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FLUID DISPENSABLE APPLICATOR BRUSH

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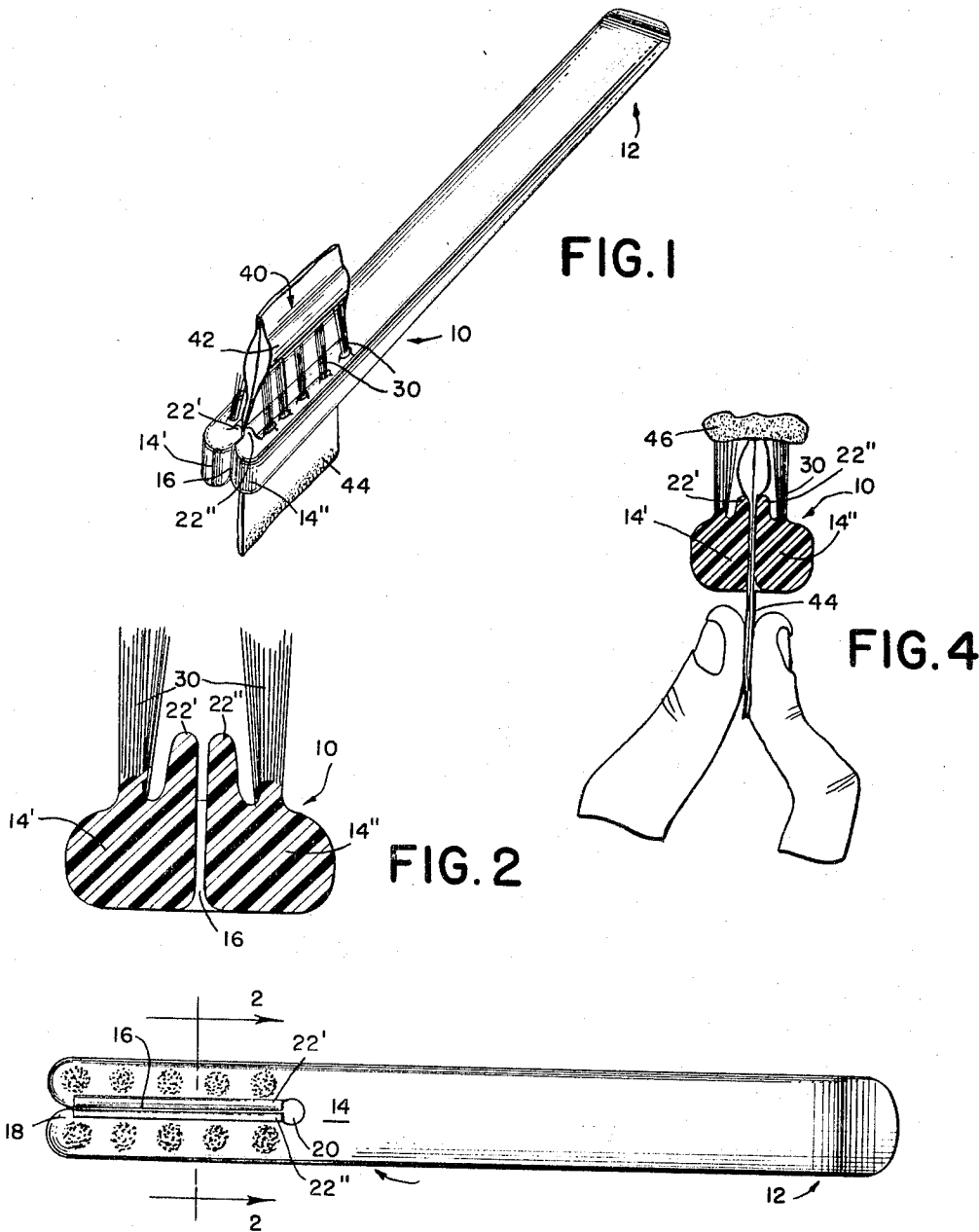


FIG. 3

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FLUID DISPENSABLE APPLICATOR BRUSH

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6 Claims. (Cl. 15—539)

The present invention relates to applicators, and more especially to the species thereof defined as brushes. Invention has particular utility in dental cleaning, treatment and care; nevertheless, the principle of invention is applicable to the general art of fluid dispensing: cleaning, coating and related fluids on applicators for the purposes desired.

An hygienic adaptation of the device is especially suitable for portable and disposable means of applying the cleaning fluid. Likewise, the entire invention, in combination, is adaptable to one-time-use and disposal. It is ideally packaged as a complete one-time-use kit, readily carried on the person or in the wallet, or pocketbook.

The particular construction of the device is such as to conserve the fluid, be it dentrifice or other cleaning, polishing or coating substance. For these and other reasons, the following objectives are recited.

It is an objective of the invention to create to a simple, yet effective means of containing, dispensing and conserving cleaning and related fluids on applicators.

A further objective of invention is to provide a disposable cleaning kit in which not only may the fluid be hygienically contained and hermetically sealed, but also that the means for containing the fluid may be hygienically associated in cooperative, dispensable relation to a brush or like applicator.

It is a principal objective of invention to devise the simplest possible means for containing applicator fluid in dispensable relation to applicator through the use of a confined and disposable reservoir for the applicator, the fluid reservoir dispensably engaging opposed segments of the applicator means.

Yet another objective of invention is to create a novel system for carrying, dispensing and applying cleaning and like fluids to applicators precedent to depositing the fluid on the surfaces to be treated.

With these and other objectives in mind, such as may be apparent from the ensuing description and drawings:

FIGURE 1 is a view in perspective of applicator and fluid reservoir, precedent to dispensing of the fluid on the applicator;

FIGURE 2 is a view thereof in vertical section, taken along the lines 2—2 of FIGURE 1, showing the details of construction of opposed segments of the applicator, the applicator means comprising, in this instance, bristles, integrally formed with the applicator;

FIGURE 3 is a top plan view of the applicator combination illustrated in FIGURE 1;

FIGURE 4 is an illustration of the mode of operation of the cooperative flexible reservoir and applicator means as engaged by the user.

Referring now to the drawings in detail, the applicator or brush 10 of FIGURE 1 is shown to comprise a substantially unitary semi-rigid construction of maximum simplicity, the same to include handle element 12 and head element 14. The handle is preferably of convolute design, concave at the bottom and reinforced sufficiently to lend overall rigidity between handle and head 14. In the present instance, a toothbrush is shown, the same to comprise a flexible material, as for instance, polyvinylchloride. In this instance, the head 14 is bifurcated at 16 and because of the resilient nature of the material, the bifurcation is terminated at apex 20 and on its outer end by opposed contiguous lips 18. It will be appre-

ciated from observation that the fluid reservoir envelope 40 of FIGURE 1, may be inserted into the space defined by opposed segments 14' and 14'' by slidable insertion of the tab portion hereinafter described in greater detail.

With especial reference to FIGURE 2, the reservoir envelope confining gap 16 of head 14 is bound at its side by the opposed segments 14' and 14'' terminating at respective upper and opposite ends by the corresponding shoulder 22' and 22''. These shoulders are designed to ensure that as the envelope is drawn downwardly, the squeezing effect upon the envelope is such as to cause the effluent, in this case, dentrifice, to deposit itself upon the top of the bristles 30 as shown in FIGURE 4.

Noteworthy is the fact that the applicator assemblage is preferably constructed of substantially the same material, including the brush portion but not the fluid containing envelope 40. This particular envelope 40 shown in FIGURES 1 and 4, includes flat side and ends, a pocket portion 42 being hermetically sealed by the adjacent sides and being of blister configuration.

The pull tab 44 is preferably roughened or apertured as shown to yield a better frictional pulling surface for the user.

Reference the shoulders 22' and 22'' above, the basic purpose of the shoulders is to ensure that the fluid which is forced from the bursting packet or envelope is forced out sooner than could be accomplished were the shoulders not an integral part of the construction, extending as they are between opposed columns of corresponding bristles. The result is that less fluid is required to accomplish the purpose, since these shoulders substantially ensure against deposit of the fluid at the base of the bristles, where it is less needed. For this reason, the shoulders 22' and 22'' are preferably substantially less in height than the bristles from the top of the corresponding segments 14' and 14''. In practice, these shoulders should be less than one-half the height of the bristles.

Turning again to the envelope 40, it is most desirable that the envelope or packet portion 42, confining the fluid in the reservoir have the weakest sealing portion thereof adjacent its top, to thereby ensure an upward flow of the effluent fluid, as opposed to sidewise bursting and flow. Alternatively, portions of the sides of the envelope adjacent the top may be sealably weakened for bursting to ensure that the effluent or fluid shall be deposited at the forward and outward portion of the bristles as well as at the rearward and outward portion thereof, without substantially clogging the bristles adjacent their respective bases.

In operation therefore, the system is such as to take a hermetically sealed effluent and apply it to an applicator by means of partially confining one end of a flexible fluid reservoir adjacent the applicator or brush means, and of sequentially expressing fluid onto the applicator means through pulling the reservoir through the fixed confining area, which is perforce of substantially less cross-section in area than the thickness of the reservoir; to burst same and dispense the desired fluid upon the applicator. This is done by first inserting the envelope in a sidewise direction through the corresponding lips 18, which are forced apart yielding access of the envelope pull tab to the bifurcated envelope confining channel 16, retaining thereby the lower portion of the envelope and exposing the upper portion or reservoir portion thereof to the plow ejection. In operation this is done by pulling downward against opposed shoulders 22' and 22'' as well as intermediate corresponding co-extensive inner walls of segments 14' and 14''.

Whereas this particular invention has been described with reference to the application of dentrifice to toothbrushes and the like, it will be readily apparent that other products requiring hygienic hermetic sealing against con-

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tamination by the atmosphere, such as: medicines, cleaning fluids, even fluid powders and the like, may be dispensed accordingly. The particular packet or envelope defining the reservoir for the fluid which is to be dispensed upon the applicator may take various forms without departing from the spirit of the invention, it being obvious that the example recited is by way of illustration only. Accordingly, the invention in its detailed construction and the mode of operation is restricted only as defined in the appended claims.

I claim:

1. The improvement in applicators comprising a resilient applicator head, bifurcated medially to define opposed segments; applicator means on said opposed segments; and a confined reservoir of applicator fluid in the form of a frangible envelope, detachably engaging the opposed segments; shoulder means in extension of the segments, adjacent the applicator means, guiding the envelope to dispense its fluid first upon exposed ends of the applicator means.

2. The improvement of claim 1 in which said the envelope is sealed to define the reservoir, the weakest sealing portion of the envelope being adjacent its top.

3. The improvement of claim 1, said applicator being a toothbrush, the segments bearing opposed rows of bristles longitudinally of the applicator, said confined reservoir extending above the bristles and being initially set for dispensing adjacent tops of the bristles by moving the reservoir in confined dispensing relation to the opposed segments.

4. The combination in a toothbrush having a head,

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handle and bristles on the head, said head being bifurcated longitudinally to form opposed segments, said segments each defining longitudinal shoulders in extension thereof adjacent the bristles, disposable dentifrice dispensing means, said dispensing means comprising a dentifrice containing envelope with reservoir and tab portions, said reservoir portion being of greater thickness than the tab, and resting initially confinedly above and between said segments and shoulders in extension thereof, and said tab portion extending below the segments, whereby upon pulling the tab, the confined fluid may be first dispensed on exposed ends of the bristles.

5. The combination of claim 4 in which the envelope is sealed to define the reservoir, the weakest sealing portion of the envelope being adjacent its top.

6. The system of claim 5 in which the confinement is guide controlled by opposed segment closure at the end of the applicator means.

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