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2,527,857

DENTAL STIMULATOR

Filed June 10, 1948



FIG-1

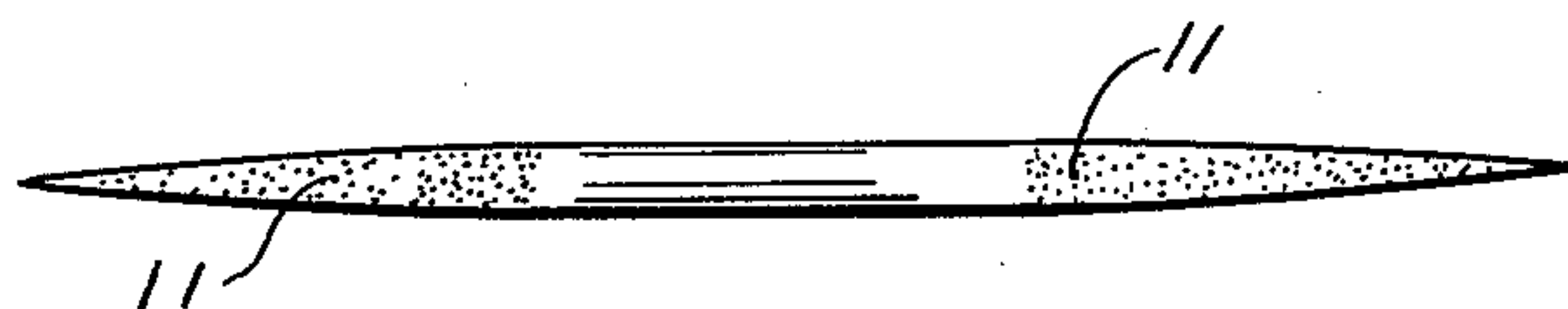


FIG-2

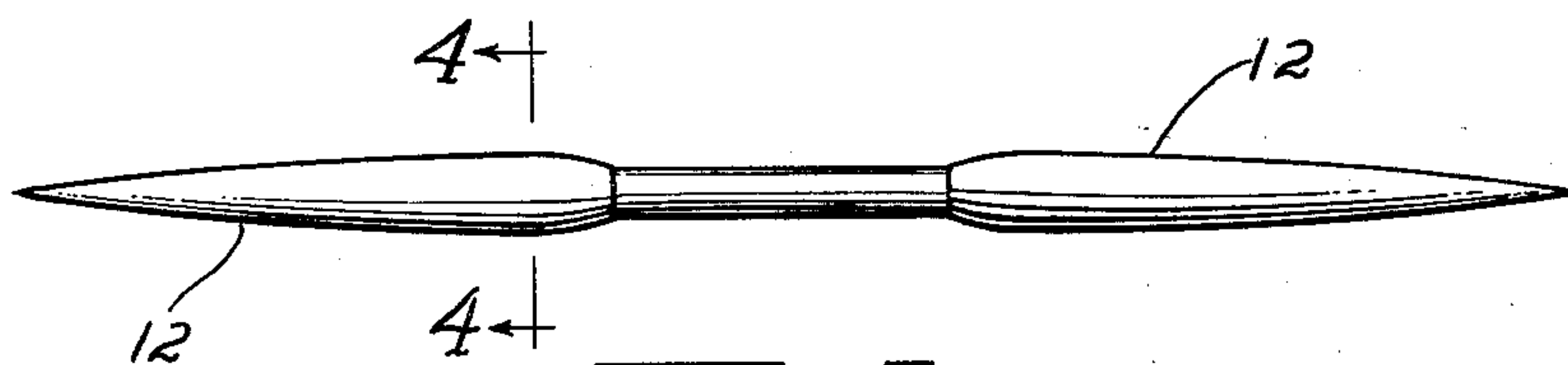


FIG-3



FIG-4

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DENTAL STIMULATOR

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1 Claim. (Cl. 128—60)

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This invention relates to improvements in dental instruments and more particularly to a device for accomplishing interdental stimulation.

Interdental stimulation comprises the exertion of pressure against the interdental tissues so as to cause the blood to flow in and out of the capillaries and thereby to stimulate the gums and tissue. Stimulation has heretofore been attempted by means of a toothbrush, a wooden toothpick or with a rubber tip mounted upon a handle, and in each instance the procedure has been to insert the implement into an interproximal space and to exert a pressure against the interdental tissue sufficiently to force out the old blood and then to release the pressure, thereby allowing fresh blood to flow into the interdental tissues. Normally interdental stimulation is taught by the dentist with the intention of having the patient perform the stimulation at home and consequently various techniques have been developed for accomplishing the intended purpose aforesaid.

Some dentists prefer the instruments aforesaid, while others prefer the toothpick or rubber tipped device and there are plausible arguments advanced in support of each. The wooden toothpick, however, is perhaps the oldest and most useful implement for tooth cleansing and gum interdental stimulation, but there is a likelihood of the toothpick point breaking off and embedding itself in the tissue, particularly where the tissue is inflamed and is relatively soft. An advantage of the wooden toothpick, however, is that it has sufficient rigidity to exert the desired amount of pressure, whereas the toothbrush bristle or a soft rubber tip is apt to bend and thereby to effect stimulation only on the outer regions of the tissue adjacent the interproximal spaces.

An object of the present invention is to retain the advantages of rigidity that are inherent in the use of a wooden toothpick and at the same time to protect the end of the pick and to present a relatively yielding surface which may be used satisfactorily upon inflamed tissue without danger of infection.

In the drawings, Fig. 1 illustrates a round wooden toothpick, the drawing being substantially twice the size of the ordinary toothpick; Fig. 2 is a view showing the toothpick with a coating of sizing material which constitutes a step in carrying out the method of the present invention; Fig. 3 is a view illustrating the toothpick with a coating of flexible material on each

end, and Fig. 4 is a section taken on the plane indicated by the line 4—4 in Fig. 3.

The toothpick with which the present invention is illustrated constitutes an ordinary round polished toothpick indicated at 10 as having a cylindrical body and pointed ends. The first step in the manufacture of a device embodying the present invention is to place a coating of sizing material 11 on each end of the toothpick of suitable character to obtain adequate bonding of a rubber-like sheath to the wood. The sizing material preferably comprises an adhesive in liquid form and into which the ends of the toothpick are dipped. A satisfactory adhesive is that having the trade designation EC-870 sold by The Minnesota Mining & Manufacturing Company of St. Paul, Minnesota. Such adhesive embodies a cement having a base of rubber-like material having thermo-plastic properties which begins to flow when heated to about 240° F. I prefer to thin such adhesive to about a 50% solution with a diluent, such as toluene. After the toothpick is dipped in the adhesive, or sizing material aforesaid, it is air dried at room temperature. It is to be understood that one end is dipped and partially dried before the other end is dipped so as to prevent the sizing material from dripping or covering any more than a predetermined portion of the toothpick.

The next step in the preparation of the stimulator is to provide a flexible, resilient coating for each end of the toothpick. The coating which I prefer to use has a latex base together with other ingredients which operate to give the desired degree of rigidity to the latex and to make it retain the pointed form as shown in Fig. 3. I have found that best results are obtained if the total solids content of the latex is between 62% and 66% by weight.

A formula which has been found to produce satisfactory results in the use of latex, as aforesaid, embodies ingredients by weight, as follows:

	Parts
Latex	100
Sulphur	1.25
Zinc oxide	.50
Age resistor	.50
Butyl zimate	.50
Vanillin (perfume)	.10
(Color added to suit)	

The age resistor is an anti-oxidant consisting of di-beta naphthyl-paraphenylene diamine. The coloring material may be a vegetable coloring dye and may be added in the amount necessary to

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obtain any color or shade desired. Inasmuch as the device is intended for use in the mouth where the taste of latex may be objectionable, I may, if desired, sweeten the material by the addition of corn sugar.

After the coating 12 is applied, it is cured for one-half hour at a temperature of 240° F. This is sufficient to produce a coating that is flexible and resilient, yet is sufficiently rigid to effect interdental stimulation in a satisfactory manner.

An advantage of a stimulator made in accordance with the present invention is the fact that a patient can readily use it safely for interdental stimulation. Little or no skill is required in mastering a technique for it is only necessary for the patient to insert the point into the interproximal space and either to pump the side of the inserted portion upwardly and downwardly against the interdental gingivae, or forcing the pick inwardly until it presses firmly against the gum, preferably holding the stimulator against the tissue for one or two seconds, thereby forcing the blood out of the adjacent capillary, then releasing the pressure and allowing fresh blood to flow into the capillary. This can readily be performed by a patient who may be engaged in

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other activities and does not require the privacy of a bathroom as is the case with a toothbrush or handled stimulator.

I claim:

- 4 An inter-dental stimulator comprising a round wooden member having tapered pointed ends, said member having a flexible sheath of rubber-like material covering said pointed ends, the external contour of the sheath conforming substantially to the conformation of the member, and the mid-section of the member being uncoated.

RONALD M. STRACHAN.

REFERENCES CITED

- 15 The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
20 106,773	Blake	Aug. 30, 1870
201,022	La Fonte	Mar. 5, 1878
1,746,591	Heymann et al.	Feb. 11, 1930
1,996,205	Jackson	Apr. 2, 1935

OTHER REFERENCES

- 25 Thomas: "Effective Interdental Stimulation," Journal American Dental Association, May 1942, pp. 741-3.
The Vanderbilt News, May-June 1947, page 25.