

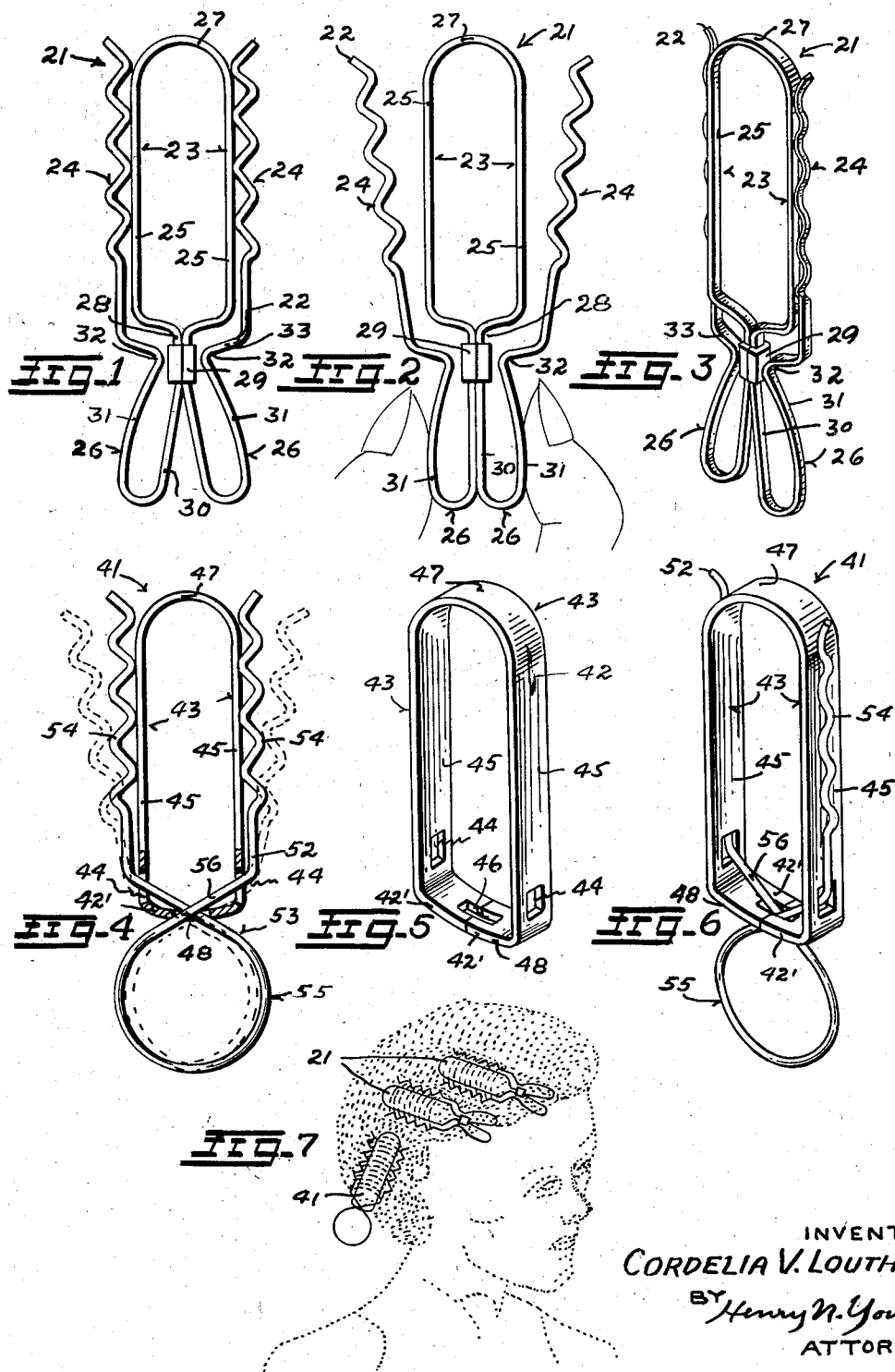
Feb. 24, 1959

C. V. LOUTHAN
HAIR CURLING DEVICE

2,874,705

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2 Sheets-Sheet 1



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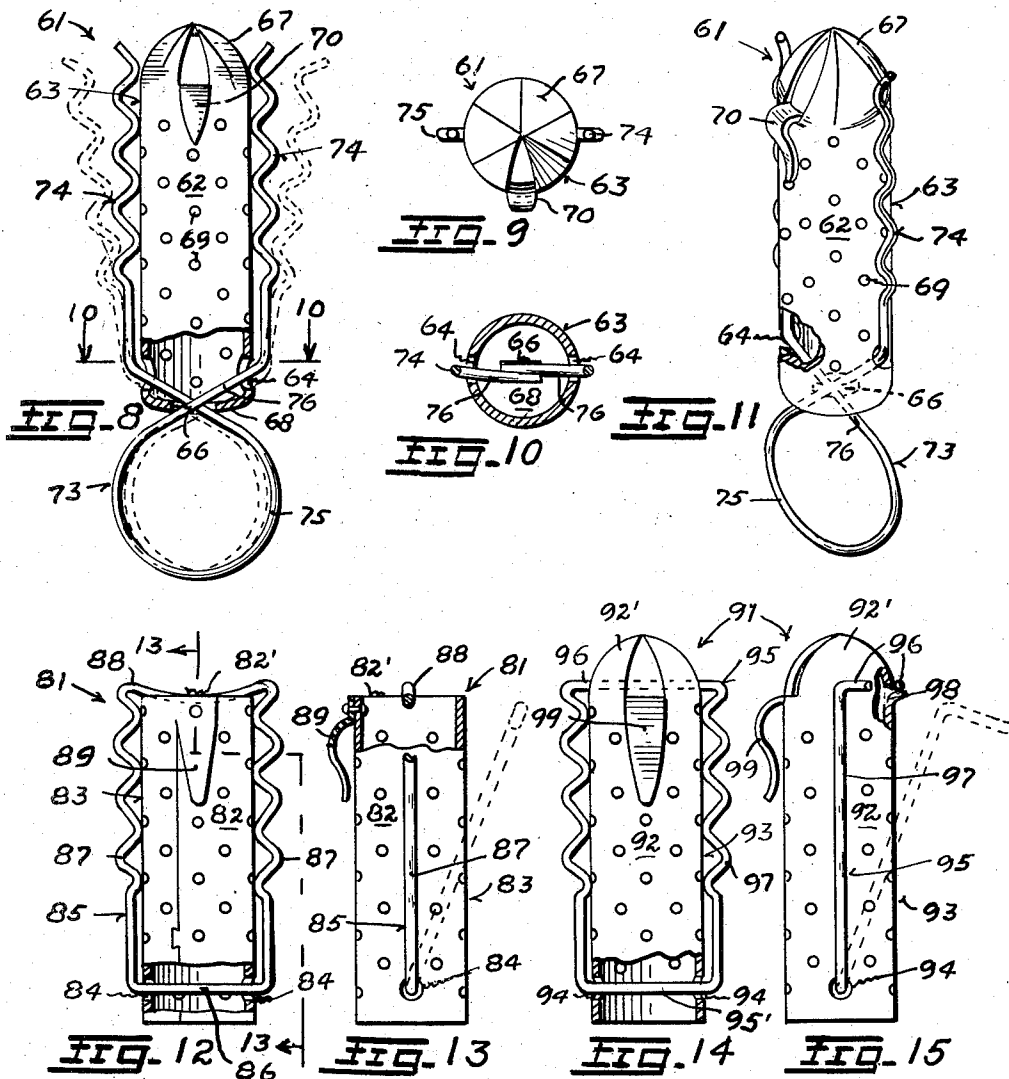
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6 Claims. (Cl. 132—41)

The invention relates to curlers provided with devices for facilitating the shaping and setting of curls of hair on a head.

More specifically, a curler of my invention provides a core on which a curl made of a strand of hair may be positioned and removably secured for the application thereto of a suitable composition which is designed to set the formed and mounted curl.

A general object is to provide particularly simple and effective curler units for mounting curls for the application of water or other curl-setting compositions thereto.

A more specific object is to provide particularly simple unitary curlers providing cores on which curls may be readily and efficiently secured during their setting.

Another object is to provide improved curlers which are adapted for either the mounting of preformed curls therein or the forming of curls on the cores thereof.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth or be apparent in the following description of typical embodiments thereof, and in the accompanying drawings, in which

Figure 1 is a side view of an effective one-piece hair curler embodying certain features of my invention, with the parts shown as normally related when the curler is not in use.

Figure 2 shows the curler of Figure 1 as opened for receiving a curl on a core portion of its structure.

Figure 3 is a perspective view of the curler of Figures 1 and 2.

Figure 4 is a side view of a two-piece embodiment of the curler in closed condition.

Figure 5 is a perspective view of the core member of the curler of Figure 4.

Figure 6 is a perspective view of the curler of Figure 4.

Figure 7 is a view showing certain of the present curlers as applied to a woman's hair.

Figure 8 is a partly broken-away side view of a third embodiment of the curler.

Figure 9 is a top view of the curler of Figure 8.

Figure 10 is a section taken at the line 10—10 in Figure 8.

Figure 11 is a side perspective view of the curler of Figure 8.

Figure 12 is a partly sectional side view of yet another curler embodying certain features of my invention.

Figure 13 is a partly sectional view taken on the broken line 13—13 in Figure 12.

Figure 14 shows a partly sectional side view of a modification of the embodiment of Figures 12 and 13.

Figure 15 is a broken-away view of the structure of Figure 14 taken from a plane at right angles to the plane of Figure 14.

The embodiment of Figures 1 to 3 inclusive discloses a unitary curler 21 which has been formed from a single relatively narrow body strip 22 of suitable material to provide an elongated and generally rectangular core por-

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tion 23, terminal clamp arm portions 24 in normally engaging exterior opposition to the substantially parallel sides 25 of the core 23, and control arm portions 26 integrally connected between the core and the clamp arms and manually engageable for swinging and holding the clamp arms 24 in spaced opposition to the core sides 25. More specifically, the core portion 23 is formed from an intermediate part of the strip 22 to provide a closed loop having an outwardly-arched end 27 and having its other end providing laterally engaged strip portions 28 extending longitudinally from the loop and preferably, but not necessarily, fixed together in a suitable manner at their point of engagement, as by a C-clamp collar 29 grippingly fixed about them thereat. The control arms 26 comprise loops having opposed inner sides 30 thereof extending from the strip portions 28 at the collar 29 in angularly spread relation and having outer side portions 31 extending from strip bends 32 which are disposed opposite the collar 28 at the base ends of the clamp arms.

It will now be noted that the spacing of the clamp arms 24 when they engage the core sides 25 exceeds the spacing of the bends 32 and that the clamp arms 24 are integrally connected to the bends 32 by strip portions 33, whereby the present unitary and planar curler 21 has all of its cooperative members comprising parts of the strip 22 in what is essentially a one-piece structure. For facilitating and insuring the retention of a positional curl on the core 23, the working portions of the clamp arms 24 are preferably cross-rippled, as shown, whereby they constitute gripping jaws and may be so referred to. Also, it will be understood that the outward arching of the core end 27 facilitates the insertion of the core in a formed curl or the direct forming of a curl about the core while the clamp arms 24 are spread apart. Since the single flat body strip 22 of uniform width is bent solely transversely thereof to provide the various cooperative parts of the present curler 21, it will be understood that said parts may be provided in a particularly simple and relatively inexpensive manner by applying a suitable bending die to a uniformly blank strip of suitably elastic bendable material and uniform cross-section to shape the strip to the form shown for it in Figures 1 and 3, with the degree of normal pressure of the clamp arms 24 against the opposed core sides 25 determined during the shaping of the control arms 26 in their plane.

Understanding that the described one-piece curl-holding structure of the curler 21 is shaped of the single strip 22 of a suitable resilient material, either metallic or nonmetallic, and has all its parts mutually coplanar, a suitable spreading of the arms 24 away from the sides 25 of the core 23 is arranged to be effected solely by pressing the control arms 26 toward each other between digits of a hand, as the thumb and a finger, to dispose the members in the spread relation shown for them in Figure 2 while the curler is supported by the hand for its operative application. When the clamp arms 24 have been appropriately spaced from the core sides 25, the core 23 may be inserted by the supporting hand within a preformed curl of appropriate diameter, after which a release of the portions 26 may effect a clamping of opposite sides of the mounted curl against the opposed core sides 25 to permit an appropriate treating and setting of the curl while it is mounted on the curler. A typical operative installation of a curler 21 is included in the showing of Figure 7 wherein two of said curlers are shown as applied for providing a curl across a person's head.

Figures 4 to 6 inclusive disclose a unitary curler structure 41 providing the operative combination of the previously described curler 21 in a two-piece assembly comprising a core member 43 formed of a uniform flat strip 42 and a clamp-providing member 53 formed of a single

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wire strip 52. The core member 43 has the form of a closed and generally rectangular loop having sides 45 extending integrally from an outwardly arched connecting core end 47. The other core end 48 is also outwardly arched, and is provided by terminal portions 42' of the strip 42 which about midway of the length of this core end. The present core-forming strip 42 is wider than the strip 22 of the first embodiment and has its opposed and flat sides 45 mutually parallel and wide enough to freely receive the wire 52 of the member 53 through openings 44 provided through the core sides 45 and an opening 46 jointly defined by opposed and registering notches provided in the abutted extremities of the strip 42 which provide the core structure; said abutting strip ends may be welded, or otherwise fixed, together, or may be merely held together by the resiliency of the strip material providing the formed core member 43.

The clamp member 53 is formed of a length of an appropriately resilient wire to provide clamp arms 54 extending from an intermediate loop 55 to which they are integrally connected by generally straight wire portions 56 which are crossed in mutual contacting relation. The portions 56 of the clamp member 53 both extend through the core opening 46 at their crossing point, and the different portions 56 also extend through the different openings 44 in the core sides 45 with the clamp arms 54 extending angularly therefrom opposite the different core sides in the plane of the core. The arrangement is essentially such that the clamp arms 54 are normally urged to extend along and against the core sides 45, and may be readily swung oppositely away from said sides by squeezing the loop 55 in its plane against the resilient resistance of the loop material whereby to then permit the engagement of the core in a formed curl, or the original forming of a curl about the core. Figure 7 generally illustrates an installation of a curler 41 for providing a curl in depending relation to a person's head, it being understood that the present curlers 41 are usable interchangeably with the curlers 21 of the first embodiment.

The embodiment of Figures 8 to 11 inclusive discloses a curler 61 in which a cylindrical shell 62 provides a core 63 having unitarily associated therewith a clamp member 73 formed substantially as the clamp member 53 of the embodiment of Figures 4 to 6. The present cylindrical core shell 62 has a rounded end 67 adjacent the extremities of the clamp arms 74 of the member 73 for facilitating its insertion in a formed curl, and the outer end 68 of the shell 62 is outwardly convex and is provided with a central slot 66 which is coplanar with slots 64 provided in the core side at opposite points of the shell adjacent its end 68. The slots 64 and 66 generally correspond to the openings 44 and 46 of the embodiment of Figures 4 to 6, and are arranged to receive the clamp arms 74 provided the clamp member 73 for a cooperation of the member with the core in the manner taught for the clamp member 53 of the previously described embodiment. The clamp member 73 of the present curler 61 has its clamp arms 74 connected to a control loop 75 by straight wire portions 76, and the present assembly is provided by inserting the clamp arms 74 through the end core opening 66 and separately through the different core openings 64 to provide a structure which, except for the cylindrical form of the core 63, is controlled and functions as the curlers 21 and 41 of Figures 1-3 and 4-6 respectively.

In order to provide the required air circulation through a curl being set thereon, a present core shell 62 is preferably provided with radial holes 69 through its sides. Also, by reason of its cylindrical form, the core 63 may have a curl shaped on it by crushing a hair strand about it while the clamp arms 74 are swung away from the opposed sides of the shell 62. For forming a hair strand into a curl around a core 63, the latter is initially engaged tangentially against the root end of a strand of hair to be curled, and the strand is then progressively formed about the core

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by winding and/or brushing it thereon until the curl is completed.

Means are preferably provided for holding the curled strand of hair about the core 63 upon the application of the clamp arms, and the core shell 62 is accordingly shown as providing a clip 70 for the purpose. As particularly shown, the clip 70 comprises a tapered tongue struck out of the rounded end portion 67 of the shell 62 and bent back opposite the adjacent cylindrical exterior of the shell for cooperation with the shell as a holding means for the turns of the applied curl to initially secure the formed curl thereat. When a curl has been provided and clipped to the core shell 62 in the described manner, the clamp arms 74 are freed to complete the clamping of the opposite curl sides to the core 63 to thereafter provide for the treating and setting of the curl on the core.

Figures 12 and 13 disclose a curler 81 having a cylindrical core 83 provided by a tubular shell 82 which is open at both ends, and is provided adjacent one end with axially aligned holes 84 at opposite sides thereof in a line which is diametrical of the shell cylinder. For clamping a mounted curl to the core sides, a wire bail member 85 of generally rectangular outline has an end 86 disposed through the holes 84, has rippled sides 87, and has its other end 88 bowed inwardly, the length of the bail 85 being such that a coaxial alignment of the mounted bail with the shell requires a springing of the bail end 88 over the opposed end 82' of the shell 82 for releasably securing the bail in its operative position on the curler core, it being noted that the bail sides 87 are so spaced that they are then arranged to clampedly engage a curl on the core against the core side thereat.

In the present structure, the cylindrical shell 82 has been formed by securing the lapped ends of a strip of suitably perforated sheet material together, with the outer end of the strip providing a tongue 89 directed from the shell end 82' toward the other end of the shell, the said tongue being cooperative with the opposed shell wall portion to provide a clip which is arranged to function as does the clip 73 of the previously described embodiment. It will be understood that when the bail 85 is swung away from the shell end 82', the core 83 is then particularly free for the forming of a curl directed about it and the firm retention of the formed curl on the core by engaging the curl with the clip 89 during the formation, and then operatively disposing the bail 85 with respect to the formed curl.

A development of the embodiment of Figures 12 and 13 is shown in Figures 14 and 15 in which a curler 91 has a cylindrical core 93 comprising a hollow shell 92 which is open at one end and has its other end 92' of an outwardly rounded form to facilitate the engagement of the shell within a curl. The shell 92 is provided adjacent its open end with axially aligned holes 94 at opposite sides thereof in a line which is diametrical to the cylinder of the shell, and the clamping of a curl disposed about the core 93 to and along the core sides is arranged to be effected by a suitable bail member 95. The present bail member 95 is formed of wire and has an end part 95' thereof journaled in the holes 94 and connecting rippled curl-engaging bail side portions 97 which are connected at their other end by a U-shaped bail part 96 extending as an offset in a plane perpendicular to that of bail sides 97 and arranged to span the core 93 when the bail sides 97 have been tangentially and clampedly applied against the turns of a curl on the core to a limit imposed by the engagement of the bail portion 96 against the shell side. As illustrated, a detent tongue 98 extends longitudinally of and outwardly from the shell 92 to define with the shell a seat for releasable engagement by the bail part 96 when a curl is gripped by the bail sides. The shell end portion 92' provides a struck-out part 99 which is bent back to extend opposite the shell wall for cooperation therewith as a clip which is arranged for securing a formed curl to the core at a core side point midway

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between the lines of action of the bail sides, it being understood that the present clip 99 is arranged to function as the clips 73 and 89 of the previously described curlers 61 and 81 respectively.

Considering generally the disclosed curler units, it will be noted that all have cores for receiving curls to be set, clamp arms for simultaneous operative applications at opposite sides of curls mounted on the cores, and a means under manual control providing for the simultaneous inoperative disposals of the clamp arms. Also, the materials providing the illustrated structures may be metallic and/or nonmetallic, provided only that such materials have the physical qualities needed for the various structural parts. Furthermore, as has been previously brought out, the various cores may mount preformed head-attached curls or have such curls originally shaped about them, the latter being particularly true of the embodiments of Figures 8-11, 12-13, and 14-15 which provide the clips for a preliminary retention of curls which have been wound outwardly on the curler core, or on another core, before the clamp arm jaws are operatively applied. It will be understood that the curler units disclosed in this application may, in general, be used interchangeably, and that when a curl formed of a head-attached strand of hair has been set on the core of any of them, an inoperative disposal of the clamp arms permits the ready removal of the set curl by longitudinally slipping it from about the core whereby the curl may thereafter assume its final form in its intended relation with respect to the head.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the present curler units may be readily understood by those skilled in the art to which the invention appertains. While I have described forms of my invention which I now consider to comprise preferred embodiments thereof, I desire to have it understood that the showings are primarily illustrative, and that such changes and developments may be made, when desired, as fall within the scope of the following claims.

I claim:

1. In a unitary hair curler of the type described, a portion providing an elongated core of uniform width arranged for the provision of a head-attached curl on and about it, and mutually coplanar clamp arm portions unitarily and hingedly related to the core at points adjacent one end thereof and simultaneously cooperative in their plane against and along the opposite sides of a curl engaged about the core, said core portion and clamp arms comprising integral parts of a laterally resilient single strip of material.

2. In a unitary hair curler of the type described, a portion providing an elongated core of uniform width

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arranged for the provision of a head-attached curl on and about it, and clamp arms having free terminal ends generally opposite a first core end and swingably related to the core adjacent the second end thereof and correspondingly and displaceably operative in a common plane against and along the opposite sides of a curl engaged about the core, the first core end being rounded to facilitate the forming of a curl about the core when the clamp arms are inoperatively disposed with respect to the core.

3. A hair curler including an elongated core around which the hair is adapted to be wound, an elongated member of resilient material fixedly related to the core at an end point thereof and at an intermediate point of the member between different portions thereof, said member having one said portion providing coplanar clamp arms swingably and normally operable in their plane along opposite sides of the core and transversely against hair curled on the core, and having its other said portion providing mutually spaced opposed parts disposed in the plane of the arms and arranged for a manual moving thereof toward each other for similarly swinging the arms away from the core.

4. A structure in accordance with claim 3 in which said mutually opposed spaced parts of the elongated member comprise lever arms radiating from a common fulcrum point adjacent the said end portion of the core.

5. A hair curler including an elongated core in the form of a flat open loop around which the hair is adapted to be wound, an elongated member of resilient material fixedly related to the core at an end thereof and at a fixed intermediate point of the member between different portions thereof, said member having one end portion providing coplanar clamp arms swingably and normally operable in their plane along the opposite sides of the core and transversely against hair curled on the core, and having its other end portion providing mutually spaced parts disposed in the plane of the arms and arranged for a manual moving thereof toward each other for similarly swinging the arms away from the core.

6. A structure in accordance with claim 5 whereof the core and member comprise portions of a single strip of laterally resilient material.

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