Jan. 7, 1947. A. R. MARTY 2,413,879

HYGIENIC VIBRATOR

Filed May 1, 1944

Fig. 1.

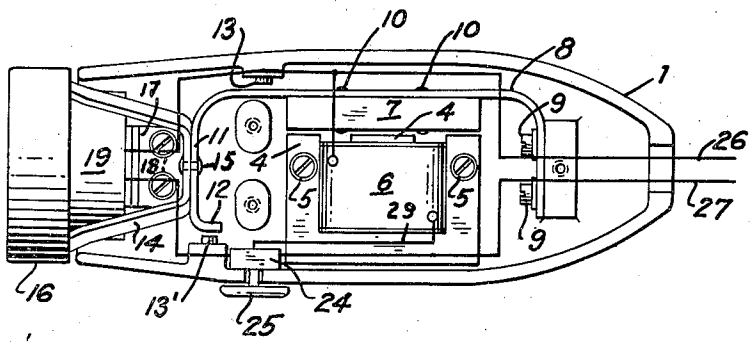


Fig. 2.

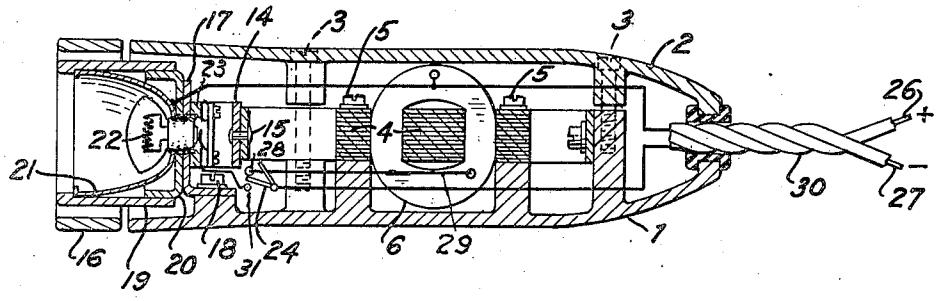


Fig. 3.

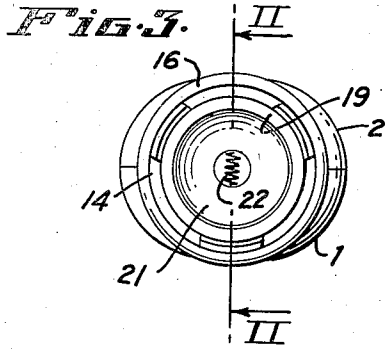
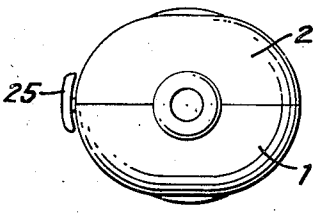


Fig. 4.



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Patented Jan. 7, 1947 2,413,879

UNITED STATES PATENT OFFICE

2,413,879

HYGIENIC VIBRATOR

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Application May 1, 1944, Serial No. 533,557

3 Claims. (Cl. 128—24.5)

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This invention relates to hygienic vibrators and more particularly to a manual instrument for combined massage, light and heat therapy.

Among the objects of the invention is to provide in a single, compact device, means for electrically applying vibration, massage, infra-red heat and light simultaneously or separately to living tissues.

Another object is to protect the radiant element from the disruptive effects of the vibratory mechanism.

Another object is to provide a device of this character in compact form and especially adapted to the stimulation of the muscular, circulatory and nervous systems of the human body.

A further object is to apply infra-red heat and vibration without vibrating the heating element.

Other objects and advantages will appear as the description progresses.

In this specification and the accompanying drawing, the invention is disclosed in its preferred form. But it is to be understood that it is not limited to this form; because it may be embodied in modifications within the spirit of the invention as defined in the claims following the description.

In the one sheet of drawings:

Fig. 1 is a plan view of a vibrator constructed in accordance with this invention, with the cover of the casing removed.

Fig. 2 is a longitudinal section of the same, on the line 11—11.

Fig. 3 is an end elevation of the same viewed from the front.

Fig. 4 is a similar view from the rear.

In detail the construction illustrated in the drawing, referring first to Fig. 2, comprises the enclosing casing divided into two sections such as the base 1 and the cover 2, secured together by the screws 3—3. This casing is preferably composed of dielectric plastic material or the like and shaped to comfortably fit the hand.

The laminated iron core 4, is fixed to the base 1 by the screws 5, 5, the electric wire 6 surrounds this center core to create a magnetic field. The armature 7 is held in vibratory proximity to the core by the flat spring 8. The bent end of this spring is fixed to the base by the screws 9, 9, and the armature is riveted to this spring at 10, 10. The free end of the spring is bent at an angle to form the head 11, that extends across the width of the base and has the angular impact end 12. The opposed bumpers 13, 13' are mounted in the base and spaced from the plane of the spring 8 and the impact end 12, respectively, to limit

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the vibratory path of the spring. These bumpers can be made adjustable to vary the rate of vibration of the armature.

The tripod shape spider 14 is riveted or spot-welded to the head 11 at 15 and vibrates therewith. The massaging dielectric annulus 16 is fixed to the spider 14 concentric with and spaced slightly outward from the end of casing.

The stationary heating assembly comprises the bracket 17 that is fixed to the base 1, by the screws 18, 18, between the lateral extensions of the spider. The stationary ring 19 is fixed on the cross strut 20, which in turn is spot-welded to the bracket 17. This ring is concentric with and interspaced from the vibratory massaging annulus 16. Both these members 16, 19 are preferably composed of plastics or the like having relatively low heat and electric conductivity. Their exposed ends are co-planar for contact with the skin.

The ring 19 has an internal shoulder to confine the rim of the parabolic reflector 21, interposed between this shoulder and the strut 20. This reflector is preferably copper or gold plated, better to reflect infra-red heat rays. The electric heating element 22 is mounted in a dielectric base 23, which is fixed to the bracket 17 and adapted to insulate the heating element from the metal parts of the apparatus.

Infra-red globes in which the heat generating element 22 is sealed in a vacuum are preferred for safety, see Fig. 2. But open elements, as in Fig. 3, have the same therapeutic value if the skin of the user is protected against burns.

The two pole electric control switch 24 is mounted on the base 1 inside the casing and has the thumb button 25 exposed on the outside of the case for manually operating the switch.

Power flows into the electric circuit over the wire 26, across the heating element 22, the switch 24 and back to the source over the wire 27. The wires 26, 27 are enclosed within a flexible cord 29 adapted to be plugged into a power circuit in the conventional manner. The heating element 22 may be cut out by shifting the switch to the contact 28, leaving the coil 6 still active over the wire 29, for massage without heat. Shifting the switch to the contact 31, cuts out the coil 6 and cuts in the heating element 22, for treatment by heat without vibration. For treatment with both heat and vibration the switch is shifted to close both contacts 28 and 31.

This invention operates substantially as follows:

When the switch button 25 is moved to close

the switch 24, a magnetic field is set up in the core 4, which attracts the armature 7 against the tension of the spring 8, which causes the end 12 to strike and rebound from the resilient bumper 13. This rebound causes it to similarly react with the opposed bumper 13'. These magnetic and mechanical effects in the armature 7 and the spring 8, set up a constant vibration of the massaging annulus 16.

The heat generated in the heating element 22, is projected by the reflector 21 through the opening of the surrounding ring 19. When this ring is laid against the human skin the infra-red heat rays from the heating element 22 penetrate into the underlying tissues with a therapeutic effect on the blood stream. The massaging effect of the vibratory annulus 16 promotes increased blood circulation within the areas being treated, effecting a more rapid circulation of the blood, absorption of heat and modification of the blood stream. These combined effects enable a greater application of heat to a larger area in a given time, and reduce the danger of burning the skin because it is thus agitated.

A transformer winding can be included within the coil 6 to step down the voltage from the usual 110 volt service to six volts, more or less, to reduce the danger of shock to the patient or operator.

Having thus described this invention what is claimed and desired to secure by Letters Patent is:

1. A hygienic instrument comprising a casing; a stationary member fixed to and projecting from the end of said casing; an annular massaging member surrounding and spaced from said stationary member, with its outer edge substantially coplanal with the outer edge of said stationary member; and vibratory means within said casing and connected to and vibrating said massaging member laterally to its own axis and relative to said stationary member.

2. A hygienic instrument comprising a casing; a vibratory means within said casing; a stationary ring fixed to and projecting from the end of said casing; a therapeutic element within said ring; an annular massaging member vibrated laterally to its own axis by said vibratory means and surrounding and spaced laterally from said stationary ring.

3. A hygienic instrument comprising a casing; a stationary ring fixed to and projecting from the end of said casing; a therapeutic element within said ring; an annular massaging member surrounding and spaced from said stationary ring with its outer edge substantially coplanal with the outer edge of said stationary ring; and vibratory means within said casing for vibrating said massaging member laterally, relative to the axis of said ring.

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