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W. E. BURNETT

ROTARY HYDRAULIC BATH BRUSH

Filed March 5, 1927

Fig. 1.

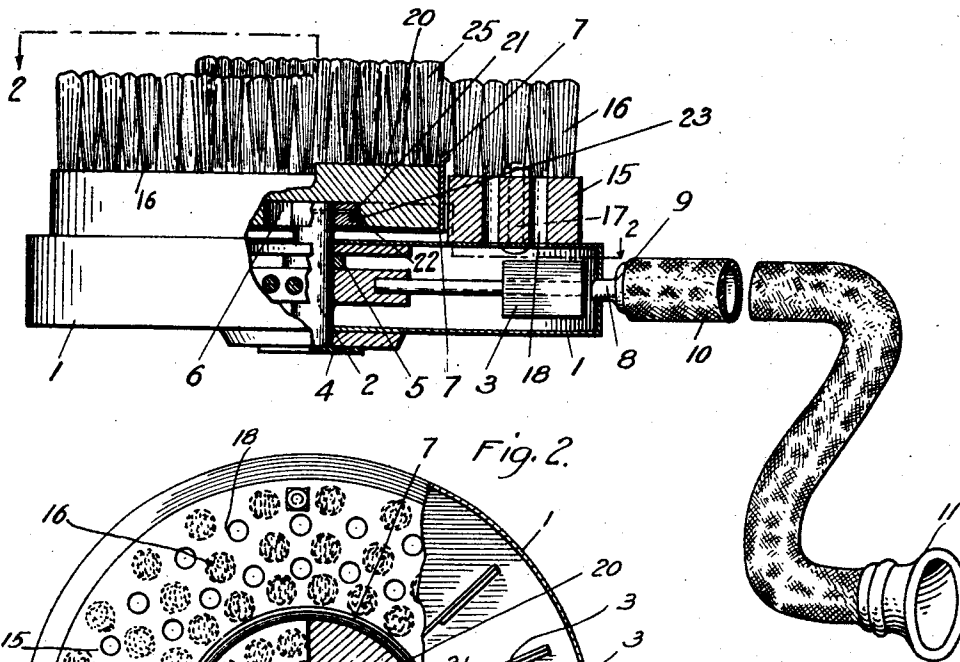


Fig. 2.

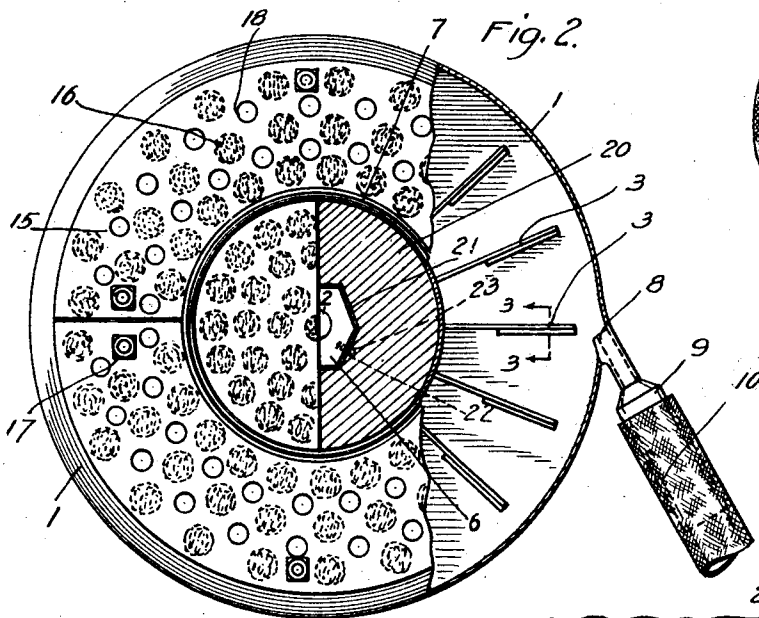


Fig. 3.

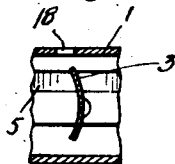
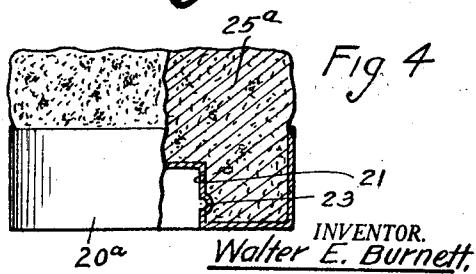


Fig. 4.



INVENTOR.  
*Walter E. Burnett.*

BY

*R. W. Smith.*

ATTORNEY.

# UNITED STATES PATENT OFFICE.

WALTER E. BURNETT, OF LOS ANGELES, CALIFORNIA.

## ROTARY HYDRAULIC BATH BRUSH.

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This invention is a rotary brush particularly adapted for bath use, and propelled by a fluid which is discharged alongside the rotary brushing element for wetting the same so as to provide the desired washing action.

It is the object of the invention to provide a device which is adapted for connection to a usual water supply under pressure, as for example the ordinary household faucet, with the water employed for propelling the rotary brushing element and then discharged through a stationary brush surrounding the rotating element, whereby a rotary brushing action and a steady spray discharge of water is obtained without the water being centrifugally thrown and thus unnecessarily scattered as would result if it were discharged directly through the rotating brush.

It is a further object of the invention to provide a construction adapted for ready interchanging of rotary brushing elements comprising various types of sponges, bristles, etc. adapted to produce desired cleansing and massaging effects, it being understood that reference hereinafter to a brushing element is meant to include any desired sponge, bristle or other suitable construction.

It is a still further object of the invention to provide a simple and inexpensive but practical construction, which is not liable to get out of order and which is extremely durable and efficient.

Further objects of the invention will be readily understood from the following description of the accompanying drawings, in which:

Fig. 1 is a side elevation of the device, partly in axial section.

Fig. 2 is a plan view partly in section on the line 2—2 of Fig. 1.

Fig. 3 is a detail section on the line 3—3 of Fig. 2.

Fig. 4 is a side elevation, partly in axial section, showing a modified form of interchangeable rotary brushing element.

The construction includes an annular closed casing 1 having a shaft 2 journaled therein with a plurality of radial blades 3 fixed to the shaft and forming a rotor adapted for fluid propulsion. One end of the shaft is journaled in end bearing 4 and its opposite end has a collar bearing 5 and then projects through the face of the casing

with a non-circular engaging head 6 and a radially projecting cup-shaped receptacle 7 fixed on said projecting end of the shaft.

The blades 3 are adapted for impingement by a stream of water discharged tangentially into the casing through a nozzle 8 at its outer periphery so as to rotate shaft 2; and in order to obtain maximum efficiency and the desired velocity the nozzle preferably has a restricted discharge end and the blades 3 may be curved axially of the casing as shown in Fig. 3.

Water may be supplied to nozzle 8 from a usual faucet (not shown), and for this purpose the nozzle projects outwardly beyond casing 1 as shown at 9, and is adapted for connection to a flexible hose 10 which at its opposite end is provided with a quick-detachable connection 11 adapted to be slipped over the end of a faucet.

The shaft 2 rotated by discharge of water through nozzle 8, supports a rotary brushing element, and the flow of water is discharged from casing 1 through a stationary brushing element which surrounds the rotating brush. As an instance of this arrangement a backing 15 carrying projecting bristles 16 or other suitable brushing means, is fixed on the face of casing 1 by bolts 17, so as to surround the cup-shaped receptacle 7, and spray discharge ports 18 open through the face of the casing and through the backing 15 for discharging water in a steady spray through the bristles 16.

The rotary brushing element employed in connection with the stationary brush as thus described, is removably mounted in receptacle 7 and is engaged by the head 6 so as to rotate with shaft 2. For this purpose the rotating element includes a backing 20 adapted to slip into receptacle 7 and having a non-circular recess 21 in its base corresponding to the non-circular head 6 and adapted to be received thereover. The backing 20 may be removably held in place by a spring pressed ball 22 in head 6 adapted for engagement in a cooperating depression 23 in the wall of recess 21, whereby backing 20 is normally securely held but may be removed by a sharp pull thereon.

A brushing means is carried by backing 20 to form the rotary brushing element, and preferably projects slightly beyond the stationary brushing means 16; and in practice rotary brushing elements having various types of brushing means may be provided

for interchangeable mounting in receptacle 7. As an instance of this arrangement the backing 20 shown in Fig. 1 supports bristles 25, while in Fig. 4 the backing 20<sup>a</sup> is an open container having a sponge 25<sup>a</sup> fixed therein and forming the brushing means.

In operation the rotary brushing element is turned with shaft 2 by the discharge of water through nozzle 8, and said rotary brushing element projecting slightly beyond the stationary brushing element performs the major brushing action, while the water discharge through ports 18 and thence through the surrounding stationary brushing element saturates the entire brushing surface to produce the desired washing action without scattering the water unnecessarily as would result from discharge directly through the rotating element.

I claim:

1. A rotary brush comprising a casing having axially spaced back and face walls and a peripheral wall connecting the back and face walls, a shaft journaled in the casing and projecting through the face wall, a rotor fixed on the shaft in the casing, means for discharging fluid into the casing for turning the rotor, a non-circular head on the projecting end of the shaft, a rotary brushing element having a backing provided with a corresponding non-circular recess adapted for quick removable reception on the non-circular head for turning the rotary brushing element with the shaft, a yieldable friction locking means on the non-circular head adapted to releasably engage the wall of the non-circular recess, and a stationary brushing element comprising a plurality of brushing means projecting from a backing, the said backing being fixed on the face wall of the casing around the space occupied by the rotary brushing element, the face wall of the casing and the backing for

the stationary brushing element having aligned apertures therethrough between adjacent brushing means of the stationary brushing element, and the rotary brushing element projecting slightly beyond the stationary brushing element.

2. A rotary brush comprising a casing having axially spaced back and face walls and a peripheral wall connecting the back and face walls, a shaft journaled in the casing and projecting through the face wall, a rotor fixed on the shaft in the casing, means for discharging fluid into the casing for turning the rotor, a rotary brushing element mounted on the projecting end of the shaft, and a stationary brushing element comprising a plurality of brushing means projecting from a backing, the said backing being fixed on the face wall of the casing around the space occupied by the rotary brushing element, and the face wall of the casing and the backing for the stationary brushing element having aligned apertures opening therethrough between adjacent brushing means of the stationary brushing element.

3. A rotary brush comprising a closed casing, a shaft journaled in the casing and projecting through the wall of the casing which forms the face of the casing, a rotor on the shaft in the casing, means for discharging fluid into the casing for turning the rotor, a rotary brushing element mounted on the projecting end of the shaft, and a stationary brushing element comprising a plurality of brushing means projecting from the face wall of the casing around the space occupied by the rotary brushing element, the said face wall of the casing having apertures opening therethrough between adjacent brushing means of the stationary brushing element.

In testimony whereof I have affixed my signature.

WALTER E. BURNETT.