needle-spray, so that it is possible to take a bath in a narrow place or vessel without wetting the floor.

The parts of the brush are so combined and arranged that sharp metallic projections are avoided which may have a tendency to tear, scratch or injure the skin.

With the brush is associated a novel form of valve that is easily manipulated and which is arranged to shut off the water supply or to direct the spray to the soft or rough surfaces of the brush.

I avoid the employment of reservoirs, and produce a brush of light, simple construction which can be handled with ease and facility, by making the handle in the form of a hollow core or tube adapted to have a hose or flexible tube connected thereto, for supplying water to the needle-spray. Provision is also made for the application of an electric current to the body by the provision of an electrically conductive spray tube and means for connecting a source of electric current to the spray tube so that the jets of water will conduct the electric current to and through the wet fluid absorptive rubbing portion and to the body of the user, and by the provision of an insulated handle so that the electric current will be applied only at parts to which the rubbing surface of the brush is applied.

With these ends in view, the invention consists of the novel construction and combination of parts, which will be hereinafter fully described and claimed.

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

Figure 1 is a side elevation partly broken away and in section, of a bath brush embodying my invention; Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 3 through the improved bath brush; Fig. 3 is a sectional plan view, the plane of the section being indicated by the dotted line 3—3 of Fig. 2. Fig. 4 is an enlarged cross section on the line 4—4 of Fig. 1 through the tube and the regulating valve, the rest of the brush being omitted; and Fig. 5 is a detail view of one form of a double water coupling which may be used in connection with the improved brush to supply hot or cold water thereto. Fig. 6 is a view, partly in perspective, illustrating means whereby an electric current may be supplied to the person of the bather when water flows through the improved brush.

The handle 5 is preferably of cylindrical form, and at one end it is enlarged to produce a head 6, the latter being provided with sockets or recesses 7. The handle 5 and its

head 6 are provided with a longitudinal passage 8, and in the handle and its head is firmly secured one end portion of the needle-spray tube 9, the latter extending a suitable distance beyond the head and occupying a co-axial relation to the handle. The outer end of the tube 9 is closed in any suitable way, but this tube is provided with rows of spray openings 10, 11, the same being arranged to face in opposite directions, as indicated more clearly by Figs. 3 and 4. It will be understood that the spray openings 10, 11, are provided in that part of the tube which is extended beyond the head of the handle, and this projecting part of the spray tube is adapted to support the means employed by me to hold the soft and harsh bristles which form the soft and rough faces respectively of the brush. I employ two rows of coarse bristles, indicated at 12, 13, and corresponding rows of soft bristles, indicated at 14, 15, and one row of coarse bristles is arranged to have interlacing relation to the row of adjacent soft bristles, thus the bristles 12 and 14 are interlaced, while the bristles 13 and 15 are interlaced, as shown more clearly by Fig. 3. The rows of bristles are fastened in any suitable way to cores which are preferably of metal, and in the manufacture of the brush, I prefer to employ cores of wire which are twisted together to form strands adapted to grip and hold the bristles of the brushes. The strands forming the cores of the bristles 12, 14, are indicated at 16, while the strands forming the cores for the coarse and soft bristles 13, 15, are indicated at 17, in Fig. 3. The cores for the bristles 12, 14 are made from pieces of twisted wire which are doubled upon themselves, and in a similar way the wires forming the cores for the bristles 13, 15, are doubled so that each core will sustain a row of coarse bristles and a row of soft bristles.

The metallic cores of the rows of bristles are fastened to bridge pieces or cross heads 18, 19, the former of which is secured in any suitable way to the outer end of the perforated spray-tube 9, while the other cross head or bridge piece is attached to the spray-tube at a point quite close to the head 6 of the handle. This cross head 19 is provided with downwardly inclined portions 19[a], see Fig. 1, and at the lower ends of said inclined portions of the cross head are fastened the ends of the strands forming the cores of the bristles. The ends of said cross head and the ends of the core strands are extended into and fixed in the recesses 7 of the head 6, and the metallic parts of the brush are thus housed within the head of the handle in a way to prevent them from scratching, tearing or injuring the flesh of the user.

The rows of bristles are disposed on opposite sides of the spray-tube and the jet openings 10, 11. The openings of the jet tube open through the latter on lines between the two sets of bristles 12, 14 and 13, 15, respectively, whereby jets of water issue in the form of a spray from one side or the other of a brush according to the adjustment of an internal valve tube 20. This valve tube is arranged snugly within the jet tube 9 and it extends through said tube 9 and the passage 8 of the handle, one end of the valve tube extending or projecting beyond the handle for a suitable distance, as shown by Figs. 1 and 2. The valve tube thus extends the full length of the brush and it is provided with a slot or waterway 21, the latter extending longitudinally of the valve tube for a distance equal to the length of the series of jet openings in the perforated tube 9. The width of the slot or waterway 21 is equal to the width of the series of openings 10 or 11, in one side or the other of the spray-tube 9, and this valve tube is adapted to be turned on its axis within the spray-tube in order that the waterway or slot 21 therein may be brought opposite to either of the rows of jet openings 10 or 11, or opposite to a solid non-perforated part of the spray tube 9. The projecting end of the valve tube 20 is provided with a cross bar 22 which is adapted to be grasped by the fingers in order to rotate said valve tube within the handle or the spray tube, and to this extended end of the valve tube is adapted to be coupled means for supplying the brush with hot or cold water, as may be desired. A flexible tube or hose 23 may be attached to the exposed end of the valve tube 20, and this tube may have a single suitable connection 24, shown by Figs. 1 and 2, which may be fitted on either a hot or cold water faucet. In lieu of using the single water tube, I may employ a double water tube having the legs 25, 26, united by a T coupling 27, and these legs are provided with the connections 28, shown by Fig. 5, which may be fitted on the hot water and the cold water faucets respectively, thus making provision for supplying hot or cold water to the valve tube of the brush.

If it is desired to supply a current of electrical energy to the body when the bristles are saturated with water, an electrical conductor 29 may be clamped in a binding post 30, which is secured to the projecting end of the metallic valve tube 20, the latter thus serving in part as a conductor for the electrical current. The electric circuit is shown by Fig. 6, the same including a battery 35 and an electrode 36. This electrode is represented as a foot-plate on which the bather should stand, and the electric circuit is completed through the body of the bather, the brush and the foot-plate, although I reserve the right to form a complete circuit in any equivalent way. The handle 5 and the head 6 are made of hard rubber in order to serve as an insulator to the tube 20 in the application

of the electric current, and this handle is preferably provided with a ribbed or corrugated surface 31, thus preventing the brush from slipping in the hand when using it in soapy water.

In using the improved brush, one of the tubes is connected with the faucet and the valve tube 20 is adjusted to direct the spray through either group of openings on the coarse and soft side of the brush. The brush is rubbed frictionally against the skin and the spray is directed in needle like jets against the body, thus securing at one and the same operation the beneficial effects of the frictional rub and the spray bath. The valve may be conveniently manipulated at any time to change the course of the flow of water through the brush, or the valve may be turned in a direction which will bring the waterway 21 opposite to a non-perforated part of the tube 9, thus cutting off the flow of water.

It is evident that any suitable substance may be used in lieu of hard rubber, to form the handle and serve as an electrical insulator, and that the bristles when worn may be replaced by fresh or new bristles.

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

1. A brush of the character described, comprising a handle, groups of coarse and soft bristles, and means for directing the spray between either the coarse or soft bristles.

2. A brush of the character described, having groups of coarse and soft bristles, a perforated spray tube provided with openings arranged to direct a needle spray between the groups of bristles, and means for controlling the flow of water through the needle spray toward either of said groups.

3. A brush of the character described, having groups of bristles, a spray tube provided with perforations arranged to direct water between the bristles, and a valve tube adjustable on its axis and within the spray tube.

4. A brush of the character described comprising a handle, a spray tube having sets of jet openings facing in different directions, groups of bristles each disposed in the plane of the jet openings of one set, and an adjustable valve arranged to control the flow of water through either set of jet openings.

5. A brush of the character described, comprising a suitable handle, a spray tube having a perforated part exposed beyond the handle, groups of bristles supported on the handle and the tube and disposed on opposite sides of the perforations in said tube, and a valve tube disposed within the spray tube and having a waterway arranged to control the out-flow of water through the perforations on either side of the spray tube.

6. A brush of the character described, comprising a handle provided with a recessed head, a perforated spray tube, cross heads attached to the spray tube, metallic cores attached to the cross heads, the ends of the cores and the ends of one of the cross heads being housed within the recesses of the head on the handle, bristles attached to the metallic cores, and means for controlling the flow of water through the spray tube.

7. A brush of the character described having a handle, a spray-tube provided with sets of jet openings facing in different directions, cross heads fastened to said tube, and groups of bristles provided with cores attached to the cross heads and supported thereby in spaced relation to the different sets of jet openings in said spray tube.

8. A brush of the character described, having a spray tube provided with independent sets of jet openings, one set of said openings extending through one side of the tube, and another set of jet openings extending through the opposite side of said tube, groups of bristles disposed on opposite sides of the tube, and each group having certain bristles disposed in the path of jets adapted to issue through certain openings of one set and other bristles of the group being disposed out of the path of jets to issue through other openings of the sets, and means for controlling the flow of liquid through either set of jet openings and toward one group or the other of the bristles.

9. A brush of the character described having a fluid absorptive rubbing portion, a spray tube and valve comprising two tubular parts, one within the other, and one rotatable axially relatively to the other, the spray tube being located in proximity to the fluid absorptive rubbing surface, a handle, and gripping means located in proximity to the handle for actuating the rotatable part of the spray tube and valve.

10. A brush of the character described, having groups of coarse and soft bristles, a perforated spray tube provided with openings arranged to direct a needle spray between either group of bristles, and angularly movable means co-axially arranged with the spray tube for controlling the flow of water through the tube openings.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY HERTZBERG.

Witnesses:
EMMA T. HERTZBERG,
DAVE MICHALOVITZ.