Jan. 26, 1932. R. M. KEELE 1,842,408

HAIR WAVING APPARATUS

Filed April 14, 1931

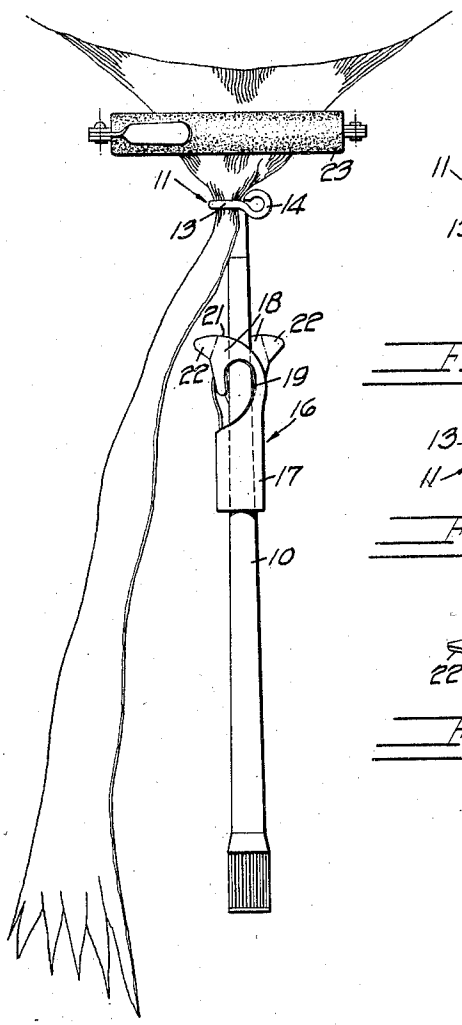


FIG. 1.

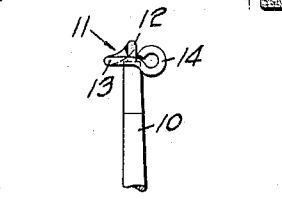


FIG. 3.

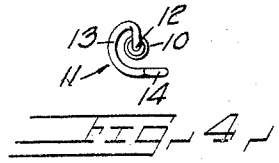


FIG. 4.

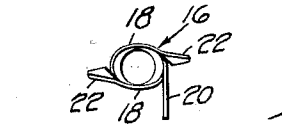


FIG. 5.

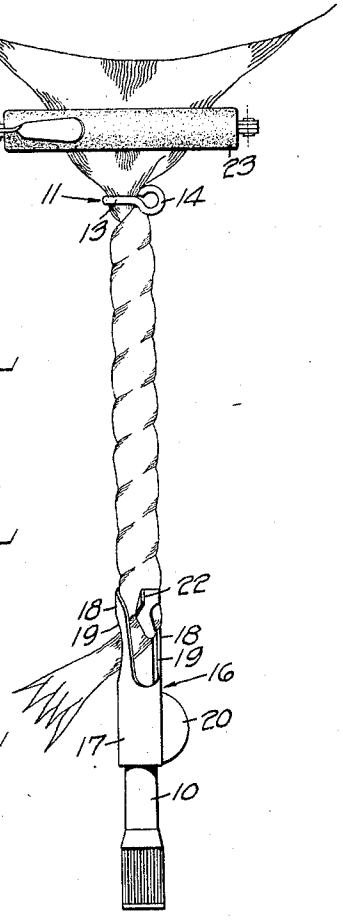


FIG. 2.

INVENTOR.
RALPH M. KEELE
BY White, Frost, Flehr & Lothrop
ATTORNEYS.

Patented Jan. 26, 1932 1,842,408

UNITED STATES PATENT OFFICE

RALPH M. KEELE, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO DUART MANUFACTURING CO. LTD., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA

HAIR WAVING APPARATUS

Application filed April 14, 1931. Serial No. 529,926.

This invention relates generally to hair waving apparatus of the type in which a strand of hair is wound spirally upon a rod or mandrel.

In the past the use of apparatus of the above character has required a skilled operator, due to the fact that the winding of the hair strands upon the curling rods or mandrels has been accomplished entirely by hand. As a typical example of such operation, a strand of hair adjacent the scalp is tied with string to one end of the rod, and then the strand is wrapped spirally upon the rod. The end of the wound strand is then tied to the rod by string or other means, and after a suitable moistened pad has been applied, a tubular electrical heater is slipped over the assembly. Unless the strand is wound with proper tension and distribution, a proper wave will not result.

It is an object of the present invention to devise improved hair waving apparatus of the above character which will enable the winding operation to be performed by a relatively unskilled operator. In this connection the invention is characterized by the use of a winding device carried by the curling rod, this winding device serving not only to facilitate the winding operation, but also to retain the strand in wound condition during the heating operation.

It is a further object of the invention to devise hair waving apparatus of the above character which will make unnecessary the use of strings or equivalent expedients for tying the hair strand to the rod upon which it is wound.

Further objects of the invention will appear from the following description in which the preferred embodiments of the invention have been set forth in detail in conjunction with the accompanying drawings. It is to be understood that the appended claims are to be accorded a range of equivalents consistent with the state of the prior art.

Referring to the drawings:

Figure 1 is a plan view illustrating apparatus incorporating the present invention.

Fig. 2 is a view similar to Fig. 1, illustrating the manner in which the winding operation is carried out.

Fig. 3 is a detail illustrating the construction at one end of the rod upon which the hair is wound.

Fig. 4 is an end view of the rod as illustrated in Fig. 3.

Fig. 5 is an end view of the winding device which is utilized in conjunction with the rod upon which the hair is wound.

The apparatus as illustrated in the drawings consists of a rod or mandrel 10 which is preferably slightly tapered. Secured to the small end of rod 10 there is a relatively rigid wire 11, which is bent as shown in Figs. 3 and 4. Thus one portion 12 of wire 11, extends outwardly axially of rod 10, and the wire is then bent laterally to form the curved portion 13. Curved portion 13 merges with a portion 14 which is bent to the form of an eye. Referring to Fig. 3 it is evident that curved portion 13 can be said to be in a plane which is nonperpendicular to the axis of rod 10. The formation of this wire provides in effect an open hook with which a strand of hair to be wound can be engaged.

Loosely disposed upon rod 10 there is a winding device 16. This winding device can be conveniently formed of a single piece of resilient sheet metal and includes a sleeve portion 17 which loosely surrounds the rod. This sleeve portion can be made by bending the sheet metal in the form of a cylinder, one edge of the sheet metal being provided with a projecting tab 20 for a purpose to be presently explained. Duplicate portions 18 extend from one end of sleeve 17. The preferred form of portions 18 will be evident from an inspection of Figs. 1, 2 and 5. The inner contour line 19 is hook shaped as shown in Fig. 1. The outer contour line 21 is such (Fig. 1) as to provide ears 22, and these ears are bent outwardly as shown in Fig. 5. Since portions 18 are formed of the same piece of sheet metal as the remainder of the winding device, it is evident that they are relatively resilient, and the resiliency is in a direction laterally to the axis of rod 10.

In utilizing my apparatus it is preferable to grip the base of the strand with a suitable

two-part clamp or protector 23. The individual hairs of the strand are then bunched together and engaged in the hook formed by wire 11, at the end of rod 10. The strand is retained in such engaged position, and the operator then takes winding device 16 and advances it to the small end of rod 10. The entire strand is then engaged by one of the resilient portions 18, and the winding operation commenced by turning the winding device in a counterclockwise direction as viewed in Fig. 1. While the winding device is being rotated around the rod, the operator permits it to progress away from the head or toward the outer or larger end of rod 10. Thus a strand is wound spirally upon the rod as shown in Fig. 2. Due to the resilience of the portion 18 which engages the hair strand, and due to the fact that this portion is sprung outwardly a certain amount as it grips the strand, the strand is laid fairly tightly and smoothly upon the rod.

When substantially all of the hair strand has been wrapped spirally upon the rod, the device 16 is not removed from the rod but is merely forced a short distance back toward the small end of the rod, so that both portions 18 are then sprung outwardly a certain amount to grip the wound hair. Thus the winding device 10 serves to retain the strand upon the rod under the tension with which the strand has been wound, and in proper position to be heated to impart permanency to the wave. After the hair has been properly wound and gripped by winding device 16, a moistened pad is wound about the wound hair, and then a suitable tubular electrical heater placed over the entire assembly. The heating operation need not be described in detail as it is well known in the art.

It should be noted that my winding device can if desired be used merely as a means for gripping the hair strand after it has been wound upon rod 10. Thus the hair strand may be wound by hand, and then device 16 forced over the ends of the wound hair to grip the same and to hold it in proper wound and tensioned condition upon the rod. It should also be noted that duplicate portions 18 are not essential, although they are desirable to form a symmetrical winding device and to more firmly engage the hair strand after the winding operation. While the wire 11 for engaging the hair strand is desirable and makes it possible to effect a complete waving operation without the use of tie strings, if desired the strand can be tied to the small end of the rod by means of a string, thus dispensing with the use of this part.

Formation of rod 10 tapered is desirable because tapered construction compensates for tapering of the hair strand being wound. In other words after the hair has been wound upon the tapered rod, its external diameter is substantially uniform, thus enabling the winding device to properly grip the strand as it progresses outwardly from the rod.

I claim:

1. In a hair winding apparatus, a rod upon which a strand of hair can be spirally wound beginning at one end of the rod, and a relatively rigid wire secured to said one end of the rod, said wire being extended laterally from the axis of the rod, and then curved upon itself in a plane which is non-perpendicular to the axis of a rod to form an open hook to receive and retain the hair strand.

2. In a hair waving apparatus, a rod upon which a strand of hair can be wound, and a winding device carried by said rod and made of a single strip of resilient sheet metal, said winding device including a sleeve longitudinally slidable upon the rod and rotatable about the same, and a portion carried by said sleeve forming a strand engaging hook.

3. In a hair waving apparatus, a rod upon which a strand of hair can be spirally wound, and a hair retaining device carried by said rod, said device including a sleeve adapted to slide longitudinally upon the rod and to rotate about the same, a pair of spring metal portions extending from one end of the sleeve, said portions being disposed adjacent opposite sides of the rod and having resilience in a direction laterally to the axis of the rod.

4. In a hair waving apparatus, a rod upon which a strand of hair can be spirally wound, and a hair winding device carried by said rod, said winding device including a sleeve adapted to slide longitudinally of the rod and to rotate about the same, a pair of spring metal portions extending from one end of the sleeve, said portions being disposed adjacent opposite sides of the rod and having resilience in a direction laterally to the axis of the rod, said portions being formed to provide hooks for engaging a hair strand.

5. In a hair winding apparatus, a rod upon which a strand of hair can be spirally wound beginning at one end of the rod, and an elongated member having one end thereof secured to said end of the rod and being curved upon itself to form a hook lying in a plane which is non-perpendicular to the axis of the rod.

6. In a hair waving apparatus, a rod upon which a strand of hair can be spirally wound beginning at one end of the rod, and a hook mounted on said end of the rod adapted to engage the hair strand to retain the same during a winding operation, said hook being formed of an elongated member having one end secured to the rod and being bent to form a hook lying in a plane which is non-perpendicular and non-parallel with respect to the axis of the rod.

In testimony whereof, I have hereunto set my hand.

RALPH M. KEELE.