

[54] **HAIR CURLER**
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[51] **Int. Cl.** **A45d 2/00**
[58] **Field of Search** 132/40, 42, 39, 33, 41

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[57] **ABSTRACT**
The present invention concerns a hair curler comprising a retaining bar articulated on to one end of the curler body, the articulation consisting of a ring that revolves freely around the end of the curler body and hinge connecting said ring with the retaining bar, the axis of the hinge being perpendicular to the axis of the curler.

3 Claims, 2 Drawing Figures

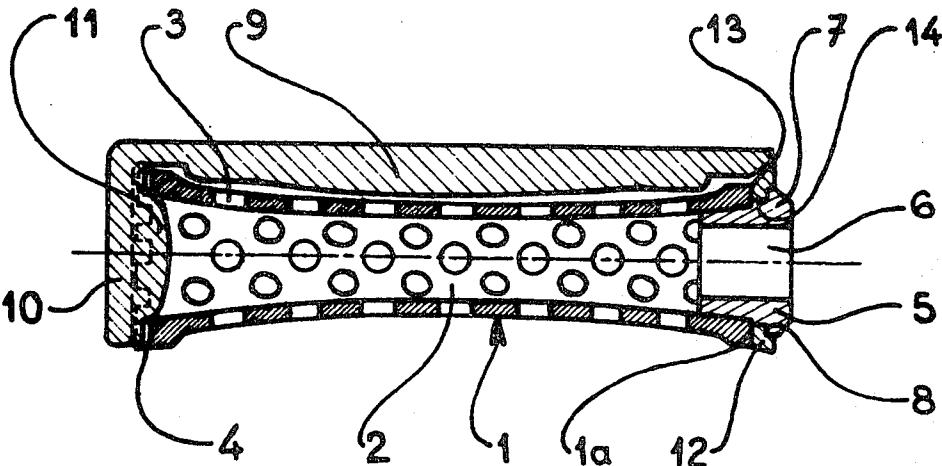


FIG-1

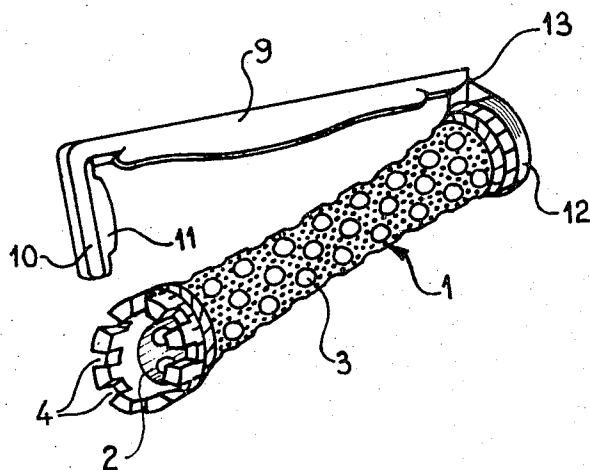
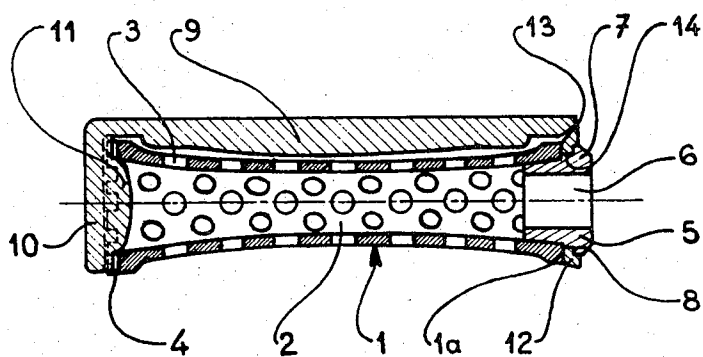


FIG-2



HAIR CURLER

Certain hair-curling methods used in hairdressing or hair-treating involve winding the hair around curlers consisting of cylindrical bodies, these cylindrical bodies usually having a lateral surface defined by a circular directrix and a straight or curved generatrix, depending on the case.

In the known types of curlers, the cylindrical body is usually a hollow body enabling the ventilation of the hair by the inner channel of the hollow body, orifices often being provided in the wall of the cylindrical body to connect the central channel of the hollow body with the ambient space surrounding the wall of the curler.

It was clear that the hair had to be kept wound around the curler during the hair-treatment process; to this end there has already been proposed, in U.S. Pat. No. 2,682,272, a curler associated with a retaining strip designed to hold the hair on the curler, this retaining strip being articulated onto one end of the cylindrical curler body. In the invention previously proposed, the articulation consisted of a swivel joint whose male part was integrated with the cylindrical curler body in the latter's axis, placed at one end, and the female part of which is integrated with the retaining strip associated with the cylindrical curler body. At its other end, the retaining strip consists of a spring catch that, when the retaining strip is shut in the direction of the cylindrical curler body, allows its position to be set by integrating its free end with the cylindrical curler body; this integration makes it possible to block the hair that is wound around the cylindrical curler body between the cylinder and the retaining strip, which is thus held in place by its two ends on the said cylindrical body.

One of the simplest methods for getting the spring catch of the retaining strip to catch onto the cylindrical curler body is to place a perpendicular part at one end of this strip and to introduce this perpendicular part into the slots provided at the end of the cylindrical curler body, the end that does not accommodate the swivel joint of the retaining strip.

With respect to curlers of the type just described above, as defined in U.S. Pat. No. 2,682,272, it has been found that it is usually rather hard to get the perpendicular part to catch in the slots provided for this purpose at the end of the cylindrical curler body, because of the fact that there is always a certain amount of play in the swivel joint, so that the movement of this strip, contrary to what might be expected, does not occur on a diametral plane of the cylindrical curler body but can occur with a considerable angular deflection with respect to the diametral plane along which the median line of the strip falls at the inception of the shutting action. The result is that the user has to grope in order to make the retaining strip catch, failing which the retaining strip's perpendicular part does not fall into the slots, so that the retaining strip is not securely fastened and the hair wound around the curler is apt to come unwound unintentionally before the end of the hairdressing process.

It is the purpose of the present invention to remedy the above drawback by proposing a method of articulation of a retaining strip associated with a curler of the type described above, a method of articulation that makes it easy to get the perpendicular part to fall readily into the slots provided for this purpose at the end of the cylindrical curler body.

The purpose of the present invention is the new manufactured product constituted by a curler with a retaining strip making it possible to wind the hair around a cylindrical curler body and to block this hair by means of a retaining strip articulated onto one end of the cylindrical curler body, said retaining strip being fitted, at the end opposite from the joint, with a perpendicular part making for ease of falling into the slots provided, at the corresponding end of the cylindrical curler body, characterized by the fact that the retaining strip is integrated at its jointed end with a ring that revolves freely around a cylindrical surface provided for this purpose at the end of the curler body, where the articulation occurs, the axis of the said cylindrical surface being the axis of the curler, and the connection between the said ring and the retaining strip being provided by a film hinge whose axis is perpendicular to that of the curler.

In the optimal form of construction, the axis of the film hinge is located in the plane of the ring, which revolves freely around the cylindrical surface provided at the end of the cylindrical curler body; the cylindrical curler body is a hollow body containing an inner channel opening out at either end of the curler, the wall having orifices evenly distributed over the entire surface of the cylindrical body; the end of the cylindrical curler body, on which the catch fastening of the connecting rod of the retaining strip takes place, is provided with radial slots or notches evenly distributed over its periphery; the cylindrical curler body is integrated, at the end containing the retaining strip articulation, with an end cap grooved along its axis, said cap entering into the cylindrical curler body and containing the cylindrical surface around which revolves the ring integrated with the retaining strip, said ring being gripped between the end surface of the hollow cylindrical curler body and a toothed flange provided on the cap; the cap is integrated with the cylindrical curler body by any suitable means, for example by gluing or by ultrasound soldering.

It will be noted that the curler according to the invention includes a cardan joint for the articulation of its retaining strip onto the cylindrical curler body: the rotation of the ring around its cylindrical surface makes it possible to select the diametral plane on which the retaining strip will be articulated; the film hinge then allows the retaining strip to move on the selected diametral plane. It will be noted that, because of the width of the film hinge used, when the user presses on the retaining strip, it is impossible for him to trigger any movement of the latter other than on the selected diametral plane. In consequence, the perpendicular part of the retaining strip will at all times fall into the radial slots provided for this purpose at the end of the cylindrical curler body, never falling wide of the slots provided, as has happened with earlier models.

In order to provide a better understanding of the purpose of the invention, we shall now describe the model represented in the appended drawing, as a purely illustrative and nonlimitative example.

In this drawing, FIG. 1 represents in perspective a curler in accordance with the invention, and FIG. 2 represents, in an axial cross section passing through the median line of the retaining strip, the curler shown in FIG. 1.

Looking at the drawing, we see that the number 1 as a whole designates the cylindrical curler body accord-

ing to the invention. Body 1 is a revolving cylinder whose generatrix has a curved shape such that the diameter of the cylindrical body is larger at either end of the cylindrical body than in its central part. Cylindrical body 2 is made of a granular-surfaced plastic material, and it defines an inner recess 2 opening from the two sides of the cylindrical body 1. The side wall contains orifices 3 evenly distributed over the entire periphery of the cylindrical curler body. On one of its ends the body of the curler 1 has slots or notches 4 provided radially in the wall of the body 1 and evenly distributed over the periphery of this end. At the opposite end of the body 1, in the recess 2, a cap 5 has been fitted, the central part of which is grooved to define a channel 6 allowing the circulation of air along the full length of the curler in accordance with the axis of the recess 2. The cap 5 accommodates at its outer end — the end not entering into the interior of the body 1 — a flange 7; the accommodation of the cap 6 in the body 1 is limited by a graduated bank 8 provided on the cap 5.

A retaining strip 9 cooperates with the curler body 1; it is jointed at one end onto the cap 5 that forms one piece with the body 1, and can fasten into its other end on the body 1 by means of a perpendicular part 10 bearing a fastening tab 11, said fastening tab fitting into the slots or notches 4 and becoming blocked between two diametrically opposite slots 4 and projecting into recess 2. The length of the retaining strip 9 is virtually the same as that of the curler body 1.

The jointing of strip 9 onto the curler body is done by means of a ring 12 integrated with the curler body via a film hinge 13. The ring is gripped between, on the one hand, the end surface 1-A of the cylindrical body 1, on the side of this body on which the cap 5 is accommodated, and, on the other hand, the flange 7 of the cap 5. The ring 12 revolves freely around the cap 5 by turning around a cylindrical surface 14 located on cap 5, between the graduated bank 8 and flange 7. The axis of the surface 14 is the same as that of the cap 5 and of the cylindrical curler body 1; the axis of the film hinge 13 is perpendicular to the axis of the surface 14 and is on the median plane of the ring 12.

In working with such a curler, the user rolls the hair around the curler body 1, the strip 9 being in its raised position more or less perpendicular to the axis of the curler body. The existence of the strip 9 in no way interferes with the winding of the hair around the curler body 1, because of the fact that the ring 12 revolves freely around the cylindrical surface 14, thereby allowing the curler to revolve around its axis without causing the strip 9 to move in any way. When the hair is fully wound, the strip 9 is lowered by being made to pivot

around the axis of the film hinge 13. It will be noted that this movement necessarily occurs on the diametral plane of the curler in which the strip 9 is located at the triggering of the lowering movement. When the strip has been lowered, the fastening tab 11 drops into a slot or notch 4 and, through elastic deformation, assumes the position represented in FIG. 1: the catch-fastening action is then performed and the retaining strip 9 blocks the hair wound around the curler body 1.

It should be noted that, in the curler according to the invention, the user necessarily lowers the strip 9 along a diametral plane of the curler, so that he necessarily achieves the catch-fastening of the tab 11 in the recess 2; by contrast, in earlier curler models, in which the articulation of the retaining strip was done via a swivel joint, there was always a certain amount of play, so that the user was liable to bring the fastening tab 11 wide of the grooved end of the curler body 1, thereby running the risk of failing to suitably secure the retaining strip. The outstanding advantage of the curler according to the invention is due essentially to the use of a "cardan"-type joint, it being understood that the film hinge 13 is sufficiently wide to prevent bar 9 from undergoing, as a result of elastic deformation, a faltering movement on either side of the diametral plane on which its movement occurs.

It is understood that the method of construction described above is in no way limitative and is open to whatever modification may be required, without this entailing a departure from the scope of the invention.

What is claimed is:

1. In a hair curler comprising a tubular body having a main tubular portion, transverse slots at one end, thereof, and a retaining cap on the other end thereof, together with a retaining bar having at one end a transverse part adapted to fit into said slots, the improvement which comprises a ring mounted to rotate freely about a cylindrical surface formed on said cap but permanently retained thereon, said ring being gripped between the end of said tubular portion and a flange on said cap, and flat hinge means which turns about an axis perpendicular to the longitudinal axis of said tube and connects said ring to the other end of said retaining bar.

2. A hair curler as claimed in claim 1 in which said cap is adhesively secured to said tubular portion.

3. A hair curler as claimed in claim 1 in which said cap is secured to said tubular portion by ultra-sonic welding.

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