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2,726,417

FOUNTAIN BRUSH

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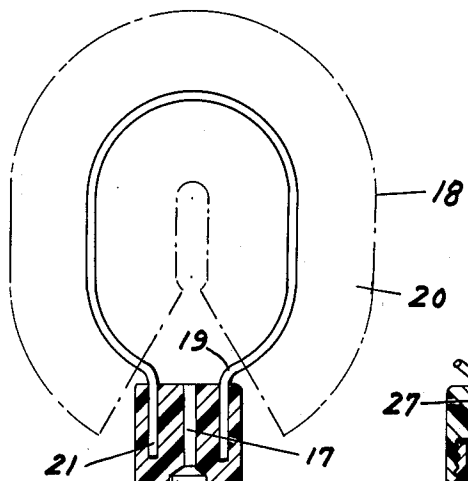


Fig. 1

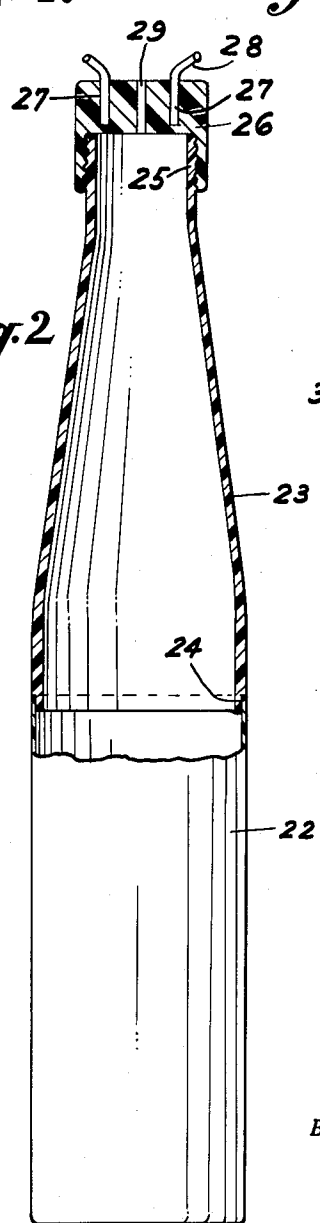


Fig. 2

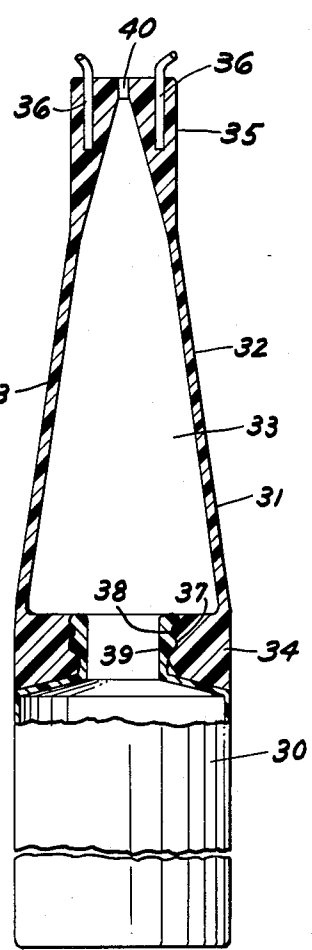


Fig. 3

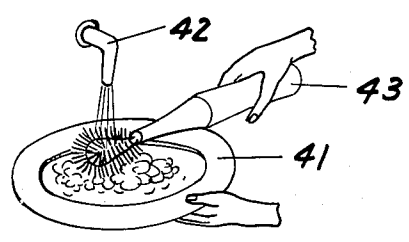


Fig. 4

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FOUNTAIN BRUSH

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4 Claims. (Cl. 15—136)

This invention relates to fountain brushes and has particular reference to a fountain brush which is intended for use as a manually operated dish washer, although it may be used as a shampoo brush or as a brush for washing any article to which it is desired to apply a measured amount of liquid detergent or soap.

An object of the invention is to generally improve devices of the character indicated and to provide a dish washing brush which is impervious to the effects of grease, fruit acids and vegetable by-products which might be encountered in the washing of dishes and food carrying receptacles.

Another object of the invention is to provide a plastic brush carrying adaptor which may readily be attached to a conventional squeezable bottle of the type employed in dispensing liquid deodorants.

The foregoing and other objects and advantages of the invention will become more apparent as the description proceeds, reference being made from time to time to the accompanying drawings forming a part of the with- in disclosure, in which drawings:

Fig. 1 is a side elevational view, with parts in section, of a fountain brush embodying the invention.

Fig. 2 is a side elevational view of a modified form of the device shown in Fig. 1.

Fig. 3 is a fragmentary view, partly in section, of another modified form of the device.

Fig. 4 is a perspective view showing the use of the device embodying the invention in washing a dish.

Referring now more particularly to the drawings, it will be understood that the reference character 7 indicates a conventional squeezable plastic bottle which is made of a plastic material which is impervious to the present known liquid detergents and soaps. The bottle 7 is sufficiently rigid to enable it to stand upright and support the other elements of the device hereinafter described, but it has side walls which may be squeezed inwardly with a slight pressure exerted by the hand.

The squeezable bottle 7 has an inclined top wall 8 which terminates in a neck portion 9 which is externally threaded. Secured to the neck portion 9 is an adaptor 10 which is preferably made of Lucite or other suitable plastic material. The adaptor 10 has an inclined bottom wall 11 which is arranged to engage the inclined top wall 8 of the bottle 7. This serves as a wide bearing surface between the adaptor 10 and the bottle 7 and obviates any tendency of the adaptor 10 to break the neck 9 from the bottle 7 no matter how much side thrust is exerted on the adaptor 10.

The adaptor 10 has a central bore 12 and a counter-bore 13 in which is cemented or otherwise secured an internally threaded closure cap 14 for the bottle 7. The closure cap 14 is preferably lined with a gasket 15 and the gasket 15 and the top of the closure member 14 are provided with aligned apertures 16 which communicate with the bore 12 formed in the adaptor 10.

The upper end of the bore 12 terminates in a reduced bore 17 which communicates with the interior

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of a brush 18 which is preferably formed of a non-corroding wire frame 19 on which are mounted the nylon bristles 20. The ends 21 of the frame 19 are embedded in suitable bores formed in the upper end of the adaptor 10. It will be understood that the adaptor 10 and the bottle 7 combine to serve as a handle for the brush 18 and a receptacle for carrying a supply of liquid detergent or soap, a limited quantity of which may be ejected from the device by applying a slight pressure to the walls of the squeezable bottle 7. When it is necessary to exert unusual pressure on the brush 18, it is preferable that the operator grasp the adaptor 10 in his hand and when it is desired to eject the liquid detergent to the brush, it is only necessary to change the position of the hand from the rigid adaptor 10 to the squeezable bottle portion 7. One of the features of the invention resides in the function of the bore 17, the counterbore 12 and the apertures 16, formed in the closure member 14 and the gasket member 15. These elements combine to prevent the liquid detergent from running out of the receptacle 7 when the device is laid on its side or turned up-side-down. Because of the relative diameters of the bore 17, the counterbore 12 and the apertures 16, no liquid detergent will pass from the receptacle 7 through the counterbore 12 and the bore 17 unless the walls of the receptacle 7 are compressed to force the liquid out. As soon as the compressing force is released from the walls of the receptacle 7, air will be drawn in through the bore 17 and into the counterbore 12, creating a vacuum therein so that thereafter no liquid will run from the device should it be turned up-side-down or should it be laid in a horizontal position. The liquid may be forced from the device only by compressing the side walls of the receptacle. This structure eliminates the necessity for valves and other mechanical means to prevent the unintentional discharge of the liquid from the receptacle.

In Fig. 2, I have disclosed a modified form of the invention in which the squeezable bottle 22 has no closure member between it and the rigid adaptor 23. In this embodiment, the rigid adaptor 23 is hollow and is formed with comparatively thin walls, the lower end of which walls are undercut as at 24 to engage the upper end of the walls of the squeezable element 22. The juncture between the members 22 and 23 may be cemented or otherwise secured. In this embodiment the side walls of the member 23 are inclined inwardly and terminate in a neck portion 25 which is provided with external threads arranged to accommodate the internal threads of a plastic cap 26 which is bored as at 27 to accommodate the terminal ends of the wire frame 28 comprising part of the brush. The modified embodiment of the device functions in the same manner as the structure disclosed in Fig. 1.

In Fig. 3, I show a still further modified form of the device in which the conventional squeezable bottle 30 is employed with a different type of adaptor 31. In this modification, the rigid adaptor 31 is molded with a hollow interior 32, with comparatively thin inwardly inclined side walls 33 and with a comparatively thick bottom wall 34 and a comparatively thick terminal portion 35 in which are embedded the ends 36 of the wire frame comprising part of the brush. The thick bottom wall 34 is provided with an internally threaded opening 37 which is adapted to engage the external threads 38 formed on the neck 39 of the bottle 30. The terminal portion 35 of the rigid adaptor 31 is provided with a restricted bore 40 which communicates with the interior of the hollow portion 32 and the interior of the brush. The device functions in the same manner as does the device illustrated in Fig. 1.

In Fig. 4, we show the device being used in the

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washing of a plate 41 under a faucet 42. It will be noted that the device 43 embodying the invention is grasped in the right hand by the operator while the left hand is used to manipulate the plate 41 in the water stemming from the faucet 42. By exerting slight pressure on the device 43 the required amount of detergent may be ejected onto the plate 41 during the washing operation. When the detergent is all washed off, the plate is rinsed and set aside to dry.

Having described our invention, what we claim and desire to secure by Letters Patent is:

1. In combination with a plastic receptacle having a threaded neck and compressible side walls, a rigid plastic adapter for said receptacle having an elongated reduced portion with thick walls, spaced longitudinal bores in said thick walls for receiving the wire shanks of a brush, a wire brush, having its shanks received in said bores, a longitudinal bore in said adapter comprising a chamber, an internally threaded counterbore in said adapter for receiving the threaded neck of said receptacle, and a reduced bore in the opposite end of said adapter in communication with said chamber.

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2. The structure of claim 1, in which the threaded end of said adapter has a diameter substantially co-extensive with the diameter of said receptacle.

3. The structure of claim 1, in which the threaded end of said adapter has a diameter substantially equal to the diameter of said receptacle, and said adapter has an end surface arranged for close contact with the end surface of said receptacle adjacent said neck.

4. The combination of claim 1, including a removable gasket between said receptacle and said adapter, said gasket having a small aperture therein communicating the bore of said adapter with the interior of said receptacle.

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