May 6, 1941. A. WATERUD 2,240,876

DENTURE BRUSH AND DISPENSER

Filed June 24, 1940

Fig. 1.

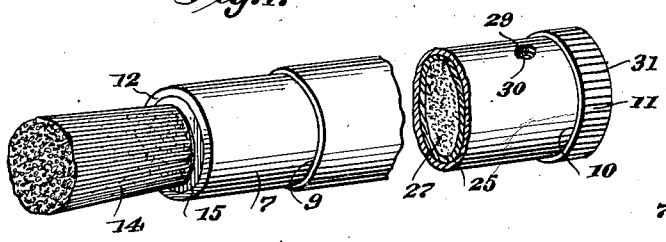


Fig. 3.

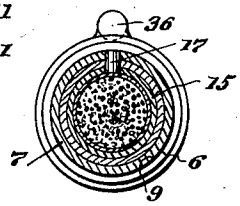


Fig. 2.

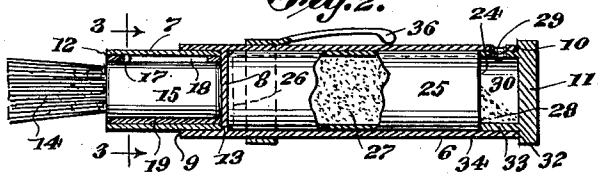


Fig. 5.

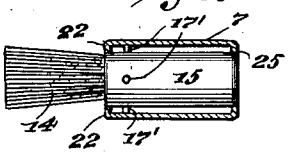


Fig. 4.

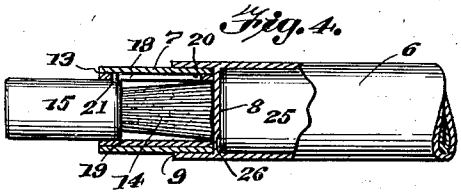


Fig. 6.

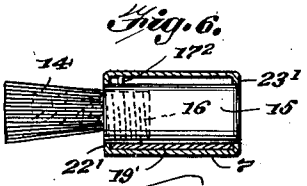


Fig. 7.

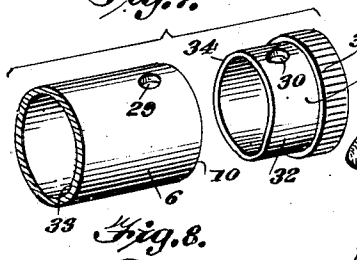


Fig. 11.

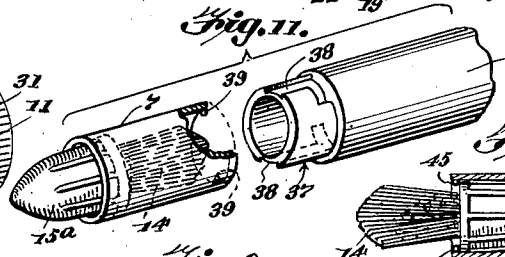


Fig. 10.

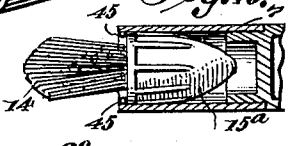


Fig. 8.

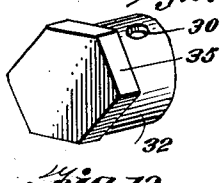


Fig. 9.

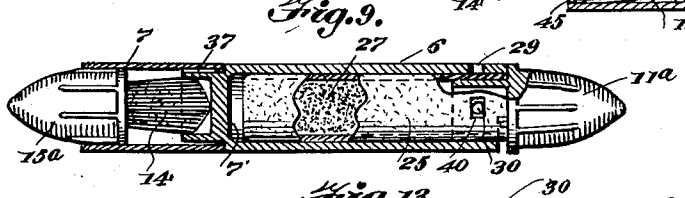


Fig. 12.

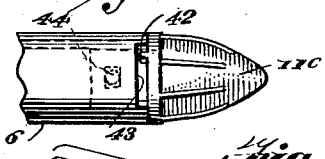


Fig. 13.

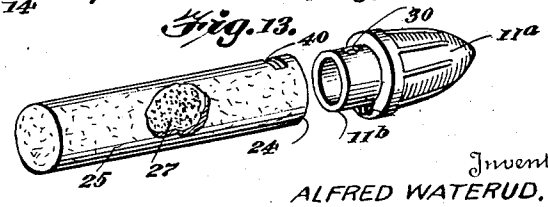
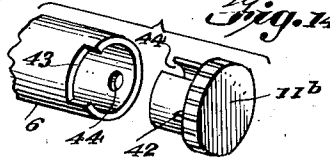


Fig. 14.



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Patented May 6, 1941 2,240,876

UNITED STATES PATENT OFFICE

2,240,876

DENTURE BRUSH AND DISPENSER

Alfred Waterud, Los Angeles, Calif.

Application June 24, 1940, Serial No. 342,153

10 Claims. (Cl. 15—184)

This is an application growing out of my former case, Serial No. 112,912, allowed December 10, 1937, "Denture brush and dispenser," since abandoned, in which the first six claims herein were allowed.

My invention relates to brushes intended for use in cleaning dentures.

The main purpose of my invention is to provide an easily accessible brush capable of use in a holder or handle of general tubular type and reversible in the holder, alternatively, for protection of the brush or for use.

A further purpose is to provide a hollow holder within which is a reversible sleeve and to mount the brush within the sleeve so as to slide in it, reversing from a position in which the sleeve protects the brush to a position in which the sleeve helps support the brush when in use.

A further purpose is to use one end of the holder for alternative brush support and protection and the other end of the holder for receiving and dispensing a powder to be used with the brush.

A further purpose is to provide a capsule for powder which may be inserted bodily within a tubular holder and which capsule is held spaced from the outlet of the holder by the walls of a dispenser, permitting control of the outlet by the dispenser.

Further purposes will appear in the specification and in the claims.

I have preferred to illustrate the invention by a few forms only among the many forms in which the invention may appear, selecting the forms with a view to breadth of disclosure and without attempting to show all of those in which the invention may be presented.

Figure 1 is a fragmentary perspective showing a sleeve and brush in position to be inserted within the holder.

Figure 2 is a central longitudinal section showing the structure and with a capsule partly sectioned.

Figure 3 is a section taken upon line 3—3 of Figure 2.

Figure 4 is a fragmentary longitudinal section showing the brush protected by the sleeve and mechanism for holding the sleeve and brush together, the sleeve and brush being reversed in position from that shown in Figure 1.

Figures 5 and 6 are fragmentary sectional views of modified forms of the brush and sleeve unit.

Figure 7 is a fragmentary detached perspective view of the body and cap.

Figure 8 is a perspective view of a modified form of a cap.

Figure 9 is a view partly in longitudinal sections and partly in side elevation of the preferred embodiment of my invention.

Figure 10 is a fragmentary longitudinal sectional view of the embodiments shown in Figure 9, with the brush unit shown in a projecting position.

Figure 11 is a fragmentary perspective view of the preferred embodiment, showing the sleeve and the holder in a separated position.

Figure 12 is a fragmentary side view of another embodiment.

Figure 13 is a perspective view of the cap and cartridge shown in Figure 9.

Figure 14 is a perspective view of the cap-end of the holder and the cap, shown in Figure 12.

Similar numerals indicate like parts throughout the specification.

The character of the denture brushes in the past has been dictated largely by the desire for cheapness of construction or supposed utility in the use of the brush. There has been little appreciation of the dangers from uncleanliness due to exposure of the exposed brush and little recognition of the convenience as well as the sanitary advantage of mounting the brush within a closure suitable for packet carriage. The present construction is intended to mount and protect the brush itself and to provide a powder to be used with the brush, all within and upon a tubular holder of general fountain pen shape capable of being carried as a fountain pen.

As illustrated my invention comprises primarily a body, handle or holder 6 which is tubular at one open end to receive sleeve 7 preferably engaging the stop 8 which is shown as a partition but which may be merely the inner end of the front opening 9 (seen at the left-hand end of Figure 2). Because of the desire to use the holder as a receptacle for a carton for holding powder, the entire body is shown as tubular and as presenting cylindrical open ends 9 and 10 for reception of the sleeve at the front end and of a dispensing stop 11 at the opposite (rear) end.

The sleeve is of diameter at each end suitable to form a friction fit within the open end 9, so that either end 12 or 13 of the sleeve may be mounted firmly in the front end of the holder, exposing the opposite end of the sleeve.

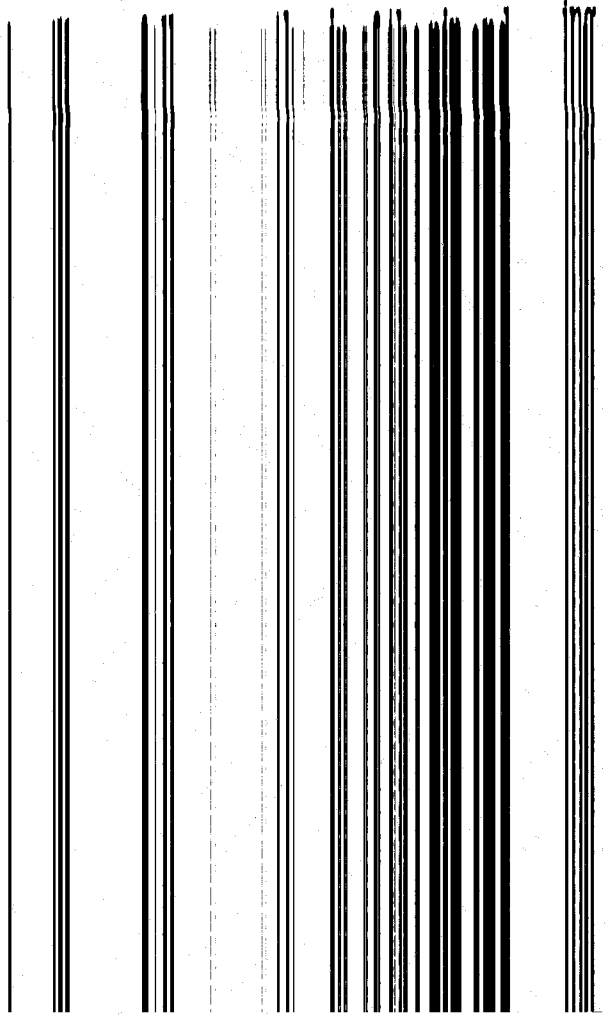
The sleeve forms an intermediate holder for a brush 14 which is rigidly mounted within an

inner shell 15 slidable within the outer sleeve 7. In Figure 6 the brush socket 16 screws into the shell 15 and the brush can be removed for cleaning.

The shell 15 and the brush 14 together form a brush unit which is guided by the shell of the brush in longitudinal sliding movement within the sleeve 7. Suitable means is taken to prevent withdrawal of the brush unit from the shell and the sliding movement within the sleeve 7. Suitable means is taken to prevent withdrawal of the brush unit from the shell and the sliding movement is further restricted by the fact that either the brush end or the shell end of the unit engages the stop 8, positioning the unit with the shell in the outer sliding position within the sleeve.

When the brush end is inward this means that the brush will be enclosed within the sleeve and this end of the sleeve will also be enclosed within the end of the holder, forming a double protection for the brush.

When the back of the shell of the brush unit engages the stop the brush will be extended to its limit from the front of the sleeve and will be held in position for use as shown clearly in Figure 2. In this position the engagement of the rear end of the brush unit with the stop 8 tends to steady the brush in its position and to prevent rotation of the brush unit. Because of the undesirability of rotation other means is shown herein for positively preventing rotation although the brush will operate even if rotation can take place. This prevention of rotation is most conveniently provided by pin and slot connection of the brush unit with the sleeve or with a lining for the sleeve and two forms of this are shown.



a lining 19', but the ends of the slot are not relied upon here to prevent removal. Removal is prevented by flanges 22', 23'. In this form the lining is provided conveniently by the use of a flat strip of lining material which is bent to form a cylinder which is not quite complete. The spacing between the ends of the strip where they do not quite meet forms the slot within which pin 17² travels. Here again one at least of the inwardly directed flanges 22', 23' should for convenience be turned inwardly after the brush unit and lining have been inserted within the sleeve. The lining in this case should preferably be of resilient material.

Where the holder is tubular the rear end of the holder is preferably used as a receiver for powder to be used on the brush. This powder is intended to be provided in capsule or cartridge form (see Figs. 2, 9 and 12). Where one end 26 of the capsule or cartridge 25 has been opened, the capsule is slid into the tubular holder, closed end 26 first, permitting the content 27 of the capsule to spill out (Fig. 2) into the space 28 at the rear end of the capsule within the holder. From this space it is dispensed through matching apertures 29 and 30 in the holder and in a cap 11 which can be tunred to act as a valve. The cap is knurled at 31 to permit ready turning in order that it may perform its valve functions. The surface 32 of the cap engages the interior 33 of the holder 6 with just sufficient friction to retain it in its adjusted position.

The end wall 34 of the cap may engage the front end 24 of the capsule to hold the capsule in place or may merely prevent the capsule from moving rearwardly. In either event this prevents the wall of the capsule from interfering with flow of powder out through the valve open-

sleeve 7 is provided with inwardly extending lugs 45 which are engaged by the brush unit, to limit the outward sliding movement thereon on the sleeve, as shown in this figure.

By reason of the structure shown in Figures 9 and 13, the cartridge 25 may be easily removed when empty and a new field cartridge replaced in the holder. This produces a very satisfactory sanitary device, and one that can be operated with ease.

In Figure 8 the outer surface of the dispensing cap is formed as a hexagon at 35 so that its non-circular contour will prevent the completed device from rolling when it is rested on its side. This function, however, may be performed by a pocket clip 36 shown in Figure 2. By the pocket clip the device is suited for carrying in the pocket. Presumably the hexagonal device of Figure 8 is better suited for use by ladies who would carry it in the handbag and the clip form is better suited for use by men to attach to the vest pocket.

It will be evident that the device is so fully portable as to greatly increase its convenience and usefulness and that the brush is so fully protected from contamination as to attract the attention of the fastidious purcha ing public.

The holder may be made to advantage of transparent or of translucent material which is light in weight. The construction is very compact and so nearly conforms to the shape of a fountain pen that the well-known graceful contour of fountain pens may be readily given to it. The fact that there is no cover to remove avoids the danger of forgetting to replace the cover.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain part or all of the benefits of my invention without copying the structure shown, and I, therefore, claim all such in so far as they fall within the reasonable spirit and scope of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a brush, a holder having an open end and a stop within the end in combination with a sleeve adapted for insertion of either end within the open end of the holder and a brush unit movable in the sleeve to expose outside of the sleeve either end of the brush unit and to protect the other end of the unit within the holder.

2. A brush comprising a handle having a tubular open end, a sleeve reversibly fitting into the open end, a brush unit including a brush body, slidable lengthwise in said sleeve, adapted to project the brush outwardly from the sleeve for use, in one position of the unit and sleeve, and by sliding within the sleeve and sleeve reversal adapted to protect the brush within the sleeve and open end of the handle.

3. A denture brush comprising a handle having a tubular open front, a sleeve, both of whose ends are adapted to fit, one at a time, into the tubular front, a brush unit slidable longitudinally in the sleeve, means for preventing rotation of the brush unit in the sleeve, means for preventing withdrawal of the brush unit from the sleeve, and a stop within the tubular end engaged by the brush unit to hold the brush against sliding and to hold the brush extended for use.

4. A denture brush comprising a holder having a tubular open end, a sleeve fitting at either end within the tubular opening and having inwardly turned sleeve end flanges, a brush unit having a brush at one end and a brush body at the other, each at all times passing through and guided by one of the flanges, and a stop upon the brush body preventing withdrawal of the brush unit from the sleeve.

5. A dispenser of tubular character having an open end, apertured in the lateral wall at the end, in combination with a capsule adapted to contain powder, open at the rear end of the capsule and a rotatable cap fitting in the open end of the dispenser, having an aperture adapted to be turned into registration with the lateral aperture in the dispenser and located in line with the capsule, whereby the capsule is prevented from movement to close off the openings.

6. In a device of the class described the combination of a tubular holder provided in its side with an aperture and with an open end, a cap provided with a tubular extension, said tubular extension provided with an aperture in its side, said extension positioned within the open end of said holder, a cartridge provided with an open end and a slot in said cartridge near said open end, said extension of the cap positioned in the open end of said cartridge, said aperture of the extension being adapted to register with the slot of said cartridge, and means on said cap and said holder for limiting rotary movement of the cap.

7. In a device of the class described the combination of a tubular holder provided with a slot, a cap on said holder and provided with a lug movable within said slot, a cartridge detachably mounted on said cap and in said tubular holder, and said cartridge and holder provided with registering apertures, whereby powder can be discharged from the cartridge to the outer atmosphere.

8. In a device of the class described the combination of a tubular holder provided with an elongated slot in one end and with an aperture, a cap provided with a longitudinally-extending slot and with an outstanding lug, said longitudinally-extending slot being adapted to register with said aperture, and said lug in the elongated slot of said holder, whereby rotary movement of the cap is limited upon said holder.

9. In a device of the class described the combination of a tubular holder provided with a tubular extension, said extension provided with L-shaped slots, a tubular sleeve provided with inwardly extending tits, said tits working in said L-shaped slots, and a brush unit reversibly mounted upon said sleeve.

10. In a device of the class described the combination of a tubular holder, a tubular sleeve mounted upon said tubular holder, said sleeve provided at one end with inwardly extending lugs, and a slidable, tubular brush unit upon said tubular sleeve and being adapted to engage said inwardly extending lugs for limiting further outward movement of the brush unit upon said sleeve.

ALFRED WATERUD.