Feb. 7, 1933. R. J. TALBOT 1,896,982

TOOTHBRUSH

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Fig. 1.

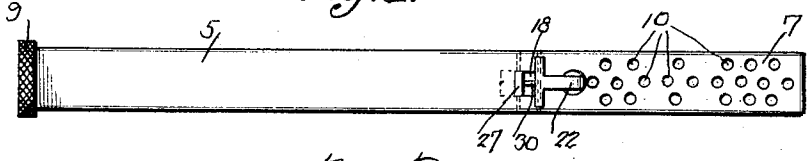


Fig. 2.

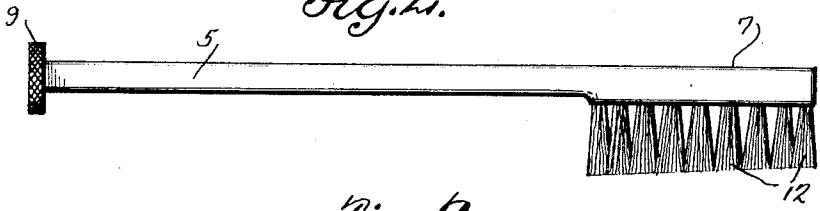


Fig. 3.

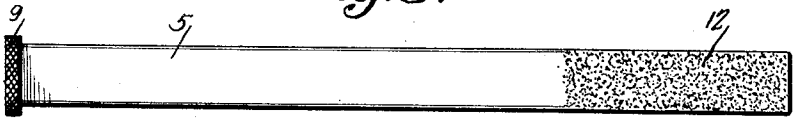


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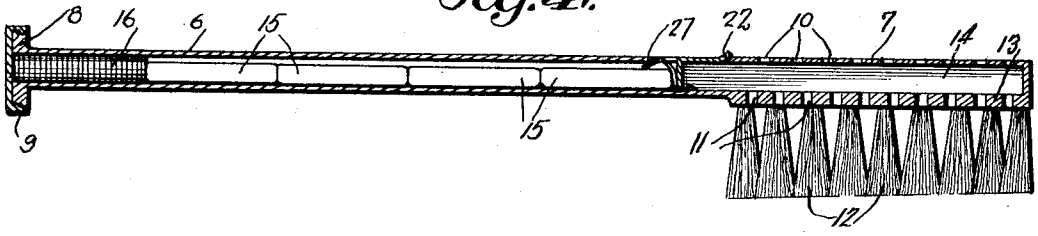


Fig. 5.

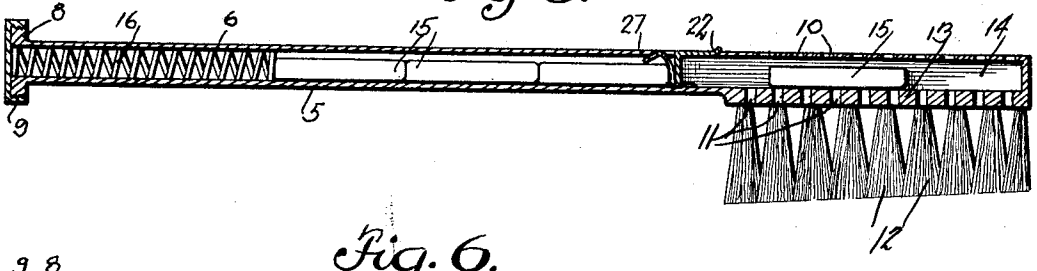
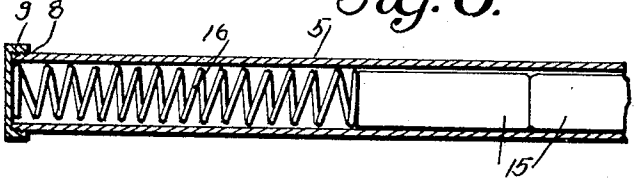


Fig. 6.



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Fig. 7.

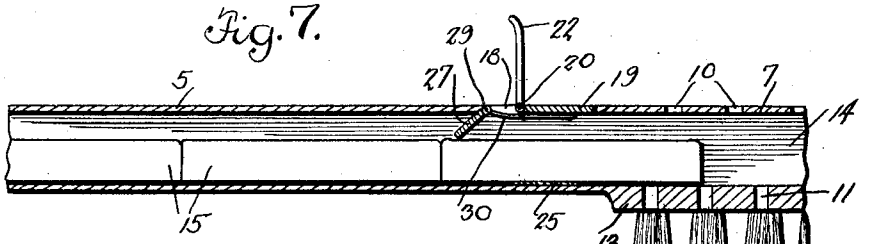


Fig. 8.

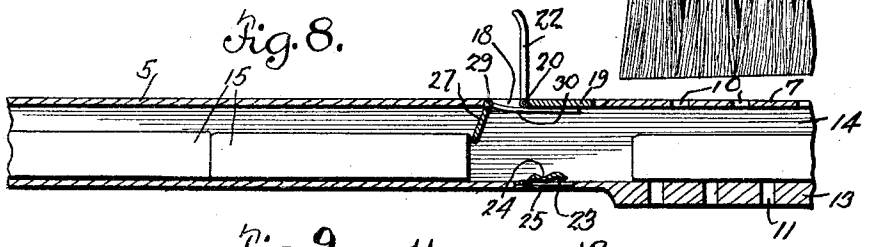


Fig. 9.

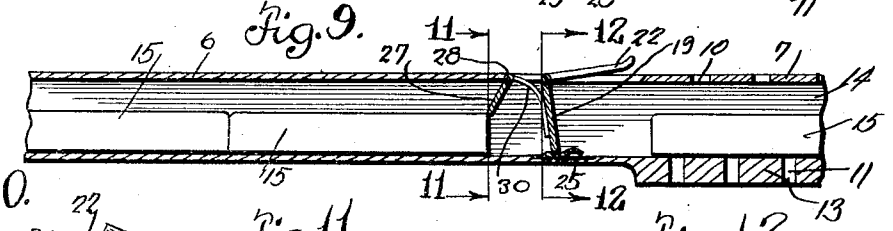


Fig. 10.

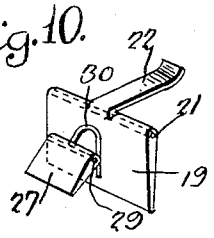


Fig. 11.

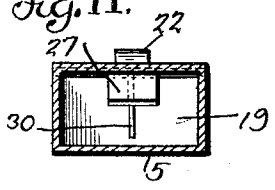


Fig. 12.

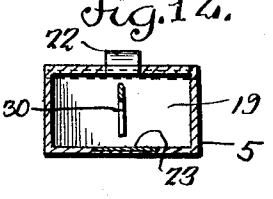
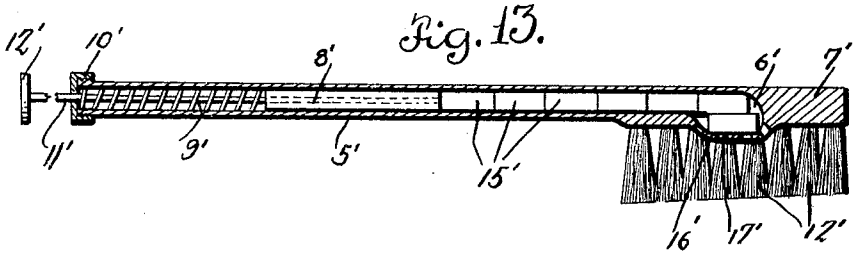


Fig. 13.



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Patented Feb. 7, 1933

1,896,982

UNITED STATES PATENT OFFICE

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TOOTHBRUSH

Application filed November 20, 1930. Serial No. 497,018.

This invention relates to improvements in tooth brushes and has reference particularly to the type in which the handle is used as a reservoir for the tooth paste. The invention comprises an elongated casing rectangular in cross section having openings at one end on both side walls and bristles are mounted in close relation to one set of apertures or openings whereby water may pass through the openings onto the bristles.

The invention further comprises arranging a series of tablets of tooth paste or other tooth detergents, within the handle portion of the elongated casing and means is provided for forcing the tablets into a chamber adjacent the bristles as they are used. Also, a valve or detent is provided within the elongated casing for allowing the passage one at a time, thereby retaining the balance of the tablets within the handle portion of the casing.

The primary object of this invention is to provide a device of the above mentioned character in which a supply of tooth paste or the like is carried in the handle of the tooth brush, whereby the necessity of using paste or cleaning material from a tube is dispensed with thereby providing a more sanitary manner of cleaning teeth and it is necessary for each individual to provide his own brush and series of cleaning tablets.

A still further object of this invention, is to provide a device of the above mentioned character having comparatively few parts to become out of order and which may be cheaply and easily manufactured at a minimum cost.

Other objects and advantages of the invention will become apparent during the course of the following description, forming a part of the specification, in which,

Figure 1 is a longitudinal top elevation of the invention illustrating the apertures in the top wall of the housing and showing the operating lever for the detent or valve;

Figure 2 is a side elevation of the invention illustrating the removable cap and the bristles anchored in one end of the casing;

Figure 3 is a bottom elevation of the invention further illustrating the removable cap at one end of the casing and the bristles embedded in the opposite end of the casing;

Figure 4 is a longitudinal cross-sectional view illustrating the manner in which the tablets or tooth paste are retained in the handle and the manner in which they are adapted to be projected into the dispensing chamber individually;

Figure 5 is a longitudinal cross-sectional view showing one of the capsules in the liquid chamber and showing the manner in which the remainder are retained in the handle;

Figure 6 is an enlarged detail longitudinal cross-sectional view of the handle, showing the manner in which the coil spring is held in place by the removable cap at one end and the manner in which it impinges the capsules at the opposite end;

Figure 7 is a longitudinal sectional view, showing in detail the construction of the detent for allowing the passage of one capsule at a time;

Figure 8 is a longitudinal sectional view, showing a fragmentary section of the handle and capsule chamber and the valve or detent construction;

Figure 9 is a longitudinal sectional view, showing a portion of the handle and the tablet chamber enlarged and illustrating the detent in its closed position;

Figure 10 is a perspective view of the valve or detent for controlling the passage of the individual capsule;

Figure 11 is a cross-sectional view taken on line 11—11 of Figure 9, illustrating the contour of the casing or handle and the arrangement of the valve or detent therein;

Figure 12 is a cross-sectional view taken on line 12—12 of Figure 9, looking in the direction of the arrows and showing the detent further in detail to illustrate the manner in which the same is pivoted in an opening within the elongated handle;

Figure 13 is a modified form of the invention and illustrates the individual tablet arranged in a handle and adapted to be projected forwardly by a follower acted upon by a coil spring.

In the drawings, wherein for the purpose of illustrating the invention and wherein like

reference characters may be employed to designate like parts throughout the same, the reference character 5 will generally be employed to designate an elongated casing including a handle portion 6 which is adapted to be formed rectangular in cross-section in conection with a brush holder 7.

One end of the rectangular handle 6 is provided with a disk 8 having suitable threads for a cap or closure 9. As the handle 6 is rectangular in cross section it is necessary to provide the disk 8 in order that the cap 9 may be screw threaded thereon by a certain movement.

The brush housing 7 is provided on its upper wall with a series of apertures 10, while it is provided on its lower wall with a series of similar apertures 11. Also, bristles 12 are embedded in the lower wall of the brush housing 7 as clearly illustrated in Figures 4 and 5. The bristles 12 may be embedded in the lower wall 13 in any suitable manner, and if desired, the brush housing 7 may be formed of a different material than the handle portion 6. The brush housing 7 is hollow and is also formed rectangular in cross-section to provide a chamber 14 into which is adapted to be projecting an individual tooth paste capsule as illustrated in Figure 5.

It is proposed to form the tablets 15 rectangular in cross-section and preferably formed of a small cube of paste whereby the same may be retained within the rectangular housing or handle 6 by being inserted after the cap 9 has been removed. A coil spring 16 having angular convolutions is mounted within the handle 6 at one end thereof after the tablets 15 have been placed in the handle whereby one end of the spring 16 will engage the tablets 15, while the opposite end will be engaged by the cap or removable closure 9. In this manner, the individual capsules 15 are fed forwardly in the direction of the compartment or chamber 14 and it is proposed to provide means for allowing the passage of only one tablet at a time in the chamber 14 where it is adapted to be acted upon by water passing through the opening 10 and out of the opening 11 whereby a portion of the capsule after having been dissolved by the water will fall downwardly upon the bristles 12.

Formed in the upper wall of the elongated casing 5 adjacent the capsule chamber 14 is a slot or opening 18 in which is pivoted an oblong detent 19 as by means of a pin 20 passing through an opening 21 in the upper edge of the detent 19, and having its ends embedded in openings in the side edges of the opening 18. A finger piece 22 is formed integral with the oblong detent 19 and when the detent is in its closed position, it is adapted to be engaged by a spring 23 having a notched portion 24 for receiving the edge of the oblong detent. One end of the spring 23 is rigidly secured in a recessed portion of the bottom wall of the casing 6, while the opposite end is free and presented in the direction of the travel of the capsules 15. In this manner, the oblong detent 19 may be held in its closed position, blocking the entire cross sectional area of the elongated casing 6.

Also pivotally mounted in a reduced portion of the slot 18 is a trip member 27 pivotally held in place as by means of a pin 28. The pin 28 passes through a bore 29 in the upper edge of the trip 27 and also has its ends anchored in the edges of the slot 18. A flexible element 30 has one of its ends embedded in the side wall of the detent 19, while its opposite end is curved and embedded in the top edge of the trip 27, whereby movement of the oblong detent 19 will simultaneously cause flexing of the flexible member 30 and cause movement of the trip 27 for allowing the passage of one capsule 15 at a time.

The construction illustrated in Figure 13, includes an elongated casing 5′ similar to the elongated casing or handle 5 and the handle is formed rectangular in cross-section and is provided at one end with an enlarged brush support 7′ in which is adapted to be supported or secured a series of bristles 12′. A brush or bristle support 7′ connects the handle 5′ and the rectangular opening in the handle 5′ terminates in the brush base or support 7′ in a chamber 6′. A spring pressed follower oblong in cross section is designated by the reference character 8′ and is slidably mounted within the handle 5′ whereby a coil spring 9′ may have one of its ends engaging the follower 8′ and its opposite end engaging a circular screw threaded cap 10′. An operating rod 11′ passes through the cap 10′ and has one of its ends connected to the follower 8′ and the other end provided with an operating finger piece 12′ whereby reciprocating movement to the follower 8′ may be caused.

The tablets 15′ are movably mounted within the handle 8′ in a similar fashion to the structure illustrated in Figures 1 to 12 inclusive but no means is provided for intercepting the passage of the tablets from the handle portion of the elongated casing through the chamber 6′. The chamber 6′ is provided with a curved lower wall 16′ having openings or apertures 17′ for the passage of water and a dissolved portion of each of the tooth paste cubicals.

For a consideration of the operation of the device as illustrated in Figures 1 to 12 inclusive, the operator first removes the screw threaded cap 9 and the tension spring 16 and fills the handle 6 with a series of the tablets 15 while the oblong detent 19 is in its closed position extending across the cross-sectional area of the casing 5. After the tablets 15 have been thus placed within the handle, the finger piece 22 may be operated to cause the detent 19 to be moved into the position shown in Figures 7 and 8 whereby

the trip 27 will allow the passage of the first tablet that will drop into position to prevent the passage of the next tablet. After a tablet 15 has been projected into the chamber 14 the remaining cubicals are retained in the handle by means of the detent 19 whereby the operator may present the brush to a suitable water supply from a faucet whereby portions of the tablet 15 will be dissolved and fed to the bristles 12.

The operation of the device as illustrated in Figure 13 is somewhat similar to the operation of the device disclosed in Figures 1 to 12 inclusive with the exception that the tooth paste tablets 15′ may be fed forwardly by means of the spring pressed follower 8′ or there may be positively operated or projected forwardly into the chamber 6′ where they may be acted upon by presenting the brush 12′ to a water supply whereby a portion of the tablet may be dissolved and fed through the opening 17′ onto the bristles 12′.

It is to be understood that the forms of the invention herewith shown and described are to be taken as the preferred examples of the same, and that various changes may be made therein without departing from the spirit and scope of the invention as claimed.

I claim:—

1. A tooth brush of the character described, comprising an elongated casing having apertures at one end thereof, tooth brush bristles mounted adjacent the apertures, a closure for the opposite end of the casing, means for feeding a series of individual tooth paste tablets to a position adjacent the apertured portion of the casing, and means for retarding the forward movement of the capsules whereby one tablet will be allowed to be moved into the compartment in close relation to the apertured portion of the casing at a time.

2. A tooth brush of the character described, comprising an elongated casing having apertures at one end thereof, a series of tooth brush bristles mounted in close relation to the apertures, a removable closure screw threaded on the opposite end of the casing, a coil spring mounted within the casing, a series of individual dentifrice tablets also mounted in the casing, and a pivoted detent mounted in the casing for preventing passage of more than one dentifrice tablet at a time into the apertured portion of the casing.

3. A tooth brush of the character described, comprising an elongated casing having apertures at one end thereof, a removable closure for the opposite end of the casing, a series of dentifrice tablets mounted in the elongated casing, means for feeding the tablets to the opposite portion of the casing and a pivoted detent mounted in the path of the dentifrice tablets.

4. In a brush, a casing having a mixing chamber and a reservoir for tablets of cleaning compound, a bristle element in communication with the mixing chamber, a valve between the chamber and reservoir and a stop actuated by the opening of the valve whereby a single tablet of cleaning compound is admitted into the mixing chamber.

5. The combination with a brush having a mixing chamber for an external liquid and a reservoir for internally carried tablets of cleaning compound, and a bristle element in communication with the mixing chamber, of means for admitting a single tablet of the cleansing compound into the mixing chamber including a valve between the reservoir and mixing chamber, and a stop raised and lowered by the opening and closing movement of the valve and extending into the reservoir for automatically arresting the passage of more than a single tablet of cleansing compound.

6. A brush comprising a reservoir for tablets of a cleansing compound and a saturation chamber with a bristle element in communication with the saturation chamber, a valve separating the reservoir and chamber, means for opening and closing the valve and means attached to the valve for automatically limiting the feeding of the tablets of cleansing compound admitted to the saturation chamber upon each opening movement of the valve.

7. In a brush of the character described, a hollow handle comprising a compartment for tablets of cleansing material and a mixing chamber with a bristle element in communication with the mixing chamber, a valve interposed between the compartment and chamber and a trip device in the compartment for engagement with the tablets of cleansing material and controlled in its operation by the valve to be disengaged from the tablets of cleansing material by operation of the valve to permit a single tablet of cleansing material to be moved into the mixing chamber.

8. A brush as recited in claim 7, characterized by a spring arm carried by the trip device and engaged with the valve.

9. In a tooth brush having an elongated handle, one end of which acts as a receptacle for dentifrice tablets and the other end acts as a mixing chamber for the dentifrice and a liquid, a valve dividing the receptacle and mixing chamber including a lift, a flap valve and a stop carried by the flap valve whereby the tablets are admitted into the mixing chamber in measured quantities.

In testimony whereof I affix my signature.

RICHARD J. TALBOT.