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MASSAGING DEVICE

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Fig. 1

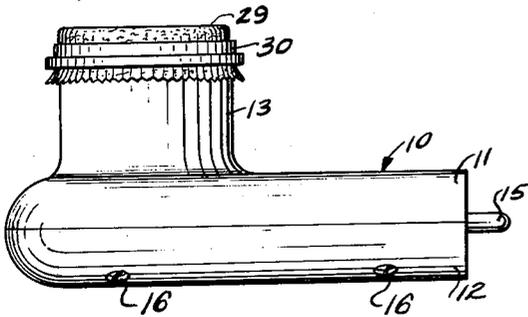


Fig. 2

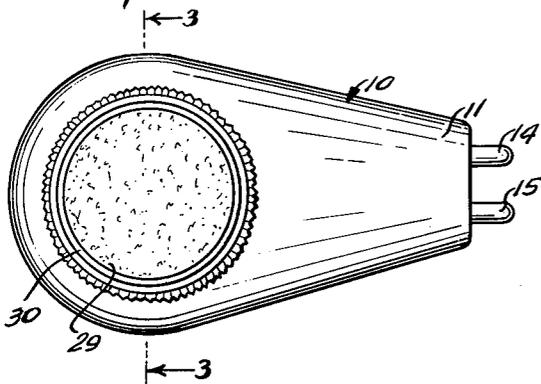


Fig. 3

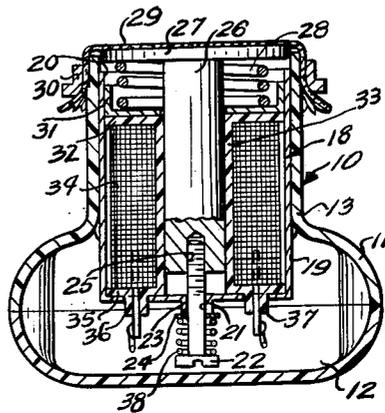


Fig. 4

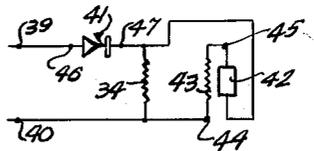
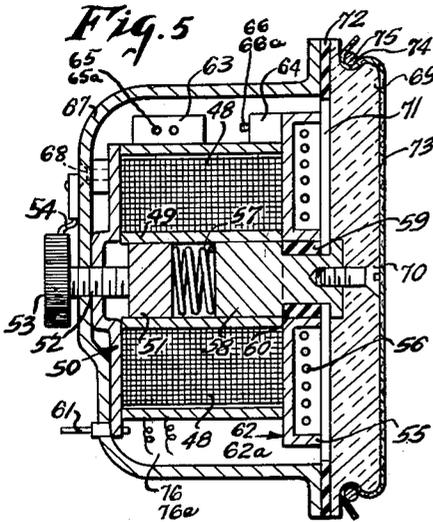


Fig. 5



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1

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**MASSAGING DEVICE**

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3 Claims. (Cl. 128—24.1)

The invention relates to a vibratory massage instrument to be used primarily for purposes of cleansing and otherwise conditioning the skin, especially by promoting the exudation of liquids, greases and entrained impurities from the pores and superficial cavities of the skin, and by securing the effective and instantaneous removal from the skin of the matter thus released.

In accordance with the invention, a vibratory member which is pressed against the skin and which has pulsating movements toward and from the skin, is heated to a temperature substantially above body temperature, and is provided with a porous absorbent overlay. The heat thus applied to the skin promotes the flow of liquid and greasy impurities from the pores and crevices of the skin, enabling the intermittent pumping action of the vibratory member to express or exude the impurities more effectively from the pores and cavities to the surface of the skin in a condition more readily separable from the skin, whereupon the absorbent overlay acts as a pulsating blotter so to speak, which absorbs the impurities instantaneously as they are exuded in a readily flowable condition at the surface of the skin. The resulting skin cleansing action is surprisingly rapid and effective, a fresh absorbent overlay being substituted as saturation with impurities approaches. The effectiveness of the instrument is not dependent upon any wiping action over the skin, the pulsations toward and from the skin in combination with the heat and the porous overlay, being sufficient to bring the impurities to the surface of the skin in a readily removable condition, and to instantaneously remove them by absorption in the overlay, as above referred to. Appropriate means are well known in the art for imparting vibrations to the instrument, and the applicator surface may be heated in various ways, e.g. by hysteresis effects emanating from an electromagnetic coil and armature used in producing the vibrations, or by electrical resistance elements carried by the vibrating member, or by other appropriate source of heat incorporated in the instrument. The porous absorbent overlay is preferably constructed of flexible porous paper similar to that used in facial tissues or may be constructed of porous cloth or synthetic porous sheet materials. Further features of the invention will be in part obvious and in part specifically referred to in the specification hereinafter contained which taken in conjunction with the accompanying drawings discloses a preferred form of massage instrument constructed to function in accordance with the invention; the disclosure however should be considered as merely illustrative of the invention in its broader aspects.

In the drawings:

Figure 1 is a side elevation of one form of the device;

Figure 2 is a plan view of the device of Figure 1;

Figure 3 is a sectional elevation taken along the line 3—3 of Figure 2;

Figure 4 is a circuit diagram showing the electrical circuits in the device shown in Figures 1, 2 and 3; and

2

Figure 5 is a sectional elevation of another device embodying the invention.

This application is a continuation in part of application Serial Number 467,999, filed November 10, 1954, now abandoned; and of application Serial No. 537,117 filed September 28, 1955, now abandoned.

Referring first to Figures 1, 2, and 3, the device is housed in a casing 10, which casing is comprised of an upper case element 11 and a lower case element 12, said elements being detachably secured together by means of screws 16. The upper case element 11 has a tubular extension 13 formed integral therewith. This extension embraces a combined vibrating and heating element 18, which includes a cupped casing 19 having an open end 20 and having in the opposite end a central clearance hole 21 therein to clear a screw 22. The material about the hole 21 of course is tubular and forms a hollow boss 23 against which a washer 24 bears. Between the head of the screw 22 and the boss 23 is a helical spring 38.

The screw threadedly engages a threaded hole in the lower end of a solid, rigid shaft-like plunger 26. The plunger 26 has, preferably formed integral therewith a flange portion 27 which forms a vibratory support for a porous absorbent overlay 29, which is to be pressed against the skin in the manner and for the purposes described herein. A spring 28 has one end acting against the flange portion 27 and the opposite end bears against a cup-like member 31, and the member 31 bears against a head 32 of a bobbin 33. This bobbin carries a solenoid winding 34, and has a head 35 on the opposite end with insulation through which the ends 36 and 37 of the winding 34 pass. The spring 28 urges the plunger 26 in one direction and the spring 38 urges the plunger 26 in the opposite direction, and by means of the screw 22 adjustments may be made.

The flange support portion 27 as stated above forms a solid, rigid vibratory support for the porous absorbent overlay 29, and the latter functions as a pulsating blotter and absorbs the liquid and greasy impurities from the pores of the skin as they are exuded by the vibration and the heat.

The solenoid winding 34 causes the armature or plunger 26 and the flange support 27 to vibrate, and the absorbent overlay 29 and its support 27 are heated by the winding 34 by hysteresis and eddy currents in the body of the armature.

Referring now to Figure 4, the circuit diagram of Figures 1, 2, and 3, the device may be connected to any convenient source of alternating current. In Figure 4, the main circuit terminals 39 and 40 are connected to said source. If desired, a rectifier 41 may be placed in series with the circuit so as to operate the device on half wave current in a well known manner if desired. Further, a thermostat 42 and a heater element 43 are connected in parallel with the winding 34. The thermostat is associated with the core 26 or the shell 19 in heat exchange relationship such that when the support 27 of the applicator reaches the desired temperature, the thermostat operates to open the circuit. Where sufficient heat is generated by the winding 34 in the plunger due to hysteresis and eddy currents, the heater winding 43 may be omitted by connecting the terminals 44 and 45 together. If desired the rectifier 41 may be omitted and the terminals 46 and 47 connected together for straight A.C. operation.

Referring now to the modification shown in Figure 5, a yoke or mounting plate 50 carries a hollow core member carrying the winding 48. A pole piece 51 has a threaded shank 52 in threaded engagement with the yoke 50 as shown, and the shank has an external serrated knob 53 engaged by a catch 54.

Mounted on the outer end of the winding 48 is a heater

frame or cell 55 having a heater element 56 that functions to heat the applicator. The pole piece 51 has connected thereto one end of a spring 57, and the other end of this spring is connected to a movable armature 58. The elements 50, 51 and 55 are preferably of non-magnetic material.

A sub-assembly comprising the pole piece 51, the spring 57 and the armature 58, is placed in position within the core 49 and held by a bushing 59 engaging a shoulder 60 of the armature 58, which normally bears against the bushing under the urge of spring 57.

Terminals 61 are insulately carried on the yoke 50. Terminals, generally designated by the arrow 62, 62a, feed the heater. A rectifier 63 and a thermostat 64 may be mounted on the yoke 50 and these have terminals 65, 65a, 66, 66a.

The parts described above are electrically connected as described herein, then mounted as a unit in a casing, as by screws 68.

The casing 67 is of insulating material to avoid shocks.

The vibratory support 69 is coaxial with and attached to the armature 58 by means of an axially extending flat head screw 70, for example, and is preferably of insulating material. A space 71 is provided between the casing and the rear side of the vibratory support 69. A soft gasket 72 of resilient material is placed between the casing and the support 69.

The support 69 has a flexible absorbent pad 73 removably mounted against its outer surface. This pad 73 may be removably retained on support 69 by means of a band 75, which is accommodated in a groove 74 circumferentially about the side of the support and clamps in place the peripheral area of the pad 73, desirably of appropriate absorbent facial tissue, which band 75 causes the face of the pad tissue to span across the surface of the support, to be placed in contact with the skin in the manner described herein.

The temperatures employed may be above body temperature preferably to 180° F. on the outer surface of the vibrating pad.

### OPERATION

Turn the device on to heat up, which will take a few minutes.

*Preparing the skin for the treatment.*—While the apparatus is heating up, cleansing cream or lotion is applied to the face to soften and prepare the skin for the beauty treatment.

*Attaching the absorbent pad.*—Absorbent pads are made of fine textile fibers of high absorbency and exceptional softness, so as not to harm even the most tender skin. They come in special boxes equipped with a unique patented arrangement in the cover, which attaches absorbent pads automatically in one second. Detailed instructions are contained in each box.

*How to operate the apparatus.*—To operate the device, press the absorbent pad covered end slightly against the skin, and a fine vibration will be felt. This vibration can be increased or decreased by the pressure applied to the instrument.

*The treatment should be localized.*—In other words, a small section of the face should be treated at a time, to allow the heat to penetrate into the skin. Moving the instrument from one spot to another will not produce the desired results. This heat application opens up the pores and liquifies the cosmetic waxes and softens other residues. The fine "micro-vibrations" and suction help to free these impurities, so that they can be picked up and absorbed by the heated absorbent pad.

*Controlling the heat.*—It is important to get the skin sufficiently hot to melt the waste matter in the pores, otherwise the heated pad can not pick it up. According to the type of skin, longer or shorter applications are recommended. It is not advisable, however, to overheat the skin. With little experience it is easy to establish the ideal period

of heat application. The duration of the treatment should be from 15 to 20 minutes, during which time the absorbent pads should be frequently renewed.

*Normalizing the skin.*—After the treatment is completed, the use of witch hazel or any other suitable lotion is recommended which has a cooling soothing effect on the skin. This will help the empty pores to close and reduce to a smaller normal size, so that they can again function normally.

*Oily skin* is the result of an overproduction of skin lubricant by the pores. By applying the apparatus with the heated absorbent pad to the skin, the surplus oils are picked up and absorbed by the heated pad, thus reducing this condition to a minimum. Frequent renewal of the absorbent pads during such treatment is recommended.

*Dry skin* is usually caused by poor blood circulation or the inability of the pores to produce the necessary lubricant to feed the skin and keep it flexible. Treatments by the equipment of the present invention will remedy this condition, as the fine micro-vibrations combined with heat will activate the blood particles in the skin and force them to circulate. As a result the sleeping pores will again become active and produce the necessary lubricant so vital for the maintenance of a healthy beautiful skin.

Although one embodiment and a modification thereof is described herein, many changes may be made in the arrangements shown, within the scope of the following claims.

What is claimed is:

1. An electric skin treating and massaging device including an insulating casing having an opening therein, a vibratory member having therein a substantially solid and rigid support adjacent to and extending outwardly beyond said opening and adapted to be pressed toward the skin, electric motor means for imparting inwardly and outwardly directed translational vibratory movements to said support, means for maintaining said support at super-body temperature, a replaceable, porous, liquid-absorbent, paper tissue overlay conformable to said support and means for detachably mounting said overlay in position directly overlying, in contact with, and spanning said support, thereby to effect absorption of impurities exuded from the skin due to heat and vibration.

2. The electric skin treating and massaging device as claimed in claim 1 in which the casing has an upstanding cylindrical wall portion, in which the electric motor means is a solenoid having an armature therein, the solid and rigid support being rigid with the outer end of said armature and being of diameter substantially to fit into said upstanding cylindrical wall, and in which the replaceable porous paper tissue absorbent overlay is retained in place against the support by means of a ring encompassing the downturned periphery of said overlay and resiliently pressing said periphery against said upstanding cylindrical wall portion of said casing.

3. The electric skin treating and massaging device as claimed in claim 1, in which the casing has an upstanding cylindrical wall portion, in which the electric motor means is a solenoid extending into said cylindrical wall portion and having an armature therein, and the solid and rigid support is axially secured to the outer end of the armature and in which the means for maintaining the support at super-body temperature is an electric heating coil in the form of a spiral and a frame encompassing said heating coil and encompassing the outer end of said armature and near but spaced from said support.

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