

(No Model.)

D. W. TOWER.
TOOTH BRUSH.

No. 499,612.

Patented June 13, 1893.

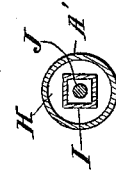
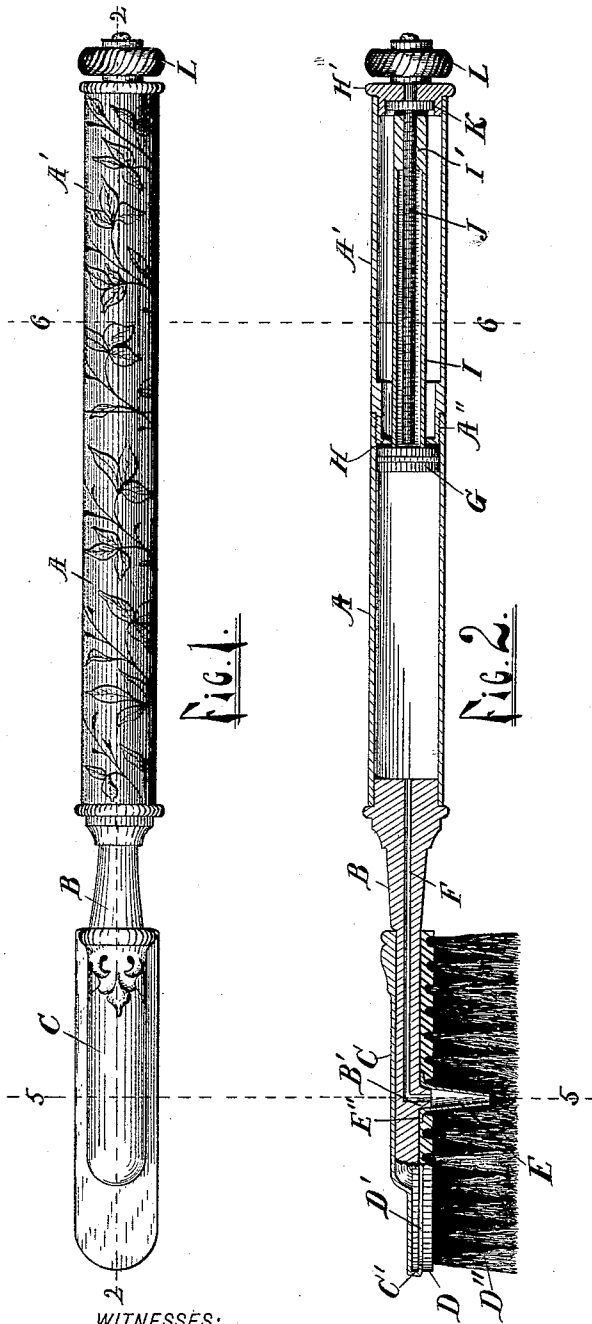


Fig. 6.

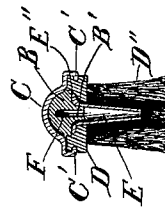


Fig. 5.

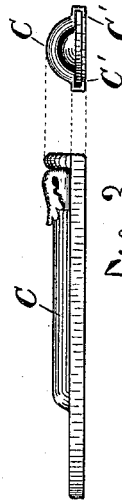


Fig. 3.

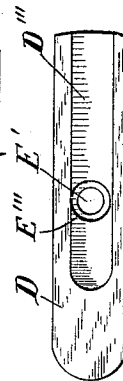


Fig. 7.

WITNESSES:

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DANIEL W. TOWER, OF GRAND RAPIDS, MICHIGAN.

TOOTH-BRUSH.

SPECIFICATION forming part of Letters Patent No. 499,612, dated June 13, 1893.

Application filed December 21, 1892. Serial No. 455,873. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. TOWER, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Tooth-Brushes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved tooth brush, and its object is to provide the same with certain new and useful features, herein-after more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a device embodying my invention; Fig. 2 a longitudinal section of the same on the line 2—2 of Fig. 1; Fig. 3 a detail of the cap; Fig. 4 a detail of the detached brush head; Fig. 5 a transverse section on the line 5—5; and Fig. 6 a transverse section on the line 6—6.

Like letters refer to like parts in all of the figures.

The handle is made in two substantially equal tubular parts A and A', connected at their adjacent ends by a screw joint A''. To the opposite end of the section A is attached the brush shank B, provided with a semi-cylindrical end, the plane side of which fits a sunken, or depressed seat D''' in the back of the detachable brush head D, and is provided with a nipple B', which enters an opening E' in said brush head, in which opening is inserted a soft rubber nozzle E, surrounding said nipple and having a flange E'', engaging a suitable annular chamber E''' to hold said nozzle in place. An opening or passage F connects the interior of said nozzle with the interior of the section A of the handle.

The brush head D is provided with the usual bristles D'', and has a groove D' in its edge, which groove is engaged by an inwardly turned flange C' on the cap C, which cap incloses the back of the brush head D and the end of the shank B, and firmly secures them to each other, the nipple B' preventing the withdrawal of the shank from beneath said cap by engaging the opening E'. A solid piston head G fits the interior of the section A

and traverses the same by means of a hollow square stem I, which passes through a square opening in the head H, on the end of the section A', and extends within the axis of said section. Said square stem is provided with a nut I', which engages the threads of a screw J, which extends within said hollow stem and thence outward through the cap H' on the outer end of the section A', said screw having a milled head L on its outer end, engaging the outside of the said cap, and a fixed collar K engaging the inside of said cap to prevent longitudinal movement of said screw in the same.

By detaching the parts A and A' of the handle the former may be filled with any suitable paste, or dentifrice, said parts then being re-connected. The piston G may be moved forward by turning the milled head L, and the dentifrice forced forward through the channel F, and nozzle E into the brush as required.

The square stem I by engaging the square opening in the head H is prevented from turning with the screw, and as the screw J and stem I are entirely behind the piston and within the part A', they are not exposed to the action of the dentifrice, from within, or any thing from without said handle, or corroded thereby, and a solid piston can be used, which will effectually prevent leakage of the dentifrice past the same; the device is thus much easier kept clean and leakage avoided.

By sliding the cap C off at the end of the head D opposite the handle, it is detached from the shank B, and the nozzle E can then be also readily detached from the brush. Thus the parts may be readily separated for cleaning, or new parts substituted as occasion requires, or several heads having differing grades of brushes may be interchangeably used.

What I claim is—

1. In a tooth brush, having a hollow handle, and an opening from the same to the brush, and a piston traversing a part of the handle nearest the brush, and a screw inclosed in the part of the same remotest from the brush, and projecting outside said handle; a head near the middle of said handle, a square opening in said head and a square stem on said piston; passing through said opening

and having a nut engaging said screw, whereby said piston is moved by the screw and prevented from rotating with the same, substantially as described.

- 5 2. In a tooth brush, a tubular handle divided into substantially two equal parts detachably connected to each other, one of said parts having attached a shank, having an opening leading to the brush, a solid piston
10 traversing said parts, and the other of said parts having a head adjacent to said piston having a square opening, and a head at the opposite end, having a round opening, a square hollow stem on said piston passing
15 through said square opening, a screw within said stem, and passing through said round opening, a milled head on the outer end of said screw engaging the outside of said head and a collar on said screw engaging the inner
20 side of said head, substantially as described.

3. In a tooth brush, a brush shank having

a laterally projecting nipple, a detachable brush head, having an opening engaging said nipple and a detachable cap inclosing the
25 back of said brush head and the end of said shank, and an inwardly turned flange on said cap engaging and securing said brush head in place, substantially as described.

4. In a tooth brush, a shank having a flat
30 side and a nipple projecting therefrom, a brush head having a sunken seat to receive said flat side, and an opening to receive said nipple and a groove in its edge, and a cap inclosing the back of said head, and the end of
35 said shank, and an inwardly turned flange on said cap engaging said groove, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL W. TOWER.

Witnesses:

LUTHER V. MOULTON,
LOIS MOULTON.