April 26, 1932. D. GABRIEL 1,855,572

TOOTHBRUSH

Filed Oct. 17, 1929

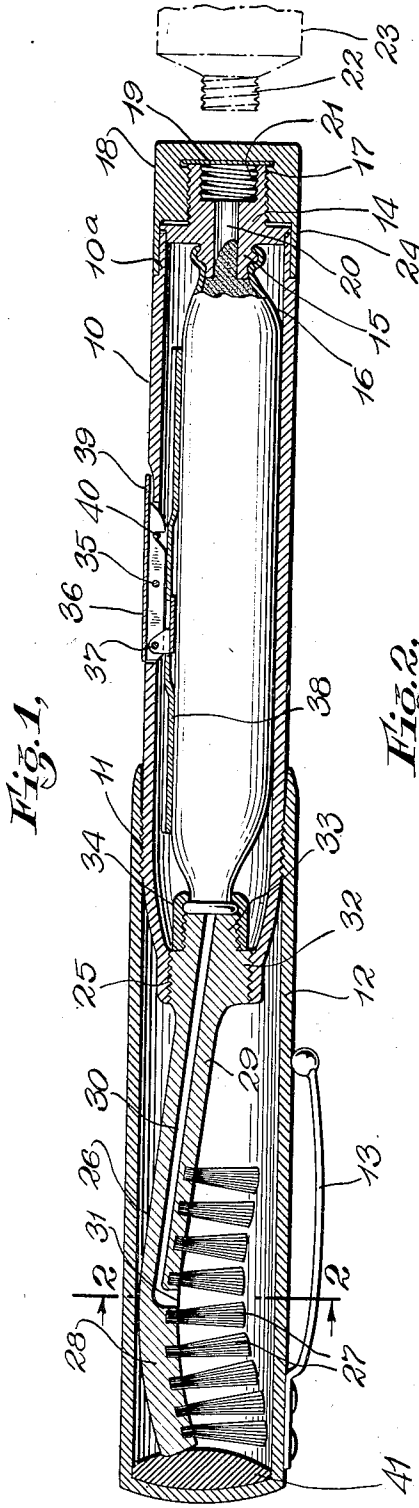


Fig. 1.

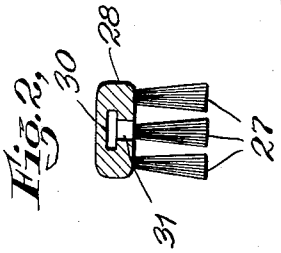


Fig. 2.

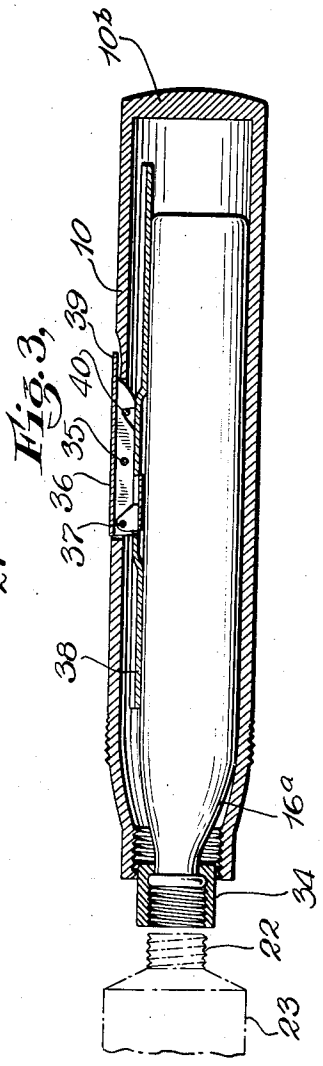


Fig. 3.

INVENTOR.
Daniel Gabriel
BY Howard C. Thompson
ATTORNEY

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UNITED STATES PATENT OFFICE

DANIEL GABRIEL, OF BROOKLYN, NEW YORK

TOOTHBRUSH

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This invention relates to tooth brushes and particularly to what may be termed a fountain tooth brush or a device wherein the dental cream is arranged within the handle portion of the brush, suitable means being provided for ejecting the cream into the bristle portion of the tooth brush in the use thereof; and the object of the invention is to construct a device of the class specified in such manner as to form a neat and finished article preferably in the general form of a fountain pen or pencil structure to facilitate the carrying of the same in a pocket, pocketbook or the like whereby the same may be carried about on the person or in a pocketbook carried by a person in the daily travels so as to render the same accessible for use as often as may be deemed necessary or desirable and especially after eating in order to maintain the teeth in a clean and sanitary state at all times; a further object of the invention being to provide a device of the class specified, the handle portion of which is in the form of a tube or barrel in which is arranged a flexible dental cream or paste container, means being provided in said tube or barrel for compressing said flexible container to discharge the dental cream or paste through a tube or passage opening outwardly through the bristle end of the tooth brush; a further object being to provide means whereby the discharge spout of a dental cream tube of standard or conventional form may be attached to or coupled with my improved tooth brush or a part thereof in such manner as to fill said compressible or flexible container whenever and as often as desired; a still further object being to provide means whereby a new brush end or a new flexible container tube may be substituted for an old or worn out one without replacing the handle portion or the closure cap employed in conjunction with said handle portion; a further object being to provide the closure cap of the device with a pad adapted to contain an antiseptic of any kind or class so as to maintain the brush end in sanitary state at all times; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified which is simple in construction, efficient in use and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification of which the accompanying drawings forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a longitudinal, sectional view through a tooth brush made according to my invention.

Fig. 2 is a partial section on the line 2—2 of Fig. 1; and,

Fig. 3 is a view similar to Fig. 1 showing a modification and showing only a part of the construction.

To illustrate one method of carrying my invention into effect, I have shown in Fig. 1 of the drawings a tooth brush constructed along the general lines of a fountain pen, at least, to resemble such a structure. In said figure, 10 represents the handle portion proper of the tooth brush which is in the form of a tube which may be composed of any desired material, one end portion of the tube being preferably threaded as seen at 11 to receive a closure cap 12, the latter being preferably provided with a spring clip 13 to facilitate the mounting of a device in connection with a pocket or other support. The outer end of the tube 10 is closed by a plug 14 which is in screw threaded engagement with said tube and carries on its inner end a nipple 15 with which one open end of a flexible tube 16 is adapted to be coupled, said tube being preferably composed of rubber.

The plug 14 has an outwardly directed extension 17 which is externally threaded to receive a closure cap 18 having a packing disk 19 to seal the end of the plug 14, the bore 20 of the plug being enlarged and internally threaded as seen at 21 to receive the externally threaded discharge spout 22 on the end of a flexible dental cream tube 23 of conventional form, the discharge spout 22 and part of the tube 23 being indicated in dot and dash lines in Fig. 1 and also Fig. 3 of the drawings. It will also be noted that the cap 18 includes a skirt portion 24 which passes onto a reduced

end 10*a* of the tube 10 to form a neat and finished appearance.

The other end of the tube 10 is preferably made slightly conical in form as in fountain pen constructions and said end is internally threaded as seen at 25 to receive a detachable brush end 26, the latter being of any desired form and construction and preferably made in accordance with conventional methods in so far as mounting and attaching the separate bunches or clusters of bristles 27 to the brush head 28, the same being modified only in constructing the head 28 as well as the shank portion 29 in such manner as to provide a bore 30 extending from the outer end of the shank 29 to preferably the central portion of the head 28 to meet an aperture 31 opening into the face of the head 28 in which the bristles 27 are mounted. The bore 30 may be of any desired construction and formed in any way, and if molded may be preferably comparatively wide and flat as seen in Fig. 2 of the drawings.

The end of the shank 29 of the brush member 26 is slightly enlarged and externally threaded as seen at 32 to engage the threads 25 in the end of the handle member 10. Said end of the shank has a reduced externally threaded nipple 33 to receive a coupling sleeve or collar 34 for mounting the other end of the flexible tube 16 in connection with said nipple.

In this connection, it is important to note that the threaded nipple 33 as well as the threads in the collar 34 will correspond to the threads of the discharge nipple 22 of a dental cream tube of conventional form so that a flexible tube 16*a* such as seen in Fig. 3 of the drawings may be filled by coupling a dental cream tube 23 directly with the collar 34 as seen in Fig. 3, this result being accomplished by removing the brush member from the tube 10 as well as withdrawing the flexible tube 16*a* from said tube. In the structure shown in Fig. 3, the outer end of the tubular handle 10 has a closed wall 10*b* and the plug 14 and cap 18 are omitted. Otherwise, the structure of the device shown in Fig. 3 is identical with that shown in Fig. 1.

In the structure shown in Figs. 1 and 3 of the drawings, the wall of the tubular handle member 10 is provided with an elongated aperture in which is pivotally mounted as shown at 35 a lever 36 to one end of which is pivoted as seen at 37 a compressor bar 38 adapted to be moved into the chamber of the tubular handle 10 and to compress the flexible tube 16—16*a* to discharge the paste or cream through the bore 30 and aperture 31 by raising the finger end 39 of the lever, the lever being tensionally supported in its inoperative position and in parallel relation to the wall of the tube 10 by engagement with a pin or other device 40 supported in the tube. The lever 36 and the bar 38 are of a general form substantially similar to devices of this class employed in conjunction with what are known as self-filling fountain pens.

However, in the present instance, the lever and compressor bar are employed for ejecting the contents of the flexible tube rather than for the purpose of filling the same. In this connection, it will be understood that any suitable means may be provided for compressing the flexible tube to discharge the contents thereof intermittently through the successive uses of my improved tooth brush. In this connection, it will also be apparent that my invention is not necessarily limited to the use of a flexible tube or other means may be employed for discharging dental creams from a tubular handle portion.

It is also preferred that the closed end of the cap 12 being provided with a pad 41 preferably of absorbent material, which may be saturated with an antiseptic solution of any kind or class and preferably of a nature to maintain the tooth brush contained within the cap in a sanitary state, when the device is not in use. However, it will be apparent that the cap in itself will form a guard means for sealing and protecting the brush member of the tooth brush and to keep it in a sanitary state at all times. In this connection, it will also be apparent that my invention is not necessarily limited to the use of the cap and especially in connection with tooth brushes which are to be maintained in the home and used as other devices of this class. The closure cap is employed only in the device intended for portable use or in carrying the same about in a pocket, pocketbook or the like.

It will be understood that while I have shown certain details of construction for carrying my invention into effect, that I am not necessarily limited to the specific structure herein disclosed and various changes therein and modifications thereof may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

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

1. A tooth brush of the class described comprising a tubular handle member, a tooth brush body detachably coupled with one end of said handle member and having a passage extending from the chamber of said handle member outwardly through the brush head of said brush member, a compressible dental cream tube arranged within said tubular handle member, means for directly and detachably coupling said compressible tube with part of the brush member arranged within said handle member, and said last named means serving as means for coupling a dental cream tube of conventional form with said compressible tube to replenish the supply of dental cream thereto.

2. A tooth brush of the class described comprising a tubular handle member, a tooth brush body detachably coupled with one end of said handle member and having a passage extending from the chamber of said handle member outwardly through the brush head of said brush member, a compressible dental cream tube arranged within said tubular handle member, means for directly and detachably coupling said compressible tube with part of the brush member arranged within said handle member, said last named means serving as means for coupling a dental cream tube of conventional form with said compressible tube to replenish the supply of dental cream thereto, a bar arranged within the handle member and adapted to cooperate with said tube to compress the same and a lever pivotally supported in connection with the handle member to control the operation of said bar.

In testimony that I claim the foregoing as my invention I have signed my name this 14th day of October, 1929.

DANIEL GABRIEL.