

April 9, 1963

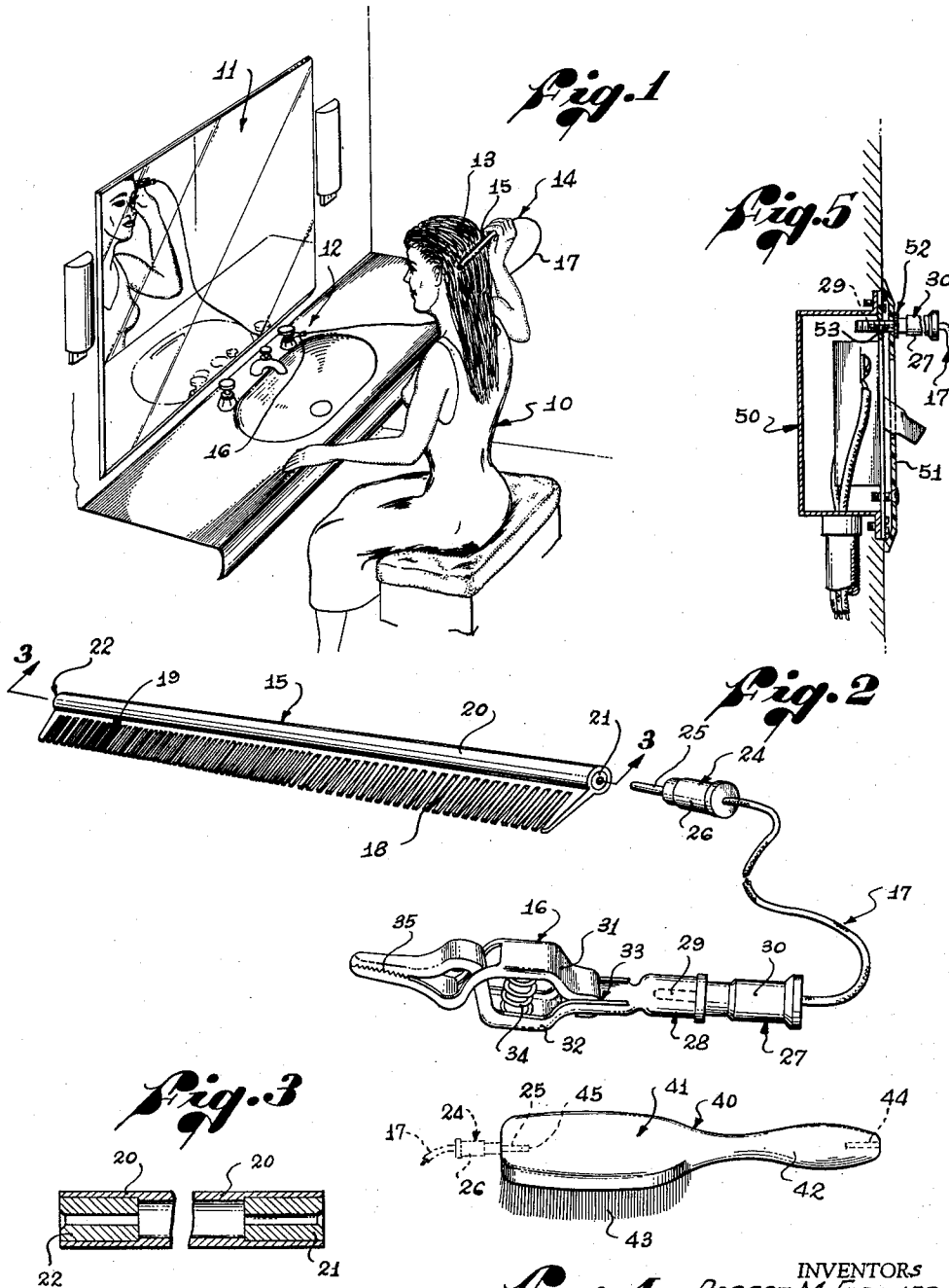
R. M. FISCHER ET AL

3,084,700

STATIC REMOVING HAIR GROOMING DEVICE

Filed April 20, 1959

2 Sheets-Sheet 1



INVENTORS
ROBERT M. FISCHER
CLARENCE H. FISCHER
PERRY STEINER
By *Frederick M. Maltby*
Attorneys

April 9, 1963

R. M. FISCHER ET AL

3,084,700

STATIC REMOVING HAIR GROOMING DEVICE

Filed April 20, 1959

2 Sheets-Sheet 2

Fig. 6

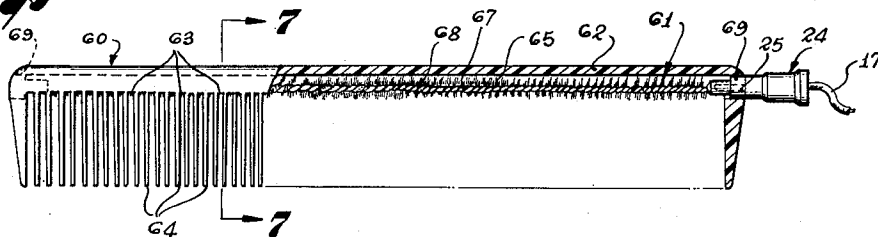


Fig. 7

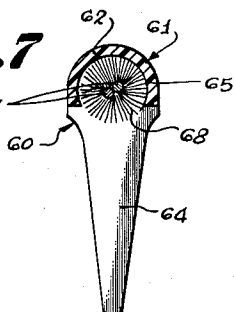


Fig. 8

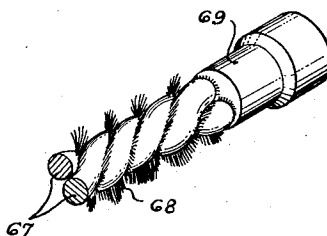


Fig. 9

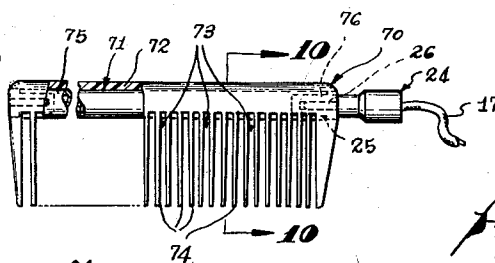


Fig. 10

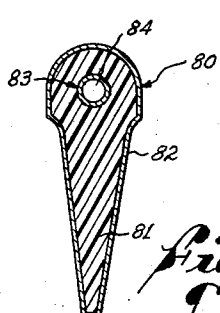
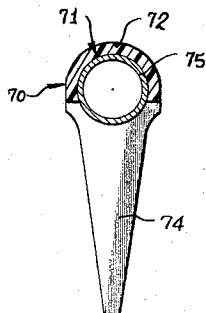


Fig. 11

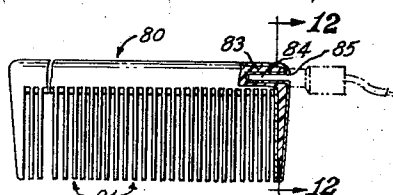


Fig. 12

INVENTORS
ROBERT M. FISCHER
CLARENCE H. FISCHER
PERRY STEINER

By *Lullander Mattingly & Huntley*
Attorneys

1

3,084,700

STATIC REMOVING HAIR GROOMING DEVICE

Robert M. Fischer, 5329 Ithaca Ave., and Clarence H. Fischer, 2265 Highbury St., both of Los Angeles, Calif., and Perry Steiner, 211 S. Beverly Drive, Beverly Hills, Calif.

Filed Apr. 20, 1959, Ser. No. 807,388

1 Claim. (Cl. 132—148)

This invention relates generally to hair grooming devices and more particularly to an electrically grounded hair grooming device which removes the effects of electrical static from the hair. This application is a continuation-in-part of application, Serial No. 714,408, filed February 10, 1958, and entitled Static Removing Hair Grooming Device, now abandoned.

The importance of personal appearance is ever increasing in our society, as readily evidenced by the constantly increasing sums of money spent yearly for goods and services in this field. Attractive, well-groomed hair is considered a highly important factor particularly by women, and one of the major objectives sought is to give the hair a soft, smooth, natural look rather than a flyaway and unruly appearance.

Experimentation has shown that the presence of static is one of the principal causes of undesirable effects, such as flyaway and unruly hair.

It has also been found that often these undesirable static effects are produced to a considerable degree during grooming of the hair, such as by combing or brushing, and that certain types of hair are more affected by these static effects than other types. Furthermore, climate has been found to have a considerable influence on the severity of these static effects. For example, static effects are quite noticeably present in hair on dry, windy, high-pressure days, and are present to a considerably lesser degree on low-pressure, muggy or rainy days.

In recognition of this problem, various anti-static shampoos and chemical compounds have been placed on the market in recent years with advertising claims that they impart many desirable features to hair through dissipation of a significant percentage of the hair's electrical static. These compounds are expensive, and still do not overcome static effects are completely as desirable. Furthermore, they generally require a liquid vehicle for the active agent; therefore, by prolonged use, could be deleterious to some scalps. A need, therefore, exists for a reasonably priced method which can eliminate the static effects more fully without subjecting the hair and scalp to wetting materials.

It is therefore a major object of this invention to provide a device which is highly effective in removing undesirable static effects from the hair and can be utilized conveniently each time the hair is groomed.

It is also an important object of this invention to provide an electrically conducting, hair grooming device which can be conveniently and securely connected by a low impedance circuit to a low impedance ground.

Another object of this invention is to provide a static removing hair grooming device of the type described in which the low impedance circuit is attached to ground by a highly versatile ground engaging means which is capable of engaging a variety of different, readily available grounds.

A further object of this invention is to provide a static removing, hair grooming device of the type described above which is easily sterilized, durable, convenient to use, and inexpensive to manufacture.

These and other objects and advantages of the invention will become apparent from the following detailed descrip-

2

tion of preferred embodiments thereof, read together with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a woman grooming her hair with a hair grooming device embodying our invention while seated before a wash basin and mirror;

FIGURE 2 is an enlarged perspective view of a hair comb embodying the invention;

FIGURE 3 is a fragmentary cross-sectional view taken on line 3—3 in FIGURE 2;

FIGURE 4 is a perspective view of a hair brush capable of being substituted for the comb in FIGURE 2;

FIGURE 5 is a perspective view of an alternate ground engaging means.

FIGURE 6 is an elevational view partially in section showing a different form of hair comb embodying the invention;

FIGURE 7 is a cross-sectional view taken on line 7—7 of FIGURE 6;

FIGURE 8 is a perspective view of the conducting element utilized in the hair comb of FIGURE 6;

FIGURE 9 is a fragmentary elevational view partially in section of still another form of hair comb embodying the invention;

FIGURE 10 is a cross-sectional view taken on line 10—10 of FIGURE 9;

FIGURE 11 is a fragmentary elevational view partially in section of yet another form of hair comb embodying our invention; and

FIGURE 12 is a cross-sectional view taken on line 12—12 of FIGURE 9.

In general our invention contemplates the use of an electrically-conducting hair-engaging device, particularly a device for grooming the hair, such as a conducting comb or brush, which is securely connected to a low impedance ground and therefore provides a low impedance electrical path for neutralizing static in the hair. The ground connection should be made in a manner which does not interfere with the free use of the hair grooming device, but still assures that the hair grooming device remains constantly in contact with a low impedance ground during its use. By experimentation it has been proven that a device of this nature has a very noticeable and beneficial effect in regard to the appearance of the hair. Because of the ground established, the hair grooming device, upon engaging the hair, quickly removes the static effects in the alternate areas contacted, creating a smooth, soft, attractive appearance and significantly reducing any unruly or flyaway condition. Furthermore, since the hair grooming means most completely engages alternate areas of hair, because of the slight spacing between the teeth or other engaging members, the static in these engaged areas is more completely neutralized than the static in the unengaged areas, with the result that the engaged areas are drawn in by the unengaged areas and the hair is held more firmly in place.

Referring now to the drawings and particularly to FIGURES 1 and 2 thereof, the numeral 10 designates a woman seated before a mirror 11 and wash basin 12, and grooming her hair 13 with a static removing hair grooming device 14. The static removing hair grooming device 14 comprises generally a comb 15, a ground engaging device 16, and an electrical conductor 17 for connecting the comb to the ground engaging device.

The comb 15 is formed of metal or some composition which has good electrical conduction properties and has wide teeth 18 at one end and narrow teeth 19 at the other. A tubular backing member 20 is provided on the ridge of the comb in electrical connection therewith and has sockets 21 and 22 mounted in the ends thereof; the socket 21 being mounted in the end adjacent the wide teeth 18 and the socket 22 being mounted in the end adjacent the narrow teeth 19.

The electrical conductor 17 is a single conductor, insulated electrical lead which is made as flexible as possible for convenience in use and storage. Single conductor tensile cord of a type manufactured by the Montgomery Company of Windsor Locks, Connecticut, having product No. T-2040, has been found quite satisfactory for this purpose. This conductor has a braided tinsel copper and cotton core enclosed in a soft rubber casing and is highly flexible.

To connect the conductor 17 to the comb 15 a plug 24 is provided on one end of the conductor. The plug 24 has a pin 25 adapted to disconnectably engage either of the sockets 21 and 22. The plug 24 also has hand grip means 26 to permit engagement and disengagement of the pin 25 with the sockets 21 and 22 without tugging on the conductor 17. The sockets 21 and 22 are provided in each end of the comb 15 so that the lead 17 may be connected to the most convenient end for the user and switched should the user desire to reverse the comb and to get the benefit of the different sized teeth 18 and 19.

Another plug 27 is attached to the other end of the conductor 17 and disconnectably engages a socket 28 attached to the ground engaging means 16. The plug 27 is preferably made identical to the plug 24 so that the two plugs may be used interchangeably and has a pin 29 and hand grip means 30 which are utilized for the same purposes as those on plug 24. The wire 17 is electrically connected to each of the pins 25 and 29 of the plugs 24 and 27 and these pins are formed to material having good electrical conduction properties so that when they are engaged with any of the sockets 21, 22, and 28, they form a good electrical connection therewith.

The ground engaging means 16, as shown in FIGURE 2, is a spring clip having two jaws 31 and 32, the jaw 31 being pivotally mounted in a slot 33 in the jaw 32. The jaws 31 and 32 are S-shaped and interdisposed so that a coil spring 34 compressed between their rear portions forces their front portions together. Scarifying teeth 35 are provided on adjacent surfaces of the jaw's front portions so that as the jaws are forced together by the spring 34, they engage and scarify any object disposed therebetween. The ground engaging means 16 may be generally similar to the usual "alligator clip" but should be capable of accommodating objects having a wide variety of shapes and sizes. The socket 28 attached to the ground-engaging means 16 will be generally similar to the sockets 21 and 22 in the backing member 20 and will be substantially the same size as those other sockets when the plug 27 and plug 24 are the same size.

In FIGURE 4, a hairbrush 40 is shown which is capable of being used in place of the comb 15. The hairbrush 40 consists of a backing member 41 having a handle 42 formed on one end thereof and bristles 43 mounted perpendicular to the other end thereof. The bristles 43 and backing member 41 are formed of material with good electrical conduction properties and are assembled together in good electrical contact. Sockets 44 and 45 are mounted in the backing member 41, the socket 44 being disposed at the end with the handle 42 and the socket 45 being disposed at the end adjacent the bristles 43. These sockets are in good electrical connection with the brush 40 and are adapted to receive the plug 24 to connect the brush, at either end, to ground through the conductor 17.

In FIGURE 5, we disclose a different form of grounding means. A standard household electrical switch receptacle 50 is shown in which the screw holding the cover plate 51 of the receptacle has been replaced by a grounding screw 52. The grounding screw 52 is adapted to hold the plate 51 on the receptacle 50 in the same manner as the screw usually provided with the receptacle and has a socket 53 therein capable of receiving the pin 29 of plug 27. It is contemplated that the screw 52, which, because it is in good electrical contact with the ground of the electrical system, can be used as a substitute for the clip shown in FIGURE 2 at places in the home

where a static removing hair grooming device is likely to be often used.

FIGURE 6 shows a hair comb 60 having a different form from the hair comb shown in FIGURE 2. The hair comb 60 is formed of non-conducting material and has a longitudinal bore 61 in its backing portion 62 which communicates with the spaces 63 between the comb's teeth 64 (see FIGURE 7). Disposed in the bore 61 is a conducting element 65 which consists of two rods 67 which are twisted together and engage projecting bristles 68 therebetween. The bristles 68 are made of conducting material as are the rods 67, and the conducting element 65 is connected at each end to sockets 69 which are also disposed in the bore 61 and are adapted to receive the pin 25 of plug 24 to connect the comb, at either end, to ground through the conductor 17.

Since the bristles 68 extend radially from the rod 67 and the bore 61 is in communication with the space 63 between the teeth 64, the bristles 68 extend into the upper portions of the spaces 63. Therefore, when the comb 60 is drawn through the user's hair, the hair is brought into contact with the conducting bristles 68 and, as discussed above, the static effects of the engaged hair are neutralized.

FIGURE 9 shows a comb 70 of still a different form than the combs shown in FIGURES 2 and 6. The comb 70, like the comb 60, is made of non-conducting material and has a longitudinal bore 71 through its backing member 72 which communicates with the spaces 73 between the comb's teeth 74 (see FIGURE 10). A cylindrical rod 75 of conducting material is disposed snugly in the bore 71 and has sockets 76 fitted in each end thereof for receiving the pin 25 of the plug 24 to ground the rod 75 through the conductor 17. The rod 75 could, of course, be made solid; however, when made hollow, it lightens the weight of the comb. Since the bore 71 communicates with the spaces 73 between the teeth 74, and rod 75 completely fills the bore 71, portions of the rod 75 are exposed between the upper portions of the teeth 74. Therefore, as the comb 70 is used, the rod 75 is brought into contact with the hair and neutralizes any static effects in the hair when the rod is connected to ground through the connector 17, as described above.

In FIGURES 11 and 12, we show a comb 80 of still another form. The comb 80 is formed of a non-conducting material such as hard rubber and has its complete outer surface including the teeth 81, coated with a conductive material 82 such as copper or silver (see FIGURE 12). A socket 83 is formed integral with one end of the comb and has an opening 84 for receiving the prong 25 of plug 24. The surface of the opening 84 is also coated with the conductive material 82, as is the face 85 adjacent the opening, so that when the prong 25 is inserted, electrical connection between the conductive coating on the comb and the plug 24 is established.

The coating of conductive material 82 can be achieved by the usual plating techniques but must be sufficiently thick to assure good electrical conductivity and wear and yet thin enough to avoid warping and chipping when the comb is flexed. Coating thicknesses in the range of 75 to 125 micro inches have been found to give satisfactory results, when plating with silver.

By utilizing a comb of the forms shown in FIGURES 6 through 12, it will be understood that the main body of the comb can be inexpensively made from any of the usual types of comb compounds and made conductive by provision of a conducting element in the back portion of the comb or a conductive coating on the surface. In fact, if desired, the conducting elements could be made small enough, or the coating and its connection to conductor 17 so arranged, that the usual type hair comb could be modified for use in our invention. These features, of course, provide considerable economic advantage.

5

From the above explanation, it will be understood that we have provided a highly effective and versatile device for removing static effects from the hair during grooming. In our device the comb 15 can be interchanged with other similarly constructed combs to permit cleaning and to make available combs of different contours, and, if desired, can be replaced by the brush 40, or combs 60, 70, or 80, or, for that matter, any other electrically conductive hair grooming or hair engaging device. The conductor 17 can be made of any desired length and interchanged with other conductors of different lengths, and, if desirable, can be carried in a small housing (not shown) which automatically reels it in when not in use. A variety of ground-engaging means 16 may also be provided, all adapted to engage the conductor 17, such as the grounding screw 52 which may be conveniently utilized in places where the device is used often.

Also, because of its disconnectable parts, our device can be quickly and easily disassembled and stored in a pocketbook, medicine cabinet or drawer when not in use, and, if desired, the hair engaging comb or brush may be used without grounding, in the usual manner.

Also, while the forms of our invention herein disclosed are fully capable of attaining the objects and providing the advantages hereinbefore stated, it should be under-

6

stood that this invention is not limited to the particular details disclosed, except as specified in the appended claim.

We claim:

Apparatus for grounding the user's hair comprising: a hair comb formed of non-conductive material and having means defining a longitudinal bore in the back portion thereof, said bore communicating with the spaces between the comb teeth; an electrically conducting hair-engaging member disposed in said bore and exposed by said spaces; detachable ground-engaging means capable of forming a good electrical connection with a low impedance ground; and electrical conductor means interconnecting said hair-engaging member and said ground-engaging means.

References Cited in the file of this patent

UNITED STATES PATENTS

2,266,561	Marick	Dec. 16, 1941
2,406,490	Day	Aug. 27, 1946
2,416,113	Mueller	Feb. 18, 1947
2,426,315	Marick	Aug. 26, 1947
2,449,972	Beach	Sept. 28, 1948
2,675,943	Daley et al.	Apr. 20, 1954
2,858,482	Nutter	Oct. 28, 1958