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ROLLER CURLER

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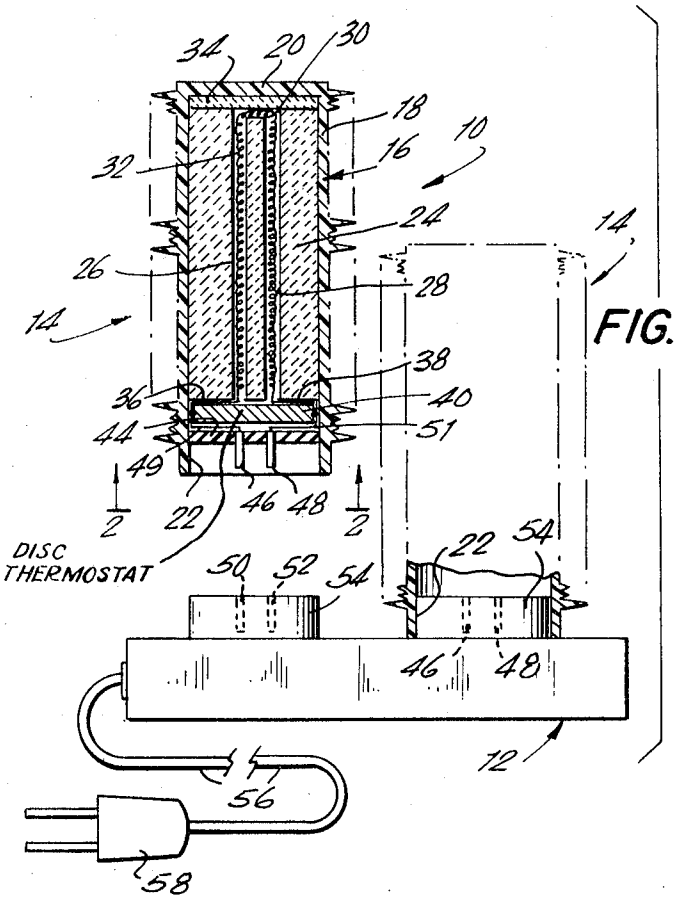


FIG. 1

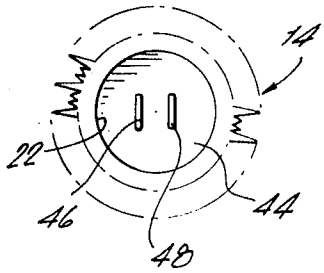


FIG. 2

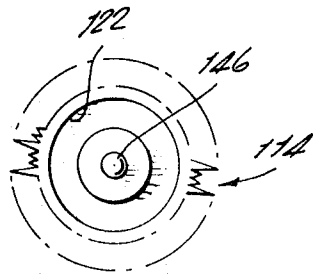


FIG. 4

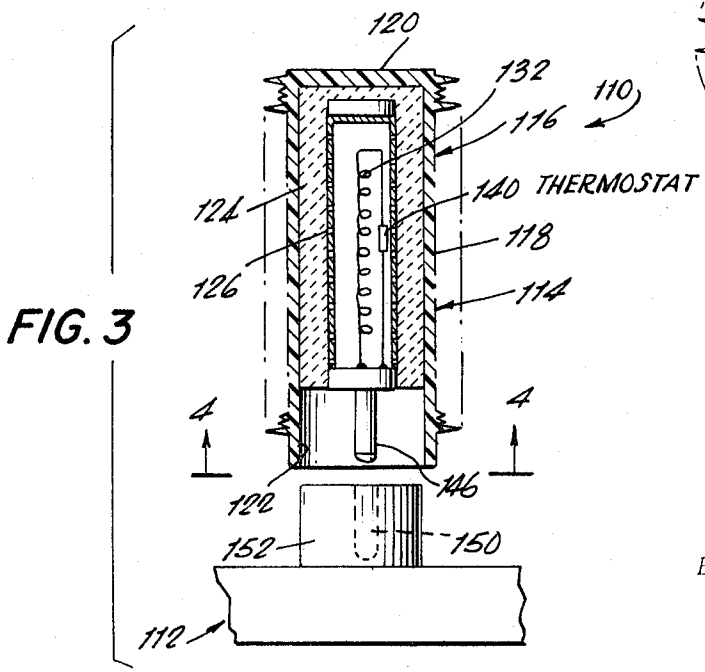


FIG. 3

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ROLLER CURLER

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ABSTRACT OF THE DISCLOSURE

This invention relates to a hair curler comprising an outer electrically non-conductive housing including a sleeve portion disposed at its lower end, an insert of refractory material disposed in the housing, a heating coil in the insert, connection means for connecting the heating coil to a source of power electrically operatively connected to the heating coil, a portion of the connection means being disposed within the sleeve portion, and thermostatic control means disposed in the housing and electrically operatively connected to the heating coil for controlling the amount of electrical power passing to the heating coil.

A cosmetic appliance and more particularly to an electrically heated hair curler.

Various types of roller curlers have been devised for use in setting hair. Many of these devices employ configurations and/or prongs about which the hair is entrained. It has been found, however, that when roller curlers are used for obtaining hair settings, especially for straight hair styling, application of heat is often desirable. One form of roller curler for hair previously employed was designed so that the hair curler could be heated by boiling in water, after which the heated curler was then used in setting the hair. This is a time consuming and unhandy procedure due to the fact that the heated curler is often difficult, distasteful or painful to handle and therefore must be allowed to cool sufficiently to allow for the touching thereof by the user thus reducing the effective operating temperature of the curler. However, the optimum temperature for use in setting the hair is in the order of 145° to 160° F. which may be somewhat distasteful to the touch, but when entrained in the hair and insulated thereby from the skin is unobtrusive. To this end, the present invention has for its object the provision of a hair curler that may be electrically heated and is so arranged that for a predetermined period after the curler has been subjected to electric heating, the outer surface thereof is not heated so that the curler is completely comfortable for handling in use when setting the hair.

In carrying out the invention, the hair curler employs an insert of a refractory material such as ceramic, porcelain, or the like, which is disposed in an outer housing or covering with the insert being so arranged to receive an electric heating coil in the interior theerof whereby after the heating coil has been excited for a predetermined period of time, the heat from the heating coil does not pass the outer housing for a further predetermined period of time, thereby allowing the hair curler to be employed before the outer surface heats up and thus treats the hair entrained about the particular hair curler.

It is a further object of the invention to provide a hair curler which may be safely and efficiently heated in a minimal period of time.

It is yet another object of the invention to provide a roller curler for use in setting hair that may be electrically heated by simply plugging into a suitable device, and which is provided with a thermostatically controlled safety means for insuring against the possibility of overheating the roller curler.

It is a further object of the invention to provide a hair curler which may be safely and efficiently heated in a minimal period of time, which will retain the heat.

It is yet another object of the invention to provide a roller curler for use in setting hair that may be electrically heated by simply plugging into a suitable device, and which is provided with a thermostatically controlled safety means for insuring against the possibility of overheating the roller curler, which will retain heat after disconnection.

Still further objects and features of the invention reside in the provision of a roller curler that is simple in construction, strong and durable, capable of being manufactured out of readily available materials, yet which may be utilized and employed in conventional hair setting procedures and which will better condition the hair for a particular styling by employing the providing optimum amounts and degree of heat for a predetermined amount of time.

These, together with the various ancillary objects and features of the invention, which will become apparent as the following description proceeds, are attained by these roller curlers, preferred embodiments being shown in the accompanying drawings, by way of example only, wherein:

FIG. 1 is an exploded vertical sectional view of a hair curler and energizing appliance utilized in accordance with the concepts of the present invention;

FIG. 2 is a bottom plan view of the roller curler looking in the direction of line 2—2 in FIG. 1;

FIG. 3 is an exploded vertical sectional view of a modified form of the invention; and,

FIG. 4 is a bottom plan view of the hair curler looking in the direction of line 4—4 in FIG. 3;

With continuing reference to the accompanying drawing, wherein like reference numerals designate similar parts throughout the various views, reference numeral **10** generally designates a preferred embodiment of the invention, which includes two main portions, an energizing appliance **12** and a roller curler, generally designated at **14**. The roller curler **14** includes an outer housing **16** provided with cylindrical side walls **18**, an upper end wall or top **20** integral with the side walls and a lower sleeve portion **22** which extends below a ceramic insert **24** securely disposed within the housing **16**.

The insert **24** is of a refractory material, preferably formed of a ceramic or porcelain-like material, and is provided with a pair of bores **26** and **28** therethrough disposed centrally and well inwardly from the outer surface of the ceramic insert **24** and which communicate with each other by means of a groove **30**. A Nichrome heating element **32** is disposed in the bores **26** and **28** and the groove **30** is of a substantially U-shape. Disposed between the ceramic insert **24** and the top **20** is an insulative disc **34** which is formed of ceramic material or other refractory type material or of a suitable heating insulative and electrically insulative material. The ends of the Nichrome heating coil **32** are connected through conductors **36** and **38** to a disc type thermostat **40** of conventional construction. A phenolic cap **44** holds the disc thermostat **40** and all of the other parts in place within the housing **18** and has a pair of pins **46** and **48** embedded therein during molding and electrically connected in any suitable way such as by conductors **49** and **51** to the disc thermostat **40**. The pins are entirely contained within the sleeve portion **22** of the housing **16** and are adapted to be inserted in openings **50** and **52** in a raised receptacle **54** connected in any suitable manner through an electrical cord **56** and an outlet plug **58** to a suitable source of electric power. The receptacle is of such a size that the sleeve portion **22** snugly fits thereover, preventing the possibility of electric shock occurring to the user.

In use, the hair curler **14** is disposed into engagement with the receptacle **54** for approximately 25 seconds at which time the disc thermostat **40** will open the circuit. However, the heat supplied by the Nichrome heating element **32** will take a period of approximately 30 seconds to pass from the center of the ceramic insert **24** to the outer surface of the housing **16** so that for approximately one-half a minute, the hair curler **14** is convenient and comfortable to hold. After the hair curler has been inserted in the hair, it will give off an optimum amount and degree of heat for hair setting.

Referring now to the embodiment of the invention illustrated in FIGS. 3 and 4, reference numeral **110** generally designates this form of the invention which includes an exciting device generally indicated at **112** as well as a roller curler generally indicated at **114**.

The roller curler **114** includes a housing **116** having cylindrical side walls **118**, a top **120**, and a lower sleeve portion **122**. An insert **124** is disposed within the housing **116** and is hollow for reception of a casing of perforated metal **126** within which Nichrome heating coil **132** and a thermostat **140** in series with the heating coil **132** is located.

In this form of the invention a single pin **146** recessed within the sleeve portion **122** and which the heating coil **132** is connected is provided for insertion into the opening **150** in the receptacle **152** provided on the exciting device **112**, the pin **146** being recessed within the sleeve **122** so as to eliminate the possibility of shock. This form of the invention operates in substantially the same manner as the form of the invention shown in FIGS. 1 and 2.

It is to be understood that ceramic material utilized is of a nature as will hold the heat which is transmitted therethrough for a period of time as will be sufficient to effectuate the curling of the hair.

In use the preheated hair curler will be positioned on the head of the user and the hair will be wound around the curler after which a securement clip or band, not shown, will be inserted to maintain the hair about the clip.

A latitude of modification, substitution and change is intended in the foregoing disclosure, and in some instances, some features of the invention will be employed without a corresponding use of other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein.

We claim:

1. A hair curler comprising an outer electrically nonconductive hollow housing having a closed upper end including a sleeve portion disposed at its lower end, an insert of refractory material disposed in and substantially filling said housing, a heating coil within said insert, electrical connection means for connecting said heating coil to a source of power, said heating coil being substantially centrally disposed in said insert so that the refractory material thereof will delay heating of said housing for a predetermined period of time, a portion of said connection means being disposed within said sleeve portion, and thermostatic electric control means disposed in said housing and electrically operatively connected in circuit between said heating coil and said connection means for controlling the amount of electrical power passing to said heating coil.

2. A hair curler according to claim **1**, wherein said thermostatic control means compresses a disc thermostat disposed between said insert and said connection means, said connection means including a disc of electrically insulative material having a pair of contact pins embedded therein, said connection means being disposed immediately adjacent said thermostat with said pins being disposed within said sleeve portion.

3. A hair curler according to claim **2**, including a plate of electrically and heat insulative material disposed between said insert and said housing and overlying said heating coil.

References Cited

UNITED STATES PATENTS

1,588,193	6/1926	Schmitz	132—33
1,641,353	9/1927	Opper et al.	
1,901,892	3/1933	Bjorkman et al.	132—33
1,941,439	12/1933	Lewis	132—33
1,995,618	3/1935	Lakenbach	219—222 X
2,060,102	11/1936	Moseley	132—34
1,779,905	10/1930	Dinger	132—36
1,927,001	9/1933	Lewis	219—222
2,394,973	2/1946	Bergen	132—37 X
2,811,629	10/1957	Danner	219—523
3,250,895	5/1966	McNair	219—222
3,257,541	4/1966	Jorgensen	219—222

FOREIGN PATENTS

98,026	2/1964	Denmark.
629,387	7/1927	France.

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U.S. Cl. X.R.

132—33; 219—241, 242, 523