Sept. 15, 1964 J. E. HAYNES ETAL 3,148,685

HAIR CURLER WITH RETRACTABLE COMB TEETH

Filed March 30, 1961

FIG. 1

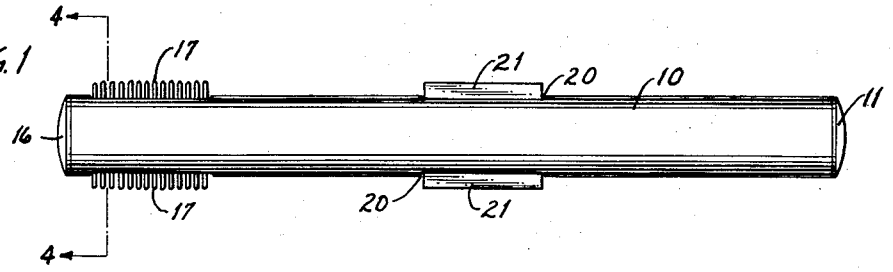


FIG. 2

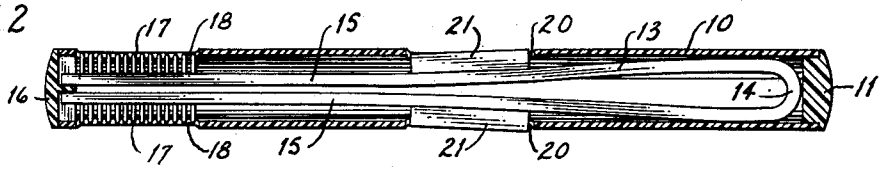


FIG. 3

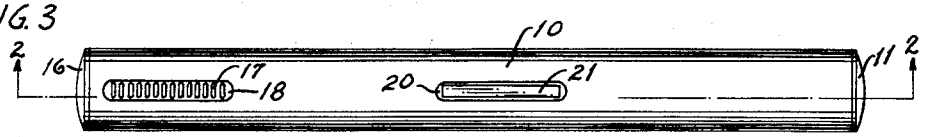


FIG. 4

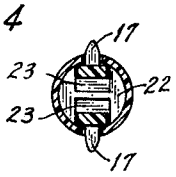
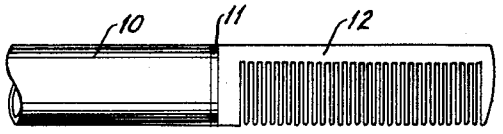


FIG. 5



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HAIR CURLER WITH RETRACTABLE COMB TEETH

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This invention relates to hair curlers, and is particularly concerned with devices characterized by the provision of a generally cylindrical mandrel over which hair locks or strands may be wound to induce a generally spiral set curl in the hair.

While numerous devices have been provided for the retention of a hair lock in curl formation over an mandrel, the securement of the lock on the mandrel has presented problems not heretofore solved to complete satisfaction. Where external securing means are incorporated with the mandrel, problems have arisen not only as to the application and removal of the securing means, but as to the physical construction of the devices, which frequently involved complicated mechanical constructions.

Simple comb devices, by which the teeth of the comb retain the hair in curl position about the body of the comb, have long since been frequently used. However, in such devices considerable difficulty is experienced in removing the curl from the teeth of the comb. In such removal, the curls frequently are disrupted and substantial manipulation is required to withdraw the comb without destroying the set of the curl formed.

In the present invention, means are provided by which a mandrel is formed to receive the lock in curled formation thereover and comb teeth are provided to retain the lock in curled formation. However, as distinct from conventional combs, the teeth of the present comb are retractable within the mandrel by a simple withdrawal movement to release the curl and permit the mandrel to be readily withdrawn from the convolutions of the curl, without any distortion of the curl in such removal.

It will thus be seen that it is among the objects of the present invention to provide a novel and improved hair curling device. It is a further object of the present invention to provide a hair curler including teeth which may engage the hair lock to secure the same in coiled formation about the mandrel during a setting period while providing means for withdrawing the comb teeth from engagement with the curl to permit the mandrel to be readily removed from the convolutions of the curl, without distortion of the set thereof. More specifically, it is an object of the present invention to provide a curling mandrel for hair, including retractable comb teeth which may extend from the mandrel to engage the hair strand or lock, securing it in curled formation over the mandrel, and which may be withdrawn within the mandrel to permit the ready removal thereof without distortion of the set applied to the curl during its setting period on the mandrel. Numerous other objects, features and advantages of the present invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a side elevation of one preferred form of the present invention,

FIG. 2 is a longitudinal sectional view of that form of the invention shown in FIGURES 1 and 3, taken on lines 2—2 of FIGURE 3,

FIG. 3 is an elevation of the invention taken at right angles from that depicted in FIGURE 1,

FIG. 4 is a sectional view taken on lines 4—4 of FIGURE 1, and

FIG. 5 is a fragmentary view of a modified form of one end of the mandrel of the present invention, showing a conventional comb attached thereto.

In the drawings, the numeral 10 refers to the hollow cylindrical mandrel over the left hand outer end of which, as shown in the drawing, the hair lock or strand is to be wound in coil forming manner, while the curl set takes place. The opposite right hand end of the tubular mandrel 10 may be closed by a simple closure plug 11, as shown in FIGURES 1, 2 and 3, or if desired, the closure plug 11 may be formed with an extended conventional comb 12, as illustrated in FIGURE 5. It will, of course, be understood that the comb 12 may be of any desired form, such for instance, as a "rat-tail" type of comb, to facilitate the arranging of the hair after the mandrel is removed, or prior to the application of the strand to the mandrel.

Within the hollow mandrel tube 10, there is mounted a return bent resilient comb tooth carrier 13. In that form of the invention here shown, the carrier 13 extends the full length of the tube, having a return bend at 14, here shown as adjacent plug 11. Forwardly from the return bent 14, the legs 15 of the carrier extend the full length of the tube 10, terminating at the opposite, here shown as left hand, end of the tube adjacent a closure guide element 16. At the outer left hand end of the legs 15 of the carrier, comb teeth 17 are provided extending laterally outward from the ends of the carrier legs to protrude, as in FIGURE 1, from side aperture 18 formed at the left hand end of the tube. Since the carrier is flexible, the legs 15 may move laterally with respect to each other to protrude the teeth 17 through the aperture 18 to a position shown in FIGURE 1, whereby they may engage the strand or lock of hair circled around the end of the mandrel to secure the same in position while the hair sets.

Midway intermediate the ends of the tube 10, apertures 20 are provided in line with the apertures 18 from which the comb teeth normally protrude when engaging the hair strand. In association with the apertures 20, the legs 15 of the comb carrier are provided with manually depressable projections 21, normally extending outwardly through the apertures 20 when the teeth 17 are protruded as in FIGURE 1.

After a strand has been curled about the end of the mandrel to induce curl formation by the engagement of the teeth 17 therewith, as the mandrel is rotated to produce the spiral securement of the strand about the mandrel and retaining the same in place during the setting period, the projections 21 may be depressed to the position illustrated in FIGURE 2, which depression carries with it the legs 15, thus withdrawing the comb teeth 17 within the confines of the mandrel surface. For guiding the lateral movements of the comb teeth carrying ends of the legs 15 of the member 13, the outer closure 16 at the left hand end, as shown in the present drawings, is provided with an inwardly projection boss 22, recessed on opposite sides as at 23, shown in FIGURE 4, to provide guide channels for the lateral inward and outward movement of the comb carrying ends of the legs 15.

With respect to construction and material of the present device, it will be understood that both the tube and the comb carrying element lend themselves admirably to manufacture from plastic material or the like. The device is simple in construction, readily suited to meet the demands of economic manufacture. The device is easy to apply and remove and highly efficient in operation. Obviously, in the practice of the invention changes of structure and design may be incorporated and the full use of equivalents resorted to without departure from the spirit or scope of the invention as outlined in the appended claim.

What we claim is:

A hair curler including a generally cylindrical hollow body defining two opposed pairs of wall apertures, a generally U-shaped resilient member within said body, combs on one end of said member extending outwardly therefrom, the resiliency of said member normally urging said combs outwardly through one pair of said opposed apertures, manually depressible elements on said member extensible through the other pair of apertures to overcome the resiliency of said member to draw the end of said member inwardly to retract said combs, and a cap on the end of said body adjacent the comb teeth having means thereon engageable between the ends of said member for guiding the movable comb ends of said member against displacement from registration with its apertures.

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