

May 12, 1953

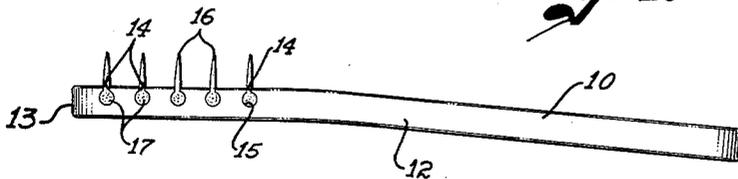
M. H. COHEN

2,637,870

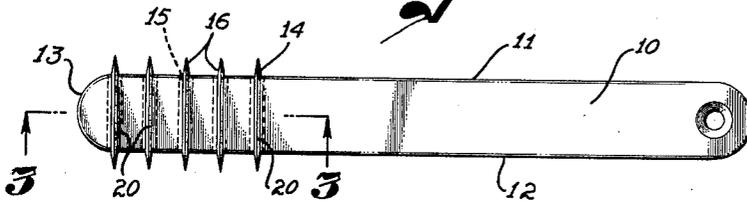
TOOTHBRUSH CONSTRUCTION

Filed Jan. 11, 1949

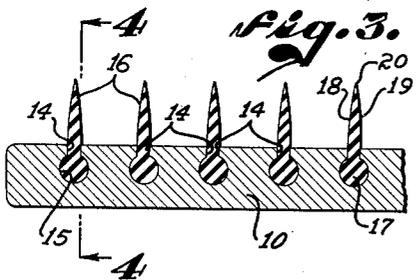
*Fig. 1.*



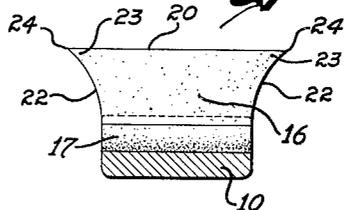
*Fig. 2.*



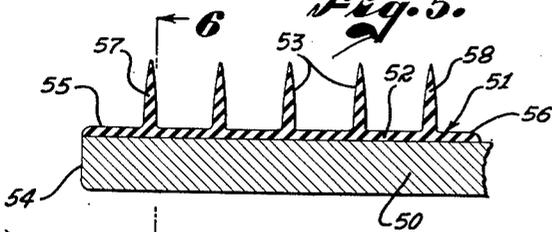
*Fig. 3.*



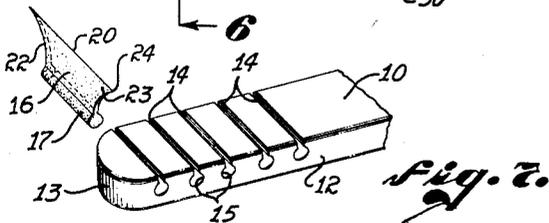
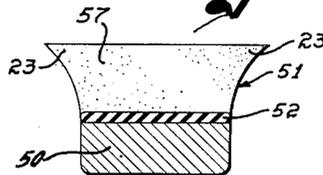
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



MAX H. COHEN,  
INVENTOR.  
HUEBNER, BEEHLER, WORREL,  
HERZIG & CALDWELL,  
ATTORNEYS.

BY *Albert M. Herzig*

# UNITED STATES PATENT OFFICE

2,637,870

## TOOTHBRUSH CONSTRUCTION

Max H. Cohen, Los Angeles, Calif.

Application January 11, 1949, Serial No. 70,232

3 Claims. (Cl. 15—188)

1

This invention relates to toothbrushes and more particularly to a toothbrush having an integral or separate handle construction and sheet-like wiping and cleansing elements substituted for bristles heretofore conventionally employed.

The instant invention seeks to overcome the objectionable abrasive characteristic of bristle brushes which, particularly at the gum line, scratch and erode the soft tissue thereby causing bleeding, tenderness, raw gum areas and exposed portions at the base of the tooth below the enamel. Infection as well as discomfort due to such attrition is by the instant construction sought to be avoided.

In addition, it is intended to employ a preferably rigid handle and a separate, removable massaging or cleaning and wiping portion most desirably having elements individually removable for replacement or cleaning. By the instant construction it is intended to eliminate much of the unsanitary condition attendant on bristle-type toothbrushes resulting from the lodgment of debris and disease-carrying microorganisms between the bristles particularly at the base thereof. The removability of the individual elements, if desired, facilitates thorough cleansing and permits sterilization of the cleansing members without affecting the handle where, as is customary, the latter is made of a material deformable by heat.

It is particularly sought by the instant construction to provide marginal points on the cleansing elements which trail the central or main body portions of the cleansing elements in use thereby assuring penetration to otherwise inaccessible recesses in and between the teeth and gums while at the same time avoiding rough gouging action. The increased flexibility at the corner extremities of the cleansing elements permits the ready bending of the latter to provide wiping surfaces which improve the emulsifying of mouth debris and improve the detergent quality of any cleansing liquid, powder, or paste.

It is therefore an object of the invention to provide a new and improved toothbrush construction having a simplicity and accessibility of its component parts.

It is another object of the invention to provide in a construction of the desired character described an optionally removable cleansing portion either as a unit or by individual elements.

Another further object of the invention is the provision of a new and improved design for the cleansing elements individually and collectively so that adequate cleansing and massage are simultaneously achieved.

The invention also has among its objects the

2

provision of improvements over prior art devices heretofore contemplated to accomplish generally similar purposes.

With these and other objects in view, the invention consists in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter set forth, pointed out in the appended claims, and illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a side view of a toothbrush embodying this invention.

Figure 2 is a plan view thereof.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a sectional view taken on the line 4—4 of Figure 3.

Figure 5 is a view similar to Figure 3 of a modified form of the invention.

Figure 6 is a sectional view taken on the line 6—6 of Figure 5.

Figure 7 is an exploded view of the form of Figures 1 through 4 showing the relationship and detachability of the cleansing elements and the handle.

Referring more particularly to the drawings, there is illustrated by way of example but not of limitation a toothbrush embodying a handle which may be of any desired shape, but as shown has parallel sides 11 and 12 and a rounded end 13 adjacent to which a number of transverse slots 14 are arranged in parallel spaced relationship to one another.

The inner portions of the transverse slots are enlarged and are preferably of cylindrical cross-section designated by the numeral 15.

The cleansing elements 16 are slidably disposed within the slots 14 and are formed with a base 17 of cylindrical cross-section axially slidable in and corresponding to the configuration of the slots.

The cleansing elements 16 are normally held frictionally within their corresponding slots. They are moreover formed with convex sides 18 and 19 tapering to a point at their upper edges 20. Thereby a desired firmness of the cleansing element adjacent its base is obtained and also a feather edge of easy flexibility for massaging and cleansing purposes.

The side edges 22 of the cleansing elements are flared outwardly and preferably curved or concaved to form a tip portion 23 of maximum flexibility which, during use, trails the main body of the cleansing element to provide a relatively broad wiping, massaging or scrubbing surface and including points 24 capable of access to

recesses in the teeth and between the teeth and gums.

Relatively vigorous scrubbing action of the main body of the cleansing elements may thereby be accompanied along the edges 22 and the tips 24 by an extremely gentle yet efficacious massaging action.

It is to be noted that the extent of flaring of the edges 22 is such that the points 24 project laterally to a considerable extent. Preferably, as can be seen most clearly in Figures 4 and 6, said lateral extension of the points 24 extends beyond the least flared side portions of the respective elements a distance approximately equal to half the effective vertical height of said elements, thereby enabling them to be bent backward or forward as the brush is moved in a longitudinal direction relative to its handle.

Transverse movement of the brush as by rolling the same along lines parallel to the plane of the cleansing element gives a feather touch to the bases of the teeth at the gum line as the same is approached from the tooth, with increasingly strong action, if desired, as the main body of the cleansing element is moved over the gum area. The reverse rolling movement of the toothbrush likewise emphasizes assuasive rather than scouring or gouging action.

The modified form of the invention illustrated in Figures 5 and 6 shows a handle 50 of any suitable shape, optionally similar to the handle of the first embodiment of the invention, which may be provided with an integrally molded portion of rubber material generally designated at 51 comprising a flat base 52 and projecting cleansing elements 53. The base 52 may be cemented or removably secured as by any interfitting or spline construction of the same and the adjacent handle thereof.

Platforms 55 and 56 may project forwardly of the foremost cleansing element 57 and the rear-most cleansing element 53 to insulate the teeth and gums of the user from direct contact with the handle 50, which is preferably formed, according to convention, of more rigid material than the remainder of the brush. The platforms 55 and 56 may, if desired, form a tubular element entirely surrounding the end 54 of the handle, but however applied thereto the effective cleansing elements 53 and the like are preferably formed in the same manner as those of the preceding embodiment and accordingly are designated by similar reference numerals.

The cleaning elements may be formed of rubber, as indicated, or any equivalent material having any desired degree of stiffness to suit the requirements of a user. Because of the feature of removability from the handle 10, particularly in the first embodiment and if desired also in the second embodiment, a highly sensitive mouth may be initially treated with relatively soft cleansing elements which may be replaced periodically with cleansing elements of increased stiffness as the mouth becomes desensitized and improved from the more gentle initial massage and prophylaxis.

This invention features the provision of a new and improved toothbrush design including improved cleansing and massaging elements capable of removal or replacement and embodying a simplicity of design rendering the same commercially acceptable and readily manufactured.

Although the invention has been herein shown

and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent structures.

The invention having been herein described, what I claim as new and desire to secure by Letters Patent is:

1. In a toothbrush comprising a handle and a plurality of generally trapezoidal sheet-like rubber elements arranged transversely of the handle at one end thereof in spaced parallel relationship, the improvement comprising each said sheet-like element having a top edge and a pair of outwardly concavely curved and flared side edges extending laterally approximately half the distance represented by the height of said element, said top and side edges respectively terminating in points in a line offset laterally from the handle, said top edge being feathered, and said edge, together with said side edges, forming laterally directed points adapted to trail and provide flat massaging surfaces in a direction substantially normal to the main surfaces of said elements.

2. In a toothbrush comprising a handle and a plurality of generally trapezoidal sheet-like rubber elements arranged transversely of and upstanding from the handle at one end thereof in spaced parallel relationship, the improvement comprising said elements each having side edges upwardly curved and flared, and normally bendable rearwardly and forwardly in use to provide laterally disposed, substantially flat massaging surfaces trailing parallel to the axis of the handle, and a straight edge most distal from the handle and lying in a plane parallel to the handle and forming points at each end with said side edges.

3. In combination with an elongate handle, toothbrushing elements at one end of said handle in spaced parallel relationship transversely of the handle, said elements each comprising a thin upstanding sheet of homogeneous rubbery material tapering to a feather edge from the handle to the top edge distal from the handle, the sides of said elements being smooth and extending outwardly laterally of the handle, defining concavely curved side edges terminating at the top edge in laterally extending points, said points extending beyond the handle a distance equal to approximately half the length of the element, said points being flexible and adapted to trail in the direction of reciprocation of the handle against the teeth of a user, providing massaging surfaces at and parallel to the edges of the handle, penetrating points thereat and means for securing said elements to said handle.

MAX H. COHEN.

References Cited in the file of this patent  
UNITED STATES PATENTS

Number	Name	Date
221,032	Carpenter et al. ....	Oct. 28, 1879
592,076	Brown .....	Oct. 19, 1897
2,209,173	Russell .....	July 23, 1940
2,476,201	Ligoure .....	July 12, 1949

FOREIGN PATENTS

Number	Country	Date
460,360	Germany .....	May 26, 1928
808,415	France .....	Nov. 14, 1936