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DISPENSER FOR POWDERED DENTIFRICE

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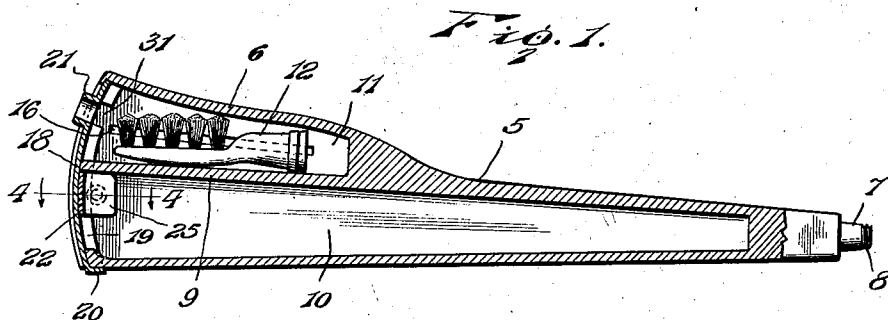
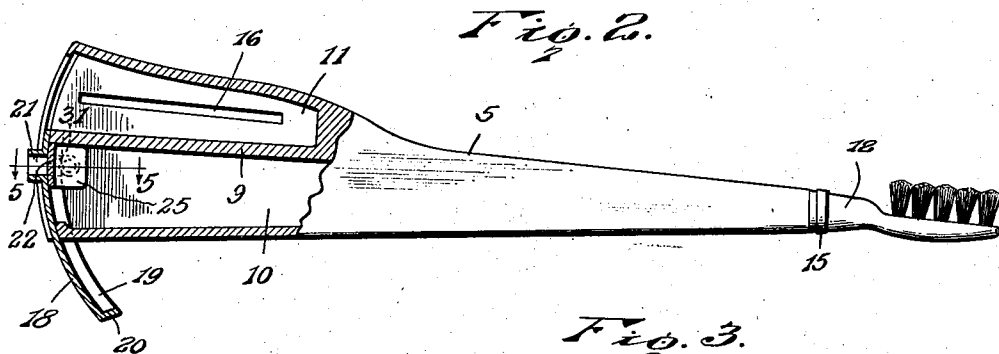
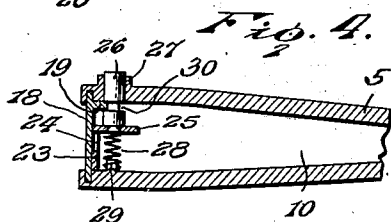
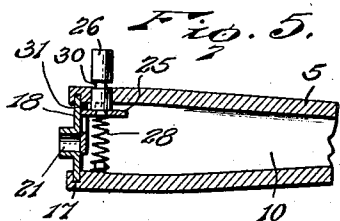
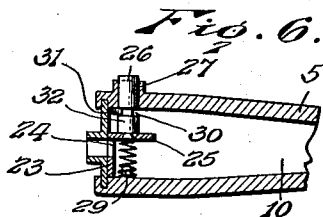
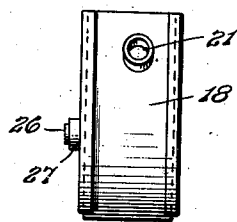
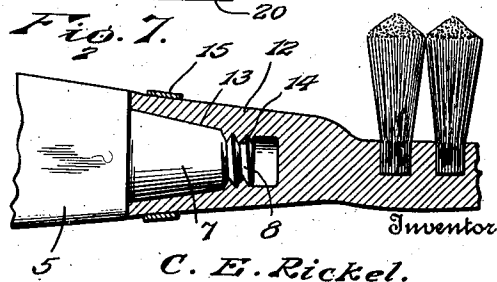


Fig. 3.



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DISPENSER FOR POWDERED DENTIFRICE

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10 Claims. (Cl. 221-62)

This invention relates to dispensers for powdered dentifrice and has for its object to provide a comparatively simple and inexpensive device of this character which is compact in construction so that it may be conveniently carried in the pocket or a hand bag and which serves as a holder for a tooth brush and as a receptacle for dentifrice to be used therewith so that both brush and dentifrice are readily accessible for immediate use when desired.

A further object of the invention is to provide a dispenser, the handle of which is provided with a compartment adapted to receive powdered dentifrice, means being provided for dispensing the powdered dentifrice on a tooth brush.

A further object is to provide one end of the handle with a sliding plate which forms a closure for the compartment, said plate being formed with a discharge opening adapted to register with a controlling valve mounted in the dentifrice compartment for regulating the discharge of the dentifrice.

A further object is to provide a novel form of controlling valve which coacts with the sliding plate or closure to automatically lock the plate in open position.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

In the accompanying drawing forming a part of this specification, and in which similar numerals of reference indicate corresponding parts in all the figures of the drawing,

Figure 1 is a longitudinal sectional view of a combined tooth brush and dentifrice holder embodying the present invention, the brush head being shown housed within the handle and both compartments closed.

Figure 2 is a side elevation, partly in section, showing the closure plate in open position and the brush head removed from the compartment and attached to the handle.

Figure 3 is an end elevation.

Figure 4 is a transverse sectional view, taken on the line 4-4 of Figure 1.

Figure 5 is a transverse sectional view, taken on the line 5-5 of Figure 2.

Figure 6 is a detail sectional view showing the valve in open position to permit discharge of the dentifrice.

Figure 7 is an enlarged detail sectional view showing the manner of detachably securing the brush head on the handle.

The improved tooth brush and dentifrice holder forming the subject-matter of the pres-

ent invention comprises a handle 5 formed of gutta-percha or other suitable material, one end of which is transversely enlarged at 6, while the other end thereof is tapered and terminates in a conical stud 7, the end of which is threaded, as indicated at 8. The handle 5 is provided with a transverse partition 9 forming independent compartments 10 and 11, one of which is adapted to receive dentifrice, preferably in powdered form, while the other serves to receive and house a detachable brush head, indicated at 12. The brush head 12 may be provided with any style of bristles and the shank thereof is formed with a conical socket 13 adapted to fit over the stud 7, there being threads 14 formed in the small end of the socket 13 for engagement with the threads 8 whereby the brush head may be quickly and conveniently attached to or removed from the handle. If desired, the shank of the brush head may be strengthened by an annular reinforcing band 15. The dentifrice compartment 10 preferably extends approximately the entire length of the handle, while the compartment 11 is formed with longitudinal slots 16 to permit free circulation of air therethrough and thus keep the bristles of the brush head in a dry, sanitary condition. The end of the enlargement 6 of the handle is preferably arcuate in shape and the side walls thereof are formed with guiding grooves 17 in which is slidably mounted a correspondingly arcuate closure plate 18. The closure plate 18 is provided with a depending arcuate flange 19 and a terminal depending stop flange 20, which latter bears against the adjacent wall of the handle when the plate 18 is in closed position, as best shown in Figure 1 of the drawing. The closure plate 18 is formed with a lateral nipple 21 having an opening formed therein and adapted to register with the compartment 10 to permit the discharge of dentifrice on the brush head when desired.

As a means for controlling the discharge of dentifrice from the compartment 10, there is provided a spring actuated sliding valve 22 including a relatively short cut-off plate 23 having an opening 24 formed therein and adapted to register with the nipple 21, said cut-off plate being provided with a depending portion 25 to which is secured one end of a valve stem 26, the other end of which extends through an opening 27 in the adjacent side wall of the handle and in convenient position to be manipulated by the operator. A coil spring 28 is in-

terposed between the depending portion 25 and a centering lug 29 on the wall of the compartment 10 for the purpose of normally holding the valve in closed position. The valve stem 26 is provided with an annular groove 30 which is disposed in the path of the flange 19 when the valve stem is pressed inwardly and permits free sliding movement of said plate while, at the same time, holding said valve stem retracted, there being a notch or opening 31 formed in the flange 19 and adapted to receive a cylindrical part 32 of the valve stem when the stem is released so as to lock the plate in open position and permit movement of the valve stem therethrough. It will here be noted that when the valve stem is pressed inwardly to cause the opening 24 in the cut-off plate to register with the nipple 21 and permit discharge of the dentifrice, the closure plate is free to slide within the grooves 17 and the closing movement of the plate 18 will cause the flange 19 to lock the valve stem in open position so that the outer end of the stem will not project beyond the side walls of the handle and form a surface projection.

Normally, the parts are in the position shown in Figure 1 of the drawing, that is to say, with the brush head removed from the stud 7 and housed within the compartment 11 and with the compartment 10 filled with powdered dentifrice, and in which position the device may be conveniently carried in a pocket or in a purse or hand bag. When it is desired to use the tooth brush, the plate is moved laterally by exerting a slight pressure on the nipple 21 until the adjacent end of the plate clears the compartment 11 and in which position the spring 28 will force the valve stem outwardly and cause the cylindrical portion 32 thereof to enter the notch 31 and thus lock the plate against further movement and at the same time prevent discharge of the dentifrice from the compartment 10. The brush head 12 is then removed from the compartment 11 and the handle positioned over the bristles of the brush head after which the valve stem is pressed inwardly which causes the opening in the cut-off plate to register with the nipple and thus allow a predetermined quantity of dentifrice to be deposited on the bristles of the brush head. The brush head is then screwed onto the stud 7 and the brush used in the usual manner for cleaning the teeth. After the teeth have been cleaned, the brush head is detached from the stud 7 and inserted in the compartment 11. By then pressing inwardly on the valve stem 26, the cylindrical portion 32 of the valve stem will clear the notch 31 and cause the groove 30 to register with the flange 19 of the sliding plate and in which position the plate may be readily moved laterally of the handle so as to form a closure for both of the compartments of the handle.

It will thus be seen that there is provided a comparatively simple and inexpensive device by means of which a tooth brush and a quantity of dentifrice may be compactly housed in a unitary structure so as to be conveniently carried in a pocket or hand bag and ready for immediate use when desired.

It will, of course, be understood that the devices may be made in different sizes and shapes and embellished or ornamented in any suitable manner to impart a pleasing ornamental appearance thereto. It will also be understood that

while it is preferred to make the handle of hard rubber, said handle and brush head may be made of celluloid, bakelite, metal, or any other suitable material having the desired strength without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A device of the class described including a handle having a compartment adapted to receive powdered dentifrice, a plate forming a closure for said compartment and provided with a discharge nipple adapted to register with the dentifrice compartment, a spring actuated valve mounted in the dentifrice compartment and provided with a stem adapted to project through one wall of the handle, and means carried by the sliding plate and coacting with the valve for normally holding the stem thereof in retracted position.

2. A device of the class described comprising a handle having a compartment adapted to contain powdered dentifrice, a sliding plate forming a closure for the compartment and provided with a discharge opening, and a valve for controlling the discharge of dentifrice through said opening.

3. A device of the class described comprising a handle having a compartment adapted to contain powdered dentifrice, a sliding plate forming a closure for said compartment and having a discharge nipple adapted to register with the dentifrice compartment, and a valve slidable transversely of the dentifrice compartment and adapted to register with the discharge nipple to permit the discharge of dentifrice from said compartment when the sliding plate is moved to partially open position.

4. A device of the class described comprising a handle having one end thereof enlarged laterally to form a compartment adapted to receive powdered dentifrice, a sliding plate forming a closure for said compartment and provided with a depending flange, and a spring actuated valve mounted in the compartment and including a stem having an annular groove formed therein adapted to receive the flange on the sliding plate, said plate being provided with a discharge nipple adapted to register with the valve to permit the discharge of dentifrice when the valve is in open position.

5. A device of the class described comprising a handle having a compartment adapted to receive powdered dentifrice, the walls of said compartment being formed with seating grooves, a plate slidably mounted in said seating grooves and forming a closure for said compartment, said plate having a discharge nipple and being provided with a depending flange having a notch formed near one end thereof, and a spring actuated valve mounted in the compartment and including a valve stem having a cylindrical portion and an annular groove, the annular groove being adapted to receive the flange on the plate to permit sliding movement of the plate and the cylindrical portion of the stem being adapted to enter the notch in the flange to lock the plate against forward movement when the nipple registers with the dentifrice compartment.

6. A device of the class described comprising a handle having a compartment adapted to receive powdered dentifrice, a sliding plate forming a closure for said compartment and provided with a nipple adapted to register with the dentifrice compartment, a normally open valve mounted in the dentifrice compartment and including a stem exposed at one side of the handle, and means

carried by the valve and coacting with the sliding plate for normally holding the stem of the valve in retracted position.

7. A device of the class described comprising a handle having a compartment adapted to receive powdered dentifrice, a sliding plate forming a closure for said compartment and provided with a discharge nipple adapted to register with the dentifrice compartment, a valve, means carried by the valve and coacting with the sliding plate for normally holding the valve retracted, and means for moving the valve to extended position when the sliding plate is operated.

8. A device of the class described including a handle having a compartment formed therein and adapted to receive powdered dentifrice, a sliding plate forming a closure for said compartment and provided with a discharge nipple, a spring actuated valve slidably mounted in the dentifrice compartment and including a perforated cut-off plate having a stem connected therewith and extending through one wall of the handle, there being an annular groove formed in the valve stem, and a flange carried by the sliding plate and movable within the annular groove to permit closing of the plate.

9. A device of the class described comprising a handle having a compartment adapted to receive powdered dentifrice, walls of said handle being formed with guiding grooves, a plate slidably mounted in said guiding grooves and form-

ing a closure for said compartment, said plate being formed with a discharge nipple and having a depending flange provided near one end with a locking notch, a spring actuated valve disposed within the dentifrice compartment and including a cut-off plate having an opening therein adapted to register with the discharge nipple, a stem surrounding the cut-off plate and projecting through one wall of the handle, said stem being formed with an annular groove, and a flange carried by the sliding plate and operating within the groove, a portion of the valve being adapted to enter the locking notch for preventing sliding movement of the plate when the nipple registers with the dentifrice receiving compartment.

10. A device of the class described comprising a handle having a compartment therein adapted to receive powdered dentifrice, an arcuate plate slidably mounted on the handle and forming a closure for said compartment, said arcuate plate being provided with a discharge nipple and having a depending flange formed with a locking notch, and a valve disposed within the dentifrice compartment and including a stem having an annular groove adapted to receive the flange on the arcuate plate, that portion of the stem adjacent the groove being adapted to enter the locking notch and prevent sliding movement of the plate.

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