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(54) Hair curler

(57) This invention relates to a hair-curler comprising an inner tubular support member 60, 64 or a helical spring and an outer coating 24 formed of a fabric carrying a plurality of thread-like elements extending therefrom for hooking and retaining the hair. In order to have optimal use conditions in all positions on the user head and, if desired, a hair-curler which may be heated, the outer coating is in the form of a sheath which is elastically deformable in all directions; furthermore the inner support member is formed of a body such that the body-coating assembly will exhibit properties of at least local flexibility and elastic deformability in order to permit the best adaptability to the user head, eg due to members 60, 64 being joined by spring rings 48.

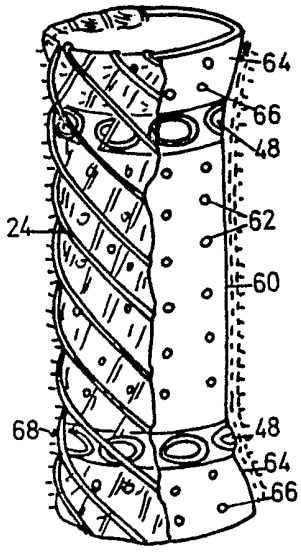

Fig.9

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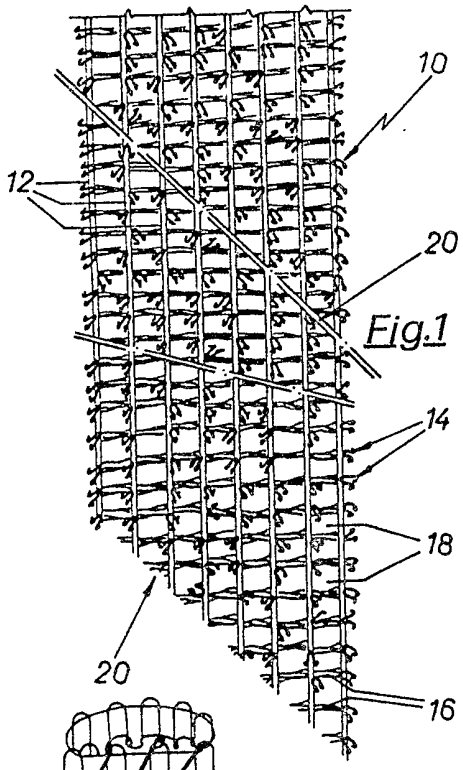


Fig.1

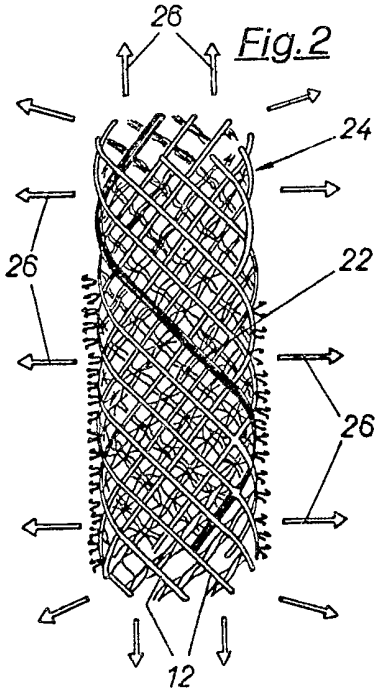
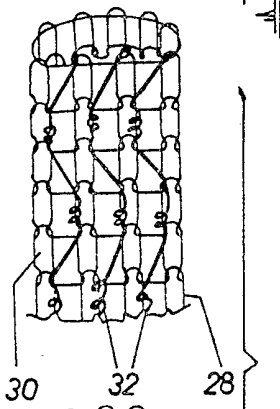


Fig.2



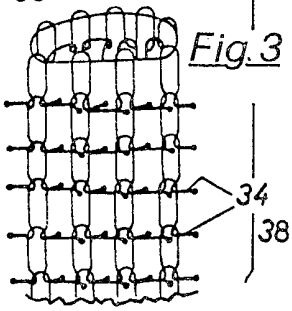


Fig.3

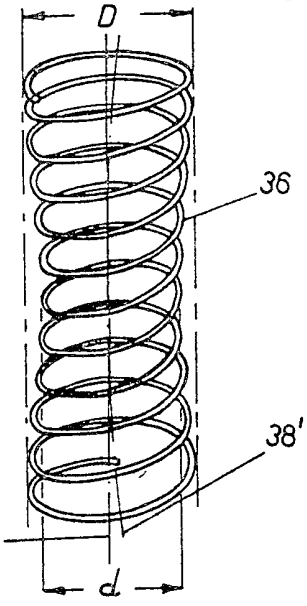


Fig.4

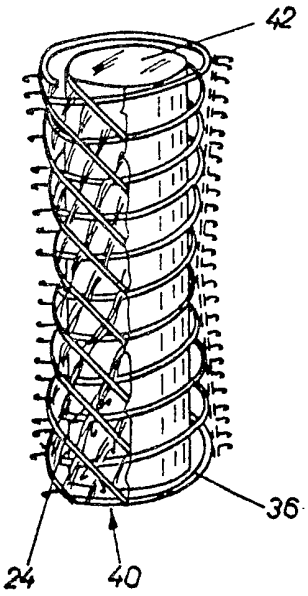


Fig.5

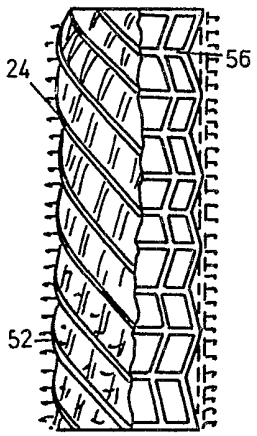


Fig. 6

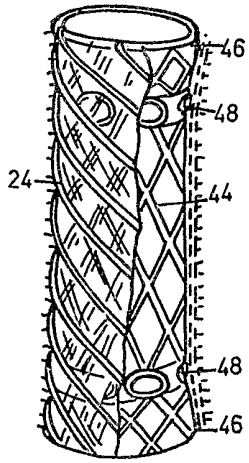


Fig. 7

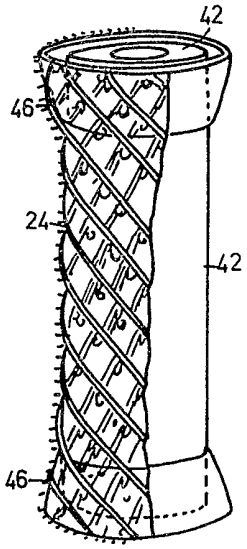


Fig. 8

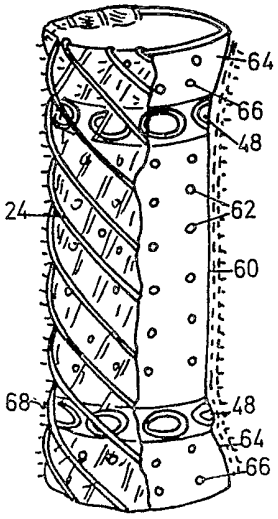


Fig. 9

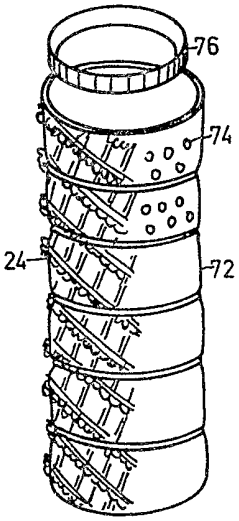


Fig. 10

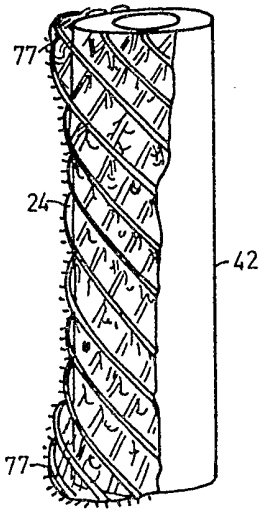


Fig. 11

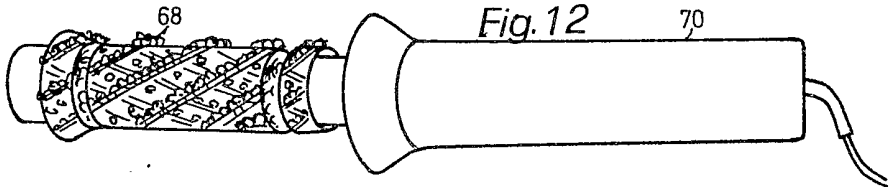


Fig. 12

SPECIFICATION

Hair-curler

BACKGROUND OF THE INVENTION
FIELD OF THE INVENTION

This invention relates to a hair-curler of the kind comprising a substantially tubular inner support member and an outer coating formed of a fabric carrying a plurality of substantially thread-like elements extending therefrom for hooking and retaining the hair.

DESCRIPTION OF PRIOR ART

Hair-curlers of the above mentioned kind are already well known and used. They are based on a fabric in which the hooking elements are formed of synthetic filaments extending from the fabric and forming at their ends a hook, a mushroom-cap or similar retaining elements. These elements are usually arranged in parallel rows, spaced apart by apertured regions, the apertures of which, in cooperation with the apertures provided in the support member, provide for the ventilation of the hair-curler. The hair retaining and ventilation properties of such hair-curlers are depending on the greater or lower mutual distance of the hook parallel rows, which are circumferentially or longitudinally arranged with respect to the hair-curler axis. Therefore, by approaching the hooking element rows a better retaining action is obtained, but this is detrimental to the curler ventilation and can lead to a greater danger of hair tear.

Futhermore, the known hair-curlers do not permit a correct adaptability of the curler surface to the user head configuration, in any position thereon. In fact, with these curlers, even if a very flexible inner support member should be provided, the outer coating would not be capable of following the different configurations of the support member and excessive thickening or thinning out of the hooking elements on the outer coating will occur.

SUMMARY OF THE INVENTION

This being stated, it is an object of the present invention to provide a new hair-curler capable of giving in all the situations optimal hair retaining and ventilation conditions together with a good flexibility and adaptability to the user head conformation.

It is another object of the present invention to provide a new hair-curler permitting a better hair retaining action and an easier hair unwinding action to be obtained and provided with an outer coating having few hooking elements and therefore a greater spacing between the parallel rows thereof in order to improve the ventilation conditions.

It is still an object of the present invention to provide a new hair-curler of the "pressure adhesive" kind, which can find a universal application, i.e. which, in addition to the conventional use, permits it to be used as a carrier provided with a heating body or to be associated to heating or vaporizing apparatus.

In order to attain these and other objects the invention provides a hair-curler of the above mentioned kind, wherein said outer coating is in the form of a cylindrical sheath, which is elastically deformable in all directions and wherein the inner support member is formed of a support body, the body-coating assembly having at least locally an inherent flexibility and elastic deformability properties in order to adapt said hair-curler to the user head.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a diagrammatic plan view of a fabric from which the hair-curler coating is obtained;

Figure 2 is a perspective front view of the coating obtained from the fabric of Fig. 1;

Figure 3 is a diagrammatic view of another possible fabric kind for hair-curlers, represented before and after the hooking elements formation;

Figure 4 is a perspective view of a support member to which a coating of Figs. 2 or 3 can be applied;

Figure 5 is a perspective view with broken away portions of a curler comprising the support member of Fig. 4 and the coating of Fig. 2;

Figures 6 through 11 are front views, with broken away portions, of other possible embodiments of hair-curlers;

Figure 12 is a diagrammatic view showing the hair-curler of Fig. 9 as applied to a heating apparatus.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, Fig. 1 shows a fabric 10 formed of a plurality of parallel rows 12, each carrying a plurality of filaments 14 extending in a direction substantially perpendicular to the fabric and in the form of hooks, mushroom caps or the like, in order to form the hooking elements. Provided between the rows 12 are connecting portions 16, which leave wide apertures 18 for the air flow from one side to the other side of the fabric.

This fabric 10 is cut along inclined lines 20 and the so obtained length is elically wound, with the opposite edges being retained as indicated by 22 in Fig. 2. Then the hooking element rows 12 are elically wound so that each row will cover at least a half-pitch of the elix and will extend along the longitudinal heigth of the coating 24 (Fig. 2). Therefore, the latter will exhibit elastic deformability properties in all directions, as indicated by the arrows 26 in Fig. 2, as well as wide ventilation apertures and a very high hair retaining action.

In Fig. 3 there is shown another kind of knitted fabric 28 forming a tubular element and including ventilation apertures 30.

During the manufacture of this fabric a rigid synthetic filament weft 32 is inserted, forming loops extending from the fabric, which then are cut in order to form hooking element 34 having the shape of a mushroom cap, a ball or the like (right portion if Fig. 3).

The above mentioned properties of the illustrated coatings and particularly their elastic deformability enable them to be coupled to inner support members of different kind, which impart at the same time to the hair curler an at least limited deformability for adapting it to the use head.

For example, in Fig. 4 there is shown a support member formed of a biconical coiled spring 36 having a greatest diameter D and a smallest diameter d, as well as an axis 38 which can be curved, f.i. as indicated in 38', due to a deformation of all the support member in order to adapt it to the particular conformation of the user head to which the hair-curler carrying this support member will be applied.

Applied on this support member 36 is a coating, for example the coating illustrated in 24 in Fig. 2, which has a lower inner diameter than the greatest diameter D of the support spring 36 before the support member being inserted. The so formed hair-curler, illustrated in Fig. 5, will exhibit a very high adaptability to the user head conformation, since it can be deformed while maintaining its good hooking and retaining properties because the coating follows without difficulties any deformation of spring 36. Of course, the same advantageous properties can be obtained with a coating as illustrated in Fig. 3.

The hair retaining action is so good that it becomes possible to associate a hair-curler to a well known cylindrical heating body 42 without need of additional outer locking elements between curler and hair, notwithstanding the assembly weight.

The advantages of the invention can otherwise be attained by using the most different kinds of support members, provided that the hair-curler assembly has at least a free deformable region. For example, the spring 36 can be cylindrical in shape or the hair-curler can be formed of the heating body 42 only, with the coating 24 extending on the sides thereof, or else the support member can be formed of a semi-rigid thick filament structure inserted into the sheath during its manufacturing operation.

In Fig. 6 there is shown another embodiment 52 having a coating 24 associated to a cylindrical or biconical support member 56 having an accordion shape and a reticulated structure, e.g. of plastic deformable and flexible material.

The hair-curler shown in Fig. 7 comprises, in addition to the sheath 24, a support member formed of a center cylindrical portion 44 which is rigid and well ventilated and connected to a pair of end portions 46 having a frustoconical shape. Then, the components 44 and 46 are locked by means of small extensible and compressible rings 48 which impart to the hair-curler the desired properties of local elastic deformability. Rings 48 can be also eliminated, thereby leaving the possibility of a reciprocal orientation between the components 44 and 46.

The embodiment shown in Fig. 8 includes a pair of frustoconical components 46 corresponding to the components of Fig. 7 and secured to the ends of the sheath 24. The center portion od the sheath forms the seat for a heating body 42 or any other support member. The greater width of the components 46 with respect to the body of the curler 42 permits the desired movability thereof to be achieved.

The embodiment shown in Fig. 9 includes again a cylindrical portion 60, possibly provided with holes 62 and two cylindrical or conical portions 64, possibly provided with holes 66. These components can be separated from each other and then kept together by the outer sheath 24 only, or connected to each other by means of small rings of the kind indicated at 48 in Fig. 7. The components 60 and 64 are made of a material adapted to trap the heat and/or to adsorb it quickly from a heat source, e.g. a metallic material. This curler kind can be made as indicated at 68 in Fig. 12, in association to heating apparatus 70 and/or steam or hot air generating apparatus. The relatively large apertures of the sheath permit the hair to be adhered to the support member, thereby adsorbing the heat therefrom.

Another embodiment which can be made of a metallic material is shown in Fig. 10, wherein the support member is cylindrical in shape and formed of a plurality of annular components 72 possibly provided with holes 74, which are articulated to each other in any suitable manner and which are kept in an operative condition by the sheath 24 secured by means of rings 76. This support member can also be formed of a spirally wound metallic strip, with the turns being free deformable with respect to each other, e.g. as a conventional shower flexible pipe.

In Fig. 11 there is shown an embodiment similar to that of Fig. 8, wherein the conical end portion 77 of the sheath 24 is obtained by hot permanent deformation or the like of the sheath 24. The inner support member 52 can be a heating body or not and have a length corresponding to or smaller than that of the sheath 24.

CLAIMS

1. A hair-curler including a substantially

tubular inner support member and an outer coating formed of a fabric carrying a plurality of substantially thread-like elements extending therefrom for hooking and retaining the hair, wherein said outer coating is in the form of a cylindrical sheath, which is elastically deformable in all directions and wherein said inner support member is formed of a support body, said body-coating assembly having at least locally an inherent flexibility and elastic deformability properties in order to adapt said hair-curler to the user head.

2. A hair-curler as claimed in claim 1, of the kind in which said coating is formed of a fabric carrying parallel rows of hooking and hair-retaining elements and having non-woven regions forming open ventilation passages, wherein said fabric is cut diagonally to the hooking element rows, elically wound and secured so as to form a sheath.

3. A hair-curler as claimed in claim 1, wherein said coating is formed of an elastic knitted fabric, carrying the hair hooking and retaining elements.

4. A hair-curler as claimed in claims 2 or 3, wherein the two end portions of the sheath assume a permanent conical shape by hot deformation or the like.

5. A hair-curler as claimed in claim 2, 3 or 4, wherein said inner support member is an elastic deformable body capable of assuming a configuration in which its axis is curved.

6. A hair-curler as claimed in claim 5, wherein said inner support member is a coil spring having a biconical or cylindrical outer configuration.

7. A hair-curler as claimed in claim 2, 3 or 4, wherein said inner support member is formed of an elastically deformable body having a reticulated structure.

8. A hair-curler as claimed in claim 2, 3 or 4, wherein said inner support member is formed of a plurality of at least partially rigid components which are deformably connected to each other by flexible portions of the support member and/or by the outer coating.

9. A hair-curler as claimed in claim 8, wherein at least a portion of said support member is formed of a rigid spirally wound strip, the turns of which are free from moving with respect to each other.

10. A hair-curler as claimed in anyone of claims 2, 3 or 4, wherein said support member is integrally or partially formed of elements made of metallic or other adsorbing and/or retaining heat material.

11. A hair-curler as claimed in claim 2, 3 or 4, wherein the axial length of said outer coating correspond to or is greater than the axial length of said inner support member.

12. A hair-curler as claimed in anyone of the preceding claims, wherein said inner support member is formed of or constitutes the housing of a substantially cylindrical heating body, which can be removably inserted inside the outer coating.

13. A hair-curler as claimed in claim 1, 2, 3 or 4, wherein said support member is formed of a self-sustaining thread-like body, which is embodied into the sheath during its manufacturing operation.

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