

Feb. 1, 1927.

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P. E. E. NUYTS

INSTRUMENT FOR MASSAGING THE GUMS

Filed Jan. 3, 1925

Fig. 1.

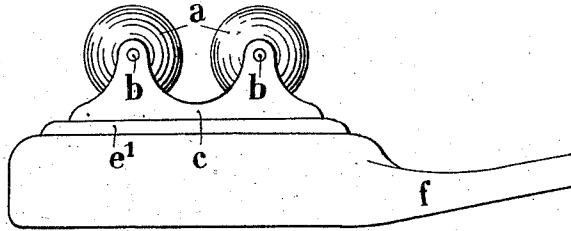


Fig. 2.

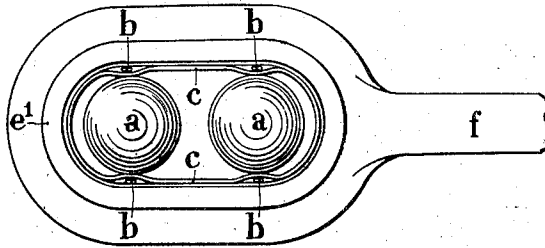


Fig. 3.

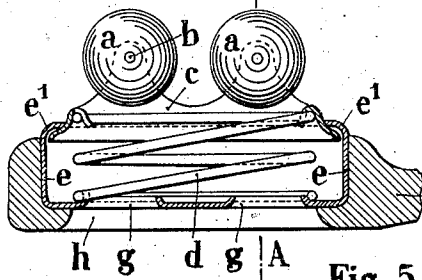


Fig. 4.

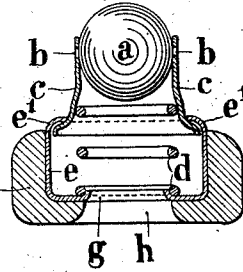


Fig. 5.

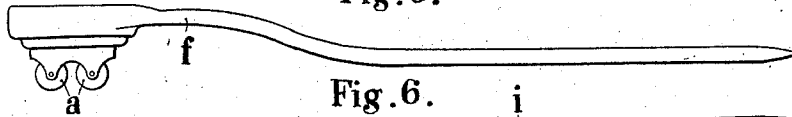


Fig. 6.

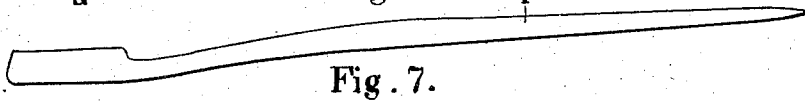


Fig. 7.

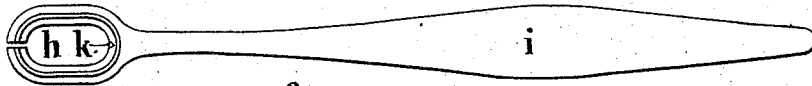


Fig. 8.

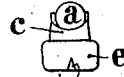
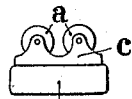
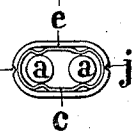


Fig. 10.

Fig. 9.



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INSTRUMENT FOR MASSAGING THE GUMS.

Application filed January 3, 1925, Serial No. 379, and in France November 10, 1924.

This invention relates to an instrument for the massage of the gums enabling:

1.—The circulation to be increased, and, due to the phagocytosis which results, therefrom, buccal diseases and inflammations to be combated.

2.—The muscular fibres to be acted upon and also the articular ligaments which keep the teeth encased in their bony sockets.

The invention is particularly applicable to the treatment of pyorrhoea of the dental sockets, the consequence of which are so important for dentition in the first place, and more particularly for the general health.

It is known that, in treating the gums by massage, different mechanical operations have to be performed. In general, a series of operations of graduated intensity have to be performed, commencing with the most light and superficial operations, and ending with the heaviest and deepest. Thus in many cases where the gums are painful, the massage must be commenced by gently touching the surface, then, when the gums have become less painful, continuing with massage by pressure, exerting at first light pressures without rubbing, then heavier pressures with rubbing, the massage being finally terminated by percussion and vibration operations in order to reach the muscular fibers and the articular ligaments of the teeth.

The invention relates to an instrument by means of which all these operations may be carried out successively, with a force which may be varied as desired, and also any intermediate operations which may be necessary, without any alteration or change having to be made to the instrument.

The instrument is characterized essentially by the combination of balls turning upon parallel spindles carried in a movable supporting frame resting upon a spring, the whole being fitted, either directly or through the medium of a fixed or removable casing, upon the end of a handle of suitable shape and curvature.

The invention is illustrated by way of example in the accompanying drawing in which—

Figure 1 is an elevation.

Figure 2 is a corresponding plan.

Figure 3 is a vertical longitudinal section.

Figure 4 is a section taken along the line A—A in Figure 3.

Figure 5 is a view of the assembled instrument.

Figures 6 to 10 illustrate a modified form of the invention in which the device is removably mounted upon the handle.

As will be seen from the drawing, the device comprises, in the example illustrated, two balls *a* turning upon spindles *b*. These spindles are mounted on a supporting frame *c*, the outer part of which is cut away as much as possible so that the balls will stand well out from the remainder of the device. This frame rests upon a spring *d*, placed in a casing *e* carried by a handle *f*. The edge *e'* of the casing *e* is flanged, as shown in the drawing, so as to hold the frame *c*. The bottom of the casing is perforated at *g*, as well as the bottom of the recess in the handle which is open at *h* in order to facilitate the cleaning and washing of the device.

By means of the instrument thus constituted all the necessary mechanical operations for the treatment of the gums may be carried out, as stated above. Since, in cases of buccal disease and inflammation, the swollen gums are particularly painful, it is first necessary to try to alleviate this pain. This can only be done by gently touching the surface of the gums in a way similar to that which is usual in massage by hand, the soothing effect of which is well known.

This first operation, which must be completed before passing to the other massaging operations (pressure, percussion, vibration,) is performed by means of the balls *a*. As the balls can turn on their spindles the inflamed gums may be gently brushed by means of the instrument without offering any resistance.

Anything which may cause pain is avoided in this first operation, which is made more gentle still by the fact that the balls are carried upon the frame *c* which is free to sink in the casing when the spring *d* is compressed, if instead of simply touching the surface of the gums a little pressure is applied.

The gums may be treated more or less gently, in this first operation, according to the lightness of touch of the masseur holding the handle; this remark also applies to the operation for the massage of the gums which are hereinafter described.

The inflamed gums having thus been rendered less painful, and, so to speak, sent to sleep by this first operation which consists in gently touching the surface of the gums, the second stage of the mechanical massage,

called massage by pressure, may then be easily carried out. It is necessary to recall that the purpose of this massage by pressure is:

- 1.—To increase the return circulation in the veins in the inflamed parts.
- 2.—As a result to assist in this way the interstitial absorption and diffusion, by breaking up and compressing the pathologic products accumulated in the interstices of the muscular tissue and the cellular tissue.
- 3.—To increase, due to this same increased circulation, the diapedesis of the white globules and thus increase the action of the phagocytes themselves which combat the infectious microbes.

The instrument described enables the massage by pressure to be carried out in two ways:

- 1.—By moving the instrument for massaging the gums in the direction of rotation of the balls. The pressure then compresses the spring, and allows the frame carrying the balls to sink in the casing, so that a certain amount of pressure is exerted due to the reaction of the spring; the balls themselves, however, remain free to turn on their spindles.

In this case, the balls do not rub at all and the massage is carried out by means of a gentle pressure.

- 2.—By moving the instrument in a direction perpendicular to its longitudinal axis; the frame carrying the balls then sinks, as in the preceding case, into its casing, but the balls can no longer turn on their spindles, and thus rub against the gums so that a more vigorous massage is obtained.

Finally, it is equally necessary in massaging inflamed gums to tone up and stimulate the muscular fibres and the articular ligaments which hold the teeth in the bony sockets.

This result can only be obtained by a combined movement of percussion and vibration.

These two last stages in the massage of the gums can be carried out by the apparatus according to the invention, due to the spring which supports the frame carrying the balls and to the special shape of this spring. This special shape of the spring enables the whole of the frame carrying the balls to sink vertically into the casing, or only one the other of its ends to be alternately pressed into the casing, the frame carrying the balls swinging in this case from front to back inversely.

Further, as the surface of the gums is not flat, but is formed of successive projections and hollows, due to the bony sockets which they cover, movements and consequently vibrations, similar to those produced by the springs of a motor car running over uneven ground are obtained dur-

ing the massage, due to the arrangement of the spring.

As it is seen, the strength and duration of the successive stages of the massage may be varied as desired. It will be noted that it is not necessary to touch the instrument in order to pass from one stage to another.

The casing *e* may form part of the handle *f*, or it may be removable. In the latter case, the handle will be provided with a suitable recess and retaining means, if such are required.

The casing *e* may be made so that it can be fitted to the handles of tooth brushes so-called "Dentclair". In this case, the brush and the gum massaging device are interchangeable upon the handle. This condition is illustrated in Figures 6 to 10 where a part of the massaging device *e* and the handle *i* are shown separately. As is shown more clearly in Figure 10, the casing *e* is provided with a notch *j* for engaging with the spur *k* which is provided upon the handle, as shown in Figure 7, in order to guide and secure the device more surely.

The ball carrying apparatus is preferably constructed entirely of metal, so that it can be disinfected. The large apertures *g*, *h* prevent any food products or septic products collecting in the instrument.

The balls may be replaced by rollers; the rollers or balls may be made of wood, metal, rubber, plastic material or the like.

The spring *d* may be of any suitable shape or arranged in any suitable manner, or may be replaced by a block of elastic material. It is to be noted that the handle for carrying the gum massaging device, has been purposely constructed in the special form illustrated which enables all the teeth and gums to be reached as easily on the surfaces which are by the palate and tongue as on the surfaces by the lips and cheeks, which renders the action of the massaging instrument upon the gums themselves easier and more thorough.

The new massaging apparatus may be applied to the massage of other parts of the body by increasing its size and providing it with a mount either with or without a handle so that it can be suitably manipulated.

The forms of construction hereinbefore described are only given by way of example; the shapes, substances and dimensions; materials used, and all arrangements of details may be varied without going outside the scope of the invention.

Claims:

1. In a gum massage instrument, a plurality of balls, a single frame receiving the several balls, means mounting said balls to rotate on parallel axes in said frame, a casing movably receiving the frame, a handle carried by the casing, and a spring inter-

posed between the casing and the frame and permitting freedom of movement of the frame and balls under tension in the casing.

5 2. An instrument as claimed in claim 1 characterized in that the edge of the casing is turned inwardly to limit the movement of the frame therein.

3. An instrument as claimed in claim 1

characterized by the provision of perforations in the bottom of the frame permitting passage of liquid therethrough. 10

The foregoing specification of my "improved instrument for massaging the gums", signed by me this 19th day of December 15 1924.

PAUL ERASME EMILE NUYTS.