April 25, 1933. J. DE PHILIPPS 1,905,960

FOUNTAIN BRUSH

Filed Feb. 5, 1932

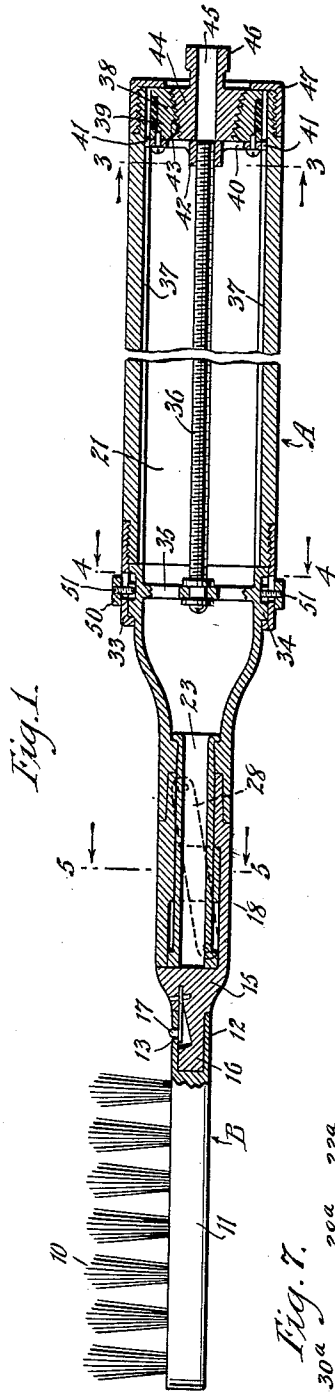


Fig. 1.

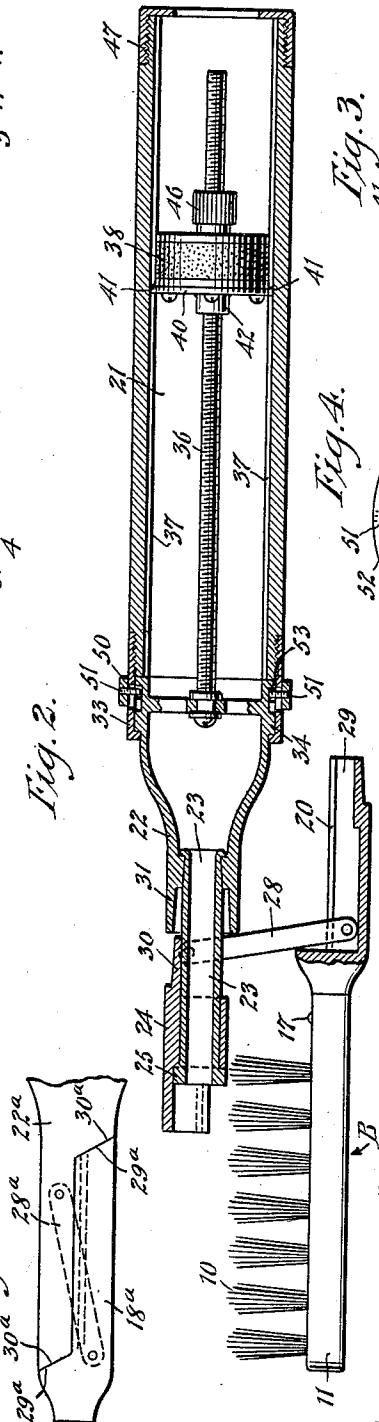


Fig. 2.

Fig. 7.

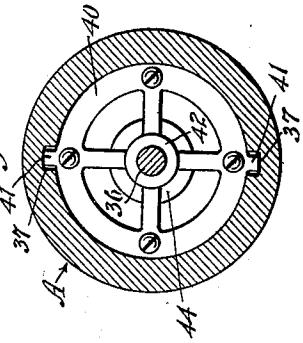


Fig. 3.

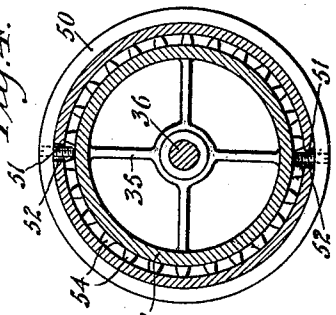


Fig. 4.

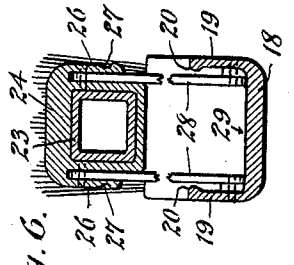


Fig. 6.

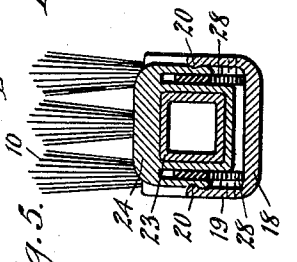


Fig. 5.

WITNESSES

Edw. Thorpe

INVENTOR

Joseph De Philipps

BY Munn & Co.

ATTORNEY

Patented Apr. 25, 1933 1,905,960

UNITED STATES PATENT OFFICE

JOSEPH DE PHILIPPS, OF NEW YORK, N. Y.

FOUNTAIN BRUSH

Application filed February 5, 1932. Serial No. 591,161.

This invention relates to fountain or reservoir applicators and while not necessarily restricted to such use, is particularly designed as an improvement in a fountain tooth brush in which the dentrifice or tooth paste is contained in the handle.

The invention aims for one of its objects to provide a brush or applicator in which the handle serves as a dispensing container for the substance which is to be applied by the brush or applicator and in which the brush or applicator head is so connected with the handle as to be movable relative thereto to uncover the outlet and dispose the head in juxtaposition thereto for receiving the contents of the container.

The invention further resides in a fountain or reservoir applicator, an improved means for effecting the feeding or extruding of the reservoir contents, together with means for facilitating the filling of the reservoir when the contents are depleted.

The invention further comprehends in a device of the character set forth an applicator or brush head which is detachably associated with the handle whereby the same when worn may be discarded and replaced by a new brush or applicator.

Other objects of the invention reside in the comparative simplicity of construction of the device, the economy with which it may be produced and the general efficiency derived therefrom.

With the above recited and other objects in view, reference is had to the following description and accompanying drawing, in which there are exhibited several forms of the invention, while the claims define the actual scope of the same.

In the drawing:

Figure 1 is a longitudinal sectional view through the device in closed condition.

Figure 2 is a similar view illustrating the brush head or applicator moved to a position to open the reservoir outlet and to receive thereon the contents of the reservoir.

Figure 3 is an enlarged transverse sectional view taken approximately on the line 3—3 of Figure 1.

Figure 4 is a similar view taken approximately on the line 4—4 of Figure 1.

Figure 5 is a sectional view taken approximately on the line 5—5 of Figure 1.

Figure 6 is a similar view illustrating the position of parts as shown in Figure 2.

Figure 7 is a fragmentary side view of a modified form of the invention.

Referring to the drawing by characters of reference, A designates generally the combined handle and reservoir, and B the brush head or applicator, which in the present instance is in the form of a tooth brush having the bristles 10 and the bristle carrier 11 formed with a socketed shank 12 provided with a keeper opening 13 opening into the socket. The applicator or brush head B further includes a stem 15 having a reduced terminal 16 adapted to receive thereover the socketed shank 12, a spring detent 17 being provided to engage in the keeper 13, whereby the bristle carrier 11 is removably associated with the stem 15. The rear enlarged portion 18 of the stem is substantially channel shaped in cross section, and the side walls 19 thereof are formed at the inner side of the free edges with inwardly directed ribs 20.

The combined handle and reservoir consists of a hollow body 21 having a reduced forward extremity 22 from which a forwardly projecting tube 23 extends concentrically. A sleeve 24 is slidably mounted on the tube 23 for limited shifting movement between the reduced extremity 22 of the body 21 and an annular stop 25. The sleeve 24 is provided with laterally spaced side flanges 26 formed with grooves 27 to receive the ribs 20 of the side walls 19 of the enlarged portion 18 of the stem 15 when said portion 18 is fitted into the sleeve 24, as illustrated in Figures 1 and 5 of the drawing. A pair of links 28 connects the sleeve 24 with the enlarged portion 18 of the stem 15 and permits of relative movement of said stem with respect to the sleeve and tube 23. The enlarged portion 18 of the stem 15 and the sleeve 24 are provided with reduced exteriorly tapered rear terminals 29 and 30 which afford means when the portion 18 and sleeve 24 are mated as illustrated in Figures 1 and 5, for engag-

ing within the forward terminal 31 of the extremity 22 which is formed with a corresponding inner taper.

The forward reduced extremity 22 is made as a separate section from the body 21 and is turnably connected with the body by an annulus 33 screwed onto the forward end of the body and engaging a peripheral rib 34 on the extremity 22. The extremity 22 is formed with an internal spider 35 which has secured thereto and projecting rearwardly therefrom a concentric threaded shaft 36 which extends approximately throughout the length of the body 21. The body 21 is formed internally with one or more longitudinally extending keyways 37, two being shown in the present instance. A plunger 38 is disposed within the body 21, and said plunger is formed with a peripheral packing 39 and has secured to its forward or leading face, a face plate 40 which is formed with radially projecting keys 41 engageable in the keyways 37. The face plate is in the form of a spider having a central interiorly threaded hub or nut 42 threadedly engaging the threaded shaft 36, so that upon relative rotation of the body 21 and extremity 22 in one direction, the plunger is fed longitudinally of the body 21 to extrude or feed the contents toward and through the tube 23. The plunger 38 is formed with a conical interiorly threaded central opening 43, into which is screwed a removable tapered exteriorly threaded closure plug 44 having a central bore 45 to accommodate the threaded shaft 36, the plug being further formed with a knurled rearwardly projecting manipulating head 46. The rear end of the body 21 is closed by a cap 47 which is preferably threaded thereon and which is provided with a central opening 48 of a sufficient size to permit of the displacement of the closure plug 44 therethrough. This permits of the filling of the body 21 with the substance to be applied to the applicator or brush head and is specifically designed to accommodate the threaded necks of collapsible tubes such as are usually employed for packaging tooth paste or other similar commodities. The tapered nature of the conical threaded opening 43 is such as to accommodate the threaded necks of various sizes to establish a fluid tight connection when filling the body 21. After the body is filled, the plug 44 is reinserted and the device is ready for use.

In use and operation, after the body and extremity 22, as well as the tube 23, are completely filled, the user initially opens the outlet end of the tube 23 by swinging the brush or applicator head B to the position illustrated in Figure 2, which disposes the bristles in juxtaposition to the outlet. By turning the body 21 in the proper direction, the plunger 38 will be advanced and the contents will be applied to the bristles. The user then swings the head B to the position illustrated in Figure 1 to close the outlet, and a slight rearward movement causes the rear conical portions 29 and 30 to engage within the forward terminal of the extremity 22. The brush or applicator may now be used in the ordinary manner.

In order to provide means for releasably locking the body 21 and extremity 22 against turning movement, a ring 50 is mounted on the annulus 33 for axial sliding movement, and said ring is provided at diametrically opposite points with inwardly projecting detents 51 which extend through longitudinal slots 52 in the annulus. The rear portion of the extremity 22 is formed with an annular exterior groove 53 and a forwardly spaced set of teeth 54, between adjacent pairs of which teeth keepers are provided for the reception of the detents 51. When the ring is slid forwardly, the detents engage between the teeth and lock the body 21 against turning movement relative to the extremity 22 and, likewise, when the ring is slid rearwardly to the position illustrated in Figure 2, the detents coincide with the annular groove 53 to admit of the relative turning movement of said parts.

In the modified form of the invention illustrated in Figure 7, the parts 18*a* and 22*a* which are connected by the links 28 are formed respectively with cooperative inclined faces 29*a* and 30*a*, thereby eliminating the necessity of employing the sliding sleeve. In other respects, the construction and operation of the device is the same as that described for the preferred form of the invention.

What is claimed is:

1. In a reservoir applicator, a hollow handle defining a container having an outlet tube protruding from one end, a sleeve having limited sliding movement on said tube and an applicator head having linked connection with said sleeve and movable with and with reference to the sleeve to cover and uncover the outlet tube.

2. In a reservoir applicator, a hollow handle defining a container having an outlet tube protruding from one end, a sleeve having limited sliding movement on said tube and an applicator head having linked connection with said sleeve and movable with and with reference to the sleeve to cover and uncover the outlet tube and to dispose the applicator head in juxtaposition to the tube when uncovered whereby to receive the contents of the container thereonto.

3. In a reservoir applicator, a hollow handle defining a container having an outlet tube protruding from one end, a sleeve having limited sliding movement on said tube and an applicator head having linked connection with said sleeve and movable with and with reference to the sleeve to cover and uncover the outlet tube and to dispose the applicator

head in juxtaposition to the tube when uncovered thereby to receive the contents of the container thereunto and yieldable resilient means for releasably locking said head and sleeve in mated relation to close the tube and dispose the head in fixed relation to the handle for active use.

4. A reservoir applicator including a hollow handle defining a container having an outlet at one end, an applicator head to normally close said outlet and a linked connection between the head and handle permitting of relative movement therebetween to uncover the container outlet and to dispose the applicator head, when moved, to uncover the outlet, in juxtaposition to said outlet for receiving thereon the contents of the container discharged therethrough.

5. A reservoir applicator including a hollow handle defining a container having an outlet at one end, an applicator head to normally close said outlet and a linked connection between the head and handle permitting of relative movement therebetween to uncover the container outlet and to dispose the applicator head, when moved, to uncover the outlet, in juxtaposition to said outlet for receiving thereon the contents of the container discharged therethrough, said handle having relatively rotatable sections and means within one section operable upon relative rotation of said sections to feed the contents through the outlet.

6. A reservoir applicator including a hollow handle defining a container having an outlet at one end, an applicator head to normally close said outlet and a linked conection between the head and handle permitting of relative movement therebetween to uncover the container outlet and to dispose the applicator head, when moved, to uncover the outlet, in juxtaposition to said outlet for receiving thereon the contents of the container discharged therethrough, said handle having relatively rotatable sections, means within one section operable upon relative rotation of said sections to feed the contents through the outlet and releasable detent means for holding said handle sections against rotation.

7. A reservoir applicator including a hollow handle defining a container having an outlet at one end, an applicator head to normally close said outlet and a linked connection between the head and handle permitting of relative movement therebetween to uncover the container outlet and to dispose the applicator head, when moved, to uncover the outlet, in juxtaposition to said outlet for receiving thereon the contents of the container discharged therethrough, said handle comprising relatively movable sections and a non-rotary longitudinally movable plunger in one section, a plunger rod fixed to the other section and threadedly engaging the plunger for feeding the plunger longitudinally of the handle upon relative rotation of the sections.

8. A reservoir applicator including a hollow handle defining a container having an outlet at one end, an applicator head to normally close said outlet and a linked connection between the head and handle permitting of relative movement therebetween to uncover the container outlet and to dispose the applicator head, when moved, to uncover the outlet, in juxtaposition to said outlet for receiving thereon the contents of the container discharged therethrough, said handle comprising relatively movable sections and a non-rotary longitudinally movable plunger in one section, a plunger rod fixed to the other section and threadedly engaging the plunger for feeding the plunger longitudinally of the handle upon relative rotation of the sections, said plunger having a filling opening and a removable plug to permit of the filling of the handle when the plunger is retracted and the plug is removed.

JOSEPH DE PHILIPPS.