

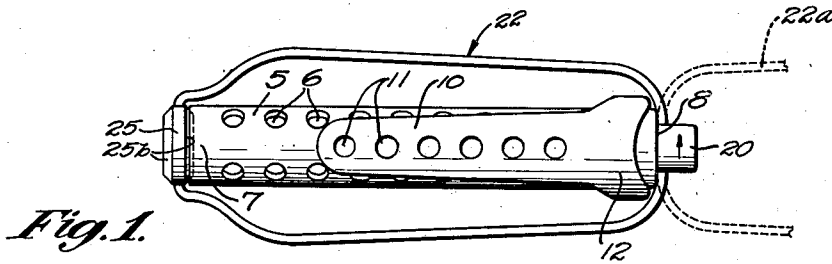
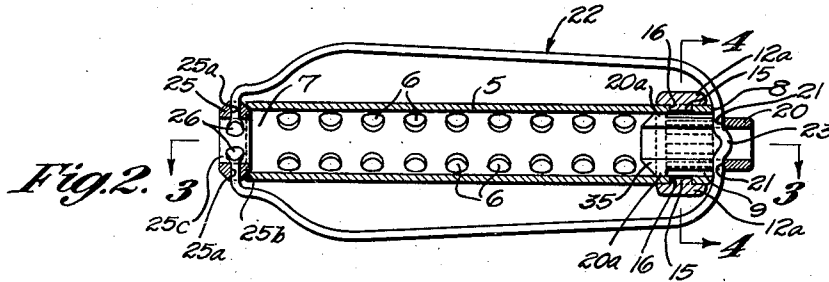
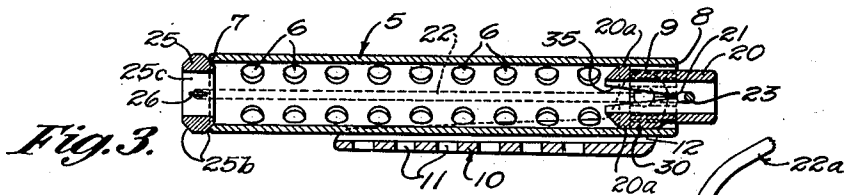
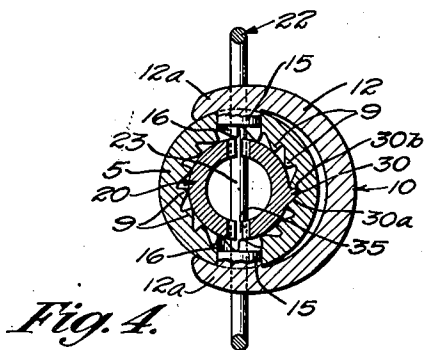
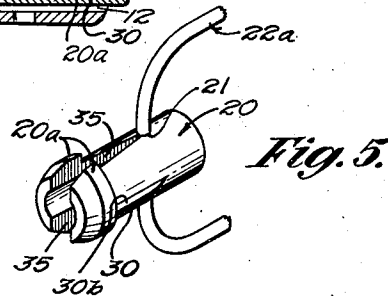
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HAIR CURLER

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HAIR CURLER

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6 Claims. (Cl. 132-41)

This invention has to do with hair curlers and, in its more particular aspects, relates to curlers on which the curl is wound and held until the curl dries or sets. In a broader aspect, however, my invention contemplates improved means in combination with any curling mandrel for efficiently winding the curl around the mandrel.

It is a shortcoming of prior art curlers that, in winding the curl on the mandrel, the operator, after making one turn of the mandrel, has to release the firm grip thereon to shift the hand in preparation for making the next subsequent rotation of the mandrel, which often results in slippage and a relatively loosely wound curl. Furthermore, in the use of conventional curlers, it requires a relatively long time and tiring physical effort to wind the curl on the mandrel.

Also in the use of curlers of the type which remain in the dampened curl while the curl is drying or setting, each user must necessarily employ a curler for each curl, thus requiring a relatively large number of curlers. Consequently, such curlers must be capable of being produced at very low cost. While such relatively cheap curlers are well known on the market, it is well known that they are made of materials and in a manner which present relatively slidable parts to catch on the hair and rough edges and projections which break the hair strands. Furthermore, such curlers, for efficient operation, require ideal ventilation to permit free circulation of air through the curler and hair wound thereon and in many respects the conventional curlers lack this desirable quality.

It is therefore among the objects of my invention to provide a hair curler in which novel and efficient means for winding the curl are embodied.

Another object is the provision of a curler having efficient ventilating means.

Another object is the provision of a curler in which there is an absence of rough edges and projections and relatively slidable parts which might catch or break the hair.

Another object is the provision of a hair curler which is simple in operation and economical of manufacture.

How I achieve these objects as well as further objects and advantages which will hereinafter appear, will be best understood from the following detailed description of a presently preferred adaptation thereof, for which purpose I shall refer to the accompanying drawing, in which:

Fig. 1 is a plan view;

Fig. 2 is a plan section partly in elevation;

Fig. 3 is a longitudinal section on line 3-3 of Fig. 2;

Fig. 4 is an enlarged cross-section on line 4-4 of Fig. 2; and

Fig. 5 is an enlarged view in perspective of the detent carrying insert.

Referring to the drawing, I show at 5 a tubular curling mandrel having a plurality of perforations 6 through its side wall for the purpose of ventilating a curl wound therearound. I find that by making the mandrel 5 of a plastic or non-metallic material I eliminate the liability of breaking the hair strands by eliminating the presence of rough surfaces and microscopic projections such as often result from use of perforated metal curlers. Mandrel 5 is open at its outer end 7 and its inner end 8. Around the inner surface of end 8, I provide a circumferential row of ratchet teeth 9.

For the purpose of clamping the initial strand of hair against the curling mandrel preparatory to and during winding, I provide a clamping jaw 10 perforated at 11 and having a yoke portion 12 at its inner end. Each of the legs 12a of the yoke carries an inwardly disposed trunnion 15, which trunnions rotatably fit into diametrically opposite holes 16 provided through the side wall of the mandrel adjacent end 8. These trunnions provide a pivotal connection of the jaw 10 to the mandrel so that the arm may be swung away from the mandrel to insert the initial hair strand and then swung back against the mandrel whereby to clamp the strand between the jaw and mandrel. Jaw 10 is also preferably of a plastic or non-metallic material for the purposes heretofore described and the legs 12a are sufficiently resilient to permit them to be flexed apart to insert the trunnions 15 into the holes 16 and to thereafter resiliently hold them in that position.

In the end 8 of the mandrel, I rotatably mount a tubular insert 20 which has diametrically opposite holes 21 through its side wall for the purpose of rotatably mounting one end of the looped curl retaining member 22, that portion of the retaining member between the side walls of the insert being deformed at 23 to prevent sliding movement thereof. The opposite free ends of the retaining member 22 pass through diametrically opposite holes 25a provided in a circular anchor ring 25 and are flattened at 26 to prevent longitudinal escape from the holes. As the retaining member emerges from the holes 25a it curves backwardly towards the opposite end of the mandrel and thence is bowed outwardly. The flattened ends 26 and the said backward

curve of the retaining member serve to restrain longitudinal movement of the retaining member in holes 25a. I preferably make the retaining member of spring wire so that it will resiliently clamp and retain a curl after it is wound around the mandrel and so that it will resiliently hold the anchor against the end of the mandrel during its curl retaining function. Both side faces of the anchor are preferably beveled at 25b so that either of the beveled portions may fit in the end of the bore of the mandrel, being resiliently held in that position by the retaining member 22 until manually disengaged. The central hole 25c through the anchor ring permits air to pass into and out of the mandrel interior.

Insert 20, in addition to serving as a mounting for the retaining loop, serves the purpose of providing means for rotating the mandrel to wind the curl therearound after the initial strand is clamped between the jaw 10 and the mandrel, the insert having a longitudinally disposed radially projecting rib or detent 30 presenting a beveled side surface 30a and a relatively straight opposite side surface 30b. The detent engages the teeth 9 to rotate the mandrel when the insert is rotated clockwise, and when the insert is rotated in the opposite direction, the detent resiliently slips back over the teeth without rotating the mandrel. During this ratchet operation the retaining member 22 is used as a handle or crank for the insert when swung into the dotted line position denoted 22a in Fig. 1. To facilitate the ratchet operation of the detent I make the insert of a material having sufficient resiliency, such as plastic, and provide diametrically opposite V-shaped slots 35 in its side walls, which slots extend inwardly to intersect the holes 21. These slots permit the opposite segments of the insert to be resiliently flexed together to allow the detent to disengage from the teeth 9 during the ratchet action. The end of the insert inside the mandrel is provided with flanges 20a which bear against the inner ends of the teeth 9 to prevent outward escape of the insert from the mandrel.

In operation, the hair to be curled is first preferably suitably dampened and the end of the strand to be curled is initially clamped between the jaw 10 and the mandrel. During this stage of the operation the retaining member 22 is swung into the dotted line position 22a of Fig. 1. Then the operator loosely grips the mandrel and jaw between two fingers to hold the initial strand in clamped position and to somewhat guide the formation of the curl as well as to hold the mandrel against backward rotative movement during operation of the ratchet mechanism, and with the other hand the operator operates the ratchet provided by the detent 30 and the teeth 9 to rotate the mandrel, thus winding the curl around the mandrel. The retaining member 22 serves as a handle for operating the ratchet. After the curl is thus firmly wound on the mandrel, the retaining member is then swung into the full line position of Fig. 1, longitudinally encircling the mandrel, and anchor 25 is anchored in the end 7 of the mandrel. The retaining member thus resiliently holds the curl against unwinding from the mandrel until the curl is dried and fully set. This drying action is facilitated by the free circulation of air through the ends of the mandrel and through the perforations. At no time may the retaining member be subjected to a sliding movement with respect to the anchor or insert, which such movement

might tend to drag a strand of hair into the mounting holes. By making the mandrel 5 and body 10 of a plastic or non-metallic material, I find that I obtain a curling device free of microscopic projections and rough or cutting surfaces which might tend to break or injure the hair. To remove the curl after it has set, the operator manually disengages the anchor 25 from the mandrel and swings the retaining member into the dotted line position 22a and then slips the mandrel from the curl.

While I have resorted to considerable detail for the purpose of making my invention understood, I wish it understood that within the broader scope of my invention, as defined by the appended claims, various modifications and adaptations may be made without departing from the spirit of the invention.

I claim:

20 1. A hair curler comprising, in combination: a mandrel adapted to be rotated to wind a strand of hair therearound, ratchet means operatively associated with the mandrel whereby to rotate the latter upon operation of the ratchet, means 25 for operating the ratchet and a resilient curl retainer pivotally mounted on the last-mentioned means for swinging movement into and out of position longitudinally encircling the mandrel.

2. A hair curler comprising, in combination: 30 a mandrel adapted to be rotated to wind a strand of hair therearound, a ratchet member functionally engaging the mandrel to rotate the latter whereby to wind the strand of hair therearound, means for operating the ratchet member and a resilient curl retainer, said retainer being 35 mounted on and constituting a crank for the ratchet operating means.

3. A hair curling device comprising a tubular curling mandrel presenting in its inner surface a circumferential row of ratchet teeth, an insert 40 rotatably mounted in the mandrel, a detent projecting radially from one side of the insert and engageable against said ratchet teeth upon rotation of the insert in one direction whereby to rotate the mandrel, said insert being longitudi- 45 nally slotted whereby to permit its opposite sides to be resiliently flexed together to disengage the detent from the teeth upon rotation of the insert in the opposite direction.

4. A hair curling device comprising a tubular curling mandrel presenting in its inner surface adjacent one end a circumferential row of ratchet teeth, a tubular insert rotatably mounted in said end of the mandrel and projecting there- 50 from to provide an operating handle, said insert being longitudinally slotted from its inner end towards its outer end whereby to permit its opposite sides to be resiliently flexed together, a rib disposed longitudinally of and projecting radially from one of the sides of the insert, said 55 rib being engageable against said teeth upon rotation of the insert in one direction and the said opposite sides of the insert being resiliently flexible together to disengage said detent from the teeth upon rotation of the insert in the opposite 60 direction.

5. A hair curling device comprising an elongated perforated tubular mandrel, a resilient curl retaining loop pivotally mounted at one end on the inner end of the mandrel and being swing- 70 able into position with its opposite sides disposed longitudinally of the mandrel whereby to retain a curl in position on the mandrel, and means for anchoring the opposite end of the loop at the 75

outer end of the mandrel, said last-mentioned means comprising a ring having an annular portion insertable coaxially in the outer end of the mandrel.

6. A hair curling device comprising an elongated curling mandrel of circular cross-section adapted to receive a curl wound therearound, a resilient curl retaining loop pivotally mounted at one end in and extending transversely through the mandrel whereby to be swung into position 10

longitudinally encircling the mandrel, means preventing transverse sliding movement of the retaining loop with respect to the mandrel and an anchor member detachably engageable against the other end of the mandrel, said loop having free ends disposed in said anchor member, said free ends being deformed to prevent their sliding movement with respect to the anchor member.

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