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3,040,753

HAIR CURLER

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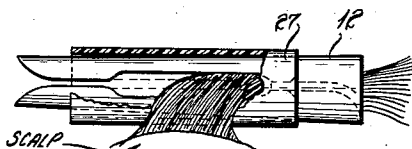


Fig. 1

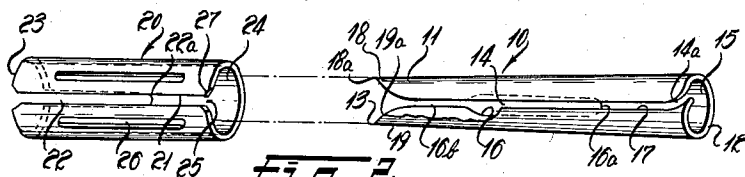


Fig. 2

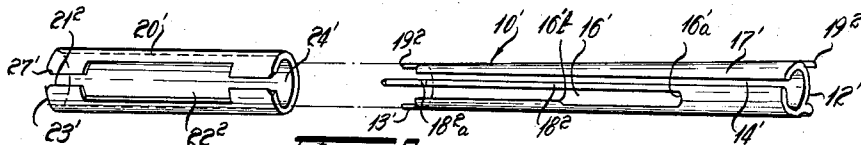


Fig. 3

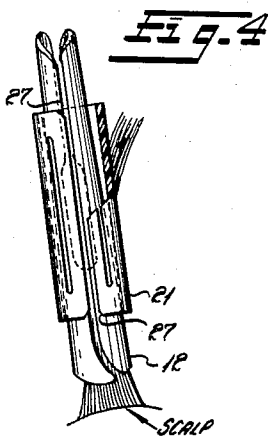


Fig. 4

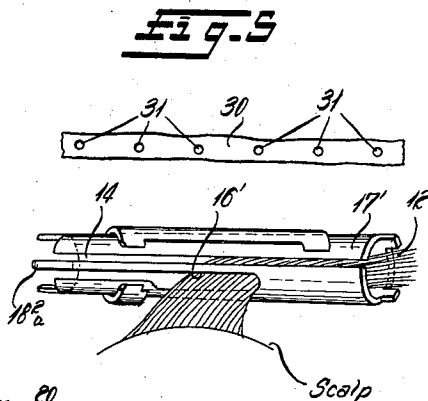


Fig. 5

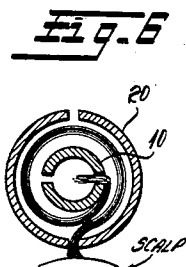


Fig. 6

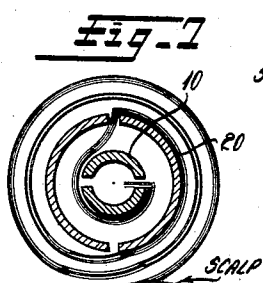


Fig. 7

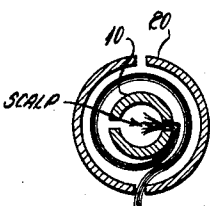


Fig. 8

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1

3,040,753
HAIR CURLER

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This invention relates to a hair curling device and, more particularly to a new and improved assembly for forming and setting curls.

Conventional type hair curler assemblies have required disassembly to insert a wisp of hair therein for curling and have been restricted to use on short lengths of hair. Former hair curl devices were also characterized by a complicated structure for forming a curl and the lack of a simple arrangement between the members for retaining the hair curling device in position after the curl had been formed.

It is an object of my invention to overcome these difficulties and to provide improvements in the hair curler which is the subject of co-pending application No. 761,375 and Patent No. 2,910,989.

It is also an object of this invention to provide an improved and novel hair curling assembly which will make a hair curl in a speedy and effortless manner for either long, short, or medium length strands of hair.

A further object of my invention is to provide a hair curling device in which the members cooperate with the curled hair to hold the assembly in position on the head.

A further object is to provide an improved type spindle for hair curlers in which the spindle slot is adapted to hold the hair strands being curled in proper position for winding.

Another object is to provide a curler assembly in which the clearance between the curling members is adjustable to accommodate within the curler, different hair thicknesses and varying lengths of hair.

An additional object of my invention is to provide a slot arrangement whereby the strands of hair to be curled are guided into a spindle slot.

Another object of the invention is to provide a hair curler assembly in which the strands of hair to be curled may be easily inserted into the curler and placed in position for curling without requiring any movement or adjustment of the hair curler parts.

These and other objects and advantages of my invention will become apparent from the following description and claims.

In the drawings, which illustrate by way of example the present invention:

FIGURE 1 shows an assembled view of the hair curler with a portion of the outer sleeve member cut away to show the manner in which the hair strands are fitted into the curler prior to the curling operation.

FIGURE 2 shows an exploded view of the curler assembly shown in FIGURE 1 showing the back side of the members.

FIGURE 3 shows a modification of the hair curler of FIGURES 1 and 2 in which the slots on the spindle member are located adjacent to one another to form a hair strand guiding finger.

FIGURE 4 shows the hair curler of FIGURE 1 from the side shown in FIGURE 2, which is disposed perpendicular to the scalp and showing hair strands disposed therein prior to the curling operation.

FIGURE 5 shows the assembled curler of FIGURE 3 disposed similarly to the curler of FIGURE 1 with respect to the scalp.

FIGURE 6 shows a cross sectional view of a curler as disposed in FIGURE 1 which shows schematically disposition of the hair in the curler after curling.

FIGURE 7 shows a similar type view and disposition of the hair within the curler in which the curled hair

2

is long and the portion of the hair strands adjacent the scalp is wound around the outside of the hair curler assembly after the end portions of the hair strands have been curled within the curling device.

5 FIGURE 8 shows a cross sectioned view schematically of the disposition of the hair strands within the curler after the hair curler operation when the hair curler assembly is disposed as shown in FIGURE 4.

10 My hair curler consists essentially of an inner spindle sleeve member 10 which is inserted in an outer cylindrical sleeve member 20. The assembly is slotted at one end thereof to permit the spindle to slip over the hair strands to be curled in a fork like manner. The slot arrangement at one side of the assembly extends 15 longitudinally the length of both the spindle and the cover sleeve so that hair strands may be passed clear through and into the bore or central portion of the spindle. The spindle is then rotated relatively to the cover sleeve to provide a curling action.

20 In the curler assembly shown in FIGURES 1 and 2 spindle sleeve member 10 has a tapered surface 11 which decreases uniformly from end 12 to end 13. The end 12 of spindle member 10 has a larger outer diameter than the inner diameter of the cylindrical cover sleeve 20, and the small end 13 of the spindle member 10 has a smaller outer diameter than the inner diameter of cover sleeve 20. The tapered surface thereby permits an adjustment of the clearance between the spindle 10 and the cover sleeve 20 outer and inner surfaces respectively 30 by moving the spindle 10 axially with respect to the cover sleeve 20.

As shown in FIGURE 2 the spindle 10 has a longitudinal slot 14 extending the entire length thereof and having a curved portion 14a adjacent the enlarged end 35 12. Slot 14 acts as a hair insertion slot in that the selected strand of hair passes through this slot and into the inner portion or bore 15 of spindle member 10. A hair retaining slot 16 is located diametrically across from hair insertion slot 14 and extends from the small end 13 of spindle member 10 to an intermediate point 16a 40 along the surface of sleeve member 10, so that a solid portion of the curler surface 17 between the end of the spindle member 12 and the point 16a remains to provide a flexible bridging portion for upper and lower members 18 and 19 which are formed by the hair receiving slots 14 and 16. Hair strand retaining slot 16 is restricted somewhat at its opened end by a narrowed entrance way 16b. This restricted portion of the slot 45 acts to keep the inserted hair in position in the central portion of the slot 16.

The ends of members 18 and 19 are rounded adjacent the open ends of the slots as shown at 18a and 19a to facilitate insertion of the hair strands within the slots.

The cylindrical cover sleeve 20 has a slot 21 longitudinally cut from end to end of the sleeve member which is approximately the same width as slot 14 of spindle member 10. Diametrically across from this slot another longitudinal slot 22 extends from end 23 toward end 24 55 and terminates at 22a so that a bridging portion 25 is formed. Longitudinal ventilating slots 26 are spaced circumferentially between slots 21 and 22. The open ends of the slots are beveled as shown at 27.

As shown in FIGURE 1 spindle member 10 is inserted within cover member 20 to provide a completed hair curler assembly ready for use when the corresponding 65 slots of the members are aligned.

The embodiment shown in FIGURE 3 shows another modification of my tapered pin curler basically the same as the curler of FIGURES 1 and 2 wherein the hair retaining and insertion slots are placed adjacent to one another. Spindle sleeve member 10' also has a longitudinally extending slot 14' extending from enlarged end 12' to reduced 70

3

end 13' and a hair retaining slot 16' longitudinally extending from spindle end 13'. This slot is dead ended at 16'a to form a solid portion 17' between the enlarged diameter end 12' of the spindle and the end of the slot at 16'a. Slot 16' has a reduced or throat portion 16'b at its open end and adjacent to the small diameter end of the spindle at 13'. Hair retaining slot 16' is located close to a hair inserting slot 14' so as to form a hair strand guiding finger 18² which longitudinally extends between slots 14' and 16'. The end 18^{2a} of this finger is bent radially outward with respect to the remaining portion of the finger and the periphery of the spindle 10' to provide a simple means for guiding the hair strands into slots 14' and 16'. Note projections 19² on this modification which are retaining means for resilient fastening members such as conventional rubber bands or the rubber fastening strip 30 shown in FIGURE 5. The fastening member would fit over the matching lugs at 19² at each end of the spindle member in order to hold the members in position if the curler were used on long hair for instance.

Cylindrical cover sleeve element 20' has a longitudinal slot 21² in its outer periphery from end to end with an enlarged cavity portion 22² intermediate its ends which is of sufficient width to permit spanning of both the hair insertion slot 14' and the hair retaining slot 16'. It should be noted in this modification that there is no need for a second slot in the cylindrical cover sleeve member 20' because the enlarged cavity portion 22² spans both slots in the spindle.

In this modification the cylindrical spindle member 10' is inserted within the cylindrical cover sleeve member 20' in the same fashion as the corresponding members of FIGURES 1 and 2 with the enlarged cavity portion 22² spanning slots 14' and 16' of the spindle member. The slot 21² on the cover sleeve member 20' is wider than the hair strand guiding finger 18² so that the radially bent out portion 18^{2a} can be slipped through the slot 21². Spindle member 10', of course, is tapered in the same manner as the spindle member 10 of FIGURES 1 and 2.

Operation

The spindle assemblies in FIGURES 1 through 3 are basically operated in the same manner in that the assembled curler with the short and long slots of the spindle and cover sleeve members aligned or oriented with the short or dead ended slots adjacent to the scalp and with the completely slotted end of the curler facing the hair strands to be curled. These strands are of course isolated and held upright from the scalp so that the curler end may pass over them in a forked manner. The end portion of the hair strands are then moved longitudinally along the aligned longitudinal slots 14 and 14' to the ends thereof and into the bore 15 of the spindle member. The curler assembly of FIGURE 1 shows the FIGURE 2 modification at the completion of this step.

The spindle member is then rotated with respect to the cover member so that the hair strands are fed back along the bore of the spindle and through the dead ended hair retaining slot to be wound around the outside of the spindle in the space between the spindle and cover sleeve members as they are rotated with respect to each other.

The restricted portions 16b and 16'b of the hair retaining slots 16 and 16' respectively act to keep the hair strands centered in the slot and thus free the operator from the necessity of making sure that the hair strands are maintained in proper position during winding. The curved portion 14a of slot 14 in FIGURE 2 also frees the operator, since it is no longer necessary to hold the hair ends away from the hair insertion slot 14 to prevent their slipping back into the slot and out of the spindle bore 15.

The modification of FIGURE 3 has the outwardly bent hair strand guiding finger 18² but this modification works in the same fashion as that of FIGURE 2. The outwardly bent portion 18^{2a} provides a simple means for guiding the hair strands into the slots and in this way corresponds to the tapered ends 18a and 19a of spindle member 10

4

of FIGURE 2. With respect to the threading of the hair through the curler modification of FIGURE 3 it should be noted that the slot 14' of spindle member 10' is aligned with the slot 21² of spindle member 20' so that the hair can be passed along slot 14' and into the bore of spindle member 10'.

FIGURES 4 and 5 show the modifications of FIGURES 2 and 3 respectively in which the curler is disposed perpendicularly to the scalp and the hair strand ends are fed back into the space between the spindle and the cover sleeve through the hair retaining slot. The hair strands closest to the scalp are passed through the hair inserting slot and into the bore of the spindle member. The curl resulting from the use of the curlers in this position is shown schematically in cross section in FIGURE 8.

FIGURE 6 shows schematically a cross sectional view of a curler assembly after the curling operation of the curler of FIGURE 1. You will note that this shows the curler as applied to short strands of hair.

FIGURE 7 shows schematically a cross sectional view of a curler after the curling in which a long length of hair is curled at the outer end and the remaining length is wrapped around the cover sleeve member. A fastening means such as a rubber band or the rubber strip 30 shown in FIGURE 5 is used with this type of curl to hold the curler in position.

FIGURE 8 as mentioned above shows schematically a cross sectional view of the curler of FIGURE 4 after the curler operation. Note that this type of curl spirals about an axis perpendicular to the scalp and that the curl formed in FIGURE 6 spirals about an axis parallel to the scalp.

It should be noted that the curler assembly after winding is adapted to have curling solution easily applied thereto so that a permanent curl may be formed. The ventilating slots 26 shown in the modifications of FIGURE 2 and FIGURE 4 have been omitted from the drawings of the spindle members and the cover sleeve 20' of FIGURE 3 in the interest of clarity. But in the actual models they would be included in all members.

It is to be understood that variations of the over all concept of applicant's invention could be made such as using a restricted portion at the end of the hair inserting slot instead of the curved configuration, or that the opened end of the slots in the spindle members could be disposed at the larger rather than the smaller end of the spindles. It is to be understood that the figures shown are merely examples of applicant's invention and that modifications as above could readily be made.

Although it has not been mentioned specifically above, the hair curler members as mentioned in my co-pending application Serial No. 761,375, would be made of plastic or yieldable material to provide a resilient gripping action between the spindle and cover members. This resilient effect would be further helped by the slots in the spindle and cover members.

From the foregoing it will be seen that there is provided by the present invention a hair curling device which is of relatively a simple design or construction and which may be formed of plastic or other suitable material by molding or the like and which also can be easily or conveniently applied and removed to the hair by the operator.

While the invention has been described in connection with different embodiments thereof, it will be understood that it is capable of further modification, and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertain, and as may be applied to the essential features hereinbefore set forth and as fall within the scope of the invention or the limits of the appended claims.

Having thus described my invention, what I claim is:

1. A hair curler assembly comprising a spindle member and a cylindrical cover sleeve member, said spindle member having a longitudinally tapering surface along

5

the major length thereof, said spindle being split by two opposed slots which extend longitudinally from one end thereof, one of said slots extending the entire length of the spindle having the greater part of its length substantially parallel to the spindle axis and the other slot extending along a major portion of the length thereof, the slots being flared at said one end of the spindle, said one slot having an arcuate section at its other end to prevent hair strands previously passed therethrough and into the central portion of the spindle from slipping back into the slot, said other slot having a minor part of its length adjacent its open end narrower than the remainder of the slot to prevent hair strands from slipping out of the slot during rotation of the spindle, said cover sleeve being of less length than the spindle and telescopically mounted thereon, the inner diameter of the cover sleeve member being slightly greater than the external diameter of the spindle member at a corresponding point, said cover sleeve having two opposed longitudinal slots, one slot extending the length thereof and in registry with the said one slot in the spindle member, the cover sleeve member also having a second longitudinal slot extending from one end thereof and in registry with said other spindle slot, said second slot extending along a major portion of the cover sleeve length.

2. A hair curler assembly comprising a cylindrical cover sleeve member and a tubular spindle member of slightly less diameter than the inner diameter of said sleeve member, said members being telescopically mounted for relative rotation with respect to each other, the spindle member having a longitudinal hair strand retaining slot extending from one end and along a major portion of the spindle member length, said spindle member also having

6

a longitudinal hair strand insertion slot extending the length thereof; the cover sleeve having slot means extending the length thereof, and in registry with the spindle slots; the longitudinal slots of the spindle member being immediately adjacent one another so that a major length of the hair strand insertion slot forms with the entire length of the hair strand receiving slot a narrow elongated hair strand guiding finger therebetween; and said cover sleeve means comprises a longitudinal slot extending the length thereof said slot having a substantially greater width than said finger and an elongated central portion of sufficient width to expose both slots of the spindle member.

3. The hair curler assembly of claim 2 wherein the end of the hair strand guiding finger is bent radially outward to facilitate hair strand insertion into the spindle slots.

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