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2,613,381

FOUNTAIN BRUSH IMPLEMENT

Filed July 30, 1948

2 SHEETS—SHEET 1

Fig. 1.

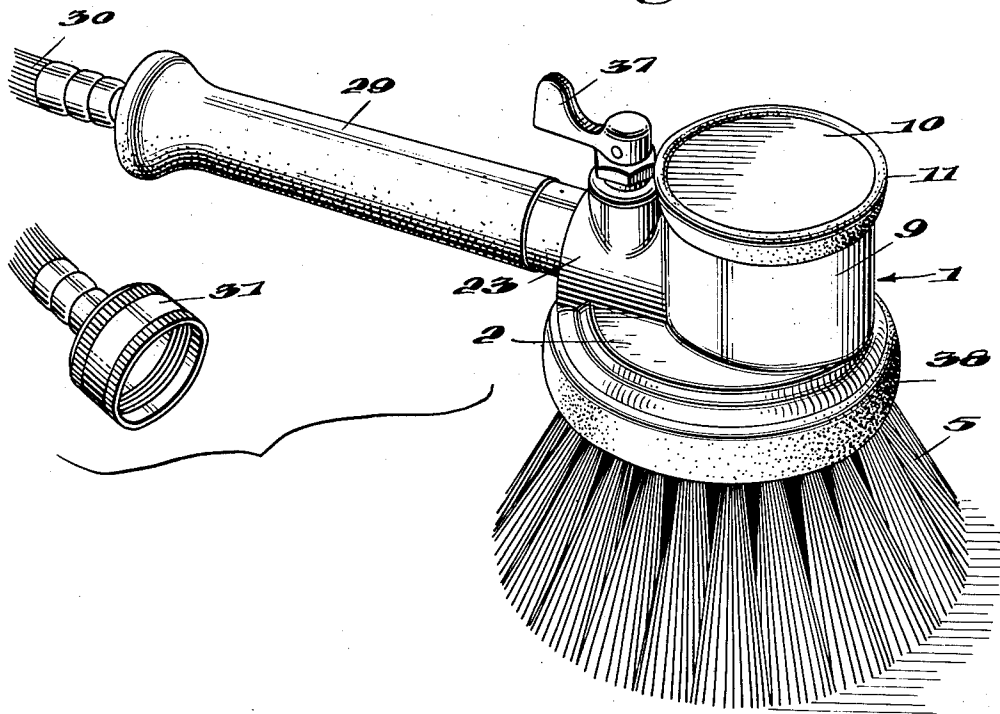
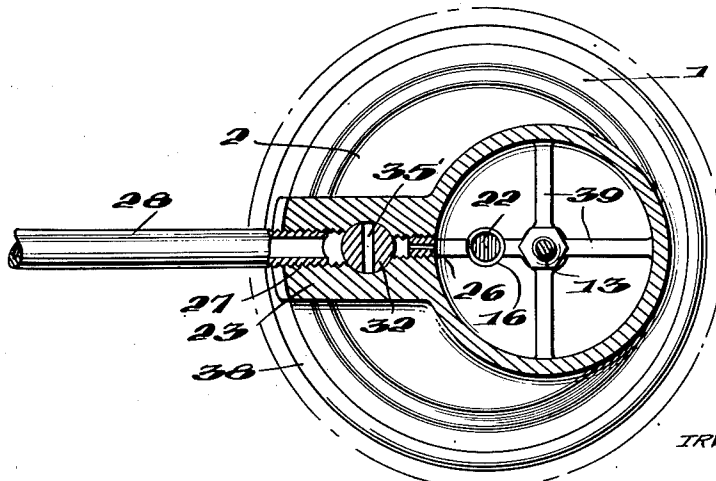


Fig. 3.



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2 SHEETS—SHEET 2

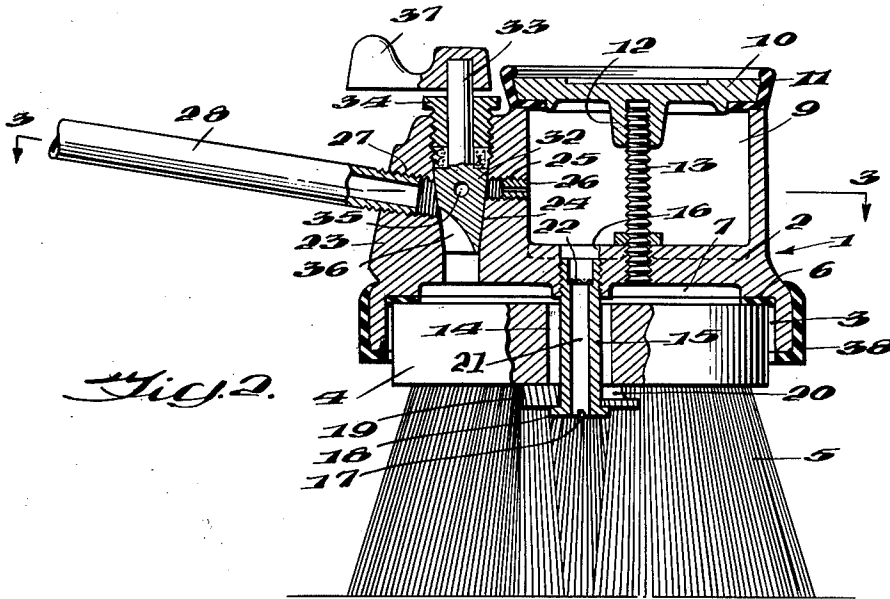
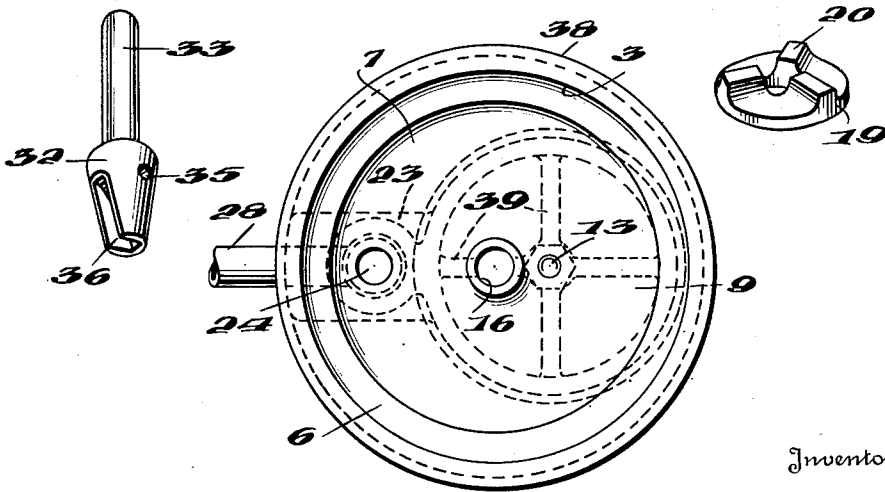


Fig. 5.

Fig. 4.

Fig. 6.



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FOUNTAIN BRUSH IMPLEMENT

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6 Claims. (Cl. 15—129)

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My invention consists in new and useful improvements in a fountain brush and has for its object to provide a convenient, self-contained implement having a soap solution mixing chamber and a clear water chamber with valve means for selectively directing the flow of water to either chamber. My improved fountain brush is readily adaptable to many uses, such for example, as washing automobile bodies, boats, the interior and exterior walls of buildings, floors, and also for washing horses, dogs and other domestic animals.

Heretofore, various efforts have been made to provide brushes of this general nature but so far as I am advised, none of such efforts has been completely satisfactory either for the reason that they have involved complicated structures which rendered the cost of manufacture and assembly excessive, or because of impractical designs which resulted in cumbersome and inconvenient implements.

It is the primary object of my invention to overcome these objections and to provide a self-contained fountain brush which is designed for compactness and simplicity of construction, thus minimizing the cost of manufacture and assembly and wherein a two-way valve control is conveniently located for directing the flow of water from one chamber to the other by a simple movement of the operator's thumb.

Another object of my invention is to provide a fountain brush implement wherein the brush proper is removably mounted so as to enable the insertion of various types of brushes for different uses. For example, in washing and rinsing fine painted surfaces such as automobile bodies, a brush made of hair may be employed, while for the walls of houses, screens, storm windows and the like, a fiber brush may be preferable.

A further object of the invention is to provide a fountain brush implement having an integral housing preferably composed of a machined casting which forms the soap and water chambers and contains all of the working parts of the device, including a two-way valve, located in close proximity to a tubular handle secured to the housing and through which water is fed from a source of supply to the implement.

A still further object of the invention is to provide a fountain brush particularly designed for the use of soap pellets as the medium for producing a soap solution and having a specially constructed water inlet to the soap chamber, comprising a restricted spray opening whereby a small measured quantity of water is sprayed into

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the soap compartment. Thus, the amount of water spraying over the soap is determined by the size of the restricted opening so that at any given water pressure a fixed amount of water is sprayed over the soap pellets.

With the above and other objects in view which will appear as the description proceeds, my invention consists in the novel features herein set forth, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

Referring to the drawings in which numerals of like character designate similar parts throughout the several views:

Figure 1 is a perspective view of my improved fountain brush implement;

Figure 2 is a partial vertical sectional view through the housing of the implement;

Figure 3 is a horizontal sectional view taken on line 3—3 of Figure 2;

Figure 4 is a bottom plan view of the housing with the brush block removed;

Figure 5 is an enlarged detail of the two-way valve plug; and

Figure 6 is a perspective view of the combined brush block adapter and water deflector.

In the drawings, 1 represents the housing of my improved fountain brush which preferably consists of an integral machined casting of aluminum or other suitable material, designed to contain all of the working parts of the implement. As will be seen from Figs. 1 and 3 of the drawings, the housing 1 comprises a substantially flat annular base 2 which forms the water chamber and brush-retaining portion of the implement. The underside of the base 2 is provided with an annular brush-receiving recess 3 to accommodate the block 4 of a brush element 5, an annular shoulder 6 being provided for engagement with the inner face of the brush block.

The base of the recess 3 is spaced a predetermined distance inwardly beyond the shoulder 6 to provide a water chamber 7, one wall of which is formed by the brush block 4 as clearly shown in Fig. 2 and a gasket is preferably interposed between the brush block and the shoulder 6 to facilitate the mounting of the brush and seal the walls of the water chamber 7.

Superimposed upon the base 2 is a substantially cylindrical soap chamber 9 which is preferably eccentrically disposed with respect to the axis of the brush-receiving recess 3 for purposes of design and convenience of operation, as will hereinafter appear. The upper end of the soap chamber 9 is closed by a disc-like lid 10 which

is preferably provided with a combination bumper and gasket 11, so shaped as to completely surround the periphery of the lid with a portion thereof interposed between the base of the lid and the upper edge of the cylindrical soap chamber wall as shown in Fig. 2. The lid may be retained in place by means of a threaded boss 12 which engages complementary threads on a stud 13 extending vertically and centrally in the soap chamber 9 from the base 2 of the housing, which forms the floor of the soap chamber.

The brush block 4 is provided with a central opening 14 which serves as a water discharge passageway leading from the water chamber 7 to the brush proper 5 and also accommodates a combination block retaining stud and soap discharge conduit 15. The stud 15 is screw threaded at one end to engage complementary threads in an opening 16 drilled in the base 2, said stud being preferably provided at its opposite end with a slot 17 to receive a screwdriver or other suitable implement. An enlarged head 18 at the lower end of the stud engages beneath a centrally apertured combination brush block adapter and water diverter 19 (see Fig. 6) which embraces the underside of the brush block 4. The adapter is preferably recessed on its upper face to provide a series of radiating fins or lugs 20 which actually abut the brush block 4, the spaces between said lugs serving to divert the water from the passageway 14 toward the brush proper, thus uniformly distributing the water throughout the brush for rinsing purposes. The longitudinal passageway 21 through the stud 15 places the soap chamber 9 in communication with the brush proper 5 and at the inner end of the passageway adjacent the soap chamber I preferably provide a screen or filter insert 22 to prevent the entrance of soap particles into the passageway 21.

It will thus be seen that by this concentric arrangement of a soap discharge passageway and water discharge passageway, utilizing the brush block retaining stud as a means of communication between the soap chamber and the brush proper, I have greatly simplified the construction and assembly of my improved brush and have provided an extremely compact and efficient piece of equipment.

Adjacent the soap chamber 9 the housing 1 is provided with a boss or thickened portion 23 which is vertically drilled and machined to form a tapered valve chamber 24 opening at its lower extremity directly into the water chamber 7 and communicating with the soap chamber 9 through a threaded opening 25 extending through the rear wall of the soap chamber. In this threaded opening 25 I preferably insert a threaded plug 26 provided with a restricted orifice, as will be seen from Fig. 2.

The rear portion of the boss 23 is provided with a threaded water inlet opening 27 drilled at a predetermined angle to receive the threaded end of a water supply tube 28, which as shown in Figs. 1 and 2, is adapted to support a tubular handle 29, of rubber or the like, disposed at the proper angle to facilitate the handling of the implement. Any suitable hose or water supply conduit 30, having a coupling 31 at its opposite end, may be connected to the tube 28 adjacent the handle 29.

A tapered two-way valve plug 32, having a vertical stem 33, is disposed within the valve chamber 24 and secured in place by an adapter 34 threaded into the upper end of the valve cham-

ber. A transverse port 35 in the plug 32 places the water inlet opening 27 in communication with the soap chamber through the restricted orifice plug 26, while an alternately located milled slot 36 in the lower portion of the valve plug places said water inlet opening 27 in communication with the water chamber 7, by-passing the soap chamber 9. A valve lever 37 is fixed to the upper end of the valve stem 33 and is arranged in close proximity to the handle 29 whereby when said handle is gripped by the operator, the lever 37 is within easy reach of the operator's thumb and may be readily flipped from one position to the other to selectively control the flow of water to the desired chamber.

In addition to the bumper 11 and in order to further guard against injury to the surfaces being washed, I preferably provide a second bumper 38 around the periphery of the base 2 of the housing 1. As will be seen from Fig. 2, this bumper 38 surrounds the base and underlies the lower face thereof so as to avoid the possibility of sharp corners coming in contact with the surfaces being washed.

As before stated, the entire housing 1 is formed of a machined casting which minimizes the parts to be assembled and affords a very compact efficient structure. During the casting process, reinforcing ribs 39 may be formed in the base or floor of the soap chamber as shown in Fig. 3 to give additional strength to the partition between the soap chamber 9 and the water chamber 7.

In the preferred use of my improved fountain brush implement, soap pellets are inserted in the soap chamber 9, the strength of the solution being controlled by the nature of the detergent, the compactness of the pellets, the quantity of pellets and their relationship with the size of the orifice in the plug 26. In other words, with the orificed plug 26 permitting the introduction of a measured quantity of water under a given pressure, by varying the type and quantity of soap pellets, I can adjust the soap solution to suit various needs. In fact, the quantity of water entering the entire brush implement is predetermined by the size of the drilling 27 so that the amount of rinse water and the amount of water spraying over the soap pellets may be tested at the factory to insure the delivery of water in fixed amounts which cannot be changed by the operator.

With the valve lever 37 in a position at right angles to that shown in Fig. 2, water is sprayed through the orifice plug 26 into the soap chamber 9 from which the solution flows through the passageway 21 in the stud 15 and into the brush proper 5. After the desired soaping and scrubbing has taken place, by simply flipping the lever 37 to the position shown in Fig. 2, the supply of water is diverted from the soap chamber and enters the water chamber 7 through the milled slot 36. From the water chamber the clear water passes through the opening 14 in the brush block 4, contacting the deflector 19 where it is diverted uniformly throughout the bristles of the brush 5 for rinsing the surface being washed.

When it is desired to substitute one type of brush for another, the brush block 4 is readily removable from the recess 3 by simply unscrewing the stud 15 and withdrawing the same from the opening 16 in the base 2 of the housing. The stud 15 and adapter 19 are then withdrawn from the one brush block and inserted in the opening 14 in the other brush block, which is

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then inserted in the recess 3 and secured in place by screwing the stud 15 into the opening 16.

It will thus be seen that I have provided a very compact and efficient brush implement which is very easily operated and which can be disassembled for cleaning purposes with little or no effort. Furthermore, the design of my improved device is such that in addition to presenting an attractive appearance, is light in weight and easily operated with one hand.

From the foregoing, it is believed that my invention may be readily understood by those skilled in the art without further description, it being borne in mind that numerous changes may be made in the details of structure without departing from the spirit of the invention as set forth in the following claims.

I claim:

1. In a self-contained fountain brush implement, a housing comprising a base, recessed on its underside to form a water chamber, a brush element including a brush block removably mounted in said recess and spaced outwardly from the base thereof to form one wall of said water chamber and a brush proper secured to said brush block, a soap chamber formed on the upper side of said base, a water discharge opening extending through the center of said brush block placing said water chamber in communication with the brush proper, a soap mixture discharge tube placing said soap chamber in communication with said brush proper and extending concentrically through said water chamber and water discharge opening, in spaced relation to the latter, means connecting a water supply tube to said housing, a two-way valve for selectively directing the flow of water from said tube either to said soap chamber or said water chamber, a handle secured to said means and a valve control lever located in close proximity to said handle.

2. In a self-contained fountain brush implement, a housing comprising a substantially flat, annular base having an annular recess on its under side to form a water chamber, a brush element including a circular brush block mounted in said recess in spaced relation to the inner face thereof and a brush proper secured to said brush block, a cylindrical soap chamber formed on the upper side of said base, a water discharge opening extending through the center of said brush block and placing said water chamber in communication with the brush proper, a stud threaded to engage an orifice in said base which communicates with the soap chamber, said stud being disposed concentrically in said water discharge opening, in spaced relation to the walls thereof and means cooperating therewith for removably securing said brush block in said recess, a longitudinal passageway through said stud forming a soap mixture discharge opening placing said soap chamber in communication with said brush proper, a valve chamber in said housing in communication with both said soap chamber and said water chamber, means connecting a water supply tube to said valve chamber, a two-way valve for selectively directing the water supply either to said soap chamber or said water chamber, a handle secured to said connecting means, adjacent to said housing, and a valve control lever located in close proximity to said handle.

3. A self-contained fountain brush implement comprising a housing, a water chamber in said housing, a soap chamber superimposed on said

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water chamber and separated therefrom by a partition, the side walls of said water chamber being recessed to receive a brush block, means spacing said brush block from said partition whereby said block forms the outer wall of said water chamber, means engaging said partition and extending below the latter for removably securing said block in place in said recess, a brush proper secured to said block, an opening in said brush block placing said water chamber in communication with the brush proper, a soap discharge passageway concentric with said opening, placing said soap chamber in communication with said brush proper, a valve chamber in said housing having means for connecting a water supply tube, a two-way valve in said valve chamber for selectively controlling the flow of water to said soap chamber or said water chamber, an implement handle fixed to said water supply tube and a valve lever on said valve located in close proximity to said implement handle.

4. A fountain brush implement as claimed in claim 3, wherein said means for securing said block in place forms said soap discharge passageway.

5. A self-contained fountain brush implement comprising a housing, a water chamber in said housing, a soap chamber superimposed on said water chamber and separated therefrom by a partition, the side walls of said housing below said water chamber being recessed to receive a brush block, a central opening in said brush block, a stud threaded to engage an orifice in said partition which communicates with the soap chamber, the stud extending through said brush block opening in spaced relation to the walls thereof for removably securing said brush block in place in said recess, a brush proper secured to said brush block the opening in said brush block serving as a water discharge passageway, placing said water chamber in communication with the brush proper, a soap discharge passageway in said stud, placing said soap chamber in communication with said brush proper, means adjacent said water discharge opening for deflecting water throughout the area of the brush proper, a valve chamber in said housing having means for connecting a water supply tube, ports leading from said valve chamber to said soap chamber and said water chamber respectively, a two-way valve in said valve chamber for selectively directing the flow of water either to said soap chamber or said water chamber, a plug having a restricted spray orifice in said valve chamber port leading to said soap chamber, an implement handle fixed to said water supply tube, and a valve lever on said valve located in close proximity to said implement handle.

6. A fountain brush implement as claimed in claim 5 including a strainer element located in said soap discharge passageway.

IRVIN L. TUCKER.

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