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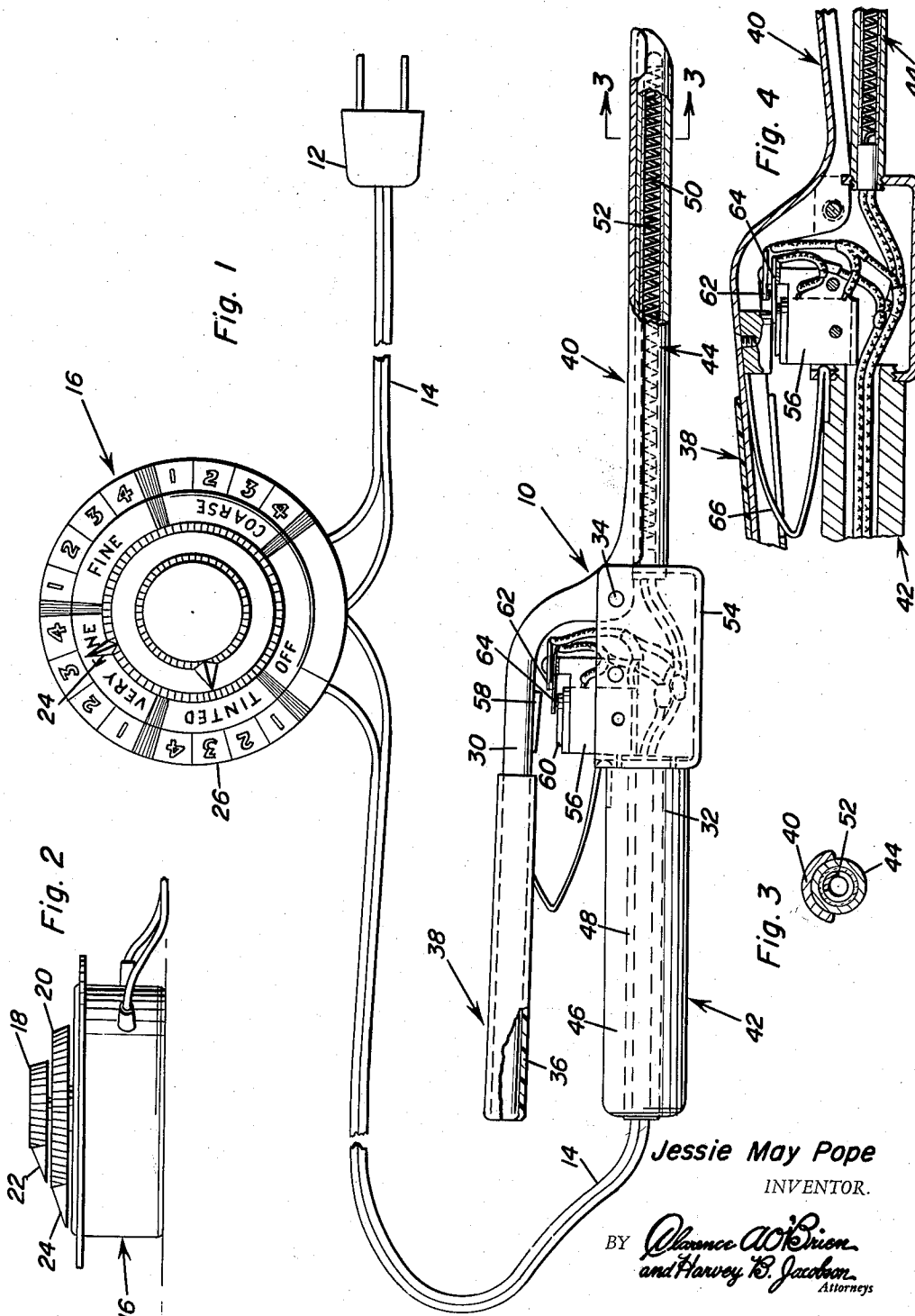
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3,102,941

HAIR CONDITIONING IMPLEMENT

Filed Jan. 15, 1960

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

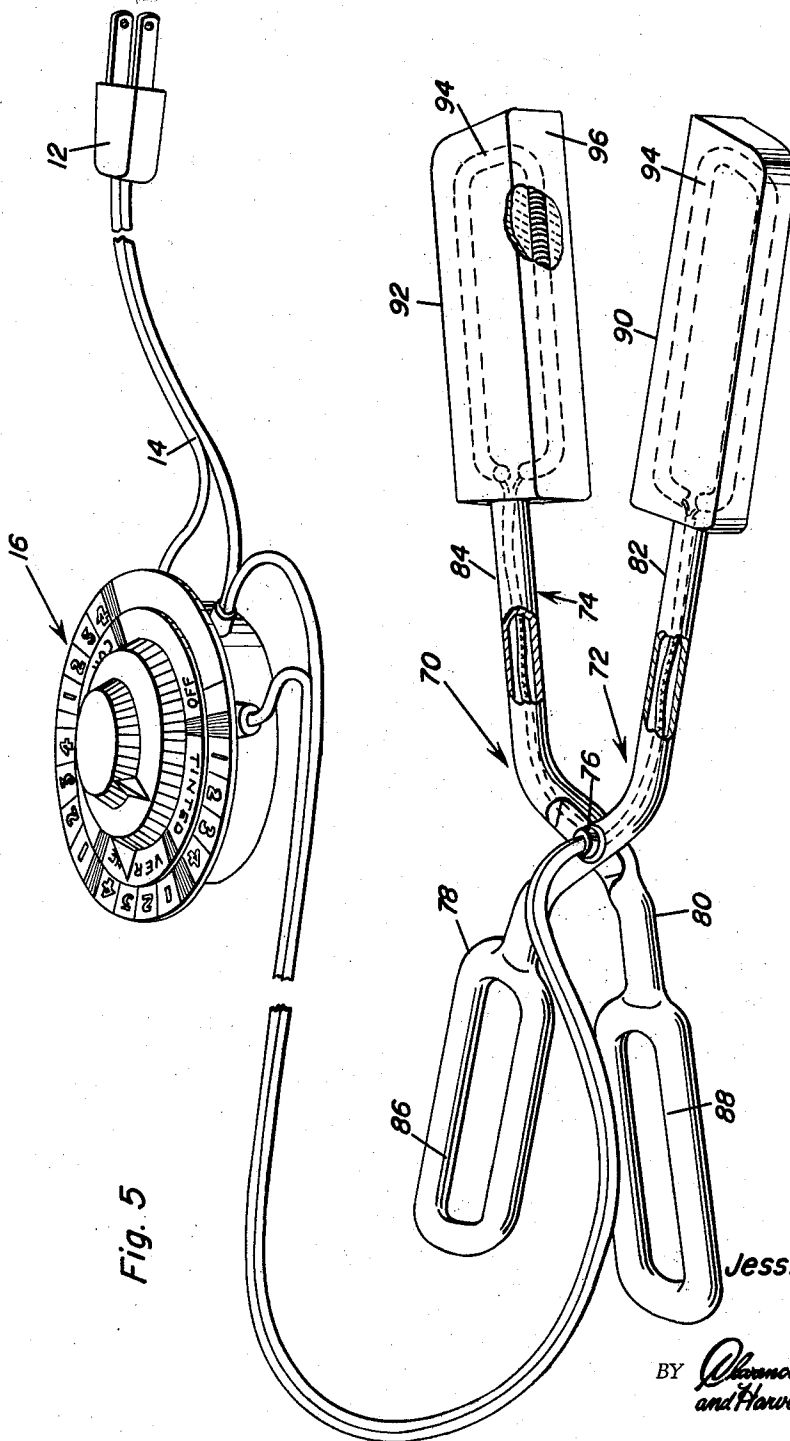


Fig. 5

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Fig. 6

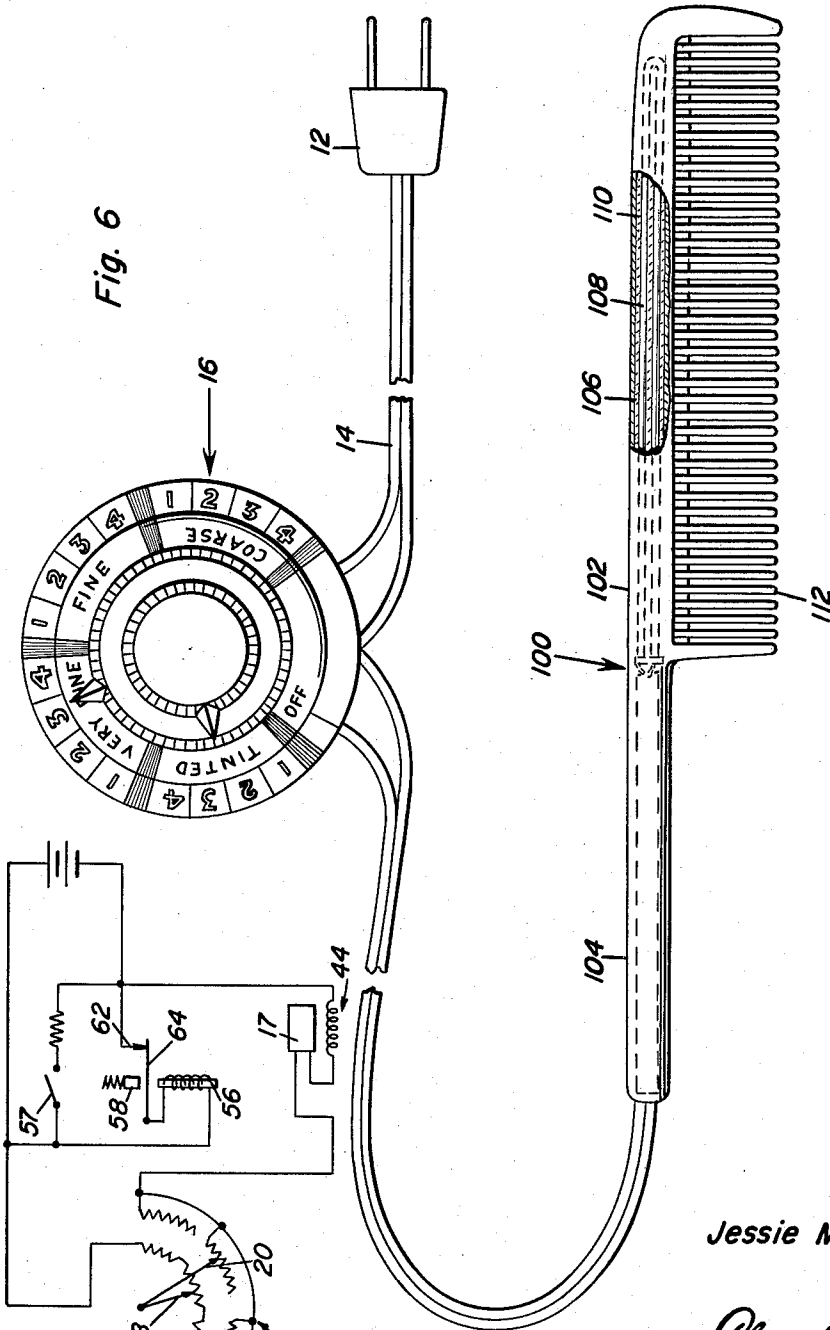
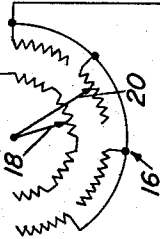


Fig. 7



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HAIR CONDITIONING IMPLEMENT

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12 Claims. (Cl. 219-24)

This invention relates generally to hair conditioning equipment and more particularly to such equipment utilizing electric heating means in conjunction therewith wherein the effect of the heating means may be varied dependent upon the texture and tint of the hair involved.

The present application represents an improvement over applicant's Patent No. 2,409,791 issued October 22, 1946.

Although the prior art discloses various types of implements for conditioning the hair in different manners, certain deficiencies in each of the known devices have limited the utility thereof and accordingly relatively few have gained popularity. It is the principal object of this invention to provide hair conditioning equipment which overcomes several of the disadvantages associated with former equipment by providing cooperating electrical means also for selectively adjusting the ranges of heating effects of the heating means involved depending upon the texture and tint of the hair being treated and the degree of heating within each range. The invention makes use of either an auto transformer or a variable resistor interposed between the electrical source and heating means of the heating equipment for varying the heating effect. A graduated scale is provided for use in conjunction with the manual actuator of the variable means for allowing selective adjustment of the auto transformer or the variable resistor. It is also contemplated that thermostatic elements be utilized to prevent overheating of the heating means.

It is a further object of this invention to provide several forms of heating equipment, each being operable on either alternating or direct current and each including the manually variable means for adjusting the heating effect of the heating means. The invention pertains to heat treatments which include the use of croquignole iron for curling hair, a presser for straightening hair, and a comb for facilitating hair waving.

It is a still further object of this invention to provide novel heating equipment where heating means are provided which will instantaneously and continuously provide the desired heat, obviating the necessity of frequently preheating the equipment during the hair treatment.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is an elevational view of the iron comprising the initial embodiment of this invention and showing parts thereof broken away;

FIGURE 2 is a side elevational view of the variable means utilized to vary the heating effect of the heating means carried by the iron;

FIGURE 3 is a vertical sectional view taken substantially along the plane 3-3 of FIGURE 1;

FIGURE 4 is a fragmentary sectional view of a portion of the iron illustrating how the vibrator means thereof functions to open and close the iron's jaws;

FIGURE 5 is a perspective view of a second implement of the invention known as the presser and utilized for straightening hair;

FIGURE 6 is an elevational side view partially broken away of the third implement of the invention comprising a heated comb; and

FIGURE 7 is an exemplary circuit diagram corresponding to the initial embodiment of the invention.

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With continuing reference to the drawings and initial reference to FIGURES 1 through 4 and 7, numeral 10 generally represents the croquignole iron comprising the first embodiment of the invention and adapted to be connected to an electrical source through a conventional male plug 12 and conductor means 14. Interposed in the conductor means 14 is a variable electrical means generally designated as 16 and comprising either an auto transformer or a variable resistor such as diagrammatically illustrated in FIGURE 7 and including manual actuators 18 and 20 for controlling the disposition of the variable means. Such voltage varying devices are well known in themselves and do not form part of the contribution of the present invention. Each of the manual actuators 18 and 20 is however provided with a pointer 22 and 24 for use in conjunction with the graduations 26 on the plate adjacent thereto. It will be appreciated that different positions on the plate are designated for different textures of hair with special consideration being given to tinted air. Also, settings are provided within each of the textures for adjusting the heating with respect thereto dependent upon the particular hair treatment concerned.

The conductors 14 extend to the iron 10 which includes a pair of elongated members 30 and 32 which are pivoted to each other at point 34. Each of the members defines a handle and jaw portion. The handle portion of member 30 is provided with an insulative sleeve 36 such as plastic. The handle portion is here generally designated as 38. The jaw portion of the elongated member 30 is generally designated as 40 and has a generally arcuate cross-section as best illustrated in FIGURE 3. The elongated member 32 is provided with a handle portion generally designated as 42 and a jaw portion generally designated as 44. The handle portion 42 includes an insulative or wooden sleeve 46 having a bore 48 extending therethrough for passing the conductor means 14. The cross-section of the jaw portion 44 is circular and defines a cavity 50 therein receiving a heating coil 52. As will be apparent from FIGURE 3, the arcuate jaw portion 40 conforms to the circular jaw portion 44.

A box 54 positioned intermediate the handle portion 42 and jaw portion 44 houses vibrating means including an electro-magnet 56 disposed opposite to a projection 58 of magnetic material carried by the elongated member 30 rearwardly of the pivot point 34. The pole face 60 of the electro-magnet 56 will draw the projection 58 downwardly as best illustrated in FIGURE 4 when the projection is brought into proximity by spreading of the jaws 40 and 44 for the purpose of completing opening the jaw portions 40 and 44. The electro-magnet 56 is energized from the electrical source through conductors 14. However, a switch including leaf contacts 62 and 64 is connected in series with the electro-magnet 56 as diagrammatically shown in FIGURE 7. It will be appreciated that the leaf contact 64 is disposed in the path of the projection 58 and accordingly each time the projection 58 and elongated member 30 are drawn toward the pole face 60 about the point 34, the projection 58 opens the circuit to the electro-magnet 56, releasing the energization thereof and allowing spring 66 disposed between handle portions 38 and 42 to urge the jaw portions 40 and 44 back together.

In use, the hair is received between the jaw portions to spread the jaws slightly thereby rendering the vibrator operative while heat is applied as desired and in accordance with the graduations on the variable means 16. The vibrator continues to vibrate the jaw portions to facilitate the hair curling. Of course, it will be appreciated that when the iron is desired to be used manually, the electro-magnet 56 may be shunted by a switch 57 for example as shown in FIGURE 7.

Attention is now called to FIGURE 5 wherein the plug

12, conductor means 14, and variable means 16 are identical to those discussed above. The hair conditioning implement here generally designated as 70 represents the presser for the purpose of straightening hair and includes two elongated members 72 and 74 pivoted at point 76. The elongated members include respectively handle portions 78 and 80 and jaw portions 82 and 84. As indicated, the handle portions 78 and 80 are provided with defined openings 86 and 88 for receiving the fingers of the hand for facilitating the pivotal movement of the member about point 76. The jaw portions 82 and 84 are tubular and the conductors 14 extend therethrough. At the outward end of each jaw portion is disposed box-like structures 90 and 92, respectively. Each are provided with a cavity therein for receiving heating means as a heating coil 94. Further, each defines a flat face 96 disposed proximate the heating coil 94. In use, the hair is gripped between the opposed flat faces 96 and heat is applied through the variable means 16 as noted above. By properly setting the variable means 16, the desired heating effect of the heating coil 94 is achieved and most efficient straightening of the hair results. Thermostatic elements 17 are utilized in conjunction with the variable means 16 in each of the hair conditioning implements as diagrammatically illustrated in FIGURE 7 for preventing over-heating of the heating means and resulting damage to the hair.

Attention is here called to FIGURE 6 wherein again the socket 12 and conductor 14 and variable means 16 are identical to those discussed above in conjunction with the first and second implements of the invention. Herein, the implement 100 comprises a heated comb utilized for the purpose of waving and treating the hair. The comb 100 includes a tubular elongated member 102 defining a handle portion 104 and a back portion 106. The conductors 14 extend through the portions 104 and 106 and are connected to the heating coil 108 received in the cavity 110 defined in the back 106. It is preferable that the member 102 be coated with or covered in some manner with plastic or some other insulative material. Extending perpendicular to the back 106 and parallel to each other are a series of teeth 112 utilized to comb and wave the hair. As noted, inasmuch as the variable means 16 may be manually adjusted in accordance with the graduations thereon so that the hair is treated with the proper heat only, best results are assured.

From the foregoing, it should be appreciated that novel hair conditioning equipment has been disclosed wherein variable means are provided in conjunction with three different types of hair conditioning implements each being similarly set for efficiently treating the hair. The use of each of the several devices will be readily appreciated. For example only, the presser may be utilized by people having characteristically curly hair for the purpose of straightening their hair so as to be more manageable. The iron and comb, of course, may be utilized in conjunction with any subsequent hair beauty treatment.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A hair conditioning apparatus, comprising a hair conditioning implement, heating means disposed therein for application to the hair through the implement, a source of energy operatively connected to the heating means for supplying heat therethrough, selectively and independently operable heat control means operatively connecting the source of energy and the heating means for respectively selecting the range of heat best suited for a particular texture of hair and the degree of heat within said range for performing different heat treatments, said heat control

means including indicia means for indicating hair texture and degree of heat and a pair of selectors for cooperation with the indicia means, said hair conditioning implement including pivotally connected elements having grip means connected thereto and vibrating means operatively connected to said source of energy and operative in response to separation of said elements to oscillate one of said elements relative to the other element, independently of any gripping pressure applied to the grip means.

2. The combination of claim 1 wherein said vibrating means is operatively mounted entirely within one of said elements between said grip means and a pivotal connection between said elements.

3. A hair conditioning apparatus comprising, a hair conditioning implement having a hair contact portion and a hair guiding portion for bringing hair into contact with said contacting portion, heating means disposed in said contact portion for transfer of heat to hair in contact therewith, biasing means operatively connected to said contact portion and guiding portion for urging said guiding portion toward engagement with said contact portion, and means responsive to separation of said contact and guiding portions and mounted on the implement for vibrating the guiding portion against the bias of said biasing means, whereby hair disposed between and separating said contact and guiding portions will be operative to maintain said separation responsive means operative to vibrate the guiding portion.

4. The combination of claim 3 wherein said biasing means comprises hand-grip means connected to said contact and guiding means and spring means connected to said grip means for biasing said contact and guiding portions into engagement with hair disposed therebetween.

5. The combination of claim 4, wherein said means for vibrating comprises electromagnetic means mounted on said implement for intermittently separating said contact and guiding portions against the bias of said biasing means when energized and circuit breaking means mounted on the grip means for deenergizing the electromagnetic means in response to separation of the contact and guiding portions.

6. The combination of claim 5 wherein said circuit breaking means comprises magnetic pole means mounted on the implement for displacement into operative position in proximity to the electromagnetic means by engagement of hair between the contact and guiding portions and circuit opening switch means opened upon engagement with the pole means when displaced from the operative position by the electromagnetic means.

7. The combination of claim 6 including plural voltage control means operatively connecting said heating means to a source of potential in parallel with said vibrating means and means for shunting said vibrating means to stop vibration of the guiding portion.

8. The combination of claim 3, wherein said means for vibrating comprises electromagnetic means mounted on said implement for intermittently separating said contact and guiding portions against the bias of said biasing means when energized and circuit breaking means mounted on the grip means for deenergizing the electromagnetic means in response to separation of the contact and guiding portions.

9. The combination of claim 8 wherein said circuit breaking means comprises magnetic pole means mounted on the implement for displacement into operative position in proximity to the electromagnetic means by engagement of hair between the contact and guiding portions and circuit opening switch means opened upon engagement with the pole means when displaced from the operative portion by the electromagnetic means.

10. The combination of claim 3 including plural voltage control means operatively connecting said heating means to a source of potential in parallel with said vi-

brating means and means for shunting said vibrating means to stop vibration of the guiding portion.

11. Hair curling apparatus comprising a pair of clamping tongs which can be opened and closed, a handle grip on each tong, one of said tongs being cylindrical and the other having a trough-like cross section, an electric heating device in said cylindrical tong, an electromagnet mounted on the hand-grip for said cylindrical tong, a normally closed switch in series with said electromagnet, a pole piece for said electromagnet opening, said switch when attracted to the electromagnet and means connecting said pole piece to said hand-grip of the trough-like tong for opening thereof each time the circuit of the electromagnet is closed by said normally closed switch, while when the circuit is broken said trough-like tong is closed by a spring urging said hand-grips apart to separate the pole piece from the electromagnet and release the switch to its normally closed condition whereby the tongs are vibrated when opened to receive hair therebetween.

12. The combination of claim 11 including variable

control means connecting a source of potential to the electric heating device in parallel with said electromagnet and means for shunting the electromagnet and switch to stop vibration of the tongs.

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