

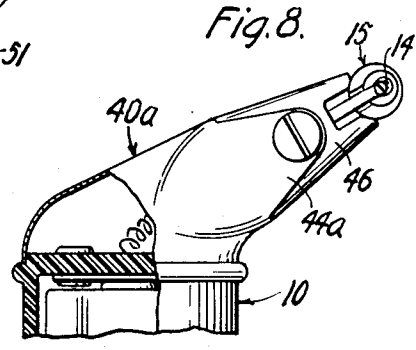
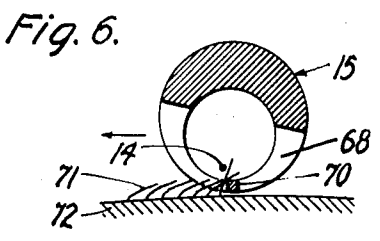
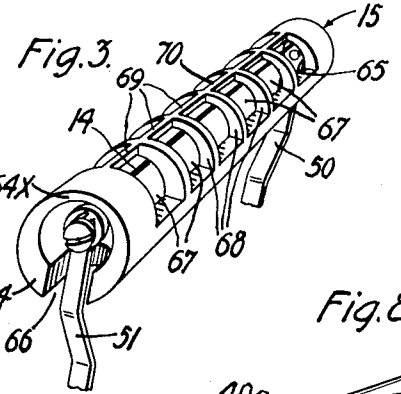
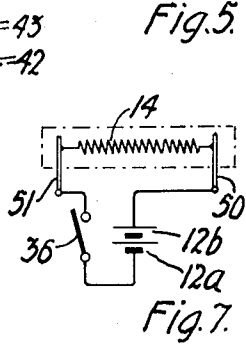
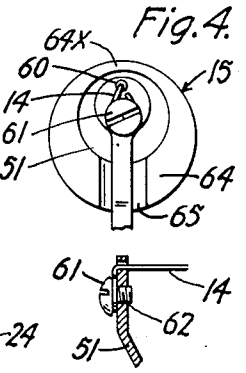
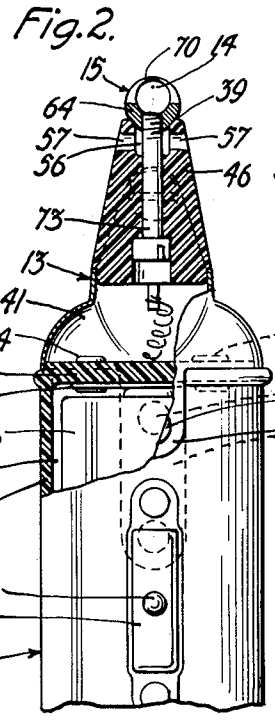
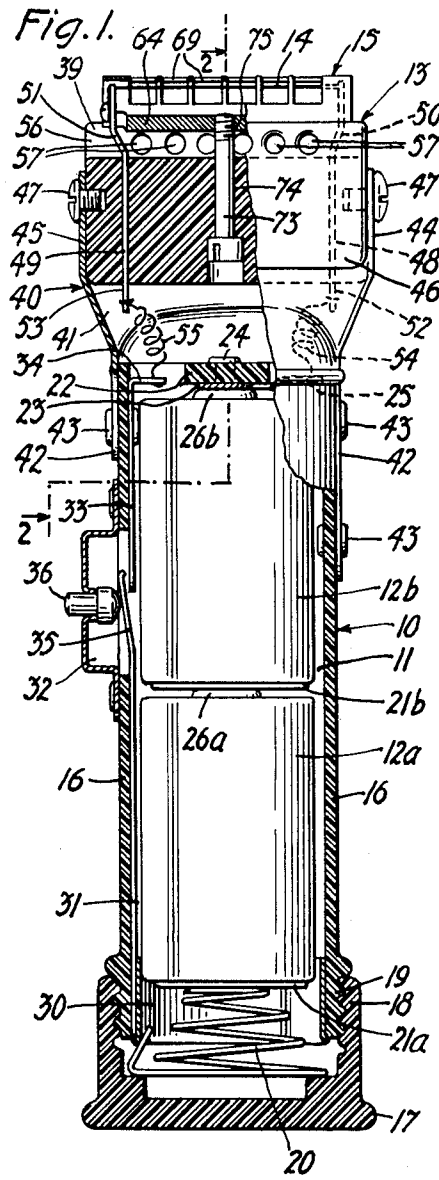
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G. S. HILLS

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HAIR SINGEING DEVICE

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Inventor:
George S. Hills

by *Furness Pinkert.*

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2,727,132

HAIR SINGEING DEVICE

George S. Hills, New Rochelle, N. Y.

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This invention relates to devices for removing unwanted hair or fuzz from the human body and more particularly to devices which singe or burn off the hair as distinguished from cutting it or shaving it off.

Methods now most commonly employed for removal of unwanted hair or fuzz consist in cutting it with scissors, shaving it off with a razor, uprooting it with tweezers, or removing the hair by applying wax or some chemical substance. There is medical authority that the cutting of the hair stiffens and coarsens the stump and it is believed that singeing the hair does not cause a stiffening or coarsening of the stump. It is also believed that the cutting or uprooting of hair tends to change the color of the new growth. Furthermore, close removal of hair or fuzz with a sharp cutting device, especially hair on the face and neck of women whose skins are tender, may result in cutting or scraping the skin and this method of removal of unwanted hair is dangerous when not done properly. Also, many women object to the "close shave" effect of cutting hair or fuzz with a razor.

Although the removal of unwanted hair and fuzz from the human body, especially from the face and neck, by singeing is believed to be the more desirable method of any that has been proposed, there has not heretofore been made available any practical device suitable for the purpose. It has, for example, been proposed to make a singeing device wherein an electrically heated component is connected in circuit with the ordinary house current which usually is 110-120 volts. These devices are not satisfactory for several reasons, including (a) the singeing component is not arranged so that it can reach the hair or fuzz, (b) the use of high voltage electricity to heat the singeing member is dangerous, and (c) there is not proper provision made to keep the part of the device which necessarily comes in contact with the skin sufficiently cool to prevent burning of the skin.

According to this invention a hair or fuzz singeing device is provided which comprises a resistor in low voltage circuit having an on-and-off switch, the current being supplied by a low voltage dry cell battery or batteries, the singeing member being heated by the battery current to a hair-singeing temperature and being disposed within a metal guard having high heat conductivity and so designed that it can be brought into contact with the skin to guide the hair or fuzz that is to be singed off into contact with the heated singeing member and the guard is so designed that it will not become sufficiently hot to burn the skin. Preferably the dry cells, which may be of the ordinary and well known flashlight, photo-flash, radio, or similar type, are replaceably mounted within a mounting chamber which provides a suitable handle for the device as well as providing means for mounting the singeing head which carries the singeing member and metal guard. Thus the entire assembly, including power source and electric circuit, is self-contained and can be made in the form of a small,

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portable, and compact unit, easily handled and manipulated by an average person without requiring special skill.

Although the novel features which are believed to be characteristic of the invention will be pointed out in the annexed claims, the invention itself as to its objects and advantages and the manner in which it may be carried out may be better understood by reference to the following description taken in connection with the accompanying drawings forming a part hereof, in which:

Fig. 1 is a view in elevation, partly broken away, of a device embodying the invention;

Fig. 2 is a partial view in elevation and partly in cross section on line 2—2 of Fig. 1;

Fig. 3 is a view in perspective to larger scale of the metal guard and singeing member mounted therein;

Fig. 4 is a view in elevation of a conductor post for mounting the singeing member;

Fig. 5 is a view in cross section of the post illustrated in Fig. 4;

Fig. 6 is a diagrammatic view to illustrate the operation of the device in hair singeing operation;

Fig. 7 is a wiring diagram of the electrical circuit; and

Fig. 8 is a view in elevation partly in section of a modified form of head.

Referring now to the drawings, in which like reference characters denote similar parts throughout the several views, the singeing device as illustrated in Figs. 1 and 2 comprises a cylindrically shaped hollow handle portion 10 providing a chamber 11 for replaceably holding batteries 12a and 12b, a head portion 13 for mounting a singeing member 14 in circuit with the batteries, and a guard member 15 surrounding the singeing member. Or, a transformer may be housed in the chamber 11 instead of dry cell batteries, and the transformer connected to the ordinary 110-120 volt current, or the transformer may be placed outside and away from the handle and connected with flexible lead wires to it, thus to provide a source of low voltage power in the chamber 11.

The cylindrical side wall 16 of the hollow handle portion 10 is made of insulation material such as moldable plastic. The hollow handle is closed at its bottom end with a removable end closure cap 17 made of plastic. As shown, the closure cap has an internally threaded annular ring 18 which is threaded on to corresponding threads 19 on the outside of the cylindrical wall 16 of the handle at its lower end. The closure cap 17 mounts a compression spring 20 which urges the batteries 12a and 12b upwardly in the hollow handle to hold the batteries 12a and 12b securely without jostling in the battery chamber 11 and also to provide an electrical conductor from the metallic casing 21a of the battery 12a which forms one of its electrodes, as described in further detail hereinafter.

The upper end of the hollow handle 10 is provided with a cross piece 22 of insulation material such as plastic, which is secured to the side wall 16 of the handle. This cross piece serves to mount a metal conductor plate 23 on its underside. The conductor plate 23 is secured to the cross piece 22 as by rivets 24, the plate 23 having an outwardly extending arm 25 providing a post upon which to connect a conductor lead. The conductor plate 23 serves as a stop against which the center metallic electrode 26b of battery 12b abuts, the spring 20 urging the batteries toward the stop and the center electrode 26a against the metallic casing 21b forming the other electrode of battery 12b.

The lower end of the hollow handle 10 is provided with a metallic conductor ring 30 on the interior surface of the cylindrical side wall 16 which, in turn, is connected to a metallic conductor bar 31 mounted on the interior surface of the handle, the conductor bar 31 terminating

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at a switch box 32 mounted on the side wall 16. Extending upwardly from switch box 32 is a metallic conductor bar 33 on the interior surface of the hollow handle 10 which terminates in an arm 34 providing a conductor post for a lead. An "on-and-off" push button switch 35 operable by a push button 36 provides means for electrically connecting and disconnecting conductor bars 31 and 33.

Mounted on the upper end of the handle portion 10 is a head mounting member 40 made of metal which comprises a hollow neck portion 41 which fits over the end of the cylindrical side wall 16, there being downwardly extending arms 42 which are secured to the side wall 16, as by rivets 43. Extending upwardly from the neck portion of the head mounting member is a pair of oppositely disposed clevis arms 44 and 45 within which rests a guard mounting member 46 (herein called a "guard mount" for convenience of description). The guard mount 46 is shown removably secured to the clevis arms 44 and 45 as by screws 47.

The guard mount 46 which is preferably made of an insulation material, such as plastic, is generally trapezoidal in cross section as shown in Fig. 2, tapering toward its upper end where it terminates in a trough shaped channel 39 to accommodate the single member guard 15 which is described in further detail hereinafter. Molded in the plastic guard mount is a pair of oppositely disposed conductor bars 48 and 49 made of good electric conductivity metal, the upper ends of which provide posts 50 and 51 on which to connect the singeing member 14, and the lower ends of which provide posts 52 and 53 to which are connected flexible lead wires 54 and 55 in turn connected to posts 25 and 34 respectively. It will be observed that the guard mounting member 46 is provided with passageways 56 and 57 which connect with the channel 39, these passageways providing vents for dissipating heat from the metallic guard 15 to the ambient atmosphere.

The singeing member 14 is made of resistor wire, such as Nichrome wire and one end is anchored to post 50 and the other to post 51. One means for anchoring the Nichrome wire singeing member 14 to the posts is illustrated in Figs. 4 and 5 wherein it will be observed that the wire is brought through a hole 60 in the anchor post 51 and wrapped around a removable threaded screw 61 screwed into a tapped and threaded hole 62 in the anchor post. The removable screw 61 provides means whereby the Nichrome singeing wire 14 may be readily replaced and securely anchored to the posts 50 and 51. It will be observed that the singeing member 14 is disposed longitudinally within the guard member 15 which rests in the channel 39 in the guard mount 46. The conductor members 48 and 49 are given a set so that the posts normally exert a force outwardly so that the singeing member 14 will remain taut notwithstanding expansion when heated.

The guard itself comprises a generally tube-shaped member, perhaps best shown in Fig. 3. It is made of a good heat conducting metal, preferably copper. At its lower or base side the metal is relatively thick and this thickened base part 64 extends uninterrupted throughout its length except for cut out portions or slots 65 and 66 one at each end to accommodate the upstanding conductor posts 50 and 51. The cross section of the wall of the tubular guard member 15 tapers to thin section (as shown at 64x, Fig. 3) at the side opposite the thickened base 64 and the wall on this thinned side is interrupted to form a plurality of open slots 67, the partitions 68 between the open slots providing, in effect, brackets for supporting a plurality of aligned cross members 69. The aligned cross members 69 provide a guide or plow (designated generally by reference character 70) which serves to raise the ends of hairs protruding from the skin and direct the ends of the hairs into close proximity or into contact with the singeing member 14, when the guard is moved along in contact with the skin. It will

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be noted that the plow member 70 consisting of the aligned cross members 69 is slightly offset on the periphery of the guard from a radial line through the singeing member 14, as illustrated in Fig. 6, wherein is shown diagrammatically hairs 71 protruding from the surface of the skin 72.

The guard 15 is removably secured in channel 39 of the guard mounting member 46 by means of a screw 73 which extends through a bore 74 on the member 46 and is screwed into a threaded hole 75 in the base 64 of the guard 15.

It will be seen from the foregoing that the device described comprises a hollow handle 10 which provides a chamber 11 to accommodate dry cell batteries 12a and 12b, providing a source of electrical power, a singeing member 14 made of electrical resistance wire connected to conductor posts 50 and 51, the singeing wire being positioned close to the thin outer portion of and surrounded by the metallic heat conducting guard 15 which is mounted on a guard mount 46, in turn secured to the hollow handle 10. The singeing wire 14 is connected in an openable and closeable circuit with the source of electrical power. The electrical circuit is illustrated diagrammatically in Fig. 7 wherein it will be seen that the resistor wire or singeing member 14 is connected to conductor posts 50 and 51 in circuit with the batteries 12a and 12b, the circuit being openable and closeable by switch 36.

The operation of the device to remove unwanted hair or fuzz from the skin by singeing the hair or fuzz does not require special skill. The device is grasped by the handle and the push button switch 36 is pressed to close the electrical circuit. Ordinary flashlight batteries or other small dry cells of similar kind have been found to be satisfactory for producing a suitable source of electric power to cause the singeing member to glow or to be heated to hair-singeing temperature. A device constructed according to the invention utilizing a Nichrome wire about .01" in diameter and about one and one-eighth inches long as the singeing member and utilizing two flashlight batteries having a rated voltage of about one and one-half volts each, connected in series, has served satisfactorily to cause the singeing wire 14 to glow and the life of the batteries is sufficiently long for all practical purposes. In any event they are very inexpensive, readily obtainable and easily installed in the battery chamber of the handle. It will be understood, of course, that the length and cross section of the Nichrome resistance wire utilized for the singeing member are to be so proportioned as to operate as efficiently as possible taking into account the voltage and other characteristics of the dry cells that are to be used.

When the circuit is closed and the singeing member heated to hair-singeing temperature, the device is manipulated to move the guard 15 along and in contact with the skin at the place where it is desired to remove hair or fuzz. The plow 70 of the guard will move the protruding hairs through the slots 67 of the guard into proximity or in contact with the heated singeing member 14, as diagrammatically illustrated in Fig. 6. Inasmuch as the singeing member 14 is heated to singeing temperature the protruding hairs are burned or singed off. It is particularly significant to note that the guard 15 is made of a good heat conducting material and is so designed that the heat from the heated wire 14 is rapidly conducted away from the thin or skin-contacting side of the guard and conducted to the mass of metal 64 at the base of the guard, the passageways 56 and 57 providing vents for rapid dissipation of the heat flowing to this mass of metal 64 at the base of the guard which is away from the skin. Thus the part of the guard close to the skin does not become uncomfortably warm. The switch 36 which normally remains open unless pressed to close it, is a protection against expending the

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energy of the dry cells when the device is not in actual hair singeing use.

The modified construction illustrated in Fig. 8 is in all substantial respects similar to the construction described and illustrated in Figs. 1-7, the difference being that the head mounting member 40a, as illustrated in Fig. 8, instead of extending coaxially with the hollow handle 10 as does the head mounting member 40 illustrated in Fig. 1, is so designed that the arms 44a and 45a (45a is oppositely disposed to 44a and not visible in Fig. 8) corresponding to arms 44 and 45 of Fig. 1, extend outward at an angle from the handle 10 as illustrated in Fig. 8. Otherwise the parts and the electrical circuit are like those of the device illustrated in Figs. 1-7. In some instances the provision of a singeing head extending outwardly instead of upwardly from the handle is to be preferred.

The terms and expressions which have been employed herein are used as terms of description and not of limitation, and there is no intention in the use of such terms and expressions of excluding any equivalent of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of invention claimed.

What is claimed is:

1. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion to provide a chamber, means providing a source of electric power in said chamber, a guard mounting member of insulation material means mounting said guard mounting member secured to one end of said handle portion, a generally tubular shaped hollow metal guard having a base portion mounted on said guard mounting member said hollow guard having a plurality of heat conducting brackets in spaced parallel relationship terminating in said base portion, said base portion being thicker than said brackets and providing a mass of heat-dissipating metal at the base of said guard, a singeing member extending through said hollow guard at right angles to said brackets, said singeing member being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, a conductor post at each end of said tubular guard mounting said singeing member, other conductor members connecting said conductor posts in circuit with said source of power and switch means for opening and closing said circuit.

2. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion providing a chamber for one or more dry cell batteries to provide a source of electric power, a guard mount, means mounting said guard mount secured to one end of said handle portion, a hollow heat-conducting metal singeing member guard mounted on said guard mount, said guard comprising a plurality of heat-conducting brackets in spaced parallel relationship terminating in a thicker metal base portion which provides a mass of heat-dissipating metal at the base of said guard, a singeing member extending through said hollow guard and surrounded by said brackets, said singeing member being of resistance wire and adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, a plow member on said guard positioned in parallel relation with said wire and extending across said brackets for guiding said protruding hair or fuzz into proximity to said singeing wire member, conductor posts mounting said singeing wire member, other conductor members connecting said conductor posts in circuit with said source of power and means for opening and closing said circuit.

3. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion providing a chamber for one or more dry cell batteries to provide a source of electric power, a guard mount, means mounting said guard mount secured

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to one end of said handle portion, a hollow metal singeing member guard of generally tubular shape mounted on said guard mount, said tubular guard member having a plurality of slots forming partitions which provide a plurality of heat-conducting metal brackets in spaced parallel relationship terminating in a base portion providing a mass of heat-dissipating metal adjacent said guard mount, a singeing wire extending through said hollow guard and surrounded by said brackets, said singeing wire being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, an elongate guide member on said guard extending across said brackets for guiding said protruding hair or fuzz into proximity to said singeing wire, said guide member lying parallel with and to one side of said singeing wire, conductor posts mounting said singeing member, other conductor members connecting said conductor posts in circuit with said source of power and means for opening and closing said circuit.

4. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion defining a chamber for one or more dry cell batteries providing a source of electric power, a guard mount having a channel at its outer end, means mounting said guard mount secured to one end of said handle portion, a tubular shaped hollow guard of good heat conducting metal mounted in said channel of said guard mount, the tubular wall of said guard being thicker at its base side and thinner at its opposite side and having a plurality of slots along its thinner side, a singeing wire extending through said hollow guard, said singeing wire being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, an elongate plow member extending across said slots and lying parallel with said singeing wire, conductor posts mounting said singeing wire, other conductor members connecting said conductor posts in circuit with said source of power and an "on-and-off" switch for opening and closing said circuit.

5. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion defining a chamber for one or more dry cell batteries providing a source of electric power, a guard mount having a channel at its outer end, means mounting said guard mount secured to one end of said handle portion, a tubular shaped hollow guard of good heat conducting metal mounted in said channel of said guard mount, means removably securing said guard in said channel, the tubular wall of said guard being thicker at its base side which lies in said channel and thinner at its opposite side and having a plurality of slots along its thinner side, a singeing wire extending through said hollow guard, said singeing wire being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, an elongate plow member extending across said slots and lying parallel with said singeing wire, conductor posts, removable means securing said singeing wire to said conductor posts, other conductor members connecting said conductor posts in circuit with said sources of power and an "on-and-off" switch for opening and closing said circuit.

6. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion defining a chamber for one or more dry cell batteries which provide a source of electric power, a guard mount having a channel at its outer end, means mounting said guard mount secured to one end of said handle portion, a tubular shaped hollow guard of good heat conducting metal mounted in said channel of said guard mount, removable screw means securing said guard in said channel, the tubular wall of said guard being thicker at its base side and thinner at its opposite side and having a plurality of slots along its thinner side, vents in said guard mount through which heat is dissipated from the base of said guard to the ambient atmosphere, a singeing wire extending through said hollow guard, said singeing

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wire being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, an elongate guide member extending across said slots and lying parallel with said singeing wire for guiding hair protruding from the skin into contact with said singeing wire, conductor posts mounting said singeing wire, other conductor members connecting said conductor posts in circuit with said source of power and an "on-and-off" switch for opening and closing said circuit.

7. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion to provide a chamber, means providing a source of electric power in said chamber, a guard mounting member of insulating material, means mounting said guard mounting member secured to one end of said handle portion, a generally tubular metal guard member having a base portion mounted on said guard mounting member and an opposite portion having at least one slot formed therein for the admission of hair, said tubular metal guard member being thinner at said opposite portion and thicker at said base portion with the base portion providing a mass of metal for receiving and dissipating heat, a singeing member extending through said tubular metal guard substantially parallel to the axis thereof, said singeing member being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, a conductor post adjacent each end of said tubular metal guard member mounting said singeing member, other conductor members connecting said conductor posts in circuit with said source of power and switch means for opening and closing said circuit.

8. A device for removing unwanted hair or fuzz protruding from the skin by singeing which comprises a hollow handle portion to provide a chamber, means providing a source of electric power in said chamber, a guard mounting member of insulating material, means mounting

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said guard mounting member secured to one end of said handle portion, a generally tubular metal guard member having a base portion mounted on said guard mounting member, said tubular metal guard member having a plurality of spaced fingers with openings therebetween, said fingers each having a thinner portion disposed substantially opposite said base portion and tapering and increasing in thickness to where each joins with said base portion, said base portion being of substantially greater cross-sectional thickness than the thinner portions of the fingers and providing a mass of metal for receiving heat from said fingers and dissipating the same, vents in said guard mounting member through which heat is dissipated from the base portion of said tubular metal guard member to the ambient atmosphere, a singeing member extending through said tubular metal guard substantially parallel to the axis thereof, said singeing member being adapted to be electrically heated to hair singeing temperature when in circuit with said source of power, a conductor post adjacent each end of said tubular metal guard member mounting said singeing member, other conductor members connecting said conductor posts in circuit with said source of power and switch means for opening and closing said circuit.

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