C. O. ENGSTROM.

TOOTH BRUSH.

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1,097,122.

Patented May 19, 1914.

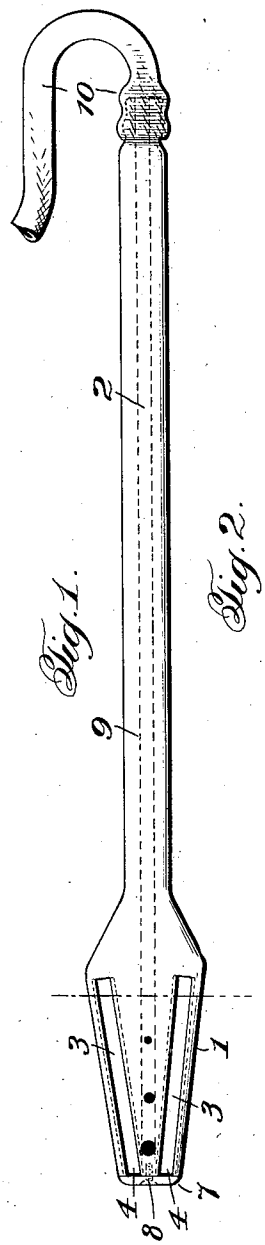

Fig. 1.

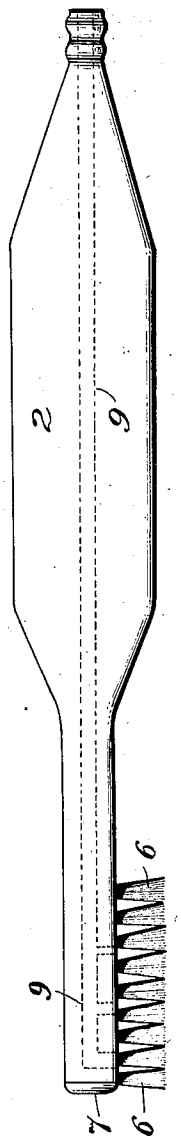

Fig. 2.

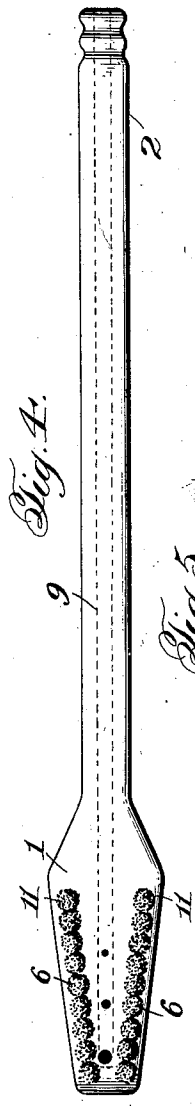

Fig. 4.

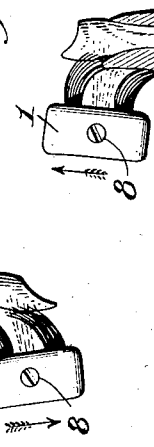

Fig. 6.

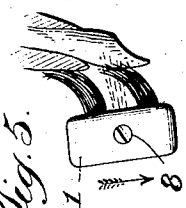

Fig. 5.

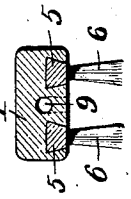

Fig. 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

CARL O. ENGSTROM, OF SACRAMENTO, CALIFORNIA.

TOOTH-BRUSH.

1,097,122. Specification of Letters Patent. Patented May 19, 1914.

Application filed October 22, 1912. Serial No. 727,133.

To all whom it may concern:

Be it known that I, CARL O. ENGSTROM, a citizen of the United States, residing at Sacramento, in the county of Sacramento and State of California, have invented certain new and useful Improvements in Tooth-Brushes, of which the following is a specification.

Heretofore it has been the practice in using a tooth-brush, for the dislodgment of particles of food matter from the teeth, to operate the brush with a reciprocating motion from the cuspids to the molars and vice-versa, which action often injures the gingival margin of the gingiva, allowing the food particles to enter under the gingival space, causing the same to decay and irritating the gingiva.

The present invention relates to an improved tooth-brush particularly designed to be employed in connection with an advanced method of cleaning the teeth of food particles which consists in operating the brush with an oscillating movement of the bristles, the bristles when in their upward movement removing food particles from the lower teeth, and when in their downward movement removing food particles from the upper teeth, the bristles always being drawn over the surface of the teeth in the direction of extension of the gingival margin so as not to force food accumulation under the gum margin.

The principal object of the present invention is to provide a tooth-brush with a plurality of spaced rows of bristles converging at their outer ends to conform to the buccal surfaces of the teeth, and to provide a flow of water between said rows of bristles to moisten the parts and assist in dislodging particles of food matter from the teeth before the same are subjected to the action of the bristles.

Another and important object is to provide a handle for the tooth-brush which extends at right angles to the bristle holding portion, which materially assists in the proper manipulation of the brush.

The invention consists, broadly, in combination with a tooth-brush provided with spaced rows of bristles converging at the forward end of the bristle supporting back, a water conduit arranged longitudinally of the brush and provided with openings communicating with the space between the bristles, a tubular connection with said water conduit and adapted to be connected to a source of fluid supply and a handle for said brush arranged at right angles to the plane of the bristle supporting portion.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the accompanying drawings:—Figure 1 is a bottom plan view with the bristles removed, disclosing the grooves for retaining the brush backs in position, the means for retaining the brush backs in the grooves, the water conduit extending longitudinally of the handle, and the openings from said conduit between the rows of bristles. Fig. 2 is a side elevation of my improved brush, disclosing the shape of the handle, and in dotted lines disclosing the conduit therein. Fig. 3 is a transverse sectional view of the brush-head disclosing the shape of the slots for receiving the brush backs and with the bristles mounted therein. Fig. 4 is a bottom plan view of a modified form of brush with the bristles secured to the brush head. Fig. 5 is a view of the manner of operating the brush when cleaning the upper teeth. Fig. 6 is a view of the manner of operating the brush when cleaning the lower teeth.

Referring more particularly to the drawings, the reference numeral 1 designates a brush head provided with side walls converging toward the outer end thereof and from the inner end of said head extends a handle 2, the faces of which are arranged at right angles to the plane of the head, and said head is provided on its under face with spaced dovetailed grooves 3 converging toward the outer end of the head and arranged adjacent the edges of the head and which communicate with the outer end of the head as at 4. Removably mounted in said grooves 3 are brush backs 5 having outwardly flaring side walls and in said backs 5 are secured in any suitable manner tufts of bristles 6 preferably arranged in a single row. The brush backs are detachably secured in the grooves 3 by an end cap 7 secured over the outer end of the brush head by a retaining screw 8, and said cap 7 closes the ends 4 of the grooves 3. Interiorly of the handle 2 and head portion 1 is a water conduit 9 which extends longitudinally of the center thereof from the rear end of the handle and

terminates short of the extreme end of the head portion and provided in the under face of the head portion and extending centrally and transversely thereof are a plurality of openings 9 which diminish in size from the outer to the inner end of the head, and said openings communicate with the interior of said water conduit 9. Removably secured over the end of the handle is a flexible tubing 10 preferably formed of rubber and the opposite end thereof is adapted to be connected in any suitable manner to a water-spigot.

In the use of the device, the tubing 10 is attached over a suitable water-spigot, whereupon an even stream of water will flow from the openings 9, owing to their increase in size toward the end of the channel. The user after inserting the brush in the mouth grasps the flat handle thereof with the fingers on one face and the thumb at the other, giving the same an oscillatory movement, and in the downward stroke, as in Fig. 5, the first row of bristles will be moved downwardly over the surface of the teeth, the stream of fluid issuing from the openings 9 will moisten the teeth and then the second row of bristles will be moved downwardly over the surface of the teeth removing all particles of foreign matter not removed by the first row of bristles and moistened, but not removed by the flow of fluid. On the upward oscillation of the brush, as in Fig. 6, the above operation will take place only in an upward direction. In neither movement of the brush will the gingival margin of the teeth being cleaned be removed from its normal place or disturbed in any manner. It will be observed that by arranging the rows of bristles so that the same converge toward the front end of the back and the back shaped as above described, that a receding exit for the fluid, together with the matter removed from the teeth, is provided, and when the brush is in use, the fluid together with the foreign particles removed from the teeth will flow toward the lips and be readily discharged from the mouth. It will also be observed that by constructing the brush back as above described and arranging the bristles at an inclination toward the outer end of the brush head, that the shape of the brush will conform to the buccal surfaces of the teeth.

In providing removable bristles for the brush, the same may be readily replaced when worn out, and one handle and brush head will suffice for a great length of time.

In the modification disclosed in Fig. 4, the rows of bristles are arranged as above described but are secured directly to the brush head 1 as at 11.

Having thus described my invention what is claimed as new and is desired to be protected by Letters Patent is—

1. A tooth-brush of the character described, comprising a brush-head and a handle extending therefrom, a pair of spaced rows of bristles secured to said brush-head and the same converging toward the outer end of said head, a passage extending longitudinally through said handle portion and terminating short of the outer end of said brush-head, and said brush-head provided with openings communicating with said passage and arranged between said rows of bristles, substantially as described.

2. A tooth-brush of the character described, comprising a brush-head and a handle extending therefrom, a pair of spaced rows of bristles carried by brush-backs removably mounted in guides formed in said brush-head and the same converging toward the outer end of said head, a passage extending longitudinally through said handle portion and terminating short of the outer end of said brush-head, and said brush-head provided with openings communicating with said passage and arranged between said rows of bristles, substantially as described.

3. A tooth-brush of the character described, comprising a brush-head, a substantially flat handle extending therefrom and the faces thereof arranged at right angles to the plane of said brush-head, said head provided with spaced dove-tailed grooves therein, the same arranged adjacent the side edges thereof and converging toward the outer ends, brush-backs removably secured in said grooves and provided on one face with bristles, means for retaining said brush-backs in said grooves, a passage extending longitudinally through said handle portion and terminating short of the outer end of said brush-head, and said brush-head provided with openings communicating with said passage and arranged between said rows of bristles, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL O. ENGSTROM.

Witnesses:
N. A. ACKER,
A. K. DAGGETT.