July 27, 1948. R. E. RATLIFF 2,445,924

HAIR CURLER

Filed Aug. 26, 1946

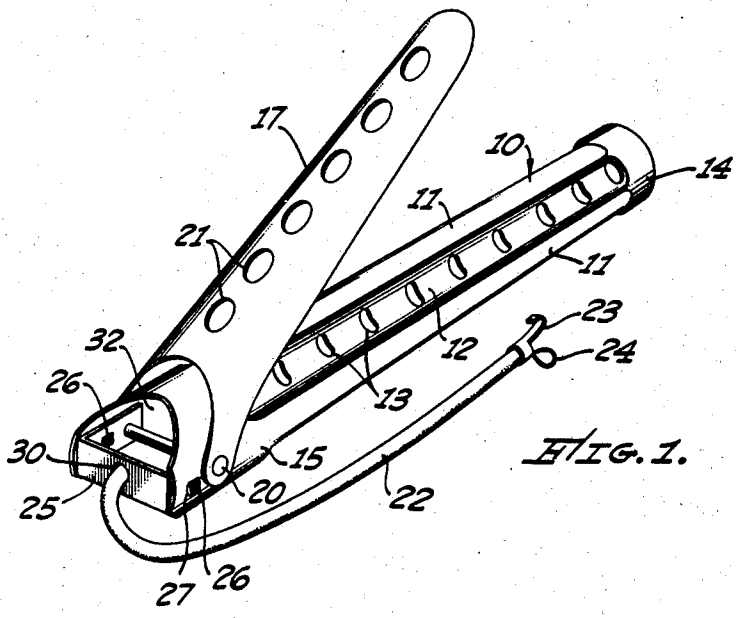


FIG. 1.
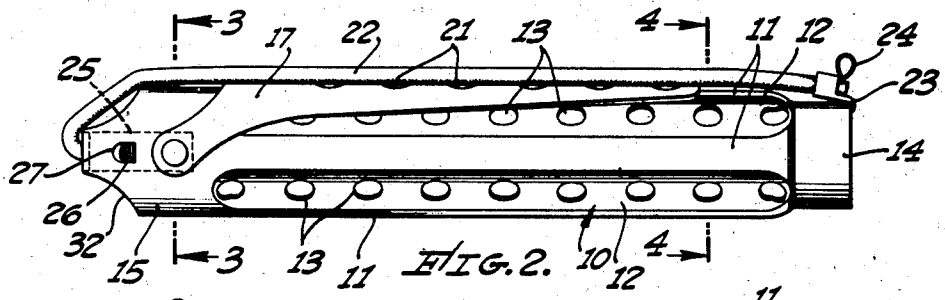


FIG. 2.

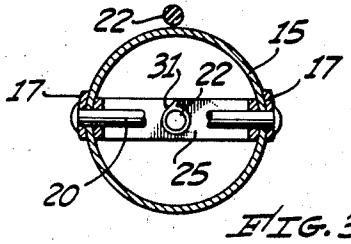


FIG. 3.

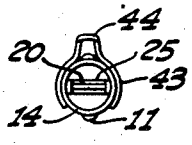


FIG. 6.

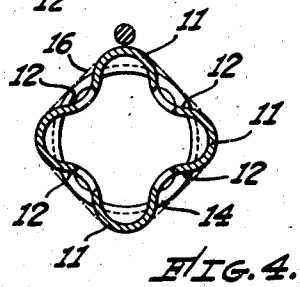


FIG. 4.

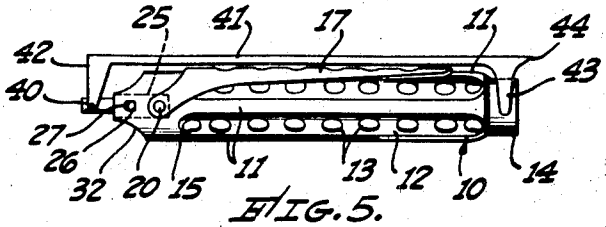


FIG. 5.

RUDOLPH E. RATLIFF,
INVENTOR

BY

ATTORNEY.

Patented July 27, 1948

2,445,924

UNITED STATES PATENT OFFICE

2,445,924

HAIR CURLER

Rudolph E. Ratliff, Los Angeles, Calif.

Application August 26, 1946, Serial No. 693,018

9 Claims. (Cl. 132—42)

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My invention relates generally to hair curlers and more particularly to devices of this type adapted to be used in the home and in beauty shops to produce curls and waves in the hair in any of the well known manners.

Of the various types of curlers which have heretofore been available, one of the most popular types has been one consisting primarily of a small metal tube around which the hair is wound and held in place by some form of clamping means. While such curlers have been quite simple to use and have produced fairly good results, they have a number of disadvantages which are apparent to those who use them. For example, the clamp which fits over the hair after it is wound upon the curler has customarily been a wire bail which is pivotally attached to the body of the curler at one end thereof, and provided with a roller adapted to fit into the other end of the curler to hold the bail in place and prevent the hair from unrolling. This construction has been objectionable since it has meant that the rolling of the hair on the body of the curler must be stopped at a point just beyond the bail, which often means that the hair is not curled all the way to the scalp, or in other cases, that the hair is pulled tightly so that the curler may be as close to the scalp as possible.

Another disadvantage of such curlers has been that inadequate provision has been made for the flow of air through the hair and through the length of the curler. While the body of such a curler has customarily been provided with a number of holes through which air may circulate, large areas of metal have remained, against which the hair rests with no possibility of air flowing through the latter to dry it. In addition, the end of the body of the curler has generally been closed by the clamping means and attachments so that the flow of air along the body of the curler has also been materially restricted. As a result, any air which does pass through the holes in the body of the curler must then pass through a restricted passageway to escape from the interior of the curler to the outside.

It is therefore a major object of my invention to provide a curler in which the clamping member holding the hair upon the curler may be engaged at any desired rotational position to permit the complete rolling of the hair without pulling of the latter.

It is another object of my invention to provide such a curler in which provision is made for an increased flow of air through the curler and the hair wound thereon to shorten the drying time of the latter.

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A further object of my invention is to provide such a curler which may be readily made with few manufacturing operations, and from easily obtainable materials so that the cost of the curler will be kept low.

It is still another object of my invention to provide such a curler which produces superior results whether used by experienced or inexperienced operators.

These and other objects and advantages of my invention will become apparent from the following description of a preferred and a modified form thereof, and from the drawings illustrating those forms in which

Fig. 1 is a perspective view of my preferred form of curler;

Fig. 2 is a side elevational view thereof;

Fig. 3 is a cross-sectional view taken at 3—3 in Fig. 2;

Fig. 4 is a cross-sectional view taken at 4—4 in Fig. 2;

Fig. 5 is a side elevational view of an optional form of my device showing the use of a more rigid clamping member; and

Fig. 6 is an end elevation of the optional form showing the engagement of the clamping member with the body of the curler.

Referring now to the drawings and particularly to Figs. 1 and 2 thereof, the numeral 10 indicates the body of a curler which is generally cylindrical in shape and preferably formed of a relatively light gauge, rust-proof metal such as aluminum. As will become apparent, the body 10 may be made from seamless tubing or from a flat sheet formed to the desired shape. At the rear or left end of the body 10, as shown in Fig. 1, the body is substantially cylindrical for a short distance, and this cylinder portion 15 is then distorted to form a series of ridges 11 and grooves 12 extending substantially the entire length of the body. Along the bottom of the grooves 12 I provide a series of holes or apertures 13 which permit air to circulate through the body portion 10, thereby aiding in the drying of the hair. The ridges 11 have a relatively short radius of curvature so that a minimum of their area is in contact with the hair, and the major portion of the latter extends over the grooves 12 without touching the metal thus affording ample opportunity for air to pass through the hair to dry it.

At the forward or right hand end of the body 10 as shown in Fig. 1, I provide a cylindrical portion 14 whose diameter is preferably smaller than

that of the cylindrical portion 15 at the rearward end of the body, and is preferably of such a size that it may be slipped within the roll of hair wound around the body 10 of the curler. This is illustrated in Fig. 4 where the shape taken by the hair is indicated by the phantom outline 16 which, it will be noted, is slightly larger than the maximum diameter of the cylindrical portion 14. In this way, the curler may readily be removed from the hair without unrolling the latter, and without any danger of the hairs being caught and broken when the curler is removed. While this feature is not essential, it materially adds to the usefulness of the curler and simplifies its operation.

To hold a lock of hair to the body 10 of the curler when starting to roll the hair thereon, I provide a finger 17 which is pivotally attached to the larger cylindrical portion 15 by means of a rivet 20 or similar holding means. As is customary, the finger 17 is provided with holes 21 which extend through it to prevent the finger from completely closing off the flow of air to the grooves 12 and holes 13 located therein. The use and operation of finger 17 is conventional, and hence it is believed that a more detailed description of this particular feature is not needed.

To keep the hair from unrolling after it has been wound upon the curler, I provide an elastic cord or resilient member 22 to act as a clamping member which is attached to the rearward end of the body 10, and provided with a hook or other suitable engaging member 23 which is adapted to fit over the end of the small cylindrical portion 14. A convenient member such as a loop of thread 24 or a projection on the hook 23 is provided to enable the resilient cord 22 to be readily grasped and stretched.

The resilient cord 22 is attached to the body member 10 in a manner so that the cord may be rotated to extend along the body portion 10 in any desired position. While other methods of attachment may be used, I prefer to use a U-shaped cross member 25 whose base extends across the cylindrical portion 15, and whose arms are parallel to the axis of the body 10. The arms of the cross member 25 are held to the body 10 both by rivet 20 and by a pair of stamped-out ears 26 which fit into holes 27 in the cylindrical portion 15 to prevent any pivoting of the cross member about the rivet.

Centrally located in the cross member 25 is a hole 30 through which the elastic cord 22 is passed and held by a knot or clamping member 31. The hole 30 is of a sufficient size to permit the elastic cord 22 to move freely therein, and hence turned so that it may be placed along the body 10 in any desired position thus allowing the entire length of a strand of hair to be curled without pulling the scalp.

It will be realized that the cross member 25 closes a portion of the end opening in the body 10 and hence tends to decrease the flow of air through the curler. To overcome this difficulty, I have cut away the end of the cylindrical portion 15 as indicated at 32 in Figs. 1 and 2 so that an unobstructed passageway for the air is provided. Furthermore, since the opposite end of the curler is open at all times, there is ample opportunity for air to circulate through the hair on the curler, thus shortening the drying time whether the drying is done by natural air movement or by a blower which forces heated air over the head.

To use the device a strand of hair is first

clamped between the finger 17 and the body 10 of the curler. The hair is then wound onto the curler, over the finger 17 to hold the latter in place, and this winding is continued until the roll of hair is adjacent the scalp. The curler and hair are then secured by placing the elastic cord 22 over the outside of the hair and engaging the hook 23 with the end of the cylindrical portion 14. As previously described, the elastic cord 22 may be placed in any position along the length of the curler so that any desired number of turns or portions of a turn of hair may be secured to produce a curl the full length of the strand of hair without pulling the scalp. When the hair has been dried, the hook 23 is disengaged, and the roll of hair may be slipped off the body 10 of the curler, passing readily over the smaller cylindrical portion 14.

Under certain conditions, the use of the elastic cord 22 may be considered undesirable; and to provide a curler for use under these conditions, I have developed the form shown in Fig. 5. In that form, the curler is provided with a body portion 10 having ridges 11 and grooves 12 with holes 13 formed at the bottoms of the grooves as before. The body 10 is formed to produce a cylindrical portion 14 of small diameter, and a cylindrical portion 15 of larger diameter at its opposite ends. A finger 17 is pivotally attached to the body portion 10 by a rivet 20, and a cross member 25 is held in the cylindrical portion 15 by the rivet and by ears 26 fitting in holes 27. All of these members may be identical with the corresponding members of the preferred form previously described, but the clamping member to hold the hair in place on the curler is modified as shown in Fig. 5. As in the preferred form, the cross member 25 has a hole 30 centrally located therein and a rivet 40 or similar member is suitably mounted in the hole to extend coaxially with the body 10 and be rotatable about that axis. A metal clamping member 41 extends the length of the curler and is provided with ears 42 which are pivotally attached to the rivet 40 so that the clamping member may extend parallel to the body, as mentioned, or may be swung away therefrom to permit the hair to be wound onto the latter.

At the free end of the clamping member 41 are a pair of resilient engaging arms 43 which are adapted to fit around and engage the small cylindrical portion 14 so that the clamping member 41 may be firmly held in this position. A lip 44 may conveniently be formed at the free end of the clamping member 41 to aid in grasping the latter to swing it away from the body portion 10 when tightly held by the engaging arms 43. Since the rivet 40 is rotatably mounted in the cross member 25, the clamping member 41 may be turned to any desired position along the body 10 of the curler and thus any desired length of hair may be wound on the curler.

In use, the hair is wound upon the curler as in the preferred from, and when this is completed, the clamping member 41 is rotated to the proper position and then swung to a position parallel to the axis of the curler with the resilient engaging arms 43 holding the clamping member to the smaller cylindrical portion 14 as shown in Fig. 5. It will be noted that in this form, as in the preferred form, the ends of the body portion 10 are left unobstructed so that air may flow freely throughout the length of the body to aid in drying the hair.

It will thus be seen that I have provided a

curler which is so constructed as to improve the flow of air through the hair and thus materially decrease the drying time of the latter. Furthermore, in both the preferred and optional forms, I provide clamping members to hold the hair on the curler which are adjustable so that any desired number of turns or portions of turns of the hair may be placed on the curler to permit the hair to be rolled all the way to the scalp without pulling the latter. While I have shown and described a preferred and optional form of my device, I do not wish to be limited to the particular form or arrangement of parts herein described and shown, except as covered by my claims.

I claim:

1. A hair curler which includes: a tubular body portion having holes therein through which air may pass; and a clamping member attached to said body portion at one end thereof for rotation about the axis of said body, and adapted to be engaged with the other end thereof to prevent the unwinding of hair wound upon said body portion.

2. A hair curler which includes: a tubular body portion having holes therein through which air may pass; a cross member attached to said body portion at one end thereof; and a clamping member attached to said cross member for rotation about the axis of said body portion, and adapted to be engaged with the other end thereof to prevent the unwinding of hair wound upon said body portion.

3. A hair curler which includes: a tubular body portion having holes therein through which air may pass, and having a larger substantially cylindrical portion at one end and a smaller substantially cylindrical portion at the other end; a cross member attached to said larger cylindrical portion; and a clamping member attached to said cross member for rotation about the axis of said body portion and adapted to be removably attached to the end of said smaller cylindrical portion to prevent the unwinding of hair wound upon said body portion.

4. A hair curler which includes: a tubular body portion having longitudinally extending ridges and grooves therein, with holes formed in said grooves through which air may pass; a cylindrical member at one end of said body portion and coaxial therewith; a small cylindrical member at the other end of said body portion and coaxial therewith; a cross member attached to said larger cylindrical member; and a clamping member attached to said cross member for rotation about the axis of said body portion, adapted to be removably attached to the end of said smaller cylindrical member to prevent the unwinding of hair wound upon said body portion.

5. A hair curler which includes: a tubular body portion having longitudinally extending ridges and grooves therein, said ridges being adapted to support hair wound upon said body portion, and said grooves having holes therein through which air may pass; a cylindrical member at one end of said body portion and coaxial therewith; a smaller cylindrical member at the other end of said body portion and coaxial therewith; a finger pivotally attached to said larger cylindrical member adapted to extend along the length of said body portion on the outside thereof; a cross member attached to said larger cylindrical member at the outer end thereof and having a centrally located hole, said first mentioned cylindrical member having a portion cut away adjacent said cross member to permit a free flow of air through said body portion and said cylindrical members; and a claming member rotatably mounted in said hole and adapted to extend along the length of said body portion and engage said smaller cylindrical member, whereby hair may be wound on said curler and held against unrolling by said clamping member.

6. A curler as described in claim 5 in which said clamping member includes: an elastic cord one end of which is passed through said hole in said cross member and held therein; and a hook member attached to the other end of said cord, adapted to engage the free end of said smaller cylindrical member.

7. A curler as described in claim 5 in which said clamping member includes: a shaft rotatably held in said hole in said cross member; a clamping arm pivotally attached to said shaft and adapted to extend along the length of said body portion to clamp hair between said arm and said body portion; and engaging arms at the free end of said clamping arm adapted to engage said smaller cylindrical member to hold said clamping arm against pivoting.

8. A hair curler which includes: a tubular body portion having holes therein through which air may pass; an elastic cord one end of which is attached to one end of said body portion for rotation about the axis of the latter; and a hook member attached to the other end of said cord to engage the free end of said body portion, thereby preventing the unwinding of hair wound upon said body portion.

9. A hair curler which includes: a tubular body portion having holes therein through which air may pass; a shaft attached to said body portion at one end thereof for rotation about the axis of the latter; a clamping arm pivotally attached to said shaft and adapted to extend along the length of said body portion to clamp hair between said arm and said body portion; and engaging arms at the other end of said clamping arm adapted to engage the free end of said body portion to hold said clamping arm against pivoting.

RUDOLPH E. RATLIFF.

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