Dec. 26, 1933. W. S. LEWIS 1,941,439

HAIR CURLING DEVICE

Original Filed Sept. 25, 1928

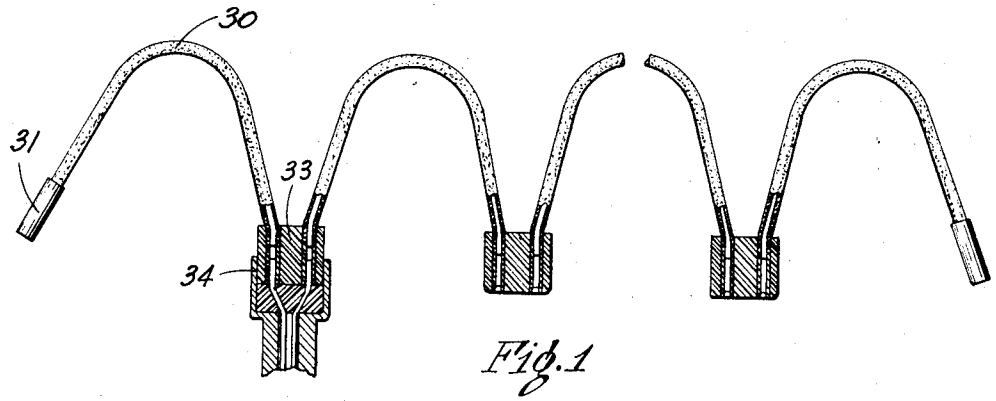


Fig. 1

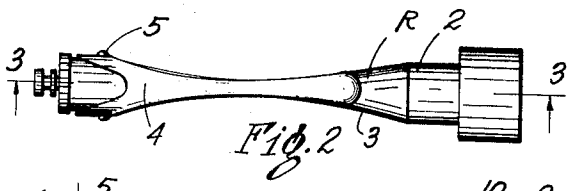


Fig. 2

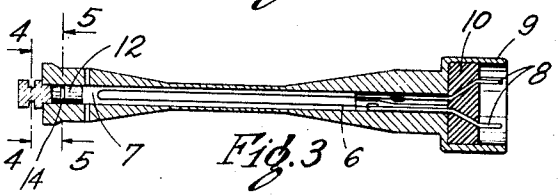


Fig. 3



Fig. 4



Fig. 5



Fig. 6

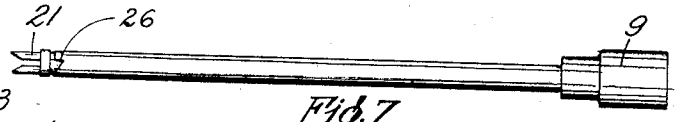


Fig. 7

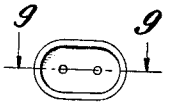


Fig. 8



Fig. 10

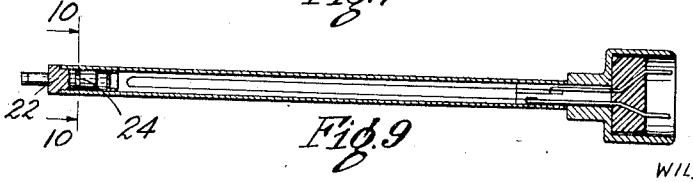


Fig. 9

Inventor

WILBUR S. LEWIS

By Richey & Watts

Attorneys

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UNITED STATES PATENT OFFICE

1,941,439

HAIR CURLING DEVICE

Wilbur S. Lewis, Lakewood, Ohio, assignor to The Nestle-Le Mur Company, Cleveland, Ohio, a corporation of Ohio

Original application September 25, 1928, Serial No. 394,980. Divided and this application June 30, 1931. Serial No. 547,927

10 Claims. (Cl. 132—33)

This invention relates to a method and apparatus and is primarily directed to the provision of a simplified apparatus for carrying out a permanent waving operation. More in particular, the invention lies in a novel type of hair waving unit and means for electrically and mechanically connecting a plurality of said units in a series hook up.

This invention is a division in my application Serial No. 394,980, filed September 25, 1928.

An important feature of my invention lies in the employment of curling units of improved construction and design. These curling units include a rod on which the hair is wound, the rod being of tubular construction and housing an electrical resistance unit intended to heat the tubular portion, and a terminal member adapted to be quickly and easily connected into and removed from the circuit. This practice is somewhat in contrast with the prior art practice wherein the heating unit is disposed in a case into which the curling unit is inserted. Such an arrangement necessitates the use of large and expensive equipment due to the individuality of each case and curling unit, each case being separately connected to a suitable source of current supply. A good example of this type of curling device is to be found in the so called pedestal outfits in wide-spread use today.

Each of the curling units contemplated by me has associated therewith insulating pads adapted to be interposed between the head of the person on which the heat is used and the heat element proper. The invention embraces clamps or suitable means for tightening hair on the rod, as well as terminals for hooking the heaters in series.

Other objects and advantageous features of this invention will be noted in the accompanying drawing and written description, wherein like characters of reference designate like parts and wherein:

Figure 1 is a view, somewhat diagrammatic, of a hook up which may be employed in conjunction with the heating units;

Figure 2 is an elevation of one form of my curling units;

Figure 3 is a section taken on the line 3—3 of Figure 2;

Figure 4 is a section taken on the line 4—4 of Figure 3;

Figure 5 is a section taken on the line 5—5 of Figure 3;

Figure 6 is an elevation of a slightly modified form of heating unit;

Figure 7 is a view of another modified form of waving unit;

Figure 8 is an end elevation of the heating unit shown in Figure 7, showing the terminals;

Figure 9 is a longitudinal horizontal section of the curling unit shown in Figure 7 and taken on the line 9—9 of Figure 8; and,

Figure 10 is a section taken on the line 10—10 of Figure 9.

Referring to the drawing, it will be obviously understood that the underlying principles of this invention are susceptible of embodiment with hair waving apparatus of almost any construction. However, this invention is primarily directed to the curling units and their particular features of novelty, as well as to a method of hooking such heaters in series in a simple manner so that they may be easily connected and disconnected to a source of current supply.

To this end, I have shown in Figure 2 the preferred form of unit designated generally by the letter R. The unit comprises a rod 2 which is of tubular construction and has an outer surface which tapers toward a central cylindrical portion 3. A finger 4 is hinged as at 5 to the rod 2 and has the under surface contoured complementary to that of the rod so that such finger normally lies in close embrace therewith. The purpose of this finger is quite apparent, inasmuch as hair is intended to be caught between the finger 4 and the rod. An electrical resistance heating unit 6, which may be of any suitable type is located in an axial bore 7 lying centrally of the rod and extending entirely throughout. The heating element is provided with terminals at one end which are mounted in a block of insulating material 10 located in an enlarged socket portion 9 integrally with one end of the rod 2.

The rod 2 adjacent the socket 9 is adapted to be received in a notch provided in a support for the curling unit, such as that shown and described in my copending application, hereinbefore mentioned, of which this application is a division. The other end of the rod 2 is provided with a ratchet mechanism which is employed to effect the tightening of a strand of hair on such rod.

This ratchet mechanism comprises an arbor portion 12 fitted into the bore 7 at one end and carries a stiff wire 14, Figure 5, having its ends bent tangentially and two enlarged external cylindrical portions connected by a flat sided neck 15. The engagement of the sides of the neck 15 with the sides of the notch 25, shown in Figure 10 of my copending application Serial No. 394,980,

prevents the arbor from turning and the ratchet bar 14 permits the rod 2 to be rotated about the arbor in one direction only so that the strand may be wound up tightly but cannot be unwound of its own accord.

In Figure 6, I have shown a slightly modified form of curling unit wherein the means for preventing rotation of the tubular member in one direction consists of the ratchets 20, one of which is disposed adjacent the terminal end of the cylinder and the other is placed adjacent the free end. This type of curling unit embodies all the features hereinabove mentioned with regard to the units shown in Figures 2 and 3 as to the resistance unit and the method of mechanically and electrically connecting the unit in series with a plurality of other units. The ratchets are adapted to be engaged by pawls (not shown) that consist of a single length of material secured at one end and directed to engage the ratchet teeth. These pawls may be mounted on the clamp member 13, shown in Figure 10 of my application Serial No. 493,980, of which this application is a division, said members being located adjacent the supports 22 and in such position as to readily engage with the ratchet teeth. It is apparent that this arrangement will permit of the rotation of the curling unit in one direction only which will permit the strand of hair to be wound up tightly thereon.

In the form of curling unit shown in Figures 7 and 9, the body portion consists of a tubular member of constant diameter throughout its main body portion surmounted by an enlarged sleeve corresponding to the sleeve 9 in Figures 2 and 3 for the purpose of housing the block of insulating material 10 through which the terminals 8 project. This curling unit, of course, is provided with a resistance unit 6 all in the same manner as that described hereinbefore with reference to the other type of curling unit. However, the means located at the opposite end of the rod for tightening the hair after it has been somewhat loosely wound thereon differs somewhat over the arrangement hereinbefore described.

This means consists of a rod-like end member comprising a fork 21 formed on the end of a cylindrical bearing 22 adapted to fit and turn within the end of the tubular sleeve. In this instance, as in the above instance, a resilient but rather stiff spring wire 23 having its ends projecting tangentially bears within a reduced portion 24 of the end of the tubular member and serves as a ratchet to permit rotational movement of the fork in one direction only with relation to the cylinder. The notch 26 acts to guide the end of the wire 23 into the interior of the tube when assembling the apparatus. The provision of the notch 26 in the end of the tubular member has certain distinct advantages as it greatly assists in the insertion of the rod-like tip member and the spring wire ratchet into the end of the tubular member. By providing the notch the ends of the wire ratchet members 23 may be quickly and easily inserted in the tube without the use of special tools. In inserting the forked tip into the tubular member one end of the wire 23 is placed in the notch 26 and the parts are rotated causing this end of the wire to spring into the tube. It will be evident that upon turning the tip through an angle of 180° the other end of the wire 23 will come into the notch 26 and will also be snapped into the tube by further rotation of the parts.

To connect in series any, or all, of these various waving units, I employ a number of connectors such as shown in Figure 1. Generally speaking each of these connectors consists of a short length of wire 30, properly insulated, wherein each end of the wire is provided with means, as at 31, which will permit of an electrical, as well as mechanical, connection to a socket member.

I have also provided a socket member 33 that is provided with parallel apertures therethrough adapted to receive the ends of two wires. The socket member 33 may be made up of some such material as bakelite or hard rubber and is contoured to lie snugly within the sleeve 9, the ends of the wires 30 being spaced apart sufficiently to properly engage with the terminals 8.

These sockets, designated by the numeral 34, are preferably made up of a light metal which may be split so as to impart a certain amount of resiliency thereto. In effect I have provided a double plug arrangement wherein a certain definite number of double plugs are each provided with a pair of socket terminals. However, these plugs may be permanently attached to the wire so as to constitute a complete assembly or if desired may be simply units into which the ends of the wires may be inserted. On one hand the user may supplement a number of wave units employed by other units and may increase the number of double plugs used by merely adding additional wires. On the other hand these groups of double plugs may be incorporated in a system not intended to be separated.

The current may be obtained from an ordinary lighting circuit and, if desired, means can be provided for breaking the circuit and thus discontinuing the heating operation as at any desired make of terminal, all as set forth in my copending application.

It will be understood that the foregoing specification and drawing by which it is illustrated discloses a preferred embodiment of my invention, that the principles thereof are not limited to this present application but may be employed in other devices not inconsistent with the principles of the foregoing, and that the scope of my invention, is indicated by the appended claims:

Having thus described my invention I claim:—

1. A curling and waving unit comprising in combination, a tubular body portion about which a strand of hair is adapted to be wound, means on said body portion for retaining said wound strand of hair thereon, a resistance unit located interiorly of said body portion and adapted to heat said body portion when said unit is energized, means for effecting a mechanical and electrical connection with a lead from a source of current supply, the opposing end of said rod having a cylindrical bearing mounted therein carrying a fork, and a resilient means adapted to bear within the end of said tube, said tube being notched in its end to facilitate the mounting of said resilient member therein.

2. In a curling and waving unit, the combination of a hollow cylindrical casing having a resistance unit located interiorly thereof, a fork mounted at one end of said cylindrical body portion, a stiff wire with the ends projecting tangentially and bearing within said cylindrical housing for permitting the fork to be turned in one direction only, and a notch formed in said cylindrical housing to guide the ends of the wire into the interior of the housing during the assembly of the unit.

3. A hair waving unit comprising a hollow cylindrical body portion, a forked member mounted

at one end of said cylindrical body portion, a resilient wire secured to said forked member and having a projecting end disposed within said cylindrical body portion and adapted to permit said forked member to be turned in one direction only, said cylindrical body portion being provided with a notch formed in its end and adapted to guide said projecting end of said wire into the interior of said body portion during assembly of the unit.

4. A hair waving unit upon which hair may be coiled and secured comprising a tube, a member mounted in and projecting from one end of said tube and adapted to be held against rotation relative to said tube in one direction only, a wire secured to said member and engaging the inner wall of said tube and means for facilitating the mounting of said member and wire in said tube, said means comprising a notch formed in the end of said tube.

5. A hair waving unit of the type described comprising a tubular housing upon which hair may be wound, a detachable end member projecting from one end of said tubular housing, means for permitting rotation of said detachable end member with respect to said housing in one direction only, said means comprising a wire extending through said end member and having an end portion disposed substantially tangentially to and bearing against the interior of said tubular housing, said tubular housing being provided with a notch in the end thereof for permitting said wire to be inserted within said tubular housing.

6. A hair waving unit including in combination a tube upon which hair may be coiled, a rod-like member within said tube and projecting from one end thereof, an engaging device mounted on said rod-like member and comprising a resilient wire passed through said rod-like member and having its ends projecting therefrom and adapted to engage the interior of the tube and permit relative rotary movement of said rod-like member and said tube in one direction only, said tube being formed with a notch adapted to guide the ends of said wire into the interior of said tube during assembly of the unit.

7. A hair waving unit including in combination a tube upon which hair may be wound, a member projecting from one end of the tube and adapted to be held against rotation, said tube and member being capable of relative rotary movement and means for permitting said tube and member to be turned relative to each other in one direction only, said tube enclosing said means and being notched at its end to facilitate the mounting of said means therewithin.

8. A hair waving rod of the type described, comprising a body portion, a forked member mounted at one end of said body portion, a resilient wire secured to said forked member and having a projecting end disposed within said body portion and adapted to permit said forked member to be turned in one direction only relative to said body portion, said body portion being provided with a notch formed in its end and adapted to guide said projecting end of said wire into the interior of said body portion during assembly of the unit.

9. A hair waving unit upon which hair may be wound and secured, comprising a rod having a hollow end portion, a member mounted in and projecting from said hollow end portion of said rod and adapted to be held against rotation relative to said rod in one direction only, a wire secured to said member and engaging the inner wall of said rod and means for facilitating the mounting of said member and wire in said rod, said means comprising a notch formed in said hollow end of said rod.

10. A hair waving unit of the type described, comprising a body portion upon which hair may be wound, a detachable end member projecting from one end of said body portion, means for permitting rotation of said detachable end member with respect to said body portion in one direction only, said means comprising a wire extending through said end member and having an end portion disposed substantially tangentially to and bearing against the interior of said body portion, said body portion being provided with a notch in the end thereof for permitting said wire to be inserted within said body portion.

WILBUR S. LEWIS.