C. H. ERICKSON.

TOOTH BRUSH.

APPLICATION FILED MAY 28, 1913.

1,091,314.

Patented Mar. 24, 1914.

2 SHEETS—SHEET 1.

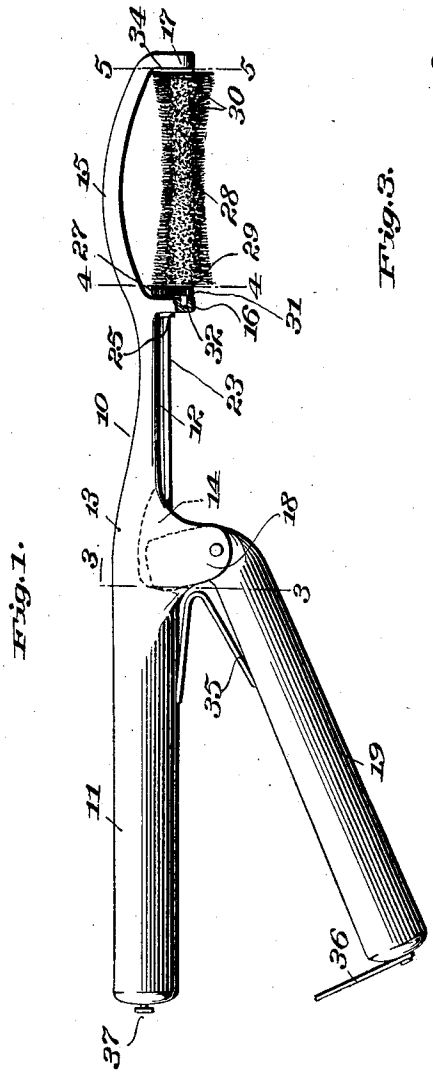


Fig. 1.

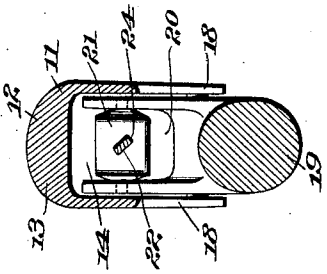


Fig. 3.

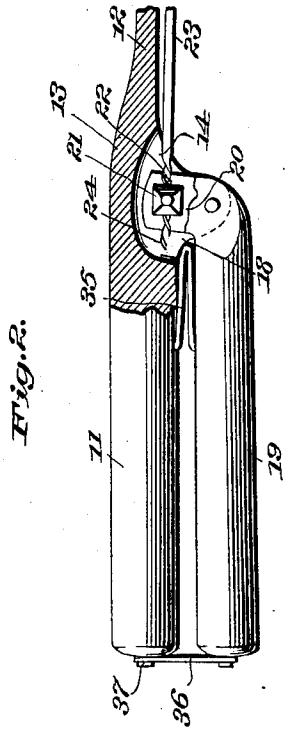


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

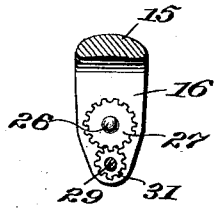


Fig. 5.

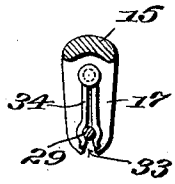


Fig. 6.

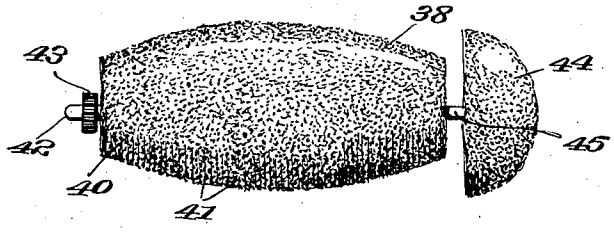
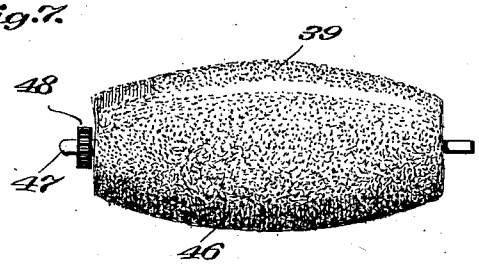


Fig. 7.



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UNITED STATES PATENT OFFICE.

CARL H. ERICKSON, OF DENVER, COLORADO.

TOOTH-BRUSH.

1,091,314. Specification of Letters Patent. **Patented Mar. 24, 1914.**

Application filed May 28, 1913. Serial No. 770,456.

To all whom it may concern:

Be it known that I, CARL H. ERICKSON, a subject of the King of Sweden, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Tooth-Brushes, of which the following is a specification.

The invention relates to dentistry, and has for an object to provide a tooth brush for cleansing the teeth.

The invention embodies, among other features, a tooth brush including a brush body of the revoluble type and in which, when the tooth brush is applied to the teeth, the brush body will revolve first in one direction and then in the other to remove any foreign matter from the teeth and cleanse the same.

In the further disclosure of the invention reference is to be had to the accompanying drawings, constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which:

Figure 1 is a side elevation of the tooth brush showing the same in initial position; Fig. 2 is a fragmentary side elevation of the tooth brush when the brush body is in final position; Fig. 3 is a sectional view taken on the line 3—3 in Fig. 1; Fig. 4 is a sectional view taken on the line 4—4 in Fig. 1; Fig. 5 is an enlarged fragmentary sectional view taken on the line 5—5 in Fig. 1; Fig. 6 is a side elevation of a different form of brush body; and Fig. 7 is a side elevation of still another form of brush body which can be used in connection with my tooth brush.

Referring more particularly to the views, I provide a tooth brush 10 consisting of a rigid handle 11 including an integral shank 12, a portion 13 of the shank 12 being cut away to provide a recess 14, the said recess being preferably formed at the inner end of the shank. The outer end of the shank 12 terminates in a curved head 15 and includes parallel bearing plates 16 and 17.

Spaced ears 18 are formed at the inner end of the shank 12 adjacent the recess 14, and mounted to swing thereon and between the ears, is a movable handle 19 provided with a recess 20 at the inner end thereof and in which is swiveled a block 21 provided with a threaded opening 22.

A rod 23 terminates at one end in a twisted portion 24 similar to the twisted portion of a corkscrew which twisted portion passes through the threaded opening 22 of the block 21 to impart rotation to the rod 23, as will be readily understood and hereinafter more fully disclosed. The other end of the rod is journaled in the bearing plate 16 and passes loosely through an opening therein, a suitable collar 25 being provided on the rod adjacent an end 26 thereof which projects beyond the bearing plate 16 to rigidly receive a toothed wheel 27. A brush body 28 includes a stem 29 surrounded by bristles 30, with the ends of the stem projecting beyond the bristles, a toothed wheel 31 of a smaller diameter than the toothed wheel 27, being secured to the inner projecting end of the stem 29 which end of the stem is adapted to repose in a recess 32 in the bearing plate 16 so that the toothed wheels 24 and 31 will mesh.

The bearing plate 17 is provided with a slot 33 and secured to the under side of the bearing plate is a spring, fork-like locking plate 34 having the fork-like end thereof registering with the outer end of the slot 33. Now when it is desired to place the brush body 28 in operative position on the head 15 of the shank 12, the inner end of the stem 29 is arranged to extend into the recess 32 so that the toothed wheels 27 and 31 will mesh as mentioned heretofore, after which the outer end of the stem is passed into the slot 33 of the bearing plate 17, thus causing the locking plate 34 to grip the other end of the stem and revolubly secure the brush body in position on the head. An expansible V-shaped spring 35 is interposed between the rigid and movable handles to normally hold the same in spaced relation, and if desirable a hook 36 can be arranged on the free end of the handle 19 to engage a pin 37 in the free end of the handle 11 to lock the handles together.

Now in the use of the device described, it will be readily seen that when the brush is in position as shown in Fig. 1 and pressure is exerted on the handles 11 and 19 to press the same together against the action of the spring 35, the inner end of the movable handle, which is bent at an angle to the main portion of the said handle and carries the block 21, will be swung forwardly in the recess 14, thus causing the block to operate over the twisted portion of the rod 23 and rotate the rod. The rotation of the rod will in turn rotate the toothed

wheel 27 which, meshing with the toothed wheel 31, will impart rotation to the brush body 28. Now when the movable handle has reached its innermost position and is released, the expansible action of the spring 35 will tend to swing the movable handle away from the rigid handle, thus resulting in a reversal of the rotation of the brush body 28, as will be readily understood.

By providing the slot 33 in the bearing plate 17 and also attaching the locking plate 34 to the bearing plate, to register with the slot, it will be apparent that the brush body 28 can be readily removed from the tooth brush to permit of using other brush bodies 38 and 39, disclosed in Figs. 6 and 7, in connection with my device, so that various forms and shapes of brush bodies can be employed with the device in order that the tooth brush can be employed to reach all portions of the teeth which are exposed to the decaying action of foods or gases.

The brush body 38 disclosed in Fig. 6 includes a stem 40 having a portion thereof surrounded by bristles 41, with the inner end 42 of the stem projecting beyond the bristles 41 to receive a toothed wheel 43 adapted to mesh with the toothed wheel 27, with the extremity of the inner end 42 of the stem adapted to lie in the bearing plate 16. On the other extremity of the stem 40 a second set of bristles 44 are provided which preferably are in the form of a head, a portion 45 of the stem, between the bristles 41 and 44, being exposed and adapted to be engaged by the locking plate 34 when the brush body 38 is arranged in position on the shank 12 of the brush body 10.

The diameter of the brush body 28, disclosed in Fig. 1, decreases toward the center, whereas in the brush body 39 disclosed in Fig. 7, the diameter of the bristles 46 thereof increases toward the center, the said bristles 46 surrounding a stem 47 having both ends thereof projecting beyond the bristles, with the inner end carrying a toothed wheel 48 adapted to mesh with the toothed wheel 27 on the rod 23.

It will be readily understood that various other forms of brush bodies can be employed in connection with my device and that the primary object of the invention is to provide a tooth brush of a simple and durable construction, which can be easily operated and which will impart a revoluble action to the brush body thereof so that all the exposed portions of the teeth can be readily and efficiently cleaned and cleared of any foreign or decayed matter incrusted thereon.

Having thus described my invention, I claim:

1. In a tooth brush, the combination with a stationary handle, of a shank integral with the handle, a head on the shank, spaced ears formed with the handle, a movable handle mounted to swing between the spaced ears and including an offset portion, a block swiveled on the offset portion of the movable handle and lying between the spaced ears, a rod on the head of the shank and having a twisted portion in threaded engagement with the block for imparting rotation to the rod when the movable handle is actuated, and a member journaled on the head of the shank and having connection with the rod whereby, when the movable handle is actuated, rotation will be imparted to the said member.

2. In a tooth brush, the combination with a stationary handle, of a shank integral with the handle, a head on the shank, spaced ears formed with the handle, a movable handle mounted to swing between the spaced ears and including an offset portion, a block swiveled on the offset portion of the movable handle and lying between the spaced ears, a rod on the head of the shank and having a twisted portion in threaded engagement with the block for imparting rotation to the rod when the movable handle is actuated, a member journaled on the head of the shank and having connection with the rod, whereby, when the movable handle is actuated, rotation will be imparted to the said member, and means carried by the movable handle and adapted for engagement with the stationary handle for holding the movable handle in inoperative position relatively to the said stationary handle.

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

CARL H. ERICKSON.

Witnesses:
J. C. TEMPLETON,
MARY E. HUGHES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."