United States Patent [19]

McKeown

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[54] LOCK-ON HAIR CURLER ASSEMBLY

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[52] **U.S. Cl.** **132/40**

[51] **Int. Cl.** **A45d 2/14**

[58] **Field of Search** ..... 132/39, 40, 41 R, 42 A

[56] **References Cited**

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Assistant Examiner—J. N. Eskovitz
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[57] **ABSTRACT**

A hair curler assembly has a tubular body formed with an axial passage and shaped for supporting a wound strand of hair. At least one of a pair of end caps may have a head formed with circumferentially spaced axially extending spring fingers which have rounded tips to slide on the wound strand of hair and grip the same frictionally under spring bias in the flexed fingers. An elastic cord extends through the passage and connects the caps under spring tension in the stretched cord.

8 Claims, 11 Drawing Figures

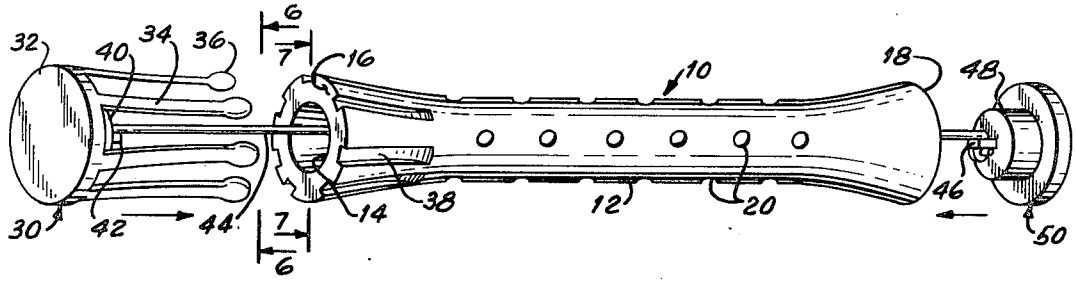


FIG. 1

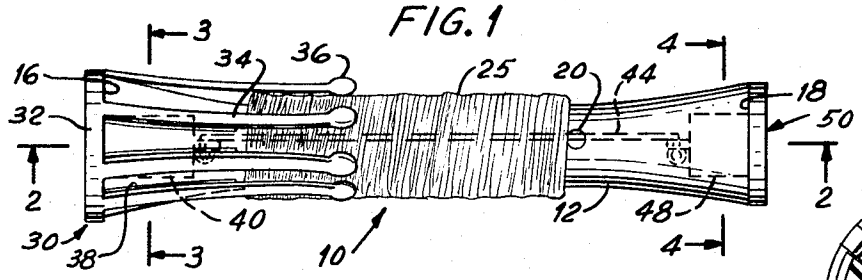


FIG. 3

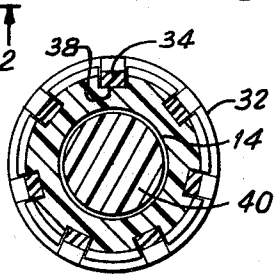


FIG. 2

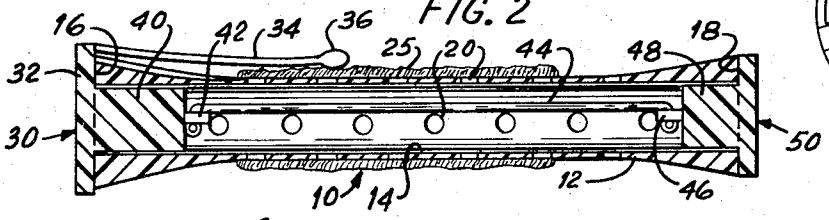


FIG. 5

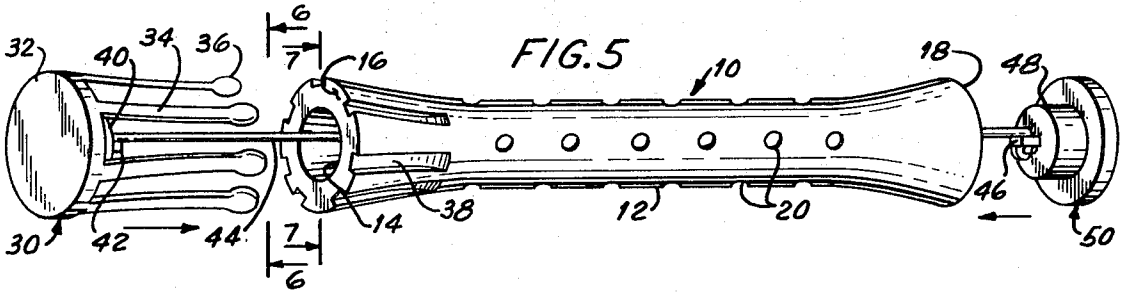


FIG. 9

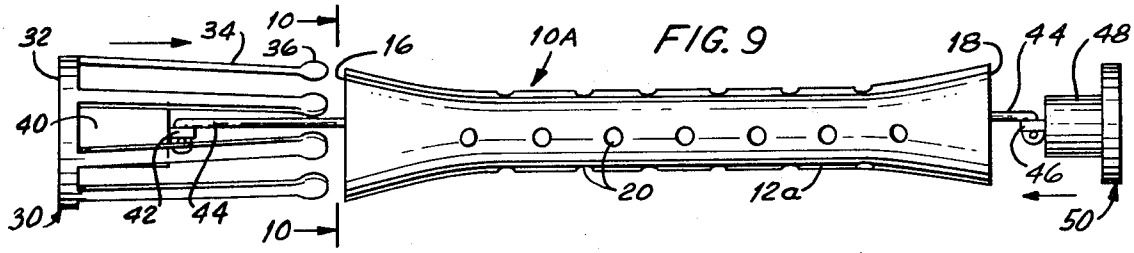


FIG. 8

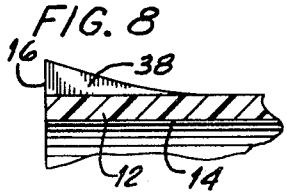


FIG. 11

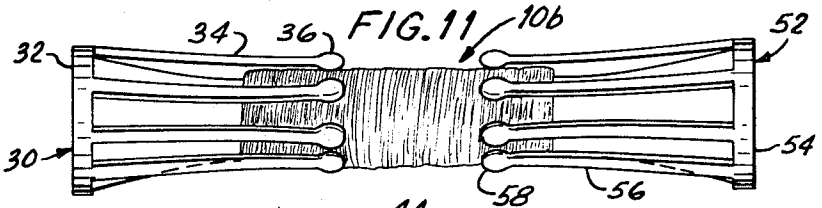


FIG. 4

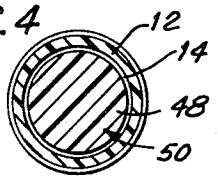


FIG. 10

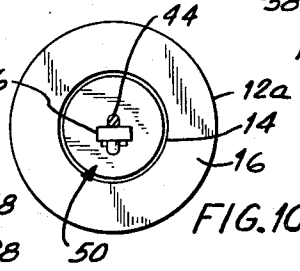


FIG. 6

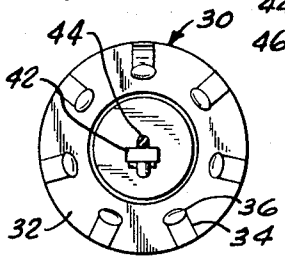
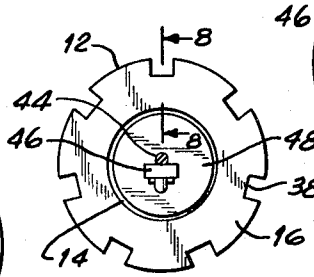


FIG. 7



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LOCK-ON HAIR CURLER ASSEMBLY

This invention relates to hair curlers, but is more particularly concerned with hair curlers which are held in place to permit the hair to set before the curlers are removed.

Difficulties encountered with hair curlers heretofore known involve the tendency of the hair catches or clasps to work loose while being worn; lack of forceful engagement with the hair curled on the curler to hold the hair and curler in secure mutual engagement; and lack of mutual engagement of parts to avoid loss of loose parts.

The present invention is directed at overcoming the above and other difficulties and disadvantages of prior hair curlers. Accordingly, there is provided a hair curler including an elongated tubular, apertured curler body upon which a strand of hair may be wound. The curler strand of hair may be engaged by an end cap clasp having a plurality of circumferential spring fingers, and engaged on one end of the curler body. An elastic cord or spring extends through the tubular curler body from the end cap clasp and may be secured to another end cap which fits into the other end of the curler body. Disengagement of the curler from the wound hair is effected by sliding the clasp axially away from the tubular body and then pulling the curler body axially through the wound curl of hair. The hair curler is made of molded plastic parts which are sterilizable, easily cleaned, strong and durable, and attractive in appearance.

It is, therefore, a principal object of the present invention to provide a new and improved hair curler of simple and practical construction, which is readily locked into place until removal thereof is desired, whereupon the curler is readily unlocked and removed.

It is another object of the present invention to provide a tubular curler having a removable end cap clasp at least at one end which is secured to the curler by an internal elastic cord secured to an end cap at the other end.

These and other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings in which:

FIG. 1 is a side view of an assembled hair curler embodying the invention, shown engaging a curled strand of hair thereon;

FIG. 2 is a longitudinal, central axial sectional view taken along line 2—2 of FIG. 1;

FIG. 3 is an enlarged cross-sectional view taken along line 3—3 of FIG. 1;

FIG. 4 is an enlarged cross-sectional view taken along line 4—4 of FIG. 1;

FIG. 5 is a perspective view of the hair curler showing parts;

FIG. 6 is an enlarged end view of a clasp taken along line 6—6 of FIG. 5;

FIG. 7 is an enlarged end view of the tubular curler body taken along line 7—7 of FIG. 5;

FIG. 8 is an enlarged fragmentary longitudinal sectional view taken along line 8—8 of FIG. 7;

FIG. 9 is a side view of another hair curler showing parts in fully open position;

FIG. 10 is an end view of the curler body taken along line 10—10 of FIG. 8; and

FIG. 11 is another embodiment of a hair curler having a clasp at each end.

Referring, now to the drawings wherein like reference characters designate like or corresponding parts throughout, there is illustrated in FIGS. 1–8 a hair curler assembly generally designated as reference numeral 10 including a tubular curler body 12 which has an axial passage 14 extending entirely through the curler body 12 between annular opposite ends 16, 18. The curler body 12 is narrower in diameter at the center and tapers outwardly to the wider ends 16, 18. A plurality of spaced holes or slots 20 are formed in the central portion of the curler body for ventilating a curl of hair 25 shown wound on the center of body 12 in FIGS. 1 and 2.

An end cap clasp 30 is provided for holding the wound curl of hair in place and has a head 32 formed with a multiplicity of integral springy fingers 34 spaced apart circumferentially of the head and extending toward the curler end 18. Free ends of the fingers 34 are formed with rounded tips 36 to facilitate sliding over the end 16 of the curler body 12. The fingers 34 taper inwardly slightly to overlay the tapered portion of the curler body 12 adjacent the end 16. The curler body 12 may be formed with a plurality of grooves 38 extending inwardly from the end 16 and extending a distance equal to about two-thirds the length of each of the spring finger 34. By this arrangement the outer ends of the spring fingers 34 remain engaged in the grooves 38 even though the inner ends of the fingers 34 are spaced away from the curler body 12 to overlay the curl of hair; see FIG. 2. If desired the length of each of the grooves 38 may extend to the full length of each of the spring fingers 34.

The end cap clasp is further formed with a plug 40 which fits into the end 16 of a passage 14 extending through the curler body 12. At the inner end of the plug 40 is an integral eye 42 on to which is tied one end of an elastic cord 44 which extends axially through the passage 14 and is secured at its other end to an eye 46 integral with a plug 48 of an end cap 50 at the other end of the curler body 12. When the end cap 50 and end cap clasp 30 are moved from opposite ends 16, 18 of the curler body, the elastic cord 44 is stretched and tensioned. It should be noted that the cord is still tensioned when both the end cap clasp 30 and the end cap 50 are fully engaged on the curler body 12 as shown in FIGS. 1 and 2. This arrangement insures that neither the cap 50 nor the clasp 30 can inadvertently come loose or fall out of the passage 14. The clasp 30 is nonrotatably engaged on the end 16 and of the body 12 and on the hair curl 25. The plug 48 is snugly fitted in end 18 of body 12 and is held therein by spring tension in the elastic cord 44. The rounded tips overlay the hair and protectively engage the same.

When the clasp is to be removed, it is slid axially outward of the curler body, whereby the spring fingers 34 are cammed open as they move outwardly along the tapered body 12. The end cap clasp 30 is never fully removed from the body as shown in FIGS. 5 and 6 but merely moved outwardly until the ends 36 are no longer engaged with the hair curl 25. The hair curl can then be unwound from the body 12. The cap 50 may remain in place during this operation. Similarly when rolling the hair curl 25 on the hair curler 20, the end clasp 30 is not removed from the body 12 but engages a small portion thereof.

If desired the grooves **38** at end **16** may be omitted. This is shown in a curler assembly **10***a* of FIGS. **9** and **10** where a curler body **12***a* has the same tapered shape as the body **12** but is smooth and fabricated without the grooves **38** (compare FIGS. **7** and **10**). The spring fingers **34** of the clasp **30** will engage on the curl of hair. The cap **50** which fits snugly in the end **18** may be used as a knob handle to turn the curler body **12***a* while the user holds the clasp **30** stationary outwardly of the body **12***a* such that the rounded tips **36** are engaged substantially at the end **16** of the body **12***a*. FIG. **11** shows an embodiment of my improved curler **10***b* where the end cap **50** has been replaced by an end cap clasp **52** having a head **54** formed with a multiplicity of integral springy fingers **56** circumferentially spaced apart and extending toward the curler end **16**. The free ends of the fingers **56** are formed with rounded tips **58** as in the end clasp **30**.

As shown the fingers **56** and **34** engage the grooves **38**. Although not shown, the curler assembly **10***a* may also be provided with the end cap clasp **52** instead of the end cap **50**.

The several parts of the curler assemblies described can be made of molded plastic which is relatively inexpensive to manufacture; which is tough and durable in construction, easily washed and sterilized, attractive in appearance, light in weight, and safe to use with all kinds of hair treatment chemicals since the material is chemically stable.

It should be understood that the foregoing relates to only a preferred embodiment of the invention, and that it is intended to cover all changes and modifications of the examples of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

The invention claimed is:

1. A hair curler assembly comprising a tubular body for winding a strand of hair thereon, said body having an axial passage therethrough, and having a narrower outside diameter at the center than at either end and tapering outwardly from said center to the larger diameter ends;

a clasp removably fitted on one end of said body and having a circular head with a plurality of circumferentially spaced integral springy fingers extending outwardly of said head and juxtaposed to one end portion of said body said fingers tapered inwardly over their entire length toward said passage in said body to overlay said tapered portion of said body whereby when said clasp is slid axially outward from said curler body said fingers are cammed open as they move outwardly along said tapered body.

2. A hair curler assembly as defined in claim **1**, wherein said clasp further comprises a central plug integral with said head extending into said passage at said one end of said body to stabilize the clasp in position on said body.

3. A hair curler assembly as defined in claim **1**, wherein said one end portion of said body is formed with a plurality of circumferentially spaced axially extending outer grooves slidably receiving parts of said fingers to prevent rotation of the clasp on said tubular body.

4. A hair curler assembly as defined in claim **3**, wherein said clasp further comprises a central plug integral with said head extending into said passage at said one end of said body to stabilize the clasp in position on said body.

5. A hair curler assembly as defined in **4**, wherein said spring fingers each have a rounded free end for sliding over the strand of hair.

6. A hair curler assembly as defined in claim **5**, including a cap with a central plug removably engaged in said passage at the other end of said body, said elastic cord being attached at opposite ends to both plugs respectively.

7. A hair curler assembly as defined in claim **1** including a second clasp at the other end of said body, said second clasp having a circular head with a plurality of circumferentially spaced integral springy fingers extending outwardly of the head and juxtaposed to one end portion of the body so that hair wound on said body will be gripped with spring bias by said fingers.

8. A hair curler assembly as defined in claim **7** wherein each spring finger is formed with a rounded free end for sliding over the strand of hair wound on said body.

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