Sept. 2, 1947. A. CALDORA 2,426,760

CURLER

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FIG. 1.

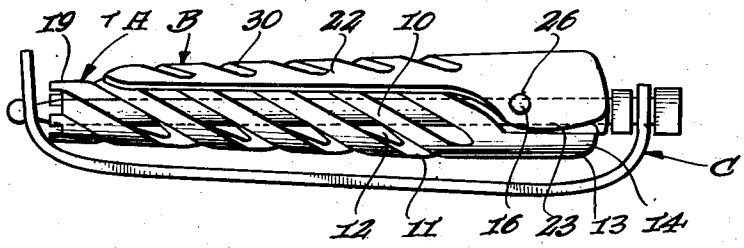


FIG. 2.

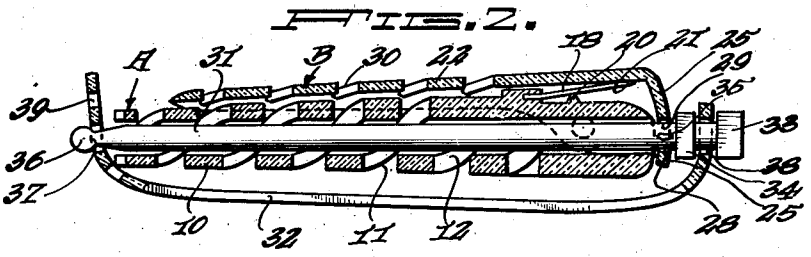


FIG. 3.

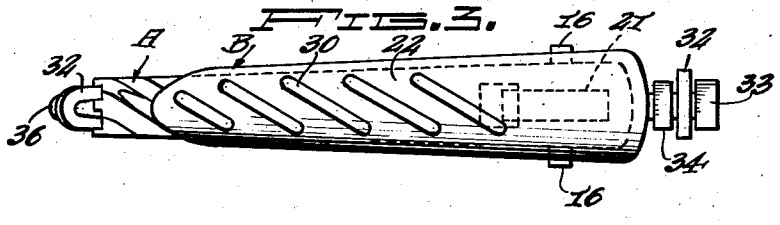
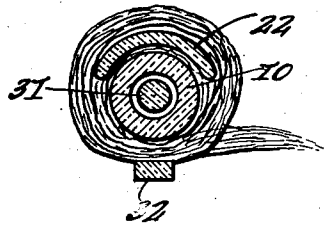


FIG. 4.



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FIG. 5.

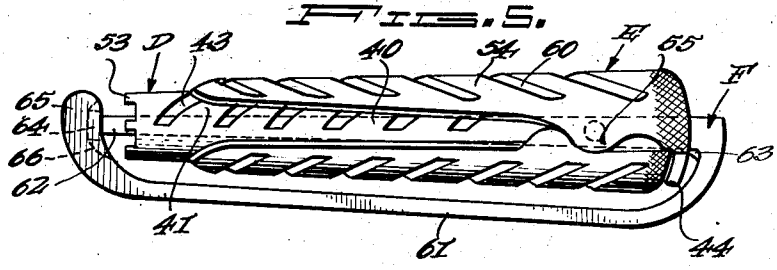


FIG. 6.

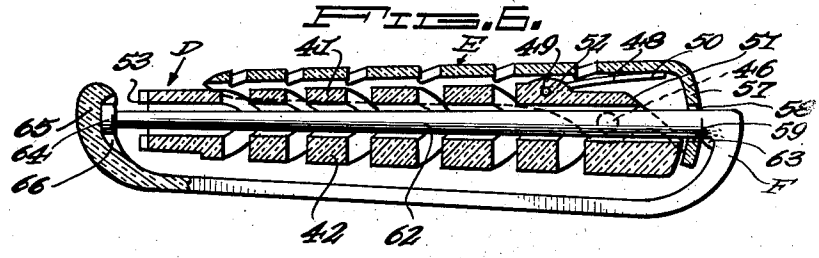
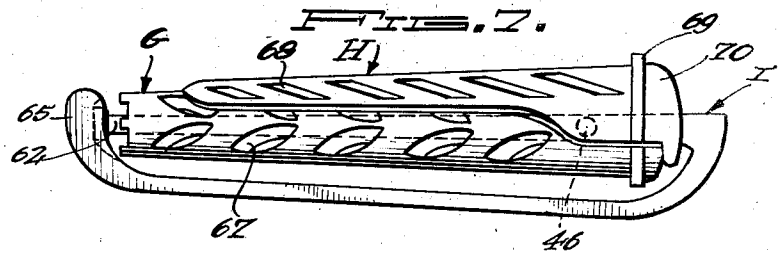


FIG. 7.



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3 Claims. (Cl. 132—41)

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The present invention relates to a curler construction, and particularly relates to improvements over the curler construction forming the subject matter of applicant's Patent 2,319,658, issued by the United States Patent Office on May 18, 1943.

Although not restricted thereto, it will particularly be described in its application to curlers made of plastic materials.

One of its objects is the provision of a curler of plastic materials which may be inexpensively manufactured or molded of relatively few parts, and which will utilize a minimum of plastic material in relation to the effective length of the curler.

Another object is the provision of a plastic curler having a relatively flexible and elastic plastic latch strap.

A further object is the provision of a plastic curler having a finger engaging spring which is completely covered by the finger.

A still further object is the provision of a plastic curler having enhanced fluid passage means which do not substantially weaken the construction thereof, and which will permit freer ingress and egress of steam, air or lotions, through the coil of hair upon the curler.

Preferred embodiments of the invention are illustrated in the drawing in which—

Figure 1 is a side elevational view of one of the embodiments of the invention;

Figure 2 is a longitudinal sectional view of the embodiment shown in Figure 1;

Figure 3 is a top view of the embodiment shown in Figure 1;

Figure 4 is a transverse sectional view of the embodiment shown in Figure 1, showing a coil of hair in place thereon;

Figure 5 is a side elevational view of a second embodiment of the invention;

Figure 6 is a longitudinal sectional view of the embodiment shown in Figure 5; and

Figure 7 is a side elevational view of a third embodiment of the invention.

Referring to Figures 1 to 4, the curler comprises a tubular portion A, a locking finger B and a latch C.

The tubular portion A is formed of an elongated, tapered, hollow piece of plastic material 10. In its outer surface are formed a plurality of parallel, spiral grooves 11. Two longitudinal series of slits or slots 12 are formed in said grooves 11, diametrically opposite one another. The larger end 13 of said tubular portion A has two recessed portions 14 situated on opposite sides of tubular portion A. Pivot pins 16 project outwardly from recesses 14, on the same axis. A leaf spring 18 is affixed to the larger end 13 of tubular portion A, peripherally midway between said pivot pins 16 and a short distance below said pins, that is, in the direction of the smaller end

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portion 19. A fulcrum 20 is formed on larger end 13 a short distance above the point where spring 18 is affixed thereto. It is the function of fulcrum 20 to elevate the free end 21 of spring 18 by engaging or supporting said spring at a distance from said free end.

Locking finger B consists of an elongated tapered, hollow piece of plastic material 22 having two lugs 23 corresponding in location and dimensions to recesses 14 and an end portion 25. Holes 26 are formed in lugs 23 to correspond in location and dimensions, to pivot pins 16. A hole 28 is formed in end portion 25. Symmetrically disposed recesses 29 are formed in the end surface of top portion 25 adjacent to and in radial relation to said hole 28. Locking finger B is mounted on tubular portion A, its lugs 23 fitting into recesses 14, the holes 26 in said lugs receiving and accommodating pivot pins 16. Locking finger B is thus pivoted on pins 16. Spring 18 engages the top end of locking finger B above pivot pins 16 and thus acts to keep locking finger B, the major part of which is below pivot pins 16, in close yielding contact with tubular portion A. Locking finger B is provided with oblique slots 30. When it is mounted on tubular portion A, oblique slots 30 do not register with slots 12 of tubular portion A. Thus air or vapor in passing from a slot 12 to a slot 30 or vice versa must pass through and affect hair disposed between longitudinally successive slots of either series. If the various slots were in register, the longitudinally intermediate hairs would not be so thoroughly affected. In particular, more uniform drying results from the offset relation of the slots.

The end portion 25 of the locking finger B extends over the adjacent end of the tubular member A and covers that end, thereby preventing the clamping of hair at that end.

Latch C comprises an elongated stem of plastic material which is slightly longer than tubular member A and a relatively flexible and elastic plastic strap 32 somewhat longer than stem 31. Stem 31 has a head 33 and an enlarged portion 34 formed a short distance from the head. Enlarged portion 34 is of substantially cubical shape its bottom portion taking the form of a plurality of teeth 35 radially disposed around stem 31 and corresponding in shape and dimensions to recesses 29. The opposite end of stem 31 comprises a knob 36 of somewhat smaller diameter than the stem itself, a reduced stem portion 37 being formed adjacent said knob. Strap 32 has a hole 38 at its upper end corresponding in diameter to stem 31. At its other end it has a longitudinally disposed plurality of holes 39 snugly corresponding in diameter to knob 36. Strap 32 is connected to stem 31 between head 33 and enlarged portion 34 by means of hole 38, said stem being inserted into said hole at said point. Stem 31 is inserted into tubular member A through

hole 28 of locking finger B. Teeth 35 of enlarged portion 34 engage recesses 29 preventing rotation of stem 31. When teeth 35 engage recesses 29, stem 31 is fully inserted into tubular member A. Since it is longer than tubular member A, the reduced stem portion 37 and knob 36 protrude beyond tubular member A. The lower end of strap 32 is then brought down around the outside of tubular portion A to meet the protruding end of stem 31. Knob 36 is inserted into and through one of the strap holes 39. The fit is rather tight and the knob 36, being of larger diameter than reduced stem portion 37, keeps the strap 32 from coming off the stem 31.

Obviously, the holes 39 may be fitted over the toothed end of the tubular member A.

Referring to Figures 5 and 6 the embodiment of the curler therein illustrated comprises a tubular portion D, a locking finger E and a latch F.

The tubular portion D is formed of an elongated, tapered, hollow piece of plastic material 40 having an eccentric bore resulting in a relatively thin upper portion 41 and a relatively thick lower portion 42. Two longitudinal series of oblique slits or slots 43 are formed in tubular portion D, one series in upper portion 41 and the other in lower portion 42. These series are diametrically opposite each other. Recesses 44 are formed at the larger end of tubular portion D on opposite sides thereof. Pivot holes 46 are formed in recessed portions 44. An elongated, substantially U shaped wire spring 48 is attached at its yoke portion 49 to thin upper portion 41 of tubular portion D a short distance below holes 46. Spring 48 is so disposed on tubular portion D that its arms or prongs 50 lie substantially parallel to tubular portion D, pointing in the direction of its larger end and substantially reaching that end, which is somewhat beveled off at point 51. Fulcrum 52 is formed immediately above the point where yoke 49 is fastened to tubular portion D. The edge of the small end of tubular portion D has teeth or serrations 53 formed in it.

Thick portion 42 has thus far been described simply as "a relatively thick lower portion." Its external shape and dimensions, however, correspond to the external shape and dimensions of locking finger E. Locking finger E consists of an elongated, tapered, hollow piece of plastic material 54, comprising two lugs 55 on the inside surface of which pivot pins 57 are formed. The latter correspond in shape, dimensions and location to holes 46.

End portion 57 is formed at the top of locking finger E. Finger E has hole 58 formed in its end portion 57. Symmetrically disposed recesses 59 are formed in the top surface of top portion 57 adjacent to and in radial relation to said hole 58. Locking finger E is mounted on tubular portion D, its lugs 55 fitting into recesses 44, its pins 57 fitting into holes 46. Locking finger E is thus enabled to pivot on pins 57 and 58. Spring 48 engages the top end of locking finger E above pivot pins 57 and 58 and thus acts to keep locking finger E, the major part of which is below pins 57 and 58, in close yielding contact with tubular portion D. Locking finger E is provided with oblique slots 60.

Latch F comprises a single piece of plastic material whose outer portion 61 is shaped like a bow and whose inner portion 62 assumes the form of a stem integral with outer bow 61 at its upper end, free from it at its lower end. At the inner point where outer bow 61 and inner stem 62 meet is formed small toothlike projection 63.

The free lower extremity of inner stem 62 is enlarged to form a knob 64. The free lower end of outer bow 61 comprises an enlarged portion 65 having a curved recess 66 formed in its inner surface. The inner stem 62 is inserted into tubular portion D through hole 58 in locking finger E. It is long enough to protrude beyond the small end of tubular portion D. When it is fully inserted, toothlike projection 63 engages recesses 59 of locking finger and prevents rotation of latch F in relation both to locking finger E, and tubular portion D. Knob 64 is made to engage curved recess 66 to lock latch F.

The embodiment of the invention shown in Figure 7 comprises a tubular portion G, a locking finger H and a latch I. The tubular portion G comprises holes or slots 67 arranged in four peripherally spaced longitudinal lines. The boundaries of the holes on the inner and outer surfaces of portion G may be described as elliptical with pointed ends, the boundary on the inner surface being smaller, the sides of the hole slanting outward perimetrally of the hole to the larger boundary on the outer surface. Finger H comprises two rows of slots 68, the individual slots being located axially intermediate the individual holes 67. The curler is provided with a two part annular band 69 the upper portion thereof being on the finger H adjacent end portion 70 and the lower portion on the tube G. In other respects the curler is similar to Figures 5 and 6. By the application of rearward pressure against the top of the upper portion of the said band, the finger H may be swung about its pivot 46 to open position.

It is apparent that the specific illustration shown has been given by way of illustration and not by way of limitation and that the structure above described is subject to a wide variation and modification without departing from the scope or intent of the invention, all of which variations and modifications are to be included within the scope of the present invention.

What is claimed is:

1. A hair curler comprising in combination with a tubular portion, a finger piece pivoted thereon, an end piece bent from the said finger piece, the said end piece having a perforation with recesses in direct communication therewith and extending radially therefrom, a latch, said latch comprising a stem, a strap carried thereby, the said stem extending through the end piece opening and tubular portion, and means on the latch member cooperating with the recesses in the end piece to prevent relative rotary movement between the said latch and finger piece.

2. A hair curler according to claim 1 wherein the rotating preventing means comprises at least a single tooth adapted to enter a recess radiating from the end piece opening.

3. A hair curler according to claim 1 wherein the finger piece is provided with a raised band portion for the purpose specified.

ARMAND CALDORA.

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The following references are of record in the file of this patent:

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