Nov. 17, 1936. E. DE LOS SANTOS 2,060,929

ELECTRIC HAIR WAVING APPARATUS

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Fig. 1

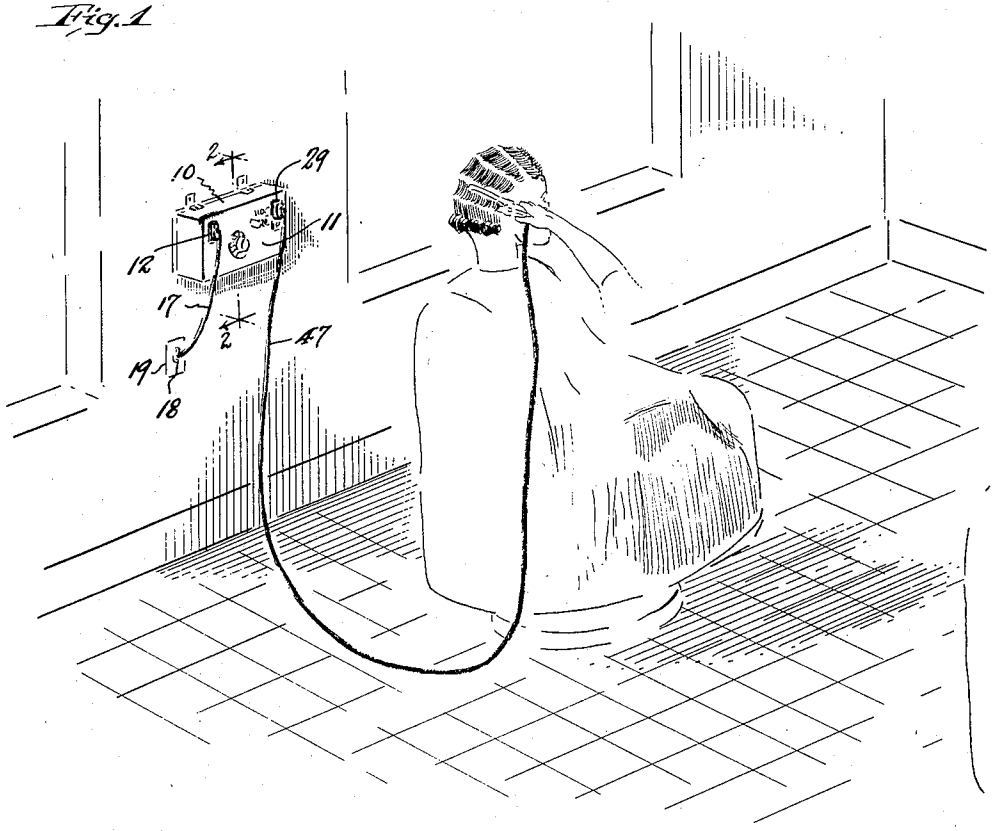
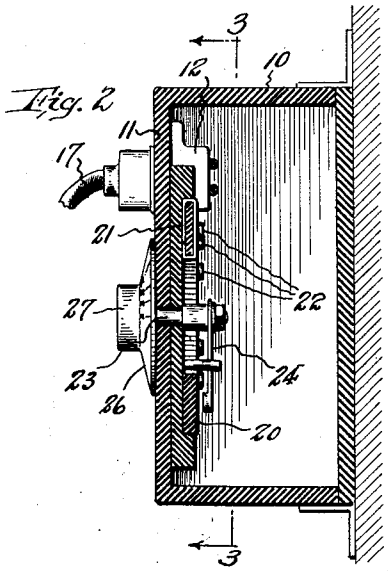


Fig. 2



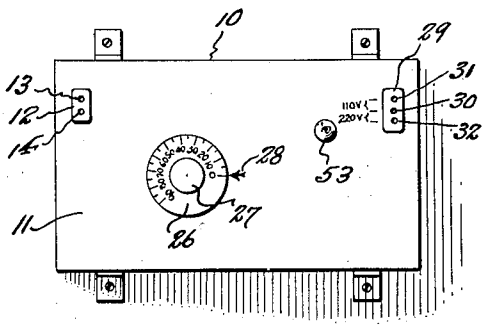


Fig. 1A

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Fig. 3

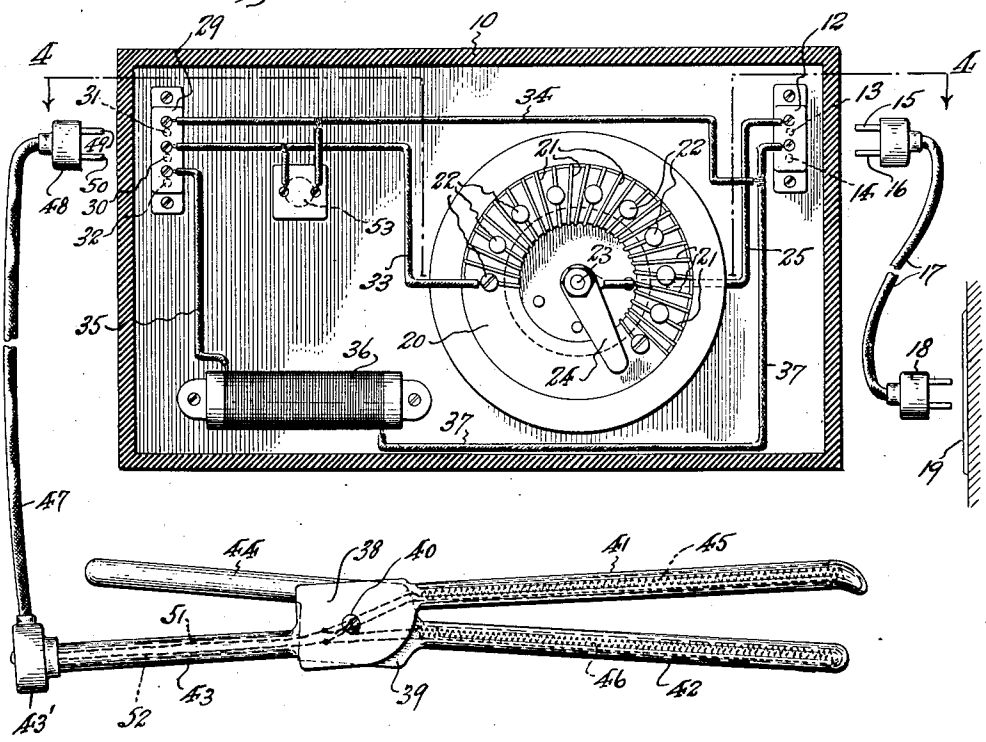


Fig. 4

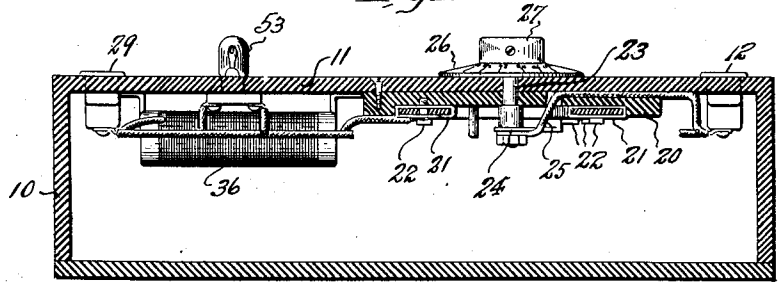
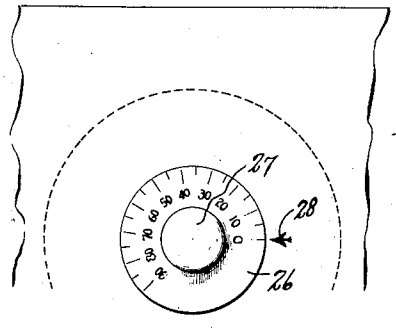


Fig. 5



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UNITED STATES PATENT OFFICE

2,060,929

ELECTRIC HAIR WAVING APPARATUS

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Application March 17, 1936, Serial No. 69,317

2 Claims. (Cl. 219—24)

This invention relates to an electrically heated hair waving iron and means for regulating or controlling the heat thereof.

This invention has for an object to provide, in connection with a hair waving iron having electrical heating elements, a novel means for selectively connecting the iron with service circuits of either 110 or 220 volts, together with means for regulating the current served to the iron heating elements so as to control the heat of the iron at any point desired between minimum and maximum limits.

Another object of this invention is to provide a novel regulating and controlling means which is independent of the waving iron per se, whereby the said means is portable and capable of being conveniently located and connected to a house or service circuit of either 110 or 220 volts, as the case may be, through a usual outlet, and thereupon being connected by a flexible conductor cable to the iron per se, whereby the operator may easily and conveniently manipulate the iron, and by manipulation and setting of the control means thereby maintain the iron at a desired temperature.

Another object of the invention is to provide means for visibly indicating that the iron is being served with electric current of desired heating effect.

Other objects of this invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:

Fig. 1 is a perspective view showing in use the novel electrically heated waving iron and means for regulating or controlling the heat thereof; and Fig. 1A is an exterior face view of the regulating or controlling means enlarged.

Fig. 2 is a vertical cross section, taken on line 2—2 in Fig. 1; Fig. 3 is a longitudinal section, taken on line 3—3 in Fig. 2, and showing the hair waving iron about to be connected with the control means; Fig. 4 is a longitudinal sectional view, taken on line 4—4 in Fig. 3; and Fig. 5 is a fragmentary face view, showing means for manipulating the heat control elements of the apparatus.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to the drawings, the reference character 10 indicates a suitable casing for the portable regulating and control unit of the apparatus. Affixed to the front wall 11 of said casing 10, which serves as a panel for mounting the elements of the regulating and control unit, is an input plug receptacle 12 having its receiving end exteriorly exposed on the outer face of said front wall or panel 11; said receptacle 12 having the respective contact terminal sockets 13 and 14 to receive the detachable plug contacts 15 and 16 of a current supply cable 17 which is connectible to a house or service circuit by the usual plug connection 18 which is engageable with an outlet connection 19 of said house or service circuit. Mounted on the interior side of said wall or panel 11 is an annular rheostat element 20, the coils 21 of which are electrically connected in series with corresponding fixed terminal contact buttons 22. Journaled in and through said wall or panel 11 in axial alignment with said rheostat element 20 is a spindle 23. Fixed on the inner end of said spindle 23 is spring leaf contact brush or arm 24, the free end of which, by rotation of said spindle, may be caused to move across and in contact with said contact buttons 22 of the rheostat coils 21. Said contact brush or arm 24 is connected by a conductor 25 with the contact socket 13 of input receptacle 12. Fixed on the outer end of said spindle 23 is a rotatable dial 26 having a finger-piece or knob 27 for turning the same. Dial 26 is graduated around a portion of its marginal periphery to indicate degrees of heat, e. g. from 0 to 90 degrees; the scale thus provided being read, when the dial is turned, by reference to a fixed indicator point 28 provided adjacent thereto on the outer face of said wall or panel 11.

Also affixed to the front wall or panel 11 of casing 10 is an output plug receptacle 29 having its receiving end exteriorly exposed on the outer face of said wall or panel. Said output plug receptacle is provided with a central outgoing contact terminal socket 30, and spaced therefrom on one side a return contact terminal socket 31, and on the other side another return contact terminal socket 32; thus constituting two pairs of sockets, viz. 30—31 for use when the apparatus is served by 110 volt current, and 30—32 for use when the apparatus is served by 220 volt current.

The last of the series of rheostat contact buttons 22 is connected by a conductor 33 to said contact terminal socket 30 of said output plug receptacle. The contact terminal socket 31 is connected by a conductor 34 back to the contact terminal socket 14 of said input plug receptacle 12. The contact terminal socket 32 is connected by a conductor 35 with one pole of a secondary resistance coil 36 which is mounted on the interior side of said wall or panel 11, and the other pole of said secondary resistance coil 36 is connected by a conductor 37 back to the contact terminal socket 14 of said input plug receptacle 12.

The hair waving iron, in a preferred embodiment thereof, comprises a member 38 and a member 39 pivotally joined together at 40. Member 38 is provided with a hollow tong leg 41, and member 39 with a hollow tong leg 42; said tong legs being adapted to be swung together in hair engaging relation by manipulation of the handle

portions 43 and 44 with which the same are respectively provided. Disposed within tong leg 41 is a suitably constructed electrical heating unit 45, and, in like manner, disposed within tong leg 42 is a similar electrical heating unit 46. Handle portion 43 is hollow and is provided with a suitable connection 43' for coupling thereto a flexible electrical cable 47 having at its free end a plug connection 48 provided with plug contacts 49 and 50 to be selectively and detachably engaged with the terminal socket contacts of said output plug receptacle 29. One conductor of said cable 47 leads from said plug contact 49 to join with a supply conductor 51 which extends through said hollow handle portion 43 and to which one pole of each heating unit 45 and 46 is connected; a return conductor 52, connected with the other pole of each heating unit 45 and 46, extends through said hollow handle portion 43 to connect with the other conductor of said cable 47 which leads back to the plug contact 50.

Mounted on the exterior of said wall or panel 11 is a signal or pilot lamp 53 which is connected in series with the rheostat device, so as to be served therethrough from the source of current supply. This signal or pilot lamp will light when the apparatus is in use, and will not only show that current is being served through the device, but, by the intensity of its light, will also visually indicate the heat variation effects of the current as regulated by the rheostat.

In the use of the device, the control unit may be placed on a table or hung upon a wall (as shown in Fig. 1) in the vicinity of the place where the operator desires to make use of the waving iron, and is then connected with the service circuit by plugging the cable 17 into the input receptacle 12. If the service circuit is of the 110 volt capacity, the waving iron is connected to the control unit by inserting the cable plug contacts 49—50 into the contact terminal sockets 30—31 of the output plug receptacle 29. With the apparatus thus made ready for operation on a 110 volt circuit, the operator may serve current under such control as will heat the tong legs of the iron to the desired degree. Since the scale of dial 26 is calibrated to accord with movement of contact brush 24 relative to the rheostat coils 21, so as to cut in or out of the circuit serving the heating elements of the iron that amount of resistance adapted to regulate the served current to a desired heat producing effect, the operator by manipulating and setting the rheostat dial, may select and obtain that degree of iron temperature best suited to the particular hair waving operation being carried on. The heating elements of the iron are, for example, so constructed that when supplied with the full strength of a 110 volt current the iron will heat to a maximum of 90 degrees F. This maximum temperature may be stepped down by manipulation of the rheostat.

Since in many instances and in many places at which use of the iron is desired, a service circuit of 220 volt capacity is alone available as a current supply, the control unit has been constructed and arranged so as to be capable of use when connected with a supply of such character. In such case, the operator merely inserts the cable plug contacts 49—50 into the contact terminal sockets 30—32 of the output plug receptacle 29. By such connection the secondary resistance 36 is included in the iron supply circuit, so that with rheostat cut out, the current served to the iron heating elements will be modified to effect the maximum heating of 90 degrees. The rheostat is, however, still included in the circuit, and consequently this maximum temperature may be stepped down by manipulating the rheostat, as will be obvious.

From the above description of the instant invention, it will be apparent that a very simple, efficient and convenient control unit for electrically heated hair waving irons is provided; the same being in a convenient portable form so that it may be carried from place to place, if desired, and so that, in use, it may be so situated as to in no way impede the operator's manipulation of the iron, as operatively connected therewith. The arrangement therefore permits the use of a simple, light-weight and easily manipulated type of waving iron per se, since there is no necessity for encumbering the iron itself with any regulating devices or bulky appurtenances. It will also be clear that the iron may be served, through the control unit, with operating current, whether the current source is of 110 or 220 volt capacity, and consequently use of the electrically heated iron need not be forgone because of the specific character of current supply in any given desired place of use.

I am aware that some changes could be made in the above described construction, and many apparently widely different embodiments of this invention could be made without departing from the scope thereof as defined in the following claims. It is therefore intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:—

1. A control means for an electrically heated hair waving iron having a flexible conductor cable and plug connection to serve current to its heating elements, comprising a portable casing, a rheostat mounted within said casing, an actuating means for said rheostat including a dial to indicate heat modifying effects of the rheostat controlled current, an input plug receptacle in a wall of said casing having a pair of contact sockets engageable by a plug connection of a cable conductor connected with a source of current, one of said contact sockets being connected with the input side of said rheostat, a secondary resistance coil mounted within said casing, an output plug receptacle in a wall of said casing, said output receptacle having three equi-spaced and aligned contact sockets, the output side of said rheostat being connected with the center contact socket of said output receptacle, one outer contact socket of said output receptacle being connected with the second contact socket of said input receptacle, and the other outer contact socket of said output receptacle being connected through said secondary resistance coil to said second contact socket of said input receptacle, all whereby said center and a selected outer contact socket of said output receptacle may be selectively engaged by said iron cable plug connection to connect the iron in series with said rheostat alone when the current source is of 110 volt capacity or in series with both said rheostat and said secondary resistance coil when the current is of 220 volt capacity.

2. A control means for electrically heated hair waving irons as defined in claim 1, wherein an external signal lamp is mounted on said casing and connected in series with said rheostat.

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