

April 2, 1946.

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2,397,757

HAIRBRUSH

Filed May 30, 1944

Fig. 1.

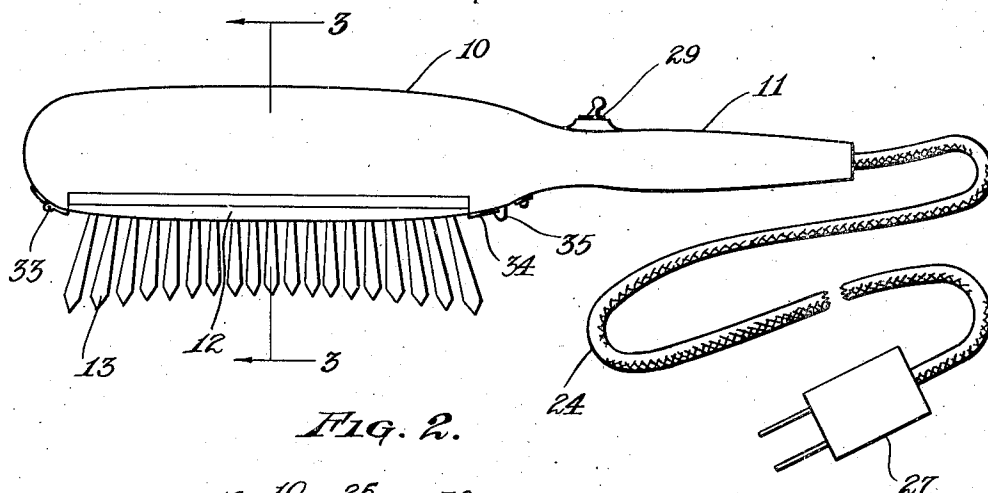


Fig. 2.

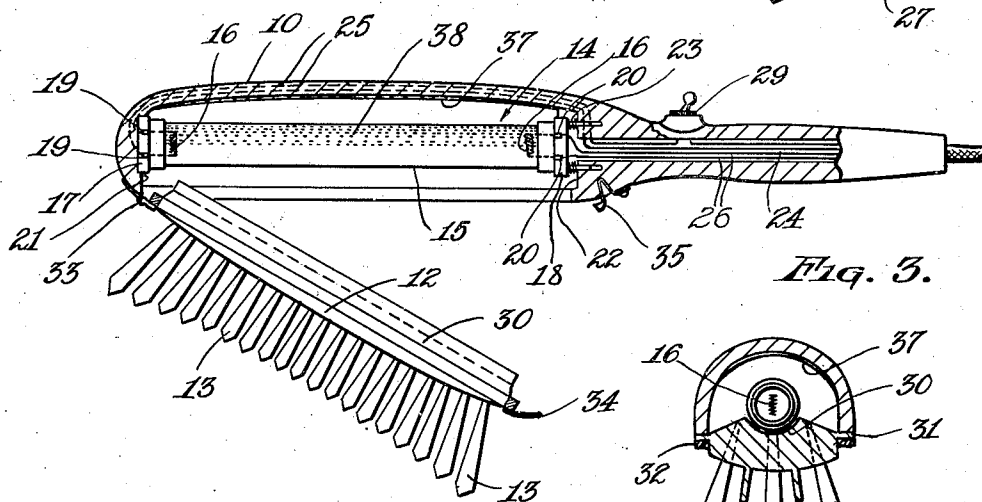


Fig. 3.

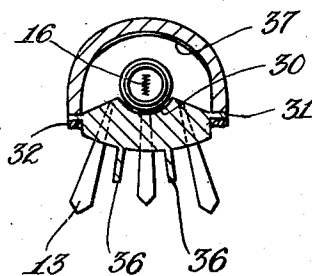
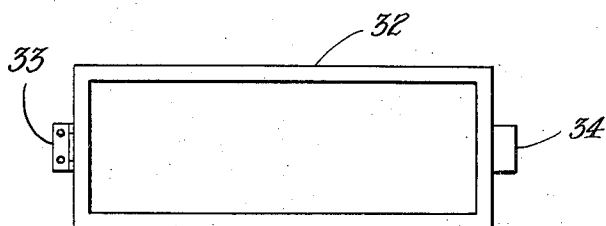


Fig. 4.



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2,397,757

HAIRBRUSH

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Application May 30, 1944, Serial No. 537,994

5 Claims. (Cl. 128—395)

My invention relates to a hairbrush and more particularly to a new and novel hairbrush having therapeutic properties.

It is the object of my invention to provide a hairbrush which promotes the healthy growth of the hair by therapeutically stimulating the flow of blood to the glands and roots of the hair, by locally inducing the production of vitamin D and by reason of valuable bactericidal properties:

A further object of my invention is to provide a therapeutic hairbrush which is inexpensive, light in weight and as easy to handle as the customary type of hairbrush.

Further objects of my invention will appear as the specification progresses.

In accordance with the invention the foregoing objects are achieved by a hairbrush comprising a brush frame within which is positioned a source of ultra-violet radiations, a brush mount which is permeable to ultra-violet radiations and which is so positioned in said holder as to be in cooperative association with the ultra-violet source, and bristles positioned in said mount which bristles may consist of a material of the type used in the customary types of hairbrushes but which for reasons later to be pointed out preferably consist of a material having ultra-violet ray transmitting properties.

My invention will be described in greater detail with reference to the appended drawing forming part of the specification and in which:

Figure 1 is a side view showing one form of a therapeutic hairbrush in accordance with my invention;

Fig. 2 is a cross-sectional view of the therapeutic hairbrush of Fig. 1;

Fig. 3 is a cross-sectional view taken along the line 3—3 of Fig. 1;

Fig. 4 is a plan view showing one form of retaining member for securing the bristle mount in the brush frame.

The therapeutic brush shown comprises a brush frame 10, a handle portion 11 integrally formed with the frame 10, a bristle mount 12 and bristles 13.

The frame 10 and handle 11 may be formed of molded resinous material such as cellulose acetate, hard rubber, "Bakelite" or the like.

As shown in Figs. 2 and 3, the frame 10 is hollow and within the same is positioned an ultra-violet ray-generating source 14. The source shown comprises a tubular electric-discharge tube having an envelope 15 consisting of quartz, of acrylic resin or of similar ultra-violet ray-permeable material. At the ends of the tube and hermetically sealed therein are discharge electrodes 16—16 in the form of incandescent filaments coated with a suitable electron-emissive material such as a mixture of strontium and barium oxides. In addition, the tube 15 contains a

quantity of a suitable gaseous medium which under electric-discharge conditions ionizes and produces ultra-violet radiations a significant proportion of which have wavelengths within the range of about 1,000 to about 4,000 Ångstrom units. A highly satisfactory gaseous medium for this purpose is mercury vapor which, when ionized under conditions of relatively low pressure, produces ultra-violet radiations having a wavelength predominantly in the region of 2736 Ångstrom units which radiations have been found to possess the highest bactericidal and anti-rachitic or vitamin D activation properties.

In accordance with the practice common to the art of fluorescent lamps, the tube 15 may also contain a gas such as neon, krypton or argon, to facilitate the starting of the electric discharge and the ionization of the mercury vapor.

The ultra-violet ray source 14 is secured within the frame 10 by socket members 17—18 which engage terminal prongs 19—19 and 20—20, respectively, of the source 14; socket 17 being rigidly secured to the forward end-wall 21 of the cavity within the frame 10, whereas the socket 18 is flexibly mounted on the rear end-wall 22 of the cavity by means of a spring 23 thereby permitting thermal linear expansion of the components of the ultra-violet ray source.

The source 14 is energized through a cable 24 which passes through the brush handle 11 and contains conductor pairs 25—25 and 26—26 which interconnect the terminals 19—19 and 20—20, respectively, and a ballast auxiliary 27 arranged external to the therapeutic brush. A toggle switch 29 connected in series with one of the conductors is provided in the handle 11 at a readily accessible point for the easy switching on and off of the ultra-violet source. In practice and for the sake of compactness I prefer to combine the auxiliary 27 and the electrical outlet connection into a single structure as shown in Fig. 1.

The brush mount 12 comprises a molded rectangular body consisting preferably of an ultra-violet ray transmitting material. Particularly suitable materials for this purpose are the acrylic resins among which may be mentioned methyl methacrylate; commonly known under the trade name "Lucite." In order to minimize transmission losses from the source 14, the upper surface of the brush mount may be provided with an arcuate channel as shown at 30 whereby the brush mount is brought into close spaced relationship with respect to the ultra-violet ray source 14.

The brush mount is removably secured in the holder 10 by means of a peripheral flange 31 thereof which flange is engaged by a metal frame 32 (see Fig. 4). Frame 32 is provided with a hinge 33 secured to the forward end of the holder 10

and a clasp 34 engaging a locking snap 35 mounted on the holder 10 adjacent to the handle 11.

The bristles 13 may consist of a material of the type used for the known type of hairbrushes, for example the bristles may consist of "Nylon." However, I prefer to make the bristles of a material which transmits ultra-violet rays, thereby increasing the effectiveness of the ultra-violet ray source. In some instances, for example when using a brush mount 12 consisting of a material of relatively low ultra-violet ray-transmitting properties and bristles 13 consisting of a material of relatively great ultra-violet ray-transmitting properties, highly effective transmission from the ultra-violet ray source is achieved by so embedding the bristles 13 in the mount 12 that they extend through the mount as shown in Fig. 3. With such a construction it is possible to use a brush mount consisting of a material having substantially no ultra-violet ray-transmitting properties, because in this instance the transmission properties of the bristles per se thus make the mount permeable to ultra-violet rays.

In addition to the bristles 13 I may embed in the mount 12 one or more series of comb teeth 36 which may be molded as an integral part of the bristle mount or may consist of individual elements embedded in the bristle mount. When the brush mount consists of a material of relatively low ultra-violet ray permeability, the comb teeth consist of a highly permeable material and are embedded through the brush mount so as to provide an efficient transmission of the ultra-violet rays.

The combined bristle and comb structure shown has the advantage that the comb teeth prevent matting of the hair and effectively place the ultra-violet ray source in direct contact with the scalp to be treated by reason of the ultra-violet ray-permeable character thereof.

In the preferred embodiment shown, the mount is made easily removable. Such a construction permits the substitution of other similar brush mounts in instances where several members of a family may each have his own brush mount and desire to use a common brush frame, and permits the substitution of other types of brush mounts for specialized treatment.

To further effectively increase the efficiency of the ultra-violet ray source the cavity in the holder 10 is lined with an ultra-violet ray reflector 37, which may consist, for example, of a highly polished thin aluminum sheet cemented to the interior surface of the holder.

Since the usual sources of ultra-violet radiations are deficient in visible light, I prefer to coat a portion of the source 14 with a layer 38 of fluorescent material by means of which it may be readily determined whether the source is operating and at the same time the visible light so produced serves for illumination.

From the foregoing description it can readily be seen that my invention relates to a hairbrush possessing novel and startling properties not otherwise obtainable.

This new brush is compact, light in weight, safe, and as easy to use as an ordinary hairbrush. Furthermore, the brush is so designed that the user while brushing his hair substantially in the customary manner will subject his scalp to the beneficial radiation from an ultra-violet ray generator located within the brush itself.

As the brush is moved over the scalp, the bristle and comb arrangement progressively parts the hair and exposes the scalp and hair roots to the beneficial effects of direct ultra-violet radiation predominantly of 2736 Ångstrom units. This radiation is known to possess valuable bactericidal and therapeutic properties and when reaching the skin to promote the flow of blood and activate vitamin D production. My invention would stimulate healthy and luxuriant hair growth through the bactericidal properties of ultra-violet radiation and by stimulating the flow of blood to the glands and roots of the hair.

While I have described my invention in a specific embodiment and by means of specific examples, I do not wish to be limited thereto for obvious modifications will occur to those skilled in the art without departing from the spirit and scope of the invention.

What I claim is:

1. A therapeutic brush comprising a brush frame provided with a cavity, an ultra-violet ray-generating source within said cavity, a brush mount enclosing said source in said cavity and consisting substantially throughout of an ultra-violet ray-transmitting material, and bristles consisting of an ultra-violet ray-transmitting material secured to said brush mount.

2. A therapeutic brush comprising a brush frame provided with a cavity, an ultra-violet ray-generating source within said cavity, a brush mount enclosing said source, and bristles consisting of an ultra-violet ray-transmitting material embedded in said mount, extending therethrough and providing an ultra-violet ray path through said mount.

3. A therapeutic brush comprising a brush frame provided with a cavity, an ultra-violet ray-generating source within said cavity, a brush mount enclosing said source in said cavity and consisting substantially throughout of an ultra-violet ray-transmitting material, bristles consisting of an ultra-violet ray-transmitting material secured to said brush mount, and a layer of fluorescent material positioned within said cavity in the path of a portion of the radiations from said source.

4. A therapeutic brush comprising a brush frame provided with a cavity, an ultra-violet ray-generating source within said cavity, a brush mount enclosing said source in said cavity and consisting substantially throughout of an ultra-violet ray-transmitting material, bristles consisting of an ultra-violet ray-transmitting material secured to said brush mount, and ultra-violet ray-reflecting means interposed between said frame and said source.

5. A therapeutic brush comprising a brush frame provided with a cavity, an ultra-violet ray-generating source within said cavity, a brush mount enclosing said source in said cavity and consisting substantially throughout of an ultra-violet ray-transmitting material, bristles consisting of an ultra-violet ray-transmitting material secured to said brush mount, a layer of fluorescent material forming a coating on a portion of said source, and a reflective aluminum sheet member secured to said frame within the cavity and interposed between the said frame and the said source.

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