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J. G. KINKADE
FOUNTAIN TOOTH BRUSH

2,033,197

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Fig. 1.

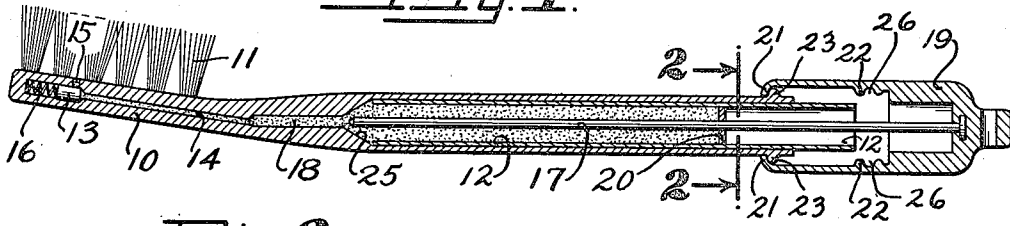


Fig. 2.

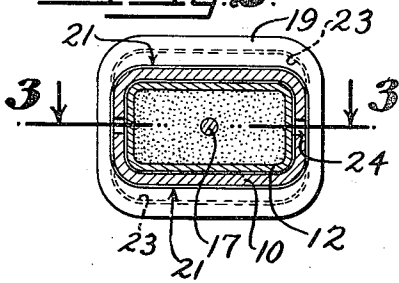


Fig. 3.

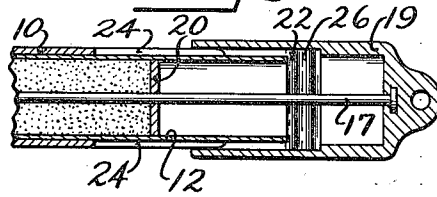


Fig. 4.

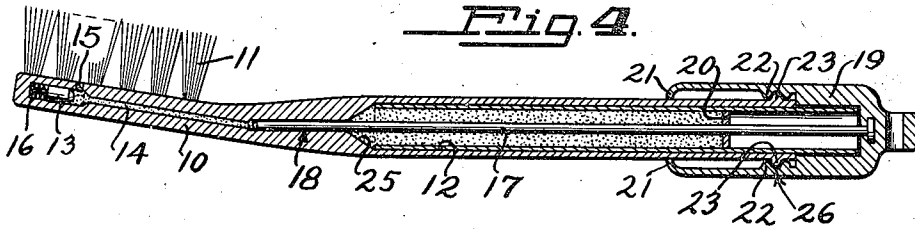
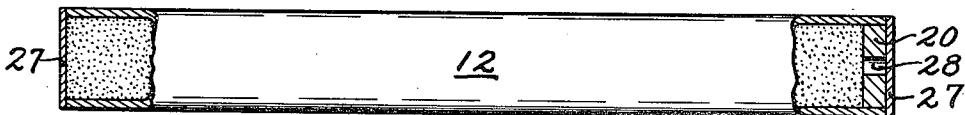


Fig. 5.



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FOUNTAIN TOOTH BRUSH

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Application October 21, 1933, Serial No. 694,570

8 Claims. (Cl. 15—137)

This invention relates to fountain brushes.

The general object of the invention is to provide an improved fountain brush which is particularly useful in connection with applying dentifrice to the teeth or shaving cream to the face, and wherein means is provided to prevent waste of the material being used.

A further object of the invention is to provide a fountain brush including novel, movable, manually operated means for feeding material to the brush.

Another object of the invention is to provide an improved fountain brush wherein a removable cartridge is employed for holding the material.

Other objects and the advantages of this invention will be apparent from the following specification taken in connection with the accompanying drawing, wherein:

Fig. 1 is a longitudinal sectional view through a brush embodying the features of my invention; Fig. 2 is an enlarged transverse section taken on line 2—2 of Fig. 1;

Fig. 3 is a longitudinal sectional view of the end of the handle member taken on line 3—3 of Fig. 2;

Fig. 4 is a longitudinal sectional view similar to Fig. 1 showing the parts in closed position; and Fig. 5 is an enlarged side elevation, partly in section, showing the replacement cartridge.

Referring to the drawing by reference characters, I have shown my invention as embodied in a brush which includes at one end a tubular handle 10 to which a brush back having bristles 11 is secured and in which a replaceable cartridge 12 is arranged. The back is provided with a cavity in which a piston 13 is mounted and this piston controls ports 5 and 14 through which material is fed to the bristles 11.

The piston 13 is urged to a closed position by a spring 16. A plunger rod 17 is mounted on the tubular handle 10 and includes at one end a part which moves into a cylindrical passageway 18, and at the other end is embedded in a closure cap 19. The plunger rod 17 passes through and has a tight fit in a washer 20 which is movably mounted in the cartridge 12.

The cap 19 is provided with opposed lips 21 on the outer end thereof and with lips 22 on the inner surface thereof, while the tubular handle 10 has a peripheral lip 23 on the outer wall thereof and the construction is such that by placing pressure on the walls at the open end of the handle 10 the closure cap 19 can be removed from the tubular handle for the purpose of replacing the used cartridge with a fresh one.

Further, when the closure cap is moved inwardly to the position shown in Figs. 3 and 4, the lip 23 becomes positioned in a groove 26, as shown, to hold the closure member in a closed position.

In use closure members 27 are removed from the ends of the cartridge 12 and the cartridge is inserted in the tubular handle 10. The plunger rod 17 is then inserted in the aperture 28 and the closure cap 19 is moved to the position shown in Fig. 1 carrying the plunger with it.

When the operator wishes to force some of the ingredient in the cartridge 12 into the bristles 11, the cap 19 is reciprocated, thus forming a partial vacuum in the cylinder 18 so that on withdrawal of the rod 17 part of the ingredients fill the chamber 18. The reciprocating operation is repeated until sufficient ingredients have passed through the parts 15 and 5 to satisfy the requirements. After this is done the cap is moved to the position shown in Fig. 4 until further use is required.

What I desire to claim and secure by Letters Patent is:—

1. In a fountain brush, a tubular removable paste-carrying means fitting frictionally in a tubular handle, a passageway at the forward end of the tubular handle, a one-way valve in said passageway for controlling communication there-through, said paste-carrying means containing a washer movable longitudinally making air-tight contact with its inner walls and also air tight over a plunger-rod carried by said cap, said cap being limited in its longitudinal stroke so that when the inner end of the attached plunger rod is withdrawn from the passageway at the forward end of the tubular handle, it permits atmospheric pressure of air to move said air-tight washer forward and forces paste into the partial vacuum created by the withdrawal of the plunger rod from the passageway.

2. In a device as described in combination, a brush back carried by and communicating with a tubular handle having flat walls; a closure cap manually movable on said tubular handle, the longitudinal movement of the same limited by locking means consisting of lips on the flat walls of said closure cap coming in contact with a raised lip on the flat walls of said tubular handle whereby pressure on the flat walls at the open end thereof will depress the walls and thus permit removal of the paste-carrying means from the tubular handle and the replacement of a loaded cartridge, said cartridge fitting frictionally with the walls of the tubular handle at the

forward end and forming an air-tight connection therewith, and the opposite end thereof extending out beyond said tubular handle for ease in removing.

5 3. In a fountain brush, a handle having a bore therein and having a head thereon, the head having a bore, said handle bore and head bore being connected by an intermediate bore, bristles in said head, said head bore having a port communicating therewith, a one-way valve in said head bore adjacent said port, a cap movable on said handle, a cartridge fitting said handle bore, a piston in said cartridge, a plunger moved by said cap and extending through said handle bore and having a sliding fit within the intermediate bore, said piston having an aperture through which said plunger passes.

10 4. In a fountain brush, a handle having a bore therein and having a head thereon, the head having a bore, said handle bore and head bore being connected by an intermediate bore, bristles in said head, said head bore having a port communicating with the head bore, a one-way valve in said head bore adjacent said port, a cap movable on said handle, said handle having lips thereon and said cap having lips to engage said first mentioned lips to limit the movement of the cap, a cartridge fitting said handle bore, a piston in said cartridge, said cap having a plunger extending through said handle bore and having a sliding airtight fit within the intermediate bore, said piston having an aperture through which said plunger passes.

15 5. In a fountain brush, a handle having a bore therein and having a head thereon, the head having a bore, said handle bore and head bore being connected by an intermediate cylindrical bore, bristles in said head, said head bore having a port at the base of the bristles and communicating with the head bore, a one-way valve in said head bore adjacent said port, a cap slidable on said handle, said handle having means thereon to limit the movement of the cap, a cartridge fitting said handle bore, a piston in said cartridge, said cap having a plunger extending through said handle bore and having a sliding airtight fit within the intermediate bore, said piston having an aperture through which said plunger passes.

20 6. In a fountain brush, a handle having a bore therein and having a head thereon, the head having a bore, said handle bore and head bore

being connected by an intermediate cylindrical bore, bristles in said head, said head bore having a port at the base of the bristles and communicating with the head bore, a one-way valve in said head bore adjacent said port, a cap slidable on said handle, said handle having lips thereon and said cap having lips engaging said first mentioned lips to limit the movement of the cap, a cartridge fitting said handle bore and projecting at one end beyond the free end of said handle, a piston in said cartridge, said cap having a plunger extending through said handle bore and having a sliding airtight fit within the intermediate bore, said piston having an aperture through which said plunger passes.

15 7. In a fountain brush, a handle having a bore therein and having a head thereon, the head having a bore, said handle bore and head bore being connected by an intermediate cylindrical bore, bristles in said head, said head bore having a port at the base of the bristles and communicating with the head bore, a one-way valve in said head bore adjacent said port, the free end of said handle being flexible and having slits therein, a cap slidable on said handle, said handle adjacent said slits having lips thereon and said cap having lips engaging said first mentioned lips to limit the movement of the cap, a cartridge fitting said handle bore and projecting at one end beyond the free end of said handle, a piston in said cartridge, said cap having a plunger extending through said handle bore and having a sliding airtight fit within the intermediate bore, said piston having an aperture through which said plunger passes.

20 8. In a fountain brush having a tubular handle with a passageway at the forward end of the handle, a one-way valve at the forward end of said passageway, a tubular removable cartridge fitting frictionally in said tubular handle, a washer movable longitudinally in said cartridge and making air-tight contact with its inner walls, a cap mounted on said handle and having a plunger rod fitting said passageway, means to limit the longitudinal stroke of the plunger so that when the inner end of the plunger rod is withdrawn from the passageway it permits atmospheric pressure of air to move the said washer forward and forces paste into the partial vacuum created by the withdrawal of the plunger rod from the passageway.

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