GUM MASSAGE IMPLEMENT AND METHOD OF FINGER MASSAGING GUMS
17 Claims, 9 Drawing Figs.

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ABSTRACT: Gum massage implement comprising a portable self-contained vibration-generating member, in combination with a single finger engaging retainer connected with said member for retaining such implement in positive constant finger engaging disposition on a single finger of the user rearwardly of the tip of the finger to transmit vibrations from such member to the finger for single finger vibration massage of the gums; and concomitant method of finger massaging gums by transmitting low amplitude high-frequency vibrations from a portable self-contained vibration-generating external source to a single massaging finger of the user rearwardly of the tip of the finger and placing the resulting vibrating finger in direct contact with a portion of the gums to massage such portion by imparting in turn the force of such vibrations thereto.
The present invention relates to an implement and method for finger massaging the gums, and more particularly to such an implement in the form of a portable self-contained vibration-generating unit or member in combination with a single finger-engaging retainer operatively connected therewith for transmitting vibrations to a single massaging finger, and to such a method employing single finger vibration contact with the gums.

Various kinds of implements and methods have been used in the past to massage the gums, but all such methods have employed implements or applicators of one sort or other which involved the placing of an inanimate massaging surface or the like directly in the mouth for contact with the gums. Both the manually and electrically operated implements which have been proposed heretofore have generally employed vibratory, pressure or friction contact.

In the case of electrically operated implements, employing a mechanical house current, the danger is always present of accidental electric shock because of the direct contact of at least a portion of the device with the human body.

Where the massaging has been carried out by direct contact with the gums of an inanimate mechanical massaging surface, whether a smooth surface, brush surface, ridged surface or the like, and whether by vibratory, pressure, friction or the like contact, because of the extraneous nature of the inanimate mechanical massaging surface, the inherent rubbing action necessary for deep and intense gum stimulation is abrasive and irritating to the soft tissues of the gums, rendering these devices objectionable and in fact quite capable of harming gingival tissues as well as incompatible with their ultimate purpose. This is true even where the inanimate massaging surface is made of soft plastic or rubber. Furthermore, inasmuch as these devices are inanimate, they often become unsterile with use and constant cleaning thereof must be carried out as well.

A recent development is directed to the employment of an electrically operated high-speed pulsating water jet directed against the teeth and gums by means of a tubular nozzle inserted into the mouth. However, this system only achieves superficial or surface stimulation of the gums despite the high pressure of the pulsating hydraulic jet because of the inherent limitations of this type of gum massaging technique. Water supply and water disposal facilities are also needed. Moreover, the above mentioned disadvantages, such as possible accidental electric shock, especially with the accompanying presence of water, and the need for constant cleaning, are still present even though no objectionable direct-rubbing action occurs.

Thus, the known direct rubbing action massaging technique using a mechanical massaging surface achieves intense stimulation of the gums but at the expense of the gums while the known pulsating water jet technique only results in superficial or surface stimulation of the gums.

It is an object of the present invention to overcome previous drawbacks in gum massaging techniques and to provide a gum massaging implement in the form of a portable self-contained vibration-generating unit or member in combination with a selectively shaped single finger engaging retainer operatively connected therewith for retaining such implement in direct contact with a single finger of the user rearwardly of the tip of the finger to transmit vibrations from the member to the finger for single finger vibration massage of the gums.

It is another object of the invention to provide a gum massaging implement or applicator of the foregoing type having a vibration-generating source disposed for generating vibrations transverse to the longitudinal axis of the massaging finger, especially at a point substantially longitudinally coincident to the position of the single finger engaging retainer with respect to the unit or member, and especially with the retainer retaining the implement removably fixedly in positive constant finger engaging disposition on the finger rearwardly of the second joint of such finger.
It is furthermore desirable to transmit sustained vibrations from the external source in question in such transverse direction while placing the underside pad at the tip of the massaging finger in pressing contact with the portion of the gums being massaged to impart in turn the force of the vibrations thereto.

The finger engaging retainer may be integral with the vibration-generating member or separate therefrom, yet in operative connection therewith, with the finger engaging retainer, for example, selectively sized and shaped for a friction fit positioning, removably fixedly, on the massaging finger of the user, especially at a point rearwardly of the second joint of the finger.

Referring to the drawing, FIG. 1, shows one embodiment of the gum massage implement 1 of the invention, composed of a portable, e.g. manually portable, self-contained vibration-generating member 2 in combination with a selectively shaped single finger engaging retainer 3 operatively connected with member 2. In this embodiment, retainer 3 and member 2 are integral, i.e. are formed as one piece. Member 2 includes a front tubular part 4 and a rear tubular part 5, whereas retainer 3 includes a pair of finger engaging wings 6 and 7 sized and shaped selectively to engage the lateral portions of the massaging finger of the user, wings 6 and 7 being accurately in juxtaposed cross section and extending sufficiently below the midpoint of the finger portion therein to insure a tight, preferably friction fit, engagement with the finger. Wings 6 and 7 are joined to the member embracing band or loop 9 at the connecting portion 8, so that as member 2 is vibrated, the vibrations are transmitted directly through retainer 3 to the finger retained thereby. The juncture 10 indicates the points of connection of the front and rear tubular parts 4 and 5.

In FIG. 2, the gum massage implement 1, according to the embodiment of FIG. 1, is shown partially in section as well as the positional relationship of the source of vibrations and the retainer 3 with respect to the single massaging finger. Preferably, the retainer 3 is placed over the top crest portion of the finger in lateral embracing disposition with the predominant portion of the girth of the finger thereat via wings 6 and 7, at a point rearwardly of the second finger joint so that the tip of the finger may be inserted freely in the mouth for direct physical contact with a portion of the gums to massage such portion by imparting in turn the force of the vibrations thereto.

As seen in FIG. 2, a miniature motor 11 of the conventional type having a rotatable shaft 12 carrying a fly weight 13 eccentrically positioned thereon is disposed within the front tubular part 4 of member 2 more or less adjacent to, or substantially coincident to, the position of operative connection of retainer 3 with member 2. In this way vibrations emanating from the motor 11 as source are transmitted to the finger directly at retainer 3. The miniature motor 11 is retained in position by forward blocks 14 and rearward transverse wall 15. A dry cell 16 is disposed in the rear tubular part 5 of member 2, having its rear end under loaded tension thereagainst by reason of the mounting of dry cell 16 against spring contact 17 in part 5. It will be appreciated from FIG. 2 that a simple electrical system is provided for operating miniature motor 11 to cause eccentric fly wheel 13 to be rotated so as to generate vibrations preferably in a direction transverse to the longitudinal axis of bipartite member 2 and also transverse to the longitudinal axis of the finger shown.

The actual construction of member 2 is well known and any similar portable self-contained vibration-generating source may be provided instead, including one powered by a single dry cell of the type shown or by a battery of two or more cells.

It will be seen, that a step or shoulder is defined along the periphery of the interior wall of front part 4 at the rear edge thereof facing juncture 10 and that a complementary forward step is provided peripherally in the exterior wall of rear part 5, also facing juncture 10. The diameters of these two steps are selectively sized to provide a friction fit in the preferred embodiment. In this way, front and rear parts 4 and 5 may be separated simply by pulling the two parts in opposite directions with respect to the longitudinal axis of member 2, perhaps with a slight twist or rotation of the parts to aid in separation, the reverse procedure is undertaken to place the two parts together again to form the bipartite member 2.

Because of the alignment and preferred frictional engagement under slight tension of clip tabs 20 and 21, the electrical circuit is completed between the dry cell and motor 11, but this condition only occurs when parts 4 and 5 are twisted or rotated to bring the rear clip tab 20 and the front clip tab 21 in longitudinal alignment. Hence, to turn off the vibration-generating source of member 2, the user need merely twist front and rear parts 4 and 5 until clip tabs 20 and 21 are no longer in alignment and contact with one another. On the other hand, the vibration-generating source, i.e. motor 11, may be switched on as desired by twisting back until tabs 20 and 21 are again placed in alignment and electrical contact. This point will be immediately manifested by the generation of vibrations due to the starting of the motor 11.

However, the significant feature of this embodiment of the invention is that a portable self-contained vibration-generating source in member 2 is combined with a single finger engaging retainer to form a gum massage implement readily positionable on the finger of the user rearwardly of the finger tip. Because of the low-voltage nature of the dry cell employed, no danger of electric shock can inherently occur when using the gum massage implement of the invention for massaging the gums via the intermediary of the gum massaging finger. The rearward positioning of implement 1 on the finger readily enables the forward end of the finger to be inserted into the mouth with the pad at the underside of the tip of the finger, preferably in direct pressing contact with the gums, to carry out the desired massaging operation.

No inanimate massage surface is thus placed in the mouth for contact with the gums, but instead an inherently soft and compatible finger of the user under the influence of the vibrations transmitted thereto by member 2.

Naturally, it is desired that the vibration-generating source impart low-amplitude high-frequency vibrations, preferably sustained vibrations, so that continuous vibrating contact of the finger with the gums can be effected, aside from the lack of abrasive and irritating action on the gums, when employing the finger of the user as the massaging surface, no real problem of unsterile conditions arises inasmuch as the hands are normally kept in constant cleansed condition and are not subject to the influences which permit unsterile conditions to arise as in the case of inanimate mechanical massaging surfaces.

Moreover, the implement of the invention may be utilized near water, as occurs in the bathroom, without any peril from electric shock due to the electrical nature of the device, and of course, due to the portability of the implement, it can actually be operated anywhere, far from the normal sources of house
current and certainly without the need for water, e.g. hot water, or water disposal facilities as normally contemplated with the use of the known pulsating water jet type of implement.

Clearly, by direct contact of the resultant vibrating finger tip with the gums, deep penetrating and intense stimulation of the gums and underlying alveolar bone can be effected with maximum direct access to all gums and bone.

In accordance with the method of the invention, single finger vibration contact with the gums is inherently achieved with an electrically safe, mechanically compatible system, without abrasion or irritation to the soft tissues of the gums and without the need for constant cleansing of the implement to remove the build-up of the adequate sterile conditions. Thus, the vibration is placed in a single finger which facilitates the bringing of the vibrations into the mouth, i.e. via such single finger, all without contact of inanimate parts of the implement with the gums or interior of the mouth.

FIG. 3 is another embodiment of the invention showing a vibration-generating member 2a, similar to that of the embodiment of FIGS. 1 and 2, in combination with a finger engaging retainer 3a in the form of a double plastic ring containing the band or loop 9a and the finger engaging ring or loop 26. Parts 9a and 26 may be formed from separate pieces having a band width, i.e. axial length, corresponding to that of retainer 3 of FIGS. 1 and 2, and a suitable thickness similar to that of wings 6 and 7 in said embodiment of FIGS. 1 and 2. Alternatively, the retainer 3a may be made of leather, rubber, metal, etc. with the two ring portions 9a and 26 suitably interconnected along their common abutting portions, e.g. by rivets, plastic cement, adhesive, or the like, so that parts 9a and 26 are substantially fixedly and rigidly interconnected to insure the transmission of the vibrations from member 2a to the finger (not shown) embraced by the finger engaging ring or loop.

FIG. 4 is a further embodiment of an implement according to the invention in which the member 2b is operatively connected with the finger engaging retainer 3b in a manner similar to the embodiment of FIG. 3, showing a rivet 28 interconnecting the upper band or loop 9b and the lower adjustable band or strap 27. Strap 27 is composed of rubber, as is ring 9b, although it will be appreciated that other materials may be used for these parts such as those discussed above in the case of the embodiment of FIG. 3. The strap 27 is adjustably placed around the finger of the user (not shown) such that the knob 29 is pushed through the appropriate aperture 30 to form a tight fit in the well-known manner.

FIG. 5 covers a further embodiment of the implement of the invention in which the member 2c is embraced along with the finger engaging retainer 3c in the form of a rubber band 31. The rubber band is constructed of material of limited elastic deformability and represents a resilient tension element placing the finger and member 2c in direct abutting relation along a common longitudinal extent of both, preferably rearwardly of the second joint of the finger. Despite the fact that a rubber band 31 is employed as the finger engaging retainer, due to the limited elastic deformability thereof, adequate emissive connection between member 2c and the finger is achieved so that the finger will vibrate continuously in the desired manner to permit in turn such vibration to be imparted to the gums to be massaged.

FIG. 6 covers another embodiment of the invention in which the member 2d is operatively connected with the finger engaging retainer 3d in the form of a coil spring 32 also embracing the finger of the user (shown in dash line) in a manner similar to the relationship provided in the embodiment of FIG. 5. The coil spring 32 is similar in function to the rubber band 31 of FIG. 5 in providing a resilient tension element of limited elastic deformability whereby to transmit directly from the vibration-generating member 2d to the finger the continuous vibrations in question for imparting in turn such vibrations to the gums being massaged.

FIG. 7 shows a further embodiment, similar to those of FIGS. 5 and 6, in which the member 2e is operatively connected with the finger engaging retainer 3e and also with the finger of the user (shown in dash line), with the finger engaging retainer being in the form of a wire reinforced paper band 33, merely twisted at its ends at the underside of the finger rearwardly of that portion which is inserted into the mouth. The functional disposition of the band 33 in placing member 2e and the finger in emissive contact is similar to that employed in the embodiments of FIGS. 5 and 6, with the exception that the wire-reinforced paper band 33 is longitudinally nondeformable, i.e. within its own plane.

FIG. 8 shows a further embodiment of an implement according to the invention in which the vibration generating member 2f is operatively connected with the finger-engaging retainer 3f by means of the rivet 35 and knob 36, diametrically disposed on the lateral surfaces of the member 2f. The retainer 3f is in the form of an adjustable band or strap 34 made of rubber and having aperture 37 at the free end thereof for insertion over knob 36 to adjust the size of the loop engaging the finger of the user (shown in dash line) in abutting contact with the underside of member 2f, similar to the functional arrangements of FIGS. 5 through 7. Because of the limited elastic deformability of rubber band or strap 34, a resilient tension element is provided as the finger engaging retainer in this embodiment as well.

FIG. 9 is functionally similar to the embodiment of FIG. 8, but employs a composite coil spring-leather strap finger-engaging retainer 3g operatively connected with the vibration-generating member 2g. Specifically, the coil spring portion 38, similar to coil spring 32 of FIG. 6, is mounted via the fastener 39 to one lateral portion of member 2g and connected at the outer spring end via fastener rivet 40 to the leather strap 41 having the apertures 43. By placing an appropriate aperture 43 over the knob 42 attached to the member 2g at a position diametrically opposed to fastener 39, and adjustable seating of the implement on the finger (shown in dash line) is possible, with the retainer 3g being of limited elastic deformability due to the coil spring portion thereof. The finger will thus be placed under resilient tension against the underside of member 2g for achieving the transmission of vibrations from the vibration generating source in member 2g to the finger in the desired manner.

It will be realized that the finger engaging retainers 3 and 3a to 3g are all intended to be selectively shaped and sized to fit a single finger of the user, with a sufficient axial dimension for the retainer to insure proper seating thereof in engagement with the finger for direct transmission of vibrations from the source in the vibration generating member to the finger thereat. Thus, the longitudinal or axial dimension of the retainers 3a to 3e, 3f and 3g are preferably similar to the dimension intended for retainer 3 shown in FIGS. 1 and 2. These parts may be made appropriately of leather, rubber, plastic, metal, wire-reinforced paper bands or the like, and in the case of the embodiments of FIGS. 1-4, the upper and lower band or loop portions of the finger engaging retainer may be interconnected by heat sealing, riveting, adhesive, etc. in the case of plastic; by adhesive, e.g. metal adhesive or welding, riveting, etc. in the case of leather or rubber, and by any conventional suitable means consistent with the aims of the invention and the intended operative interconnection of the various parts.

Other adjustment means from those shown in FIGS. 4, 8 and 9 may be employed to change the length of the strap or band in question for engaging fingers of different sizes, as the artisan will appreciate, and all such known modifications are contemplated herein.

Regarding the coil spring features of the embodiments of FIGS. 6 and 9, it will be realized that preferably two or more such springs will be provided in parallel adjacency, side by side, to increase the overall longitudinal or axial dimension of the composite finger engaging retainer band thereby provided. Desirably, in the case of the embodiment of FIG. 6, the paral-
Each separate coil springs will be longitudinally interconnected, i.e. in the longitudinal direction of the member, by spaced-apart metal links or the like, to form a composite article or band.

In the case of the embodiments of 5, 6 and 7, where the vibration-generating member and finger are positioned essentially in direct abutting contact along a common longitudinal extent, the retainer is preferably intended to maintain the member and finger under some tension, consonant with the desirable friction fit or tight embracing disposition of the finger engaging retainer surrounding and compressively embracing the member and the finger thereat.

Naturally, in the embodiment of FIG. 5, like that of FIG. 6, two or more separate rubber bands 31 may be arranged in longitudinally interconnected disposition, i.e. one behind the other, or the rubber bands 31 may be discrete and separate from one another in tandem arrangement condition, with respect to the longitudinal axis of the vibration-generating member, just as two or more coil springs 32 may be similarly arranged in discrete and separate disposition, i.e. tandem arranged one behind the other with respect to the longitudinal axis of the vibration-generating member.

It will be realized that the finger engaging retainer 3 shown in FIGS. 1 and 2 may be provided as a separate and discrete part from member 2 in tight embracing disposition, preferably by friction fit on member 2, similar to the intended disposition of the retainers of FIGS. 3 and 4 with respect to the embraced members 2a and 2b thereof. Also, the retainers of FIGS. 3 and 4 may be alternatively provided in integral connection with the corresponding vibration-generating member as contemplated in the embodiment of FIGS. 1 and 2.

From the foregoing it will be clear that the concept of the instant invention concerns a combination of elements, i.e. a vibration-generating member and a finger engaging retainer, operatively interconnected for retaining the implementation in positive constant finger engaging disposition on a single finger of the user rearwardly of the tip of the finger to transmit vibrations from the member to the finger, either by direct contact as in the case of the embodiments of FIGS. 5-9, or through the retainer itself as in the embodiments of FIGS. 1-4, for single finger vibration massage of the gums. By suitable location of the external source of vibrations in the vibration-generating member, e.g. the eccentric fly weight 13, such vibrations may be directed transverse to the longitudinal axis of the elongate member and transverse to the longitudinal axis of the finger at a longitudinal point adjacent to, or substantially coincident with, the position of operative connection of the retainer with the member for a more pronounced and sustained transmission of the vibrations to the finger and in turn to the gums.

It will be clear from the various alternative arrangements for the retainers of FIGS. 1-9 that the retainer is preferably intended to include a selectively sized single finger engaging band operatively connected with the member, with the band optionally in the form of a closed finger engaging loop, a pair of separate selectively adjustably interconnected subbands for forming a composite closed finger engaging loop upon interconnecting the subbands, or a selectively sized pair or lateral single finger engaging wings. Moreover, the band is optionally provided in the form of a resilient tension element of limited elastic deformability.

In accordance with one preferred embodiment of the invention, the finger engaging retainer includes a tubular member engaging band in the form of a closed tubular member engaging loop embracing the entire circumference of the member in a friction fit and rigidly interconnected therewith an opposed selectively sized finger engaging band in the form of a closed single finger engaging loop for embracing the entire circumference of the finger in a friction fit rearwardly of the finger tip. In accordance with another preferred embodiment of the invention, the finger engaging retainer includes such tubular member engaging band in the form of a closed tubular member engaging loop embracing the entire circumference of the member in a friction fit and rigidly interconnected therewith an opposed selectively sized pair of lateral single finger engaging wings for embracing the predominant lateral girth of the finger rearwardly of the fingertip in a friction fit.

Preferably, to achieve minimum range of access to all parts of the gums in the mouth, the implementation of the invention is intended to be mounted on the middle finger rearwardly of the second joint, or on the index finger next adjacent thereto, similarly rearwardly of the second joint, whereby the finger may extend well beyond the front end of the vibration-generating member for unobstructed insertion into the mouth.

Consequent use of the gum massage implement of the invention will achieve deep-penetrating stimulation directly of the tissues that contain, surround and support the human dentition, i.e. teeth. Because the massage vibrations are transmitted through a single finger, it is possible to reach all areas inside the mouth with direct contact vibratory application. Advantageously, the compatible fingertip application will not result in irritation or abrasion of the soft tissues of the gums as might occur with a rubber or plastic inanimate applicator.

The human gum tissues contain a capillary or terminal blood supply under low pressure which renders such tissues prone to irritation or inflammation. The first sign of irritation or inflammation is a slowing down of this terminal blood supply, accompanied by redness, puffiness and ease bleeding. The daily application of massage stimulation serves as a prophylactic measure to keep a healthy tone in normal tissues, and serves, as well, as a therapeutic measure to restore a healthy tone to inflamed tissues. However, prudence dictates that in cases of inflamed or diseased tissues, the stimulation provided by the instant gum massage implement method should be employed as an adjunct to treatment by a dentist.

In accordance with the present invention, therefore, a device and method are provided for achieving deep and penetrating massage and stimulation of the hard and soft tissues that surround and support the human teeth, whereupon continued use of the implement, in accordance with the subject method, results in stimulation of the peripheral blood circulation, thereby maintaining maximum health and tone of both the hard and soft supporting tissues.

It will be realized that because of the nature and function of the implementation of the invention, the vibration-generating member may possess any given transverse cross section compatible with the positioning on the single massaging finger of the user through the immediately disposed finger engaging retainer. Thus, a square, rectangular, triangular or other polygonal cross-sectional configuration for the vibration-generating member may be utilized, and concomitantly the member embracing band or loop, in the case of the embodiments of FIGS. 1-4, and the appropriate portion of the single finger engaging retainer of the embodiments of FIGS. 5-9 and their associative parts, will be complementarily provided to assure the operative connection between the vibration-generating member and the finger engaging retainer for the purposes in question.

Consonant therewith, the overall silhouette or shape, and especially the longitudinal cross-sectional configuration, of member 2 need not be tapered to a rounded forward tip as shown in FIGS. 1 and 2, but instead member 2 can be provided alternatively with transverse end walls at both ends to square off the ends of the device, i.e. with both ends similar to the rear wall of part 5, or with any other convenient shape, inasmuch as the purpose of member 2 is to house the vibration-generating source as an electrically and mechanically self-contained portable unit, and not to impart vibrations by direct physical contact between any part of the vibration-generating member and the gums to be massaged. Thus, the vibration-generating member represents a cordless electrically operated vibration-generating source, e.g. a dry cell or other battery-operated vibration-generating source, rather than a device having a direct gum contacting inanimate surface activated by such a source requiring extraneous and/or external electrical wires or cords for supplying the source with the necessary electrical energy.
Also, the type of vibration-generating source may be other than the miniature motor shown in FIG. 2, the significant feature thereof being the ability to generate low-amplitude high-frequency vibrations. Such vibration-generating sources as contemplated herein are generally all well-known and available in sizes appropriate for insertion in the vibration-generating member in question to provide a portable, preferably manually portable, overall implement.

It is contemplated that the finger engaging retainer 3 and 3a to 3g of FIGS. 1-9, respectively, be provided as pliable or flexible bands or straps, apart from the alternate provision for stiff bands or straps, such as in the case of the parts 26, 31 and 34. Specifically, the pliable or flexible type bands may be used for parts 26, 27, 31, 32, 34, 38 and 41, and where such parts are composed of rubber or coil spring means or the like, such parts may also be longitudinally deformable, i.e. within their own plane. Additionally, such parts 26, 27, 31, 32, 34, 38 and 41 may also be provided in the form of flexible straps or bands composed of metal braid or metal links as are conventionally used in wrist watch bands, and where subbands of these types are contemplated, rather than a continuous selectively sized friction fit band, a conventional clasp or like connection such as used in a wrist watch band can be employed for connecting the subbands.

On the other hand, in connection with the lateral wing embodiments shown on FIGS. 1 and 2, it is preferable that such wings be made of stiff materials, e.g. substantially stiff plastic or substantially stiff metal, to assure a firm grip by the lateral wings when engaging the single finger used for massage to the gums.

While thermosetting plastic materials may be employed for the various finger engaging retainer means in the embodiments shown, e.g. the embodiments of FIGS. 1-3, as well as the member embracing loop 9b in the embodiment of FIG. 4, more often the use of thermoplastic materials will be made to provide the limited pliability or flexibility of certain portions of the band parts, e.g. the parts 27, 31, 34 and 41, and even part 26. The use of thermoplastic material is advantageous in connection with the embodiments of FIGS. 1-3, since the loops 9a and 26 of the double plastic ring of FIG. 3 and the loop 9 and wing 7 of retainer 3 at connecting portion 8 in the embodiment of FIG. 1, may be conveniently heat-sealed together at the appropriate slotting portions.

It will also be realized that retainer member 2 may be composed of thermoplastic or thermosetting material or of metal, wood or the like, since the purpose of such material is to provide sufficient structural rigidity to maintain the vibration-generating source therewithin in operative disposition.

Additionally, in accordance with a particularly efficient preferred embodiment of the invention, the selectively shaped single finger engaging retainer is provided with a selectively self-adjustable pair of lateral single finger engaging wings. The finger engaging retainer is operatively connected with the vibration-generating member, e.g. in the manner of band or loop 9a of FIG. 3, with the wings being more or less semicircular in composite cross section as shown by ring or loop 26 in FIG. 3 but having a slit therein, e.g. more or less in the longitudinal direction of the vibration-generating member, e.g. at the underside of the ring or loop, to enable the wings to be spread apart adjustably in a manner analogous to the embodiment of the wings 6, 7 of FIGS. 1 and 2. By reason of the slit, the wings or half-sides of the split ring or loop in question can be spread apart for multiple dimensional adaptation embracing of the finger of the particular user. The wings in this embodiment are normally constructed of a structurally stiff yet limitedy resilient flat strip material such as plastic, spring metal, hard rubber, spring metal reinforced plastic, spring metal reinforced rubber, etc., so that the wings can be spread apart to accommodate snugly and preferably under slight tension the girth of different size fingers yet return to the original more or less closed split ring position, preferably with the wing edges at the slit touching each other, after the finger has been removed. Accordingly, only one single finger engaging retainer having a split ring, band or loop finger engaging construction need be provided which can fit the particular finger of all users because of the snug fit adjustable expansion feature inherently provided. Especially good holding action is achieved with this self-adjustable construction because of the tension provided by the material of which the wings are made and the sufficient length of the wings which permits them to touch one another at the slit when the finger is removed and thus to embrace the finger more fully when it is inserted therebetween.

Of course, in this self-adjustable split ring, band or loop finger engaging embodiment, just as in the case of wings 6, 7 of FIGS. 1 and 2, ring or loop 26 of FIG. 3 and band or strap 27 of FIG. 4, the particular finger engaging band or subbands may be attached directly to the underside of the vibration-generating member without the need for the corresponding member embracing parts such as 9a, 9b, respectively, or the like. Such connection may be by riveting, adhesive, and the like, or in the case of thermoplastic material by heat-sealing, or in the case of metal by welding, etc. or by any conventional suitable means consistent with the aims of the invention.

With respect to the subject matter of the present invention, it is well recognized that most human teeth are lost because of periodontal disease. In the treatment of periodontal disease, daily stimulation of the tissues supporting the teeth is essential. To encourage and insure such daily stimulation, the appliance thereof should be made as simple as possible. Advantageously, the ease of portability, the freedom from the need of attendant house current or a source of water, and the fact that it can be used anytime, anywhere and with no waste of time, enable the gum massage implement of the instant invention to provide the closest approach to the ideal gum stimulator, and in turn encourage the instant finger massage method to be practiced daily, in a simple and practically effortless manner.

It will be appreciated that the instant specification and drawings are set forth by way of illustration and not limitation, and that various modifications and changes may be made without departing from the spirit and scope of the present invention which is to be limited only by the scope of the appended claims.

What is claimed is:
1. Gum massage implement which comprises a portable self-contained vibration-generating member in combination with a selectively shaped single finger engaging retainer operatively connected with said member for retaining the instant self-adjustable construction, a preferred embodiment of which is shown in FIGS. 1-9, wherein the vibration-generating member is an elongate member having an electrically energizable vibration-generating source disposed for generating vibrations transverse to the longitudinal axis of the elongate member and transverse to the corresponding longitudinal axis of the finger.
2. Implement according to claim 1 wherein the vibration-generating member is an elongate member having an electrically energizable vibration-generating source disposed for generating vibrations transverse to the longitudinal axis of the elongate member and transverse to the corresponding longitudinal axis of the finger.
3. Implement according to claim 2 wherein the vibration-generating source is disposed on said member at a longitudinal position substantially adjacent to the position of operative connection of the finger engaging retainer with said member for transmitting vibrations to the finger directly at the finger engaging retainer.
4. Implement according to claim 3 wherein the vibration-generating source is a dry cell operatable electric vibrator motor.
5. Implement according to claim 4 wherein the vibrator motor contains a motor shaft having an eccentric fly weight thereon rotatable with the motor shaft to produce low-amplitude high-frequency vibrations, and the eccentric fly weight is positioned on the motor shaft at a longitudinal point substantially coincident with the position of operative connection of the finger engaging retainer with said member.
6. Implement according to claim 1 wherein the finger engaging retainer and said member are integral.
7. Implement according to claim 1 wherein the finger engaging retainer includes a selectively sized single finger engaging band operatively connected with said member.

8. Implement according to claim 7 wherein the band is in the form of a closed finger engaging loop.

9. Implement according to claim 7 wherein the band is in the form of a pair of separate selectively adjustably interconnectable subbands for forming a composite closed finger engaging loop upon interconnecting such subbands.

10. Implement according to claim 7 wherein the band is in the form of a resilient tension element of limited elastic deformability.

11. Implement according to claim 1 wherein the finger engaging retainer includes a selectively sized pair of lateral single finger engaging wings operatively connected with said member.

12. Implement according to claim 1 wherein the vibration-generating member is a manually portable self-contained elongate bipartite tubular vibration-generating member having substantially closed tubular ends and containing therewithin a dry cell operable electrically energizable vibration-generating source and a dry cell-receiving space, the vibration-generating source being disposed for generating vibrations transverse to the longitudinal axis of the elongate member and transverse to the corresponding longitudinal axis of the finger, and wherein the finger engaging retainer includes a tubular member engaging band embracing the girth of said member in a friction fit to connect operatively the finger engaging retainer with said member.

13. Implement according to claim 12 wherein the finger engaging retainer includes a tubular member engaging band in the form of a closed tubular member engaging loop embracing the entire circumference of said member in a friction fit, and rigidly interconnected therewith an opposed selectively sized finger engaging band in the form of a closed single finger engaging loop for embracing the entire circumference of the finger of the user rearwardly of the tip of the finger in a friction fit.

14. Implement according to claim 12 wherein the finger engaging retainer includes a tubular member engaging band in the form of a closed tubular member engaging loop embracing the entire circumference of said member in a friction fit, and rigidly interconnected therewith an opposed selectively sized pair of lateral single finger engaging wings for embracing the predominant lateral girth of the finger of the user rearwardly of the tip of the finger in a friction fit.

15. Method of finger massaging gums which comprises transmitting by direct physical contact continuous low-amplitude high-frequency vibrations from a portable self-contained vibration-generating external source to a single massaging finger of the user rearwardly of the tip of the finger to cause such finger to vibrate, and placing the resultant vibrating finger in direct physical contact with a portion of the gums to massage such portion by imparting in turn the force of such vibrations thereto.

16. Method according to claim 15 wherein the vibrations are sustained vibrations transmitted in a direction transverse to the longitudinal axis of the finger and the underside pad at the tip of the finger is placed in pressing contact with the portion of the gums being massaged to impart in turn the force of such vibrations thereto.

17. Method according to claim 16 wherein the vibration-generating source is a manually portable self-contained elongate bipartite tubular vibration-generating member having substantially closed ends and containing therewithin a dry cell operated electrically energized vibration-generating source, operatively connected with a selectively shaped single finger engaging retainer positioned in a friction fit removably fixedly on the massaging finger of the user rearwardly of the second joint of the finger to transmit such vibrations to the finger thereof.

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