

No. 743,582.

PATENTED NOV. 10, 1903.

W. S. STEIN.  
TOOTH BRUSH.

APPLICATION FILED JULY 3, 1902.

NO MODEL.

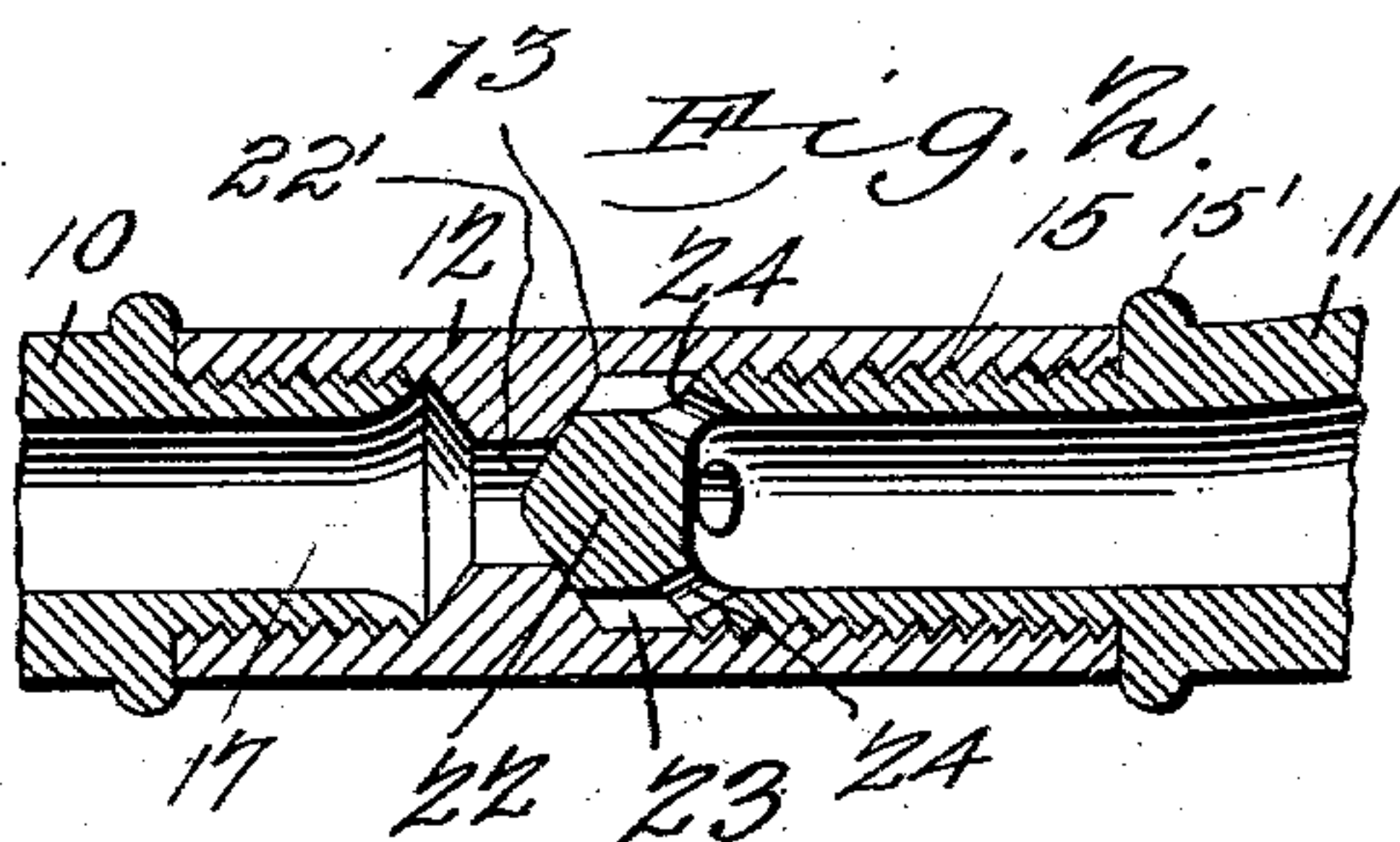
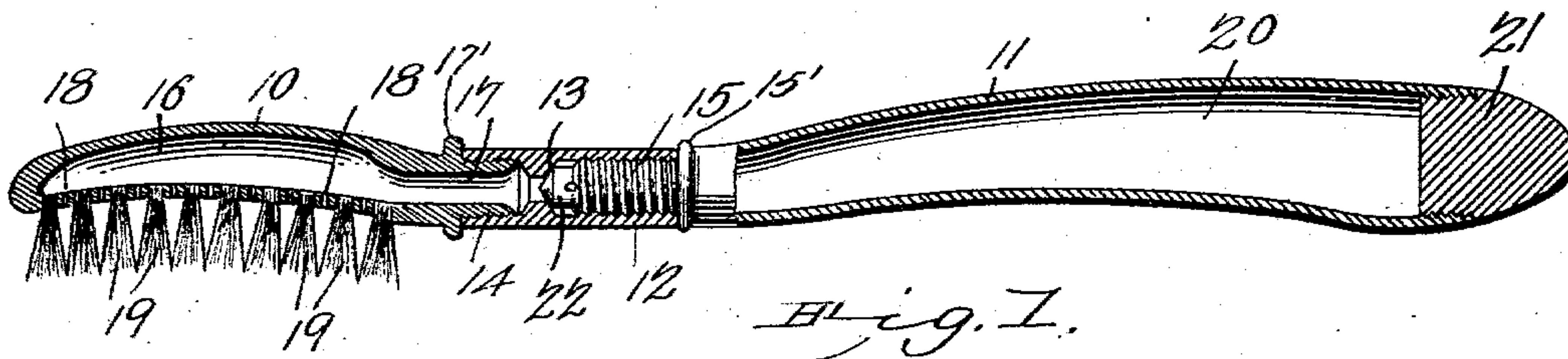


Fig. 3.

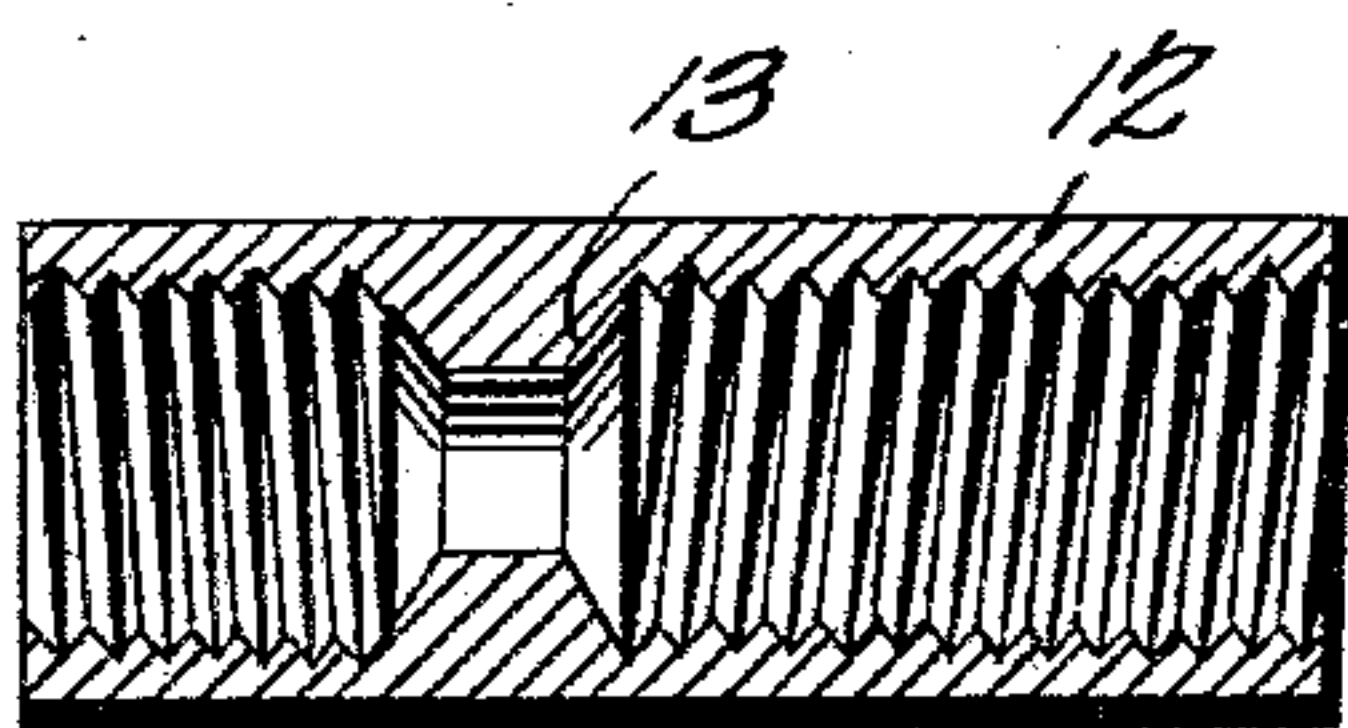
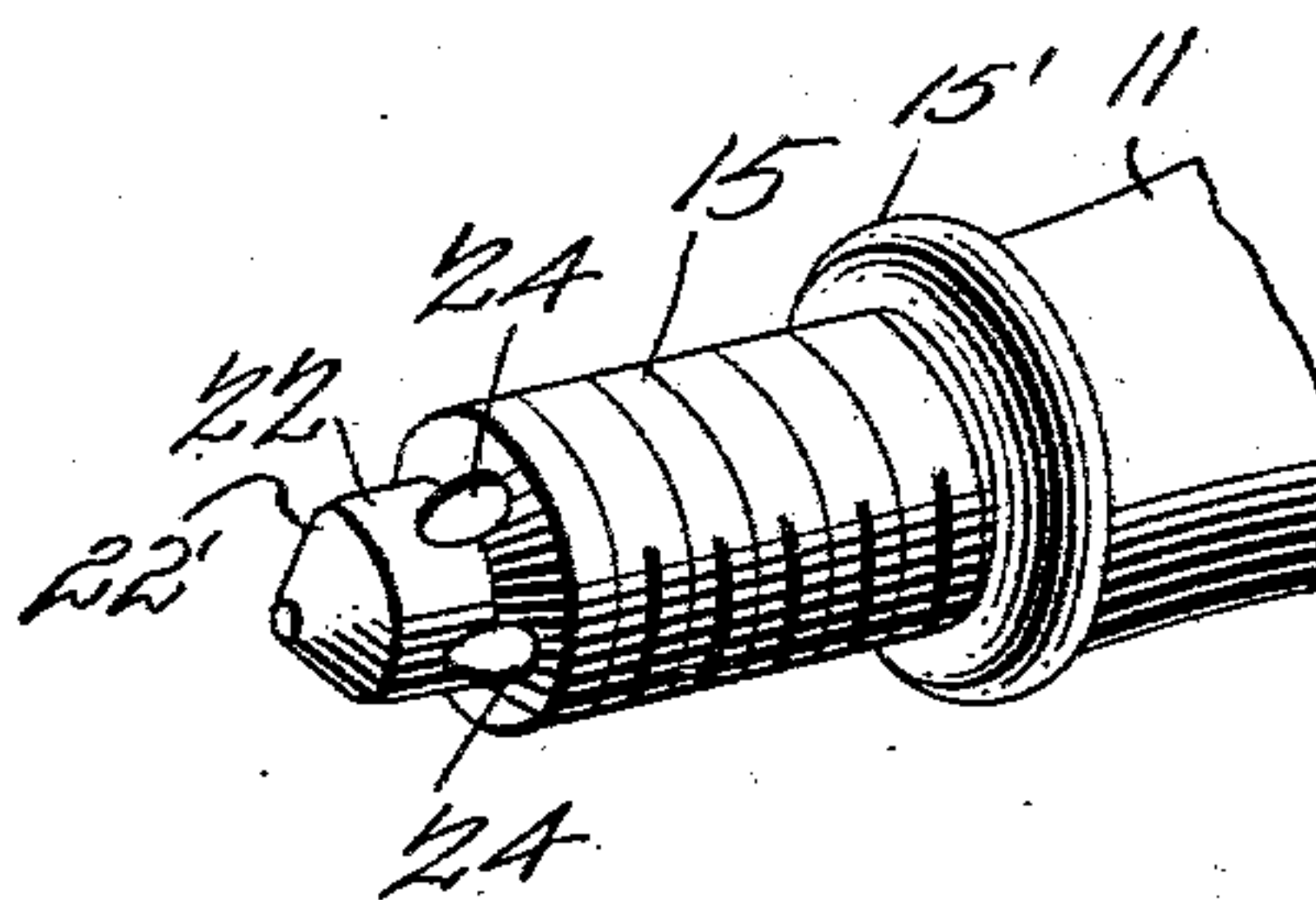


Fig. 4.



Witnesses  
*E. H. Stewart*  
*C. H. Woodward*

W. S. Stein Inventor  
by *C. H. Woodward*  
Attorneys



# UNITED STATES PATENT OFFICE.

WILLIAM SCOTT STEIN, OF LINCOLN, NEBRASKA.

## TOOTH-BRUSH.

SPECIFICATION forming part of Letters Patent No. 743,582, dated November 10, 1903.

Application filed July 3, 1902. Serial No. 114,290. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SCOTT STEIN, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Tooth-Brush, of which the following is a specification.

This invention relates to improvements in tooth-brushes, the object thereof being to provide a tooth-brush with means for supplying the dentifrice from a reservoir in the handle through orifices among the bristles.

The invention consists in forming the coupling-sleeve between the brush-head and the handle reversible and with a double valve-seat intermediately disposed therein, so that when one valve-seat is worn the sleeve may be reversed and the other valve-seat brought into action, and thus prolong the life of the device.

The invention consists, further, in the peculiar construction and combination of parts hereinafter fully described and claimed.

Figure 1 of the accompanying drawings represents a sectional elevation of the device complete. Fig. 2 represents an enlarged sectional detail illustrating the construction of the coupling means and valve mechanism between the brush-head and the handle. Fig. 3 represents an enlarged sectional view of the coupling-sleeve detached. Fig. 4 represents an enlarged perspective view of the valve end of the handle.

The same reference characters indicate corresponding parts in all the figures.

In the device as here shown the brush-head is represented at 10, the reservoir-handle at 11, and the coupling-sleeve at 12, the latter being internally screw-threaded at each end and provided with a valve-seat 13 between the screw-threaded ends, as clearly shown in Fig. 3. The brush-head is provided with a threaded stud 14, engaging one end of the sleeve 12, while the handle 11 is likewise provided with a threaded stud 15, engaging the opposite end of the sleeve. The brush-head is made hollow, as shown at 16, and provided with an outlet 17 through the stud 14 and with numerous orifices 18, leading into the interior of the brush-head from among the bristles 19, as shown. The head 10 also has a peripheral rib 17' formed on the exterior

thereof at the base of the stud 14, against which the end of the sleeve 12 abuts when the parts are connected. The handle 11 is provided with an internal cavity 20, and its outer end is provided with a screw-cap 21.

The inner end of the stud 15 is reduced and provided with a valve 22, adapted to engage the valve-seat 13 when the plug 15 is screwed into the sleeve 12. The handle 11 is also provided on the exterior thereof at the base of the stud 15 with a shoulder 15', against which one end of the sleeve 12 abuts when the parts are assembled. The valve-seat 13 has two inclined valve faces or seats extending toward each end of the sleeve, and the sleeve is reversible in position with the studs 14 and 15 and adapted to engage either end alternately so that the valve 22 will engage with either of the valve-seats. By this means in the event of the unequal wearing of either one of the valve-seats the sleeve may be reversed in position to bring the other valve-seat into action. The end of the stud forming the valve-stem 22 is somewhat smaller in diameter than the interior of the sleeve, leaving an annular cavity or chamber 23 between the valve-stem and the sleeve, and the stud is provided with apertures 24, connecting this chamber 23 with the interior 20 of the handle. When the plug 15 is screwed into the sleeve with the valve 22' in engagement with the seat 13, communication between the cavity 23 and the outlet 17 of the brush-head will be cut off; but constant communication between the cavity or chamber 23 and the interior of the handle will be maintained through the orifices 24 keeping said chamber always supplied with liquid from the handle, and thereby avoiding the danger of the ducts becoming clogged by reason of the material hardening at that point. This chamber 23 being disposed adjacent the regulating-valve and between it and the source of supply is cleared of its contents at each opening of the valve, which avoids the possibility of the material hardening in said chamber and rendering the device inoperative.

When it is desired to admit the dentifrice from the cavity 20 in the handle into the interior of the brush-head, it is only necessary to reverse the handle a few turns, so as to run the valve back out of engagement with its



seat, when the dentifrice will freely flow through the orifices 24 and chamber 23 into the brush-head through the duct 17. When the proper quantity has been supplied to said  
 5 head, the valve will be again closed by turning the handle forward to its former position. By this means the supply of dentifrice may be perfectly and easily controlled without exposing it to the outside air or to dust or evapo-  
 10 ration.

It will be noted that the brush head, sleeve, and handle, together with the plug 21, are readily detachable when required, so that all the parts are easily accessible for cleansing  
 15 at suitable intervals. This is an important feature of the invention, as one of the prime requisites of devices of this character is that they shall be thoroughly cleansed at suitable intervals, and the brush when constructed as  
 20 herein described and shown admirably meets these demands, every part being readily accessible and no obscure or remote corners being formed into which the cleansing agent cannot freely enter.

25 When the head and handle of the brush are united by the sleeve 12, the joint between them is reinforced and strengthened by the peculiar construction of said sleeve.

The parts may be formed of any desired  
 30 shape or size and of any desired material and other minor details of construction va-

ried without departing from the scope of this invention as claimed.

I claim as my invention—

A fountain tooth-brush comprising a hollow  
 35 brush-head having orifices among the bristles leading from the interior thereof, and provided with an exteriorly-threaded hollow stud, a peripheral rib formed on said head at the  
 40 base of said stud, a sleeve having an intermediate valve-seat and interiorly-screw-threaded ends, one end being adapted to engage said stud and abut against said rib, a  
 45 hollow handle having a threaded hollow stud for engaging the other end of said sleeve, and provided with a shoulder formed exteriorly thereon at the base of said stud, said hollow  
 50 handle-stud having a longitudinally-extended end of smaller diameter than said stud and adapted to engage the valve-seat of said sleeve, a chamber being formed between the periphery of said extended end and the inner  
 55 face of the sleeve, and orifices in said handle-stud communicating with the interior of the handle and with said chamber.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM SCOTT STEIN.

Witnesses:

J. A. RANDALL,  
 C. M. CLARK.