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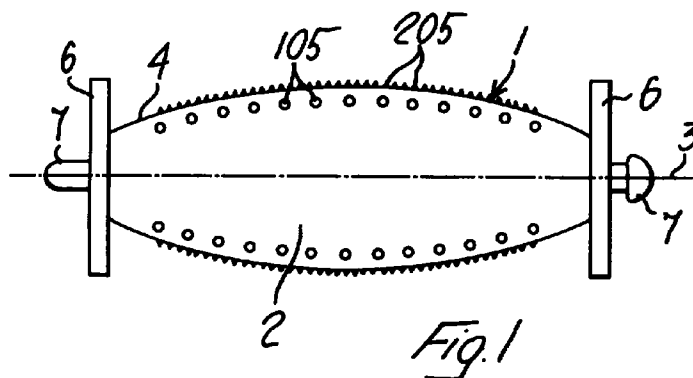
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(54) "Hair curler"

(57) The hair curler (101, 401, 501, 701, 801) for the curling treatment of a hair lock (8, 608) comprises an axial core (202, 402, 502, 702, 802) having a longitudinal axis (3) and a lateral surface onto which the hair lock (8, 608) is wound. The lateral surface is a closed curved

surface generated by a generator which is a line presenting at least one curved portion (4, 404, 504, 704, 804), revolving about the longitudinal axis (3) of the axial core.



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Description

The present invention relates to a hair curler for the curling of locks of hair, as required in permanent set or hair wave treatment.

A conventional hair curler usually comprises an axial core having a longitudinal axis and a lateral surface onto which the hair lock is wound, said axial core being in the form of a right cylinder. The hair lock, wound on and treated by means of said conventional hair curler, presents curls of hair having all substantially the same diameter.

The hair curler according to the present invention is characterised by the fact that the lateral surface onto which the hair lock is wound for treatment is a closed curved surface generated by a generator which is a line presenting at least one curved portion, revolving about the longitudinal axis of the said axial core. In this manner, the treated hair locks obtained by using the hair curler in accordance with the invention will present curls having different diameters, which are progressively increasing and/or decreasing, and therefore will present a more pleasant and in any case original appearance.

The features and advantages of the hair curler in accordance with the present invention will appear evident from the following detailed description of some preferred embodiments, made with reference to the attached drawing figures, in which:

Figure 1 is a side elevation view of a first embodiment of the hair curler according to the invention;
Figure 2 is a perspective view of a hair lock obtained by utilising the hair curler of Figure 1;
Figure 3 is a perspective view of the hair curler of Figure 1, opened into its two component halves and showing its constructional details;
Figure 4 is a side elevation of a second embodiment of the hair curler according to the invention;
Figure 5 is a side elevation of a third embodiment of the hair curler according to the invention;
Figure 6 is a perspective view of a hair lock obtained by utilising the hair curler of Figure 5;
Figure 7 is a side elevation of a further embodiment of the hair curler according to the invention, and
Figure 8 is a perspective view of a hair curler according to the invention, showing some modifications relating to the end discs of the axial core.

In Figure 1, reference numeral 101 designates generically a hair curler according to a first embodiment of the invention. The hair curler 101 comprises an axial core 102 having a longitudinal axis 3. The lateral surface of the said axial core 102 is a closed curved surface generated by a generator which is a curved line 4 revolving about the said longitudinal axis 3 of the axial core 102. The said curved line 4 can be any curved line but generally is a regular curved line which can be considered as a portion of a circle or of an ellipse. As known

in the art, the axial core is in the form of a hollow core and presents, regularly distributed on its curved surface, a plurality of through bores 105 for permitting the aeration of the hair lock which is wound onto said core and also a plurality of small indentations 205 or other projecting elements to increase the frictional contact with the said lock. As customary, the axial core 102 is provided at its ends with discs 6 which define the surface onto which the hair lock can be wound and primarily serve to avoid that the said lock can axially slip off the core 102. On the outer surface of the said discs 6, usually at the centre thereof, in alignment with the axis 3, there are provided pin-like elements 7 which serve for anchoring rubber bands or other suitable means for securing in place the hair lock being treated.

With reference to Figure 2, there is shown a hair lock 9 which can be obtained by using in treatment the hair curler above described with reference to Figure 1. From the figure it can be appreciate that the said hair lock 8 after its treatment presents a helical pattern with increasing and decreasing diameters, corresponding to the diameters of the curved surface of the axial core 102 onto which the hair lock has been wound. More specifically the treated hair lock presents an initial section or curt 9 of minimum diameter, said diameter progressively increasing up to a central section or curt 10 of maximum diameter which progressively decreases to a final section or curt 11 presenting approximately again the smallest diameter. With particular reference to Figure 3, there is shown a possible mode of realisation of the hair curler illustrated in Figure 1. The hair curler consists of practically two identical halves or shells 202, 302 made of any suitable plastics, terminating with semi-discs 106, 206. The said halves 202, 302 differ only as for what regards the means for connecting them together, such as pegs 12 intended to be fitted into corresponding bores 13 and longitudinal ribs 14 on one shell 202, also to be tightly fitted into correspondingly recessed step-like portions 15 provided on the other shell 302. Preferably the two halves or shells 202, 302 are also glued or anyhow sealed together. Suitable stiffening partitions 16 and 17 are provided to reinforce the two shells.

With particular reference to Figure 4, there is shown a hair curler 401 which presents the same features as the one illustrated in connection with Figure 1, the only difference residing in the fact that its core 402 is axially shorter and its curved outer surface presents a more marked curvature 404.

The hair curler 501 illustrated in Figure 5 is practically a combination, on the same longitudinal axis 3, of two axial cores 502 (generated by a composite generator line 504) which in the present case are identical to the axial core 402 of the hair curler according to Figure 4, but could be different in length and size, even between each other. The treated hair lock 608 obtained by using this hair curler will approximately have the appearance illustrated in Figure 6, i.e. it will be doubled with respect to the one illustrated previously with refer-

ence to Figure 2.

Still with reference to Figure 5, it must be noted that the barrel-like bulges, axially aligned, may be more than two, and consequently the final aesthetic appearance of the treated hair lock may present a number of sinuous bulges which may be more than two.

In Figure 7 there is shown a further embodiment, in which the closed curved surface of the axial core 702 of the hair curler 701 is generated by a line 704 whose curved portion is concave: in this case, the treated hair lock will present a configuration which starting from a greater diameter, and passing through a minimum diameter, will again return to a greater diameter.

With reference to Figure 8, there is shown a hair curler 801 which is identical to the hair curler 101 of Figure 1, the only difference residing in the fact that the containment discs 6, provided at the ends of the axial core 802, are provided with slots 807 which are adapted to firmly grasp the leading free portion, and/or even the trailing end portion of the hair lock being treated.

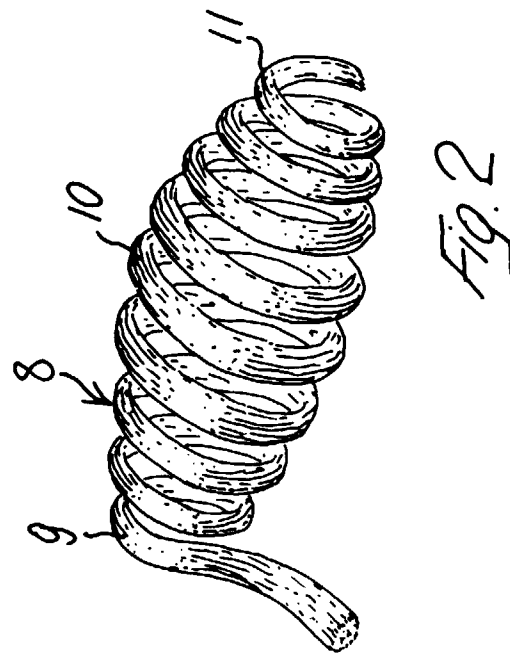
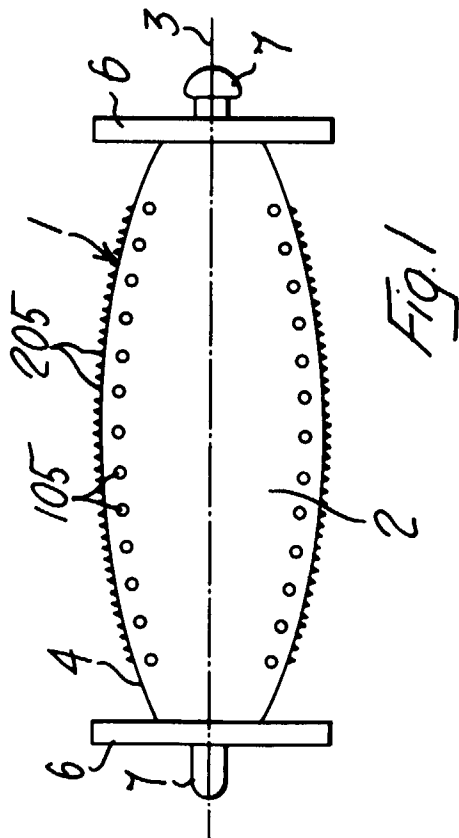
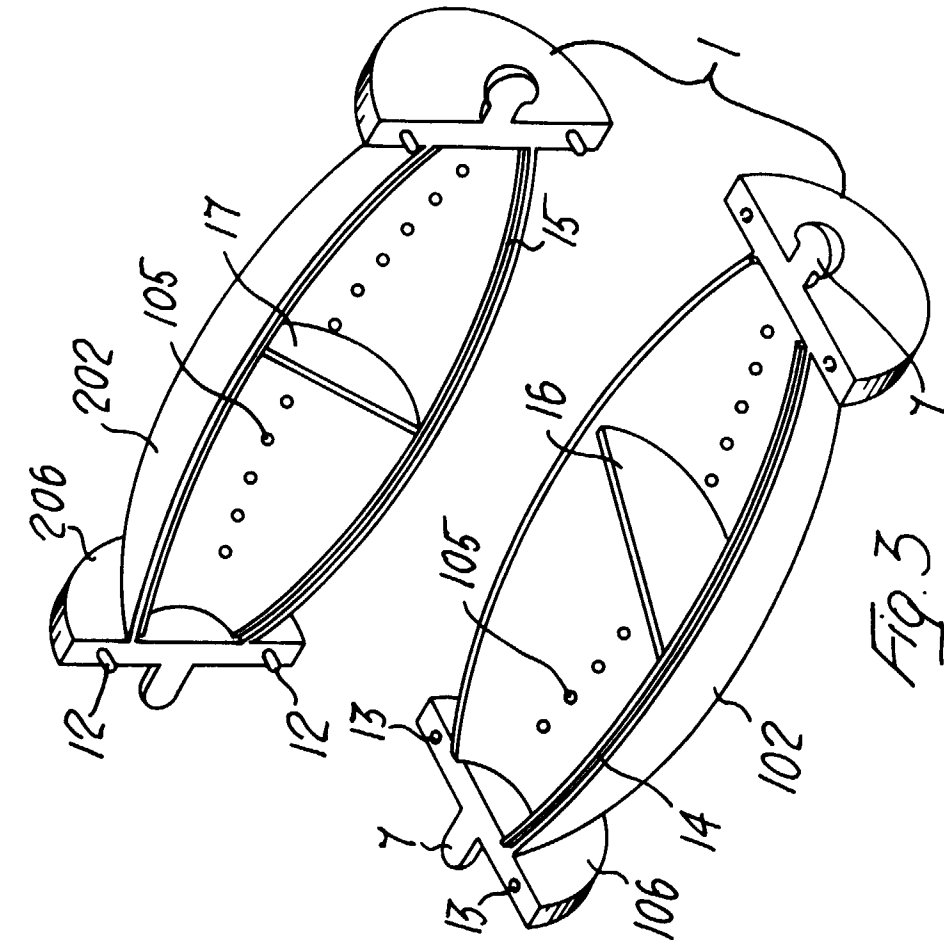
It must be noted that the provision of such slots is well known in the art, and that same has been here illustrated just to show one possibility of provision, on the novel hair curler according to the invention, of conventional and well known means for the securing the hair lock in place onto the hair curler. Similarly, the hair curler according to the invention may be provided with conventional and well known means for securing one hair curler to another one, as it is often required for the treatment of large surfaces of the hair of the user.

Claims

1. A hair curler(101, 401, 501, 701, 801) for the curling treatment of a hair lock (8, 608) comprising an axial core (202, 402, 502, 702, 802) having a longitudinal axis (3) and a lateral surface onto which the hair lock is wound, characterised by the fact that the said lateral surface is a closed curved surface generated by a generator which is a line presenting at least one curved portion (4, 404, 504, 704, 804), revolving about the longitudinal axis (3) of the axial core.
2. A hair curler according to claim 1, in which the curved portion (4, 404, 504, 804) is convex.
3. A hair curler according to claim 1 in which the curved portion (704) is concave.
4. A hair curler according to claim 1, in which the curved portion is a portion of a circle.
5. A hair curler according to claim 1, in which the curved portion is a portion of an ellipse.
6. A hair curler according to claim 1, in which the

curved portion is single, so as to define a single barrel-like axial core.

7. A hair curler according to claim 1, in which the curved portion is double, so as to define an axial core composed of two barrel-like bulges, axially aligned.
8. A hair curler according to claim 1, in which the curved portion has a sinous form.
9. A hair curler according to claim 1, in which containment elements (6, 806) are provided at the ends of the axial core, in order to avoid slipping off of the hair lock wound on the said axial core.
10. A hair curler according to claim 9, in which the containment elements are in the form of discs (6, 806).
11. A hair curler according to claim 9, in which the containment elements are provided with slots or recesses (807) for anchoring the hair lock.
12. A hair curler according to claim 9, in which the containment elements are provided with external pin like elements (7) aligned with the axis of the axial core, for anchoring suitable means for securing in place the hair lock being treated.



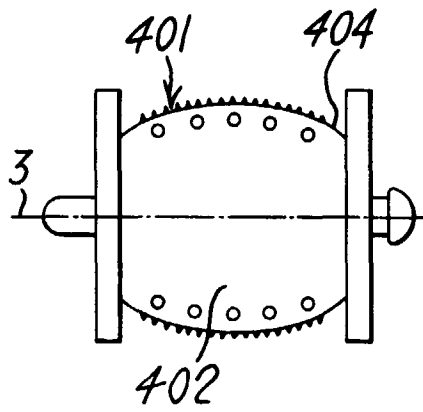


Fig. 4

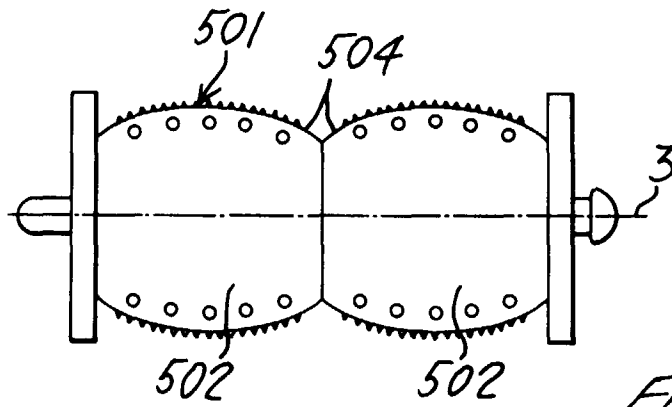


Fig. 5

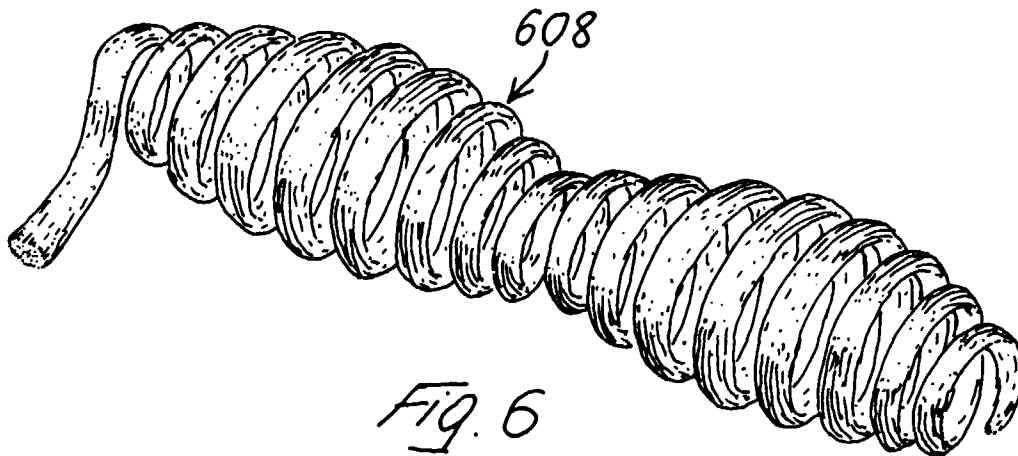


Fig. 6

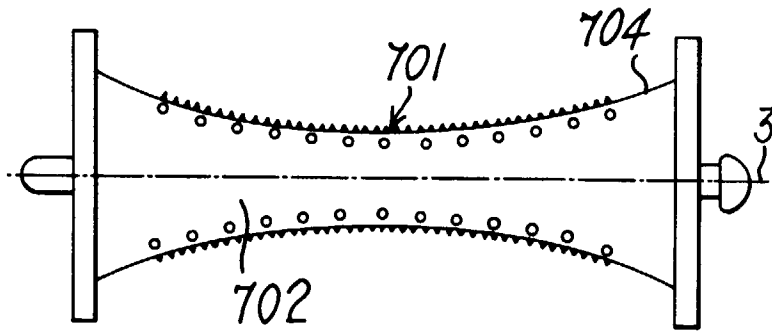


Fig. 7

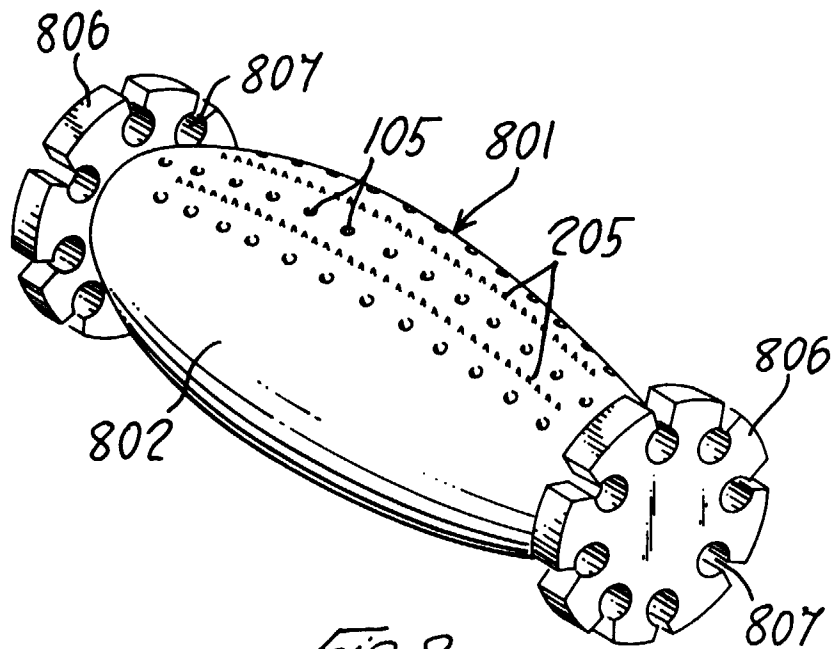


Fig. 8



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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	DE 858 009 C (SCHWARTZKOPF) * figures 2,3 *	1-3,6	A45D2/24
X	FR 403 479 A (ALMER) * figures 1-3,5,6 *	1-3,6	
X	US 2 732 845 A (WINKLER) 31 January 1956 * figures 1-3 *	1,3,6, 9-12	
X	US 2 825 344 A (LENOIS) 4 March 1958 * figures 1,2,4 *	1,3,6,9, 10,12	
X	FR 2 450 081 A (SHS STYLING-HAIR-SYSTEMS) 26 September 1980 * page 4, line 30 - page 5, line 10; figure 2 *	1,3,6,9, 12	
X	US 5 515 874 A (DENEBEIM) 14 May 1996 * figure 5 *	1,4,6	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
X	US 2 411 336 A (REITER) 19 November 1946 * figure 1 *	1,7-9	A45D
A	US 2 796 872 A (MUSSY) 25 June 1957 * the whole document *	1,8,9	
A	US 2 652 840 A (ISAACS) 22 September 1953 * figure 1 *	1,9-12	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 October 1998	Examiner Sigwalt, C
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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