

D. L. CHANDLER.
TOOTH BRUSH.
APPLICATION FILED MAY 12, 1910.

1,055,607.

Patented Mar. 11, 1913.

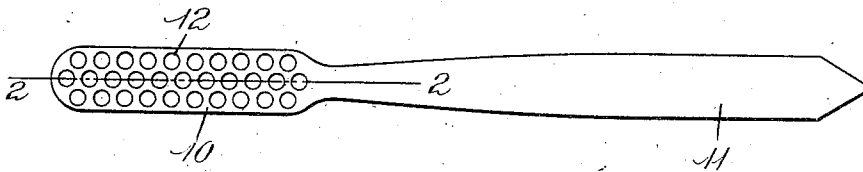


Fig. 1.

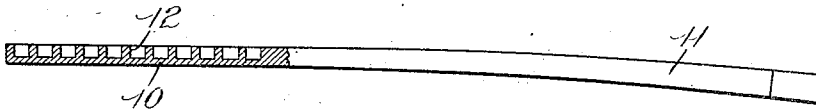


Fig. 2.

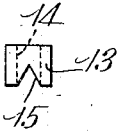


Fig. 3.

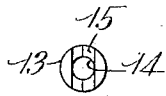


Fig. 4.

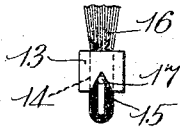


Fig. 5.

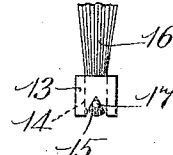


Fig. 6.

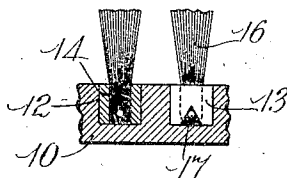


Fig. 7.

Witnesses.
Franklin & Low
Leonard A. Powell

Inventor:
Daniel L. Chandler
by his attorney, Charles S. Gooding.

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UNITED STATES PATENT OFFICE.

DANIEL L. CHANDLER, OF AYER, MASSACHUSETTS.

TOOTH-BRUSH.

1,055,607.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed May 12, 1910. Serial No. 590,808.

To all whom it may concern:

Be it known that I, DANIEL L. CHANDLER, a citizen of the United States, residing at Ayer, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Tooth-Brushes, of which the following is a specification.

This invention relates to an improved tooth brush.

10 The object of the invention is to provide a tooth brush so manufactured that the bristles of the brush will be firmly united to the body portion thereof, so that they cannot be accidentally disconnected therefrom, and
15 also the object of the invention is to so unite the bristles to the body portion of the brush that there will be no possibility of water or foreign substances getting in around the base of the different bunches of
20 bristles and between the bristles and the body portion of the brush, or between the bristles and that part which unites said bristles to the body portion of the brush, the object of the invention, therefore, being to firmly unite the bristles to the body
25 portion of the brush and to seal them in the body portion of the brush so as to render the same water-tight, thus making the brush durable and hygienic in its construction.
30 To attain these ends, each bunch of bristles, which together form the bristle portion of the brush, is firmly fastened to and sealed in a bristle holder of fictile material, preferably consisting of a collar, and the collar
35 is then firmly united to the body portion of the brush and sealed therein, so that no water or foreign matter can get in around the base of the bristles in the bristle holder, and neither can any water or foreign substance get in between the holder and the
40 body portion of the brush.

The invention consists in the improved tooth brush formed by uniting a plurality of said bristle holders with their bunches of
45 bristles to the body portion of the brush in the process of manufacturing, all as hereinafter particularly set forth in the specification and particularly pointed out in the claim.

Referring to the drawings: Figure 1 is a
50 plan view of the body portion of a tooth brush, and handle with the bristles removed. Fig. 2 is a longitudinal section taken on line 2-2 of Fig. 1. Fig. 3 is a side elevation of a bristle holder. Fig. 4 is an underneath
55 plan of the same. Fig. 5 is a side elevation of a bristle holder with a bunch of bristles

inserted therein and projecting therethrough. Fig. 6 is a side elevation of the bristle holder with the bristles drawn up into place and a cross-pin inserted therein. Fig. 7 is an enlarged sectional elevation showing two of the bristle holders in position with the bristles therein, one of said bristle holders being shown in section.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is the body or back portion of the brush and 11 the handle thereof. The body portion of the brush is provided with holes 12, 12 which preferably
70 extend part way through said body portion, these holes being provided for the purpose of receiving the bristle holders 13, 13.

The bristle holders 13 are each provided
75 with a hole 14 extending therethrough and also with a transverse groove 15 extending across the bottom thereof. It will be noted that the handle and back of the tooth brush and also the holders are preferably formed of fictile material such as celluloid, and that the holders are of slightly larger diameter when first manufactured than the diameter of the holes 12, 12 into which they are to be
80 subsequently forced.

The bunches of bristles 16 are attached to the bristle holders 13 in the following manner: A bunch of bristles is first doubled longitudinally thereof and pushed through the hole 14 in the holder 13 and downwardly below the bottom of said holder, as illustrated in Fig. 5. It will be noted that the holes 14, 14 are drilled in the holders 13 of the right size to have the bunch of bristles when doubled fill the hole. After the bunch of bristles has been doubled and passed through the hole in the collar or holder, as illustrated in Fig. 5, a cross-pin 17, also preferably of celluloid, is passed through the bunch of bristles inside the folded end
90 thereof and within the cross groove 15. The collar and that portion of the bristles which extends down below said collar, together with the pin 17, are then dipped into liquid celluloid, collodion, or any other suitable
95 sealing material, and the bristles are then drawn up into the collar tight, so as to leave the collar and the bristles in the form shown in Fig. 6. The collar is then compressed by a suitable compressing tool or pincers,
100 while hot, so as to slightly reduce the outside diameter, and also so as to close the

bristles up firmly within the collar, so that the bristles, with the liquid celluloid will fill the hole and hermetically seal the same against any liquid passing therethrough.

- 5 After the collars have had the bristles attached to them and sealed therein in the manner hereinbefore set forth, they are dipped in a mixture of alcohol and ether, which mixture slightly softens the collars
10 until they become plastic under the action thereof. These collars and their bristles in a plastic state are then forced into the holes 12 in the brush and allowed to dry and set, whereupon the bristles will become hermeti-
15 cally sealed in the collars and the collars will be firmly attached to and hermetically sealed in the brush back, the result being that no substance of any kind can get in back of the bristles and between the bristles
20 and their respective holders; neither can water or any foreign substance get in between the collars and the back of the brush.

- It will be evident that the collars, after they have dried and set, as hereinbefore set
25 forth, will firmly hold the bristles in the brush back or body portion, and the bristles also will be firmly held to their respective collars, not only by the sealing of the

same, as hereinbefore described, but by the cross-pin 17 which locks the bristles within
30 the collar, so that they cannot be removed therefrom.

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

55 A brush consisting of a body portion provided with a series of holes extending partly therethrough, a series of bristle holders of fictile material hermetically sealed within said holes, each of said bristle holders hav-
40 ing a hole extending therethrough, and a bunch of bristles doubled longitudinally thereof extending through the hole in its re-
spective holder and hermetically sealed
45 therein and a pin of fictile material extending entirely across said holder through said bunch of bristles and uniting with said holder.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit-
50 nesses.

DANIEL L. CHANDLER.

Witnesses:

WARREN H. ATWOOD,
D. CHESTER PARSONS.