

[54] **TONGUE CLEANING AND MASSAGE INSTRUMENT**

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[52] U.S. Cl. **128/62 R; 128/304**

[51] Int. Cl.² **A61H 7/00; A61B 17/22**

[58] Field of Search **128/62 A, 304, 62 R;
15/236 R, 105**

[56] **References Cited**

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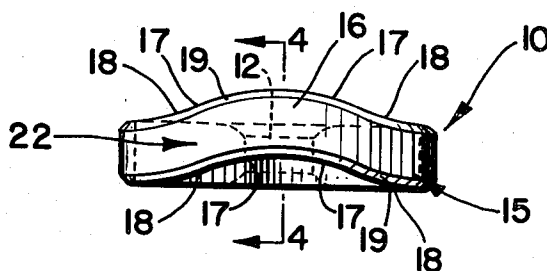
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Primary Examiner—Richard A. Gaudet
Assistant Examiner—Rick Opitz

[57] **ABSTRACT**

A hygienic tongue cleaning and massage instrument for freeing and removing pathogenic foreign matter entrapped in the papillae of the dorsal mucosa and massaging and scraping the papillae to maintain the papillae in healthy condition. The instrument comprises an elongated handle formed at one end with longitudinally diverging arms the divergent ends of which are interconnected by a longitudinally bowed cross-bar having a laterally centered arched portion and bevelled edge faces defining leading concave contact corners of an angle less than 90° to be alternately engaged in line contact with the side marginal edges of the tongue and medial depressed area of the tongue and, when pressed firmly against the tongue and drawn forwardly from the base of the tongue to the tip, to force entrapped foreign matter from between and strip foreign matter from the papillae and propel it forwardly to the tip to be expelled.

2 Claims, 5 Drawing Figures



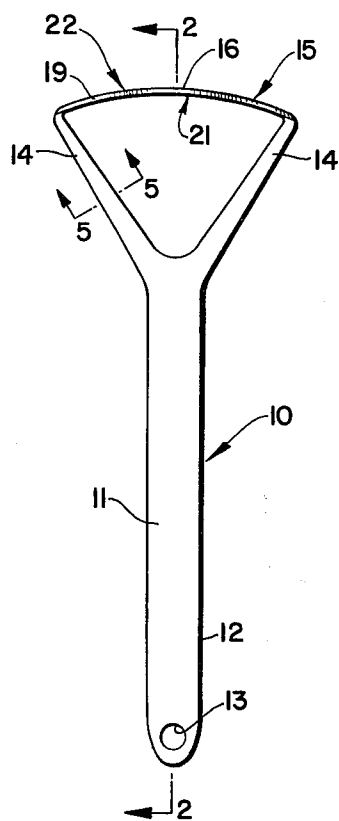


FIG. 1

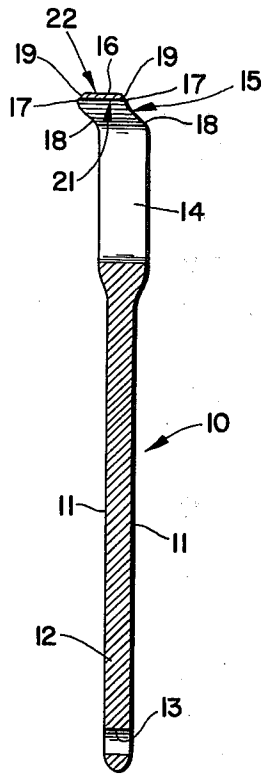


FIG. 2

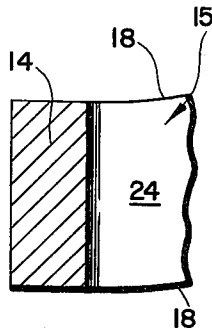


FIG. 5

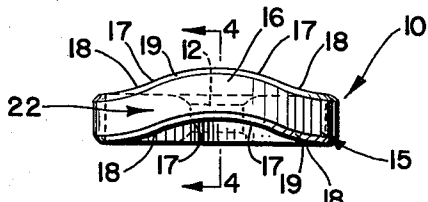


FIG. 3

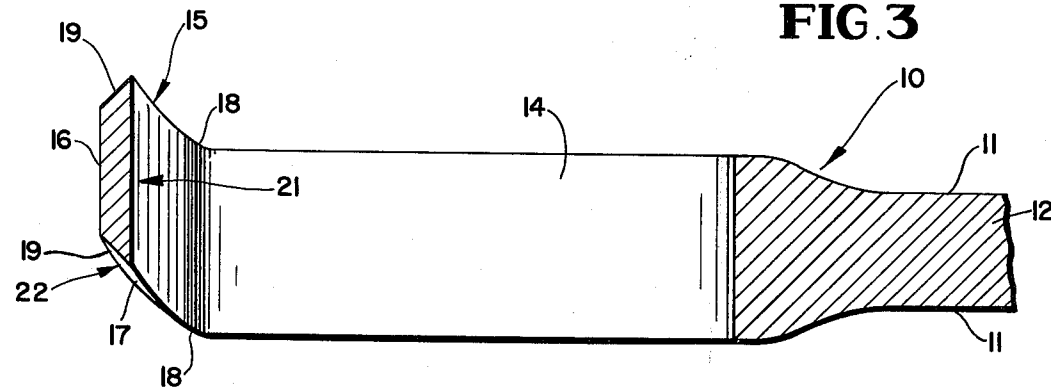


FIG. 4

TONGUE CLEANING AND MASSAGE INSTRUMENT

BACKGROUND OF INVENTION

The present invention is directed to an instrument for promoting preventive tongue hygiene practices. While dentists, oral hygienists, and related professionals have become increasingly concerned and stressed the benefits of oral hygienic practices, little attention has been given to the provision of methods and means of applying such practices to the tongue. The primary emphasis in this field has been on plaque control through frequent and proper use of toothbrushes, dental floss, and liquid irrigation devices. None of these devices can effectively clean the tongue which is primarily composed of muscle tissue with a mucous tissue covering (dorsal mucosa). The tongue itself is peculiarly constructed in that its upper surface consists of a generally laterally centered depressed area merging through upwardly and outwardly sloping areas into convex marginal portions and is composed of minute cells which are arranged in a textured surface resembling hills and valleys covered with bumps, known as papillae, forming a stippled surface. In a clean and healthy tongue, the papillae are quite short being virtually invisible unless the tongue is dried with a blast of air and examined closely. In a diseased or dirty tongue the papillae become elongated due to entrapment therebetween of pathogenic foreign matter imparting to the tongue a coated appearance, a condition which becomes exaggerated in the case of smokers. Even in the absence of this coated appearance, the papillae of a healthy tongue will harbor pathogenic foreign matter and destructive chemicals potentially hazardous to health, destructive to teeth, and personally discomfiting. The present invention is directed to an instrument for hygienically eliminating the pathogenic foreign matter and destructive chemicals from the dorsal mucosa of the tongue and massaging the dorsal mucosa in a manner to minimize the elongation of the papillae and maintain the tongue in a clean and healthy condition.

While there have been proposals in the prior art of so-called tongue cleaners or tongue scrapers, intended to clean the tongue, see for example, U.S. Pat. No. 697,336 to I. Hagerty of Apr. 8, 1902, U.S. Pat. No. 1,701,616 to I. Gross of Feb. 12, 1929, U.S. Pat. No. Des. 118,318 to A. J. Fortunati of Dec. 26, 1939, and U.S. Pat. No. Des. 122,815 to J. J. Crosby of Oct. 1, 1940, these devices fail to provide an instrument shaped to effectively enter into the medial depression of the tongue or receive the convex marginal areas of the tongue in a manner to permit a cleaning and massaging engagement with the dorsal surface.

SUMMARY OF INVENTION

It is a primary object of the present invention to provide a hygienic instrument especially designed for use on the tongue to extend the preventive hygiene of the oral cavity to effective cleaning and massaging of the dorsal mucosa so as to loosen and remove entrapped pathogenic foreign matter and, through abrasive engagement maintain the papillae in a healthy condition.

A further object of the present invention resides in the provision of a massage instrument for the tongue comprising a handle portion formed at one end with longitudinally divergent arms the spaced ends of which are connected by a laterally directed, bowed, cross-bar

the center portion of which is longitudinally arched to form along one edge face a centered convex portion for entering and engaging the medial depression of the tongue and to form along the opposite edge face laterally spaced convex end portions for receivingly engaging the marginal portions of the tongue.

Still another object of the present invention resides in convergently bevelling the opposite edge faces of the instrument cross-bar in a direction such that the leading corners of the cross-bar will have line contact with the dorsal mucosa of the tongue as the instrument is drawn forwardly along the tongue thereby applying a foreward and inward compressive force component to the individual papillae effective to force entrapped foreign matter outwardly from between adjacently related papillae ahead of the cross-bar followed by a scraping force applied to the contacted areas of the individual papillae acting to strip adherent foreign matter from the contacted area of each papillae.

BRIEF DESCRIPTION OF THE DRAWINGS

Further objects will appear from the following description and appended claims when read in conjunction with the accompanying drawings wherein:

FIG. 1 is a top plan view of the instrument provided by this invention;

FIG. 2 is a longitudinal sectional view taken substantially on line 2—2 of FIG. 1;

FIG. 3 is an end elevational view of the instrument of FIG. 1 as viewed from the upper end of FIG. 1;

FIG. 4 is a fragmental sectional view on a substantially enlarged scale of the upper end of FIG. 2 showing the bevelled edge faces of the cross-bar of the instrument of FIG. 1; and

FIG. 5 is a fragmental sectional view taken on line 5—5 of FIG. 1.

DESCRIPTION OF PREFERRED EMBODIMENT

With continued reference to the drawings wherein the same reference numerals are employed throughout the several views to indicate the same part, the numeral 10 generally designates the hygienic instrument of this invention which may be formed of any suitable generally rigid material. Preferably, the instrument is made of plastic using a two part gang mold the parting line of which lies between the wide faces 11 of handle 12 so that any molding "flash" that may exist will not form sharp or jagged projections along any surface that might engage the tongue and also to enable the corners between intersecting surfaces of the cross-bar to be formed as sharp corners but not cutting edges. If made of metal, suitable care must also be taken to assure that the corners of these intersecting surfaces do not form cutting edges.

Referring particularly to FIG. 1, handle 11 at one end is provided with a through opening 13 by which the instrument may be hung for convenient access and at its opposite end is formed with longitudinally diverging arms 14. The divergent ends of arms 14 are connected by a longitudinally outwardly bowed cross-bar 15 the center portion of which is arched at 16 as best seen in FIG. 3. Still referring to FIG. 3, it will be clear that the arched center portion 16 along the plane of line 4—4 of FIG. 3 is offset upwardly out of the plane defined by the edge faces of arms 14 by a distance of one-half the height of side arms 14. It will further be clear from FIG. 3, that the arch of portion 16 is relatively wide and flat

and that its opposed downwardly sloping edge face portions 17 merge smoothly, about halfway to the opposite extremities of cross-bar 15, into upwardly sloping edge face portions 18 of the opposite ends of cross-bar 15 lying in the respective planes of the edge faces of arms 14. As a consequence, the upper edge face of cross-bar 15 defines a centered convex portion delimited by the intersection of surfaces 17 and 18 merging into respective end located, segmental concave portions while the lower edge face of cross-bar 15 defines an inverted, centered concave portion delimited by the intersection of surfaces 17 and 18 merging into respective end located, segmental convex portions. It will be further observed from FIG. 3, that the upper and lower edge faces of cross-bar 15 are bevelled at 19 from end-to-end (See also FIGS. 2 and 4) so that upper and lower edge faces intersect the inner (concave) side face 2 of cross-bar 15 at an angle less than 90° and the outer (convex) side face 22 of cross-bar 15 at an angle greater than 90°.

This particular structure of cross-bar 15 is of prime importance in providing an effective tongue cleaning and massage instrument for the tongue since close line contact between the dorsal mucosa and cross-bar 15 is required to assure the forward and inward compression force which forces entrapped foreign matter outwardly from between adjacently related papillae ahead of the cross-bar followed by the scraping of the contacted areas of individual papillae to strip adherent foreign matter from the contacted areas of each papillae. In addition, the line contact along the leading (concave) side face 21 of cross-bar 15 acts to propel the freed particles of pathogenic foreign matter inwardly and forwardly along the surface of the tongue as the instrument is drawn forwardly along the tongue to enable the foreign matter to be readily expelled from the oral cavity.

APPLICANT'S METHOD

Applicant's novel method for most effective cleaning and massaging the tongue to assure maximum hygienic benefits comprises the following steps in the order now to be described. The first step is to apply the cross-bar 15 to the back or inner end of the dorsal mucosa of the tongue concave side face down as seen in FIG. 3 with the handle protruding from the mouth and held to apply a firm downward force. The instrument held in this position and drawn forwardly along the tongue will press the sloping surfaces 18 of the lower edge face firmly down along the side marginal edges of the tongue thereby forcing the sides of the tongue laterally inwardly and upwardly into firm line contact with the segmental convex portions of the lower edge face of cross-bar 15. As the instrument is drawn forwardly, the entrapped foreign matter will be forced from between and stripped from the papillae forming the convex marginal portions of the tongue in the manner heretofore pointed out. The freed foreign matter, due to the laterally bowed configuration of cross-bar 15, will be forced inwardly and forwardly onto the center portion of the tongue which, due to the downward and inward pressure applied by sloping surfaces 18, will be arched upwardly into light contact with the centered concave edge face of cross-bar 15 assuring that the freed foreign matter is propelled forwardly to the tip to be expelled.

After this first step is concluded, the instrument is turned over around its longitudinal axis so the cross-bar

15 may again be applied to the back or inner end of the dorsal mucosa of the tongue, this time convex side face down nested in the medial depression of the tongue. The instrument held in this position to apply a firm downward force presses the sloping surfaces 17 of the upper edge face as seen in FIG. 3 to firmly engage the medial depression and its wall surfaces in line contact with the convex upper edge face. As the instrument is drawn forwardly, the entrapped foreign matter will be forced from between and stripped from the papillae forming the medial depression of the tongue in the manner heretofore pointed out. The freed matter, here again due to the laterally bowed configuration of cross-bar 15, will be forced inwardly and forwardly along the tongue to the tip to be expelled.

If this operation is performed daily or at other frequent intervals, harmful accumulations of foreign matter can be avoided, the papillae will be maintained in a healthy condition, and the discomfort and objectionable odor from such harmful accumulations can be avoided. Furthermore, the cleaning and massaging operation under guidance of qualified oral hygienists can be employed more or less frequently as required to treat tongue diseases due to accumulations of such pathogenic foreign matter accumulations or to improve the blood circulation through the tongue where this may be deemed desirable or necessary.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by Letters Patent is:

1. A tongue massaging and conditioning instrument for enhancing the circulation through the tongue and freeing the papillae of the dorsal mucosa of pathogenic foreign matter potentially hazardous to health and destructive of the teeth comprising an elongated handle portion terminating at one end in a pair of longitudinally divergent arms mounting at their spaced ends a transversely directed, centrally arched, cross-bar substantially in the plane of said handle and arms, the opposite ends of said cross-bar comprise reversely curved (merge through reversed) arcuate segments merging into the divergent arm ends and thereby forming along one edge a centered convex portion adapted, when said instrument is held to position said one edge against the tongue and drawn forwardly along the tongue, to cooperate with the depressed medial area of the tongue and forming along the opposed edge respective laterally outwardly and downwardly sloping end portions adapted, when said instrument is held to position said opposed edge against the tongue and drawn forwardly along the tongue, to cooperate with the areas of the tongue laterally related to the depressed medial area, said one edge and said opposed edge being bevelled in a direction such that they intersect the inner wall of the cross-bar at an angle less than 90°.

2. The instrument of claim 1 wherein said cross-bar is longitudinally outwardly bowed.

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. 3,890,964

DATED June 24, 1975

INVENTOR(S) Edwin W. CASTANEDO

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4, line 49, delete "(merge through reversed)"

Signed and Sealed this

eighteenth Day of November 1975

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks