This invention relates to an integral toothbrush and dentifrice holder both held aligned in a common container that can be carried in the same manner as a fountain pen.

The combination of the invention comprises a toothbrush having a truncated handle the lower end of which is hollowed out and threaded to serve as a receptacle and cap for the neck of a collapsible tube, with the thus linked brush and tube enclosed within a removable case. This presents a unit which readily fits into a coat, vest, handbag, or other carrying receiver, just as does a fountain pen and can be similarly secured to the pocket with a clip.

The features and advantages of the invention will be more apparent from the following description and the accompanying drawing which is illustrative of the invention and in which:

Fig. 1 shows the completely assembled combination ready to be placed in a pocket, or other carrying receiver;

Fig. 2 is an end view of Fig. 1;

Fig. 3 is a longitudinal sectional elevational view through Fig. 1;

Fig. 4 is an exploded sectional view, illustrating the refilling of the tube of Fig. 3; and

Fig. 5 shows the preferred form of the invention wherein the truncated handle of the brush serves as the nipple through which the refillable tube may be filled from a supply tube, said supply tube containing dentifrice in either liquid, paste, or powder form.

Referring to Fig. 3, the toothbrush 10 consists of two main portions—a brushing end 11 with bristles 12, and an expanded, truncated handle portion 13. The lower end 14 is hollowed out and threaded internally with threads 15. The refillable collapsible tube 18 is closed at one end and at its other end has an open neck 19 having exterior threads 20 screwed into the internal threads 15 of the handle portion 13.

The toothbrush 10 is enclosed at its brushing end 11 by cover 21, and at its lower end 14 with the attached refillable collapsible tube 18 by cover 22. Covers 21 and 22 are pressed upon the stub handle 13 for economy in manufacture, and are longitudinally positioned by abutting against annular rib 16 which is disposed laterally about lower end 14. The cover 21 is provided with air vents 23 to provide for ventilation of the bristles, and a clip 24 is provided whereby the device may be secured to the pocket for convenience in traveling.

Fig. 4 shows the method of refilling the refillable tube 18 from the large size dentifrice tube 26 using a coupling connector 25 which connects refillable tube 18 to economy size tube 26. The end of the coupling connector 25, into which the refillable tube 18 screws, may be provided additionally with external threads corresponding in size and pitch to those of the large size tube 26, to be used to close the large tube by screwing on to this outside thread of the coupling connector the threaded cap which had been originally screwed on to the large tube.

This permits the coupling connector 25 to be left permanently attached to the large sized dentifrice tube 26 and allows the economy size dentifrice tube with its attached coupling connector 25 to be readily used either in conventional manner at home or for refilling the refillable tube 18 before going on a trip. A separate cap 27 may be provided with each coupling connector 25 as shown in Fig. 4 to screw into the inside thread of that end of the coupling which is used to refill the refillable tube 18 thereby effecting a closure of the large size tube of dentifrice 26 after the connecting coupling 25 has been screwed on to the large size tube of dentifrice without the need of additional threads being cut on the outside of the small end of the coupling connector.

In the preferred form illustrated in Fig. 5, the connecting coupling between the large size dentifrice tube and the refillable tube is built into the truncated handle portion 13 of the toothbrush 10. A closure in the form of a cap 28 is screwed into the threads of the opening 29 in the stub end of the toothbrush which serves as the large end of the coupling connector. The head of this closure cap is made small enough to allow cover 21 to fit over it when the cover 21 is used to enclose the toothbrush. In use cover 21 is at least partially disengaged from handle, the cap 28 is removed. The large size dentifrice tube is screwed into the large opening 29 while the refillable tube 18 is connected to the small end 15 of this coupling which is built integral with the stub handle portion 13 of the toothbrush; the large tube is squeezed so as to force the dentifrice through the connecting orifice into the small end of the coupling and so into the refillable tube.

In closing the steps are reversed, i.e., the large tube is removed, cap 28 is screwed into the opening 29, and cover 21 is replaced over the toothbrush. Since it was not necessary to remove cover 22 to refill tube 18, the toothbrush is now ready to be inserted into the pocket.

In operation covers 21 and 22 are removed, refillable tube 18 is unscrewed from the truncated handle 13 of toothbrush 10, cover 22 is replaced, the proper amount of dentifrice is deposited upon the toothbrush bristles 12, and the teeth are then brushed. Following this brushing, the brush bristles 12 are then rinsed, partially dried, cover 21 is replaced upon brushing end 11, cover 22 is removed, the refillable tube 18 is screwed into internal threads 15 of handle portion 13 of toothbrush 10, cover 22 is replaced and the refillable-pocket toothbrush is secured in the pocket by clip 24. One may, of course, replace refillable-tube 18 into stub handle 13 of toothbrush 10 immediately after depositing the dentifrice upon the bristles and then replace cover 22 upon truncated handle 13 before brushing the teeth.

The refillable-tube may be refilled from the large size dentifrice tube at any convenient time while at home to provide means for cleaning the teeth while away from home, one filling of the refillable tube before a trip with sufficient dentifrice in this tube for more than one week's use. Filling the refillable-tube before starting on a trip or on vacation would eliminate the very bothersome and weight-and-space-adding factor of a bulky dentifrice container in the luggage while still permitting the larger size to be purchased for home use before a trip. Before vacation, the refillable-tube pocket toothbrush solving what was always considered a very vexing problem during vacation time.

Covers 21 and 22 may have elevated sections or ribs
at or near their open ends protruding inwardly to fit into corresponding depressions in the stub handle 13 of the toothbrush 10, thereby allowing the covers to seat more firmly upon the stub handle portion of the toothbrush than would be the case with a friction fit. This would prevent the lower portion of the toothbrush dental unit from working loose from the upper cover 21 clipped to the pocket by clip 24, which may occur with only a friction fit being used. Alternately, the elevations may be manufactured on the stub handle portion of the toothbrush to seat into similarly shaped depressions in the covers 21 and 22 to accomplish the same result.

In a further modification, not shown, the refillable tube 18 may have threads manufactured upon the inside of its orifice to allow for its being screwed onto the outside threads of the large size dentifrice tube 26 and so eliminate the need for the coupling connector 25. This would be convenient where the diameter of the threads on the large size dentifrice tube is relatively small. Alternately, threads may be manufactured on the inside of the large size dentifrice tube to allow the refillable tube 18 to be screwed directly into the orifice of the large size dentifrice tube to effect refilling without the need of supplying the coupling connector 25.

The refillable tube 18 may be made of sheet metal or, in a preferred modification, it may be made of a readily-yielding, resilient material such as polystyrene. In the latter case, when upon being squeezed it is found to be empty, it may then be coupled with the filling tube. The toothpaste will be sucked in thereby preventing any waste and eliminating the possibility of leakage. The tube and truncated handle may of course be cylindrical in which case the covers will be of similar shape, the whole unit having the external appearance of a conventional fountain pen.

From the foregoing specifications it will become apparent that the invention disclosed will adequately accomplish the functions for which it has been designed and in an economical manner and that its simplicity, accuracy and ease of operation are such as to provide a relatively inexpensive device considering what it will accomplish and that it will find an important place in the art to which it appertains when once placed on the market. Such a device lends itself particularly for promotional use as well as for conventional commercial use.

While several forms are described in the above referred to drawing, it is to be understood that they are merely for the purpose of illustration and that various changes in construction may be resorted to in the course of manufacture in order that the invention may be utilized to the best advantage according to circumstances which may arise without in any way departing from the spirit and intention of the device, which is to be limited only in accordance with the appended claims. And while there is stated the primary field of utility of the invention, it remains obvious that it may be employed in any other capacity wherein it may be found applicable.

Having thus fully described our invention, we claim the following:

1. A dental cleansing unit comprising a toothbrush having a handle, said handle being provided with a pair of recesses and a communicating channel extending therebetween, a removable closure member for one of said recesses, a collapsible resilient dentifrice holder having a neck conforming to the other of said recesses, and means for rigidly and removably affixing said holder to said handle through said other recess, whereby said dentifrice holder can be refilled from a supply vessel by removal of said closure member and insertion of said supply vessel into said one recess, the dentifrice passing from said supply vessel through said channel into said holder.

2. A cleansing unit according to claim 1, said other recess being so provided in said handle that said holder extends longitudinally of said handle, said handle being truncated and including a lateral rib positioned intermediately said recesses, and further including a first hollowed member enclosing said toothbrush and frictionally engaging said handle, and a second hollowed member enclosing said dentifrice holder and frictionally engaging said handle, the maximum longitudinal movement of said hollowed members along said handle being limited by said rib, said second hollowed member constituting an elongation of said handle for grasping said toothbrush.

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