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MASSAGE APPARATUS WITH VIBRATORY ELECTRIC LAMP

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FIG. 1

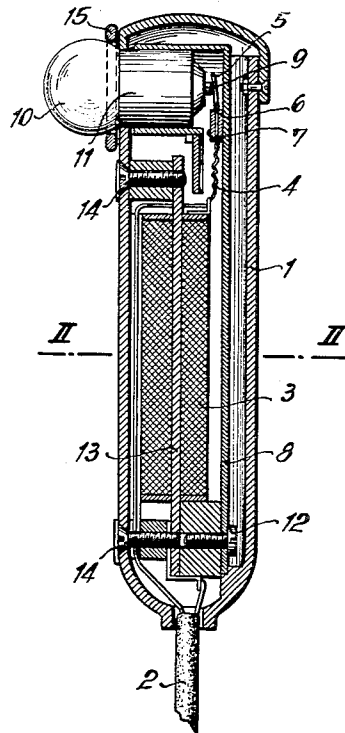
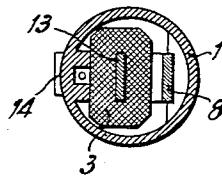


FIG. 2



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MASSAGE APPARATUS WITH VIBRATORY ELECTRIC LAMP

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2 Claims. (Cl. 128—24.2)

It is already appreciated that the application of ointments, skin creams and similar preparations by the use of manual or vibratory massage instruments can be greatly aided by the simultaneous application of radiations of suitable wave length, such as by the application of heat, of light, or of ultra-violet radiations.

Among such manual massage instruments are vibratory devices of the type known as "face irons" which utilize a small electrically heated iron plugged into an electric outlet socket as the massage head. There are other hand massage instruments of this type which are constructed in a manner similar to the usual flashlight. There are, in addition, those massage instruments which have lamps or heaters built into the massaging head.

In hand instruments of this general type, there is no additional effect attributable to the radiation, owing to deficient mechanical-physiological action. Vibratory massage instruments provided with additional sources of radiation have generally developed along two different lines or directions. In one type there is provided a vibrating annular massaging head which surrounds the source of the radiations, but this radiation source, whether it is a heater or an incandescent lamp, does not itself vibrate. With apparatus of this kind the desired simultaneous action with respect to time and place of heat convection, radiation and mechanical vibration is definitely not attained, since the vibrating ring remains cool and shades the surface which has just been subjected to the radiations. In another type of hand instrument the massage head is constructed of thick glass or of quartz, behind which are arranged heaters which also vibrate. The incandescent filaments of these heaters burn, as is the case with all such heaters, in the open air. The desired co-operation of the three healing factors, heat convection, radiation and mechanical vibration, could be attained by the use of these massage instruments if they were not in fact practically useless because of inherent fundamental defects in construction. It is a primary purpose of my invention to recognize and eliminate, by an improved construction, the defects which have destroyed the usefulness of machines of this type.

My invention is based on the principle that a filament which burns in the open air cannot be used for a massaging instrument, as it can never be sufficiently protected from the entrance and accumulation therewithin of dirt, grease and other air-borne contaminants, thereby making it impossible either to keep clean, or in a sterile condition. In order to clean such a device, or to replace the filament, it is necessary to take apart the entire massage head. The air which circulates around the filament becomes very hot, and must be withdrawn by special means. Moreover, as heat is carried away from the filament by convection, its temperature and specific radiation decreases, which means that the cross-section and length of the filament must be increased, thus necessitating that it be wound in the form of a coil and suspended. Since this filament is connected in circuit and subjected to the line voltage, it must be relatively long, thus being sub-

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jected to the danger of oscillation. The entire massage head consisting of a number of parts, including the heater, thus becomes bulky and expensive. At the same time it is physiologically dangerous owing to the production of a considerable amount of hot air, and possibly because of the high voltage which is applied to the filament. Because of the fact that aseptic conditions cannot be maintained because of the way in which such devices are constructed, use of this type of device for cosmetic purposes is not feasible.

In the present invention, instead of utilizing a massage head with a heater to supply the radiation, a miniature lamp is provided both to supply the radiation and to act as a massage head. By this improvement the defects in presently available apparatus as enumerated above are entirely eliminated.

When utilizing such miniature lamps in accordance with my invention, technical details, particularly the dimensioning and arrangement of the incandescent filament and its connections, are taken care of in the optimum manner and at extremely low cost. In a miniature lamp the incandescent filament, which is located in a vacuum and serves as the source of the radiation, forms a single structural unit with the glass envelope serving as massage head, and the whole unit can be easily removed and cleaned. The requirements for aseptic conditions are thus met by the use of my improved device.

Moreover, the incandescent filament, which is surrounded by a vacuum, is not subjected to heat losses due to convection of heat. Because of the vacuum, the glass envelope is heated, at most, to a temperature of about 50° C. which is physiologically the optimal operating temperature. At this temperature, the ointments and similar materials which are applied will flow easily.

Since the filament of a miniature lamp which burns in a vacuum can be operated at a higher temperature than a filament which burns in the open air, its specific radiation output is incomparably higher, which means that the cross-section and length of the filament are much smaller than are necessary for a filament burning in the open air. Despite the higher heating, a filament burning in a vacuum is thus better able to withstand rapid vibrations.

In order that the life of the lamp may be sufficiently great, the terminal voltage applied to a miniature lamp must be maintained sufficiently low, since the incandescent filament then becomes shorter and more rigid. In accordance with my invention, it is preferably decreased below the physiological danger limit of at most 10 volts. At the small capacities which are involved, the glass envelope also remains quite small in size, and is therefore resistant to breakage and to oscillation. This can be further improved by covering the glass body with a suitably colored plastic hood, instead of coloring it as has previously been the practice.

As a further development of my inventive concept, that part of the glass wall of the incandescent filament lamp which is on the side of the socket can be provided with a mirror, which may be either inside of the glass, or outside of the bulb. Moreover, the incandescent filament can be underheated, thus displacing the center of the radiation to the infra-red region of the spectrum. This results in light of somewhat longer wave length, and deeper penetration, at the same time increasing the useful life of the lamp because of the reduction in its output. Furthermore, since the glass envelope of the lamp is not heated as much as when the lamp is operated at the normal temperature, it may possibly be made smaller than for the standard type of lamp, thereby increasing its resistance to breaking.

Other and further objects, features and advantages of

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the invention will be pointed out hereinafter and appear in the appended claims forming part of the application.

In the accompanying drawing a now preferred embodiment of the invention is shown by way of illustration and not by way of limitation.

Fig. 1 is an axial section of a massage apparatus having the invention applied thereto, and

Fig. 2 is a section on line A—B of Fig. 1.

Similar reference numerals denote similar parts in the two figures.

Referring to the drawing in greater detail, it will be seen that the casing consists of two parts 1, 1'. The cable 2 coming from the source of current 16, which may be a small transformer, or storage battery, or dry battery, is introduced into the casing at the lower end thereof. One conductor of the cable 2 is connected to the body of the casing while the other conductor is connected to one end of the winding 3 and, through an elastic connecting piece 4, with a contact spring 5 which in turn is embedded between two insulating foils 6, 7 which may be connected to the contact spring and to the vibrating spring 8 by cementing; the contact spring 5 in turn establishes the connection with the insulated central contact 9 of the miniature lamp 10 which is seated in a conventional socket 11 which is secured to the vibrating spring 8. The latter in turn is connected by a screw 12 with an electromagnet 13 which by way of alternative may be of other shape than that shown in the drawing. It is connected to the casing 1 by one or more screws 14 at the point or points where a minimum of vibration energy is transmitted to the casing. For instance, in the drawing, two screws 14 are shown.

In order to permit exchange of the miniature bulb 10, the casing 1 is provided with a detachable ring 15.

The apparatus hereinbefore described is primarily intended for face and nerve point massage. For this purpose of use it is advisable to rate the vibrator and the miniature lamp for an input of about 4 watts each in order to obtain a sufficient but not excessive effect.

While the invention has been described in detail with respect to a now preferred example and embodiment of the invention it will be understood by those skilled in

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the art after understanding the invention that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended, therefore, to cover all such changes and modifications in the appended claims.

I claim:

1. A device of the class described, comprising in combination: a hollow case having an aperture formed therein; vibratory electromagnetic means disposed within said case and having a vibratory portion thereof disposed in proximity to said aperture; and a miniature type lamp socket carried by said vibratory portion, said socket being positioned and adapted to receive a removable miniature type incandescent lamp, comprising a glass envelope, said lamp, when positioned in said socket, extending freely movably through said aperture with a glass envelope portion thereof protruding exteriorly of said case for vibratory massaging operation with said protruding envelope portion in direct vibratory engagement with the body of a user of said device.

2. A device according to claim 1, further comprising an electrical energizing circuit common to said electromagnetic means and to said lamp socket, said energizing circuit including voltage reducing means connected to said socket for adapting said socket to receive and to energize an incandescent lamp having a relatively short thick filament to withstand the destructive effects of the vibratory motion imparted thereto, said voltage reducing means being arranged to cause energization of said filament at a voltage lower than the normal voltage thereof when said lamp is used for purposes of illumination, said lower than normal voltage causing a shifting of the spectral distribution of the rays normally emitted by said lamp toward the infra-red portion of the spectrum.

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