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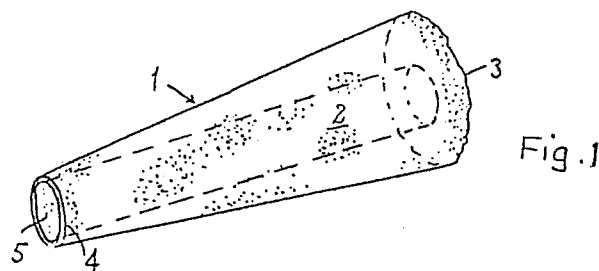
71 Applicant: **Collis, Harvey Edward**
16 Lambolle Road
London NW3 (GB)

72 Inventor: **Collis, Harvey Edward**
16 Lambolle Road
London NW3 (GB)

74 Representative: **Keltie, David Arthur et al**
Baron & Warren 18 South End Kensington
London W8 5BU (GB)

54 **Hair setting device.**

57 A hair setting device comprises an elongate roller (1) having a tapered peripheral surface (2) around which a length of hair may be wound from its free end commencing from the larger diameter end (3) of the roller (1) and such that the narrower diameter end (4) of the roller (1) lies nearer the hair roots when the length of hair is fully wound on the roller (1).



Description

"HAIR SETTING DEVICES"

This invention relates to devices for use in setting hair as for example by waving, curling or perming.

One kind of hair setting device which is known to the Applicant comprises a roller of generally cylindrical form and presenting a resilient peripheral surface. In such a hair setting device the roller may comprise a plastics or metal moulding supporting the resilient peripheral surface. In setting hair the roller is used by winding lengths of hair starting at their free ends around the peripheral surface of the roller and fastening it adjacent the hair roots with an elastic strap or plastics or metal clip. Hair setting devices of this kind have the disadvantage which can affect the versatility of the hair set, even with experienced and skilful hairdressers. As the lengths of hair are wound towards the roots there is a tendency for the turns to be tighter, i.e. at a greater tension, towards the free ends than at the roots. This has the effect that when the hair setting devices are removed there is far less "lift", i.e. volume, at the hair roots.

Accordingly, the main object of the present invention is to provide a hair setting device which avoids or substantially minimizes the aforementioned disadvantage.

To this end, and from one aspect the present invention consists in a hair setting device comprising an elongate roller having a tapered peripheral surface around which a length of hair may be wound from its free end commencing from the larger diameter end of the roller and such that the narrower diameter end of the roller lies nearer the hair roots when the length of hair is fully wound onto the roller, the dimensions of the roller being such as to carry out the purpose of tensioning the hair at the roots substantially as and for the purpose set forth.

The roller may be solid or preferably, in order to enable the hair setting device to be heated in conventional hair setting device heaters, the roller has an axially extending bore into which a heated peg of the heating device may be inserted.

The setting device may include a clip or strap or a separate clip or strap may be provided to hold the roller in position on the head with the hair at the roots in the desired degree of tension.

Alternatively, the roller described in our U.K. Patent No. 2111382B (the subject matter of which is incorporated into this specification by reference) may be inserted through the bore of the tapered roller or may be joined to the tapered roller with, in each case, its ends projection beyond those of the tapered roller, and the projecting ends folded into a position to act as a clip, by means of the folded portion(s) engaging with the wound hair on the roller.

In order to be of as light a weight as possible and thus of greater comfort to the wearer, the roller may be made entirely of a closed-cell polymeric material. Alternatively, the roller may have a sleeve of such material mounted on a suitable support e.g. of plastics material. However, the roller or the sleeve

may be made of any suitable material providing that it is non-absorbent to the hair setting medium.

From another aspect, the present invention consists in a method of setting hair, in which successive lengths of hair are wound around the tapered peripheries of respective rollers with the free ends of the lengths of hair being wound from the larger diameter ends of the roller and such that the smaller diameter ends of the rollers lie nearer the hair roots when the hair lengths are fully wound onto the rollers.

So as to increase or improve the set at the hair roots, the roller disclosed in our U.K. Patent No. 2111382B may be inserted through the bore in the tapered roller or may be joined to the tapered roller, so that, in each case, its ends project beyond those of the tapered roller, and the length of hair wound beyond the smaller diameter end of the tapered roller and around the projecting ends. It will be appreciated that this enables the axial length of the tapered roller to be effectively extended beyond its narrower diameter end.

In order that the invention may be more readily understood some embodiments thereof will now be described, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of one embodiment of hair setting device consisting of a roller and constructed in accordance with the present invention,

Figure 2 is a perspective view of one form of clip suitable to hold the roller of Fig. 1 in a hair setting position,

Figure 3 is a perspective view of another embodiment including the roller of Figure 1,

Figure 4 is an illustration of a method of using the roller of Figure 1,

Figs. 5 and 6 are perspective views of other embodiments, and

Fig. 7 is a cross-section taken along the line VII-VII of Fig. 6.

Referring to Fig. 1 of the drawings, the hair setting device consists of an elongate roller which is generally indicated at 1, having a tapered peripheral surface 2 of frusto-conical form with larger and smaller diameter ends 3 and 4 respectively. The roller 1 has an axial bore 5 for receiving a heated peg of a conventional heating device (not shown as it does not form part of this invention). In this embodiment the roller is made entirely of cellular foamed polyethylene which is non-absorbent with respect to the hair setting medium, usually a lotion. The angle of the taper may vary between about 5° and about 85° with a convenient angle being about 10° in the illustrated embodiment.

The roller 1 may be used in conjunction with the holding clip 6 illustrated in Fig. 2 or with the roller shown in the embodiment of Fig. 3 which serves as a holding clip 7 when folded.

The roller or holding clip 7 shown in Fig. 3 is inserted in the bore 5 of the roller 1 and comprises a

length of copper wire 15 covered by an extruded plastics sleeve 16 (see Fig. 7). A cylindrical jacket 8 of cellular foamed-polyethylene surrounds the sleeved wire. Mushroom-shaped end caps 9 are fixed at the respective ends of the plastics-sleeved wire by insertion of the coated wire as a tight fit into the socketed stem of the end cap. The end caps 9 thus prevent the foamed polyethylene jacket 8 from sliding and being displaced from the wire core. The end caps 9 also function to prevent setting or perming lotion from contacting the copper wire and so reduce the possibility of corrosion.

The roller or clip 7 derives from the copper wire the property of being bendable, whilst maintaining sufficient resilience to enable it to retain its bent shape once applied to the hair around the roller. Typically, the rollers or clips are 100 - 150 cms long and are thus able to be bent simultaneously at several positions along their length.

Figure 4 of the drawings shows one way in which the roller 1 may be used in conjunction with the roller clip 7 illustrated in Fig. 3. It should be appreciated that a plurality of rollers 1 together with roller clips 7 will be used to set the hair 10, each setting a respective length 11 of hair. A length 11 of hair 10 is wound around the roller 1 starting from its free end 12 at the larger diameter end 3. As the roller 1 is turned about its axis, the length of hair is wound in a spiral around the tapered peripheral surface 2 with there being no or a minimum of overlapping of the successive turns until the length of hair is fully wound with the smaller diameter end 4 lying adjacent to, and exerting adequate tension on, the roots of the length of hair to provide the necessary "lift" when the rollers 1 are removed at the end of a hair setting treatment. Then the roller clip 7 is inserted into the axial bore 5 of the roller 1 and either one or both ends folded against the wound length of hair 11 on the roller 1 to clip the hair in the hair setting position.

The length of hair can be wound onto the roller clip 7 beyond the smaller diameter end of the roller 1 in order to increase or improve the set of hair at the roots.

The embodiments of Figs. 5 and 6 differs from that of Fig. 3 in that the clip 7 is joined to the roller 1 instead of extending through a central bore 5 e.g. with a friction fit, by making the jacket 8 integral with, and of the same material as that of, the tapered roller. Thus, the roller 20 has axially projecting jacket end portions 8a extending beyond the larger and smaller diameter ends 3 and 4 of tapered roller portion 1a, a central bore 5a extending axially through the tapered roller portion 1a and through the jacket end portion 8a with the wire 15 having the plastics sleeve 16 extending through the bore 5a and terminating in the end caps 9. Either or both of the end portions 8a can serve as a clip as in the embodiment of Fig. 3. Also, the length of hair can be wound onto the left-hand as illustrated end portion 8a or beyond the smaller diameter end 4 as described with reference to Fig. 3. As will be apparent from Figs. 5 and 6 the outer surfaces of the jacket end portions 8a extend axially in parallel with the bore 5a. Alternatively, the smaller diameter end 3 could be omitted and the tapered peripheral surface

of the roller 1a could merge into that of the left hand, as illustrated end portion 8a.

The tapered roller portions 1a of the embodiment, of Figs. 5 and 6 have a greater axial extent than that of the roller 1 of Figs. 1 and 3. And in Fig. 5 the taper angle is around 5°, so that it is less than that of Figs. 1, 3 and 6.

Rollers in accordance with the invention are not limited to a use in any particular hair-setting method. They may be used in association with perming lotion in a permanent wave process or with setting lotion. Alternatively the rollers may be used without additional lotions on hair which is wet or dry, with or without additional heating.

Although the roller 1 and roller clip 7 have been described as respectively being made of and having a jacket of, cellular foamed-polyethylene, other types of material may alternatively be used. It is important however that the material should provide cushioning to the hair, and be non-absorbent. Desirably it is water repellent and resistant to degradation by the types of lotions commonly used in hairdressing.

Claims

1. A hair setting device comprising an elongate roller having a tapered peripheral surface around which a length of hair may be wound from its free end commencing from the larger diameter end of the roller and such that the narrower diameter end of the roller lies nearer the hair roots when the length of hair is fully wound onto the roller, the dimensions of the roller being such as to carry out the purpose of tensioning the hair at the roots substantially as and for the purpose set forth.

2. A hair setting device as claimed in claim 1, wherein the roller is solid.

3. A hair setting device as claimed in claim 1, wherein the roller has an axially extending central bore.

4. A hair setting device as claimed in any one of claims 1 to 3, and including means for holding the roller in position on the head with the hair at the roots in the desired degree of tension.

5. A hair setting device as claimed in claim 3, and including a jacket projecting through the central bore and axially beyond the tapered roller to form end portions and a wire extending through the jacket and terminating in end caps, whereby either or both of the end portions may serve as a clip by folding to engage with wound hair on the roller.

6. A hair setting device as claimed in claim 3, wherein the tapered roller is provided with axially projecting jacket end portions through which the central bore extends and which are integral with, and made of the same material as that of, the roller, and a wire extending through the central bore and terminating in end caps whereby either or both of the jacket end portions may be folded to engage with wound

hair on the roller and serve as a clip.

7. A method of setting hair, in which successive lengths of hair are wound around the tapered peripheries of respective rollers with the free ends of the lengths of hair being wound from the larger diameter ends of the roller and such that the smaller diameter ends of the rollers lie nearer the hair roots when the hair lengths are fully wound onto the rollers.

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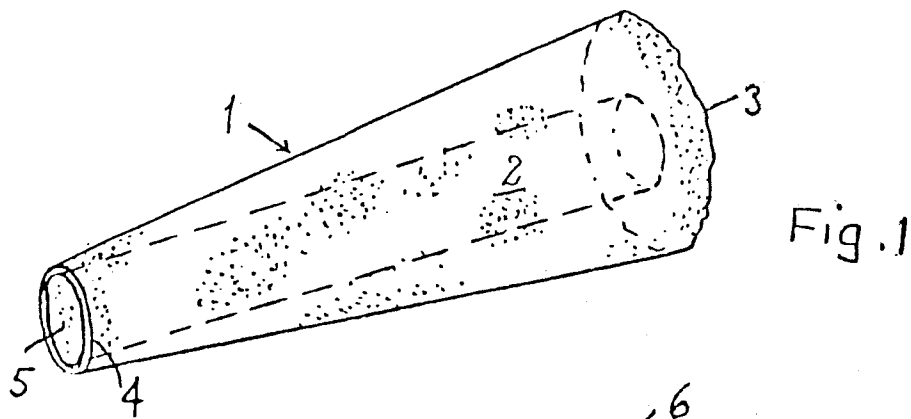


Fig. 1

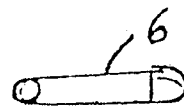


Fig. 2

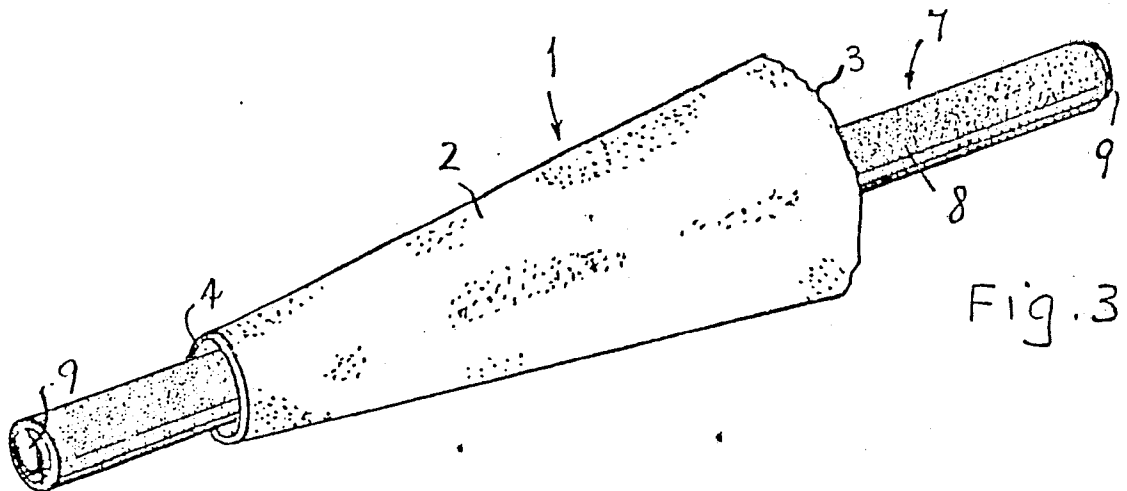


Fig. 3

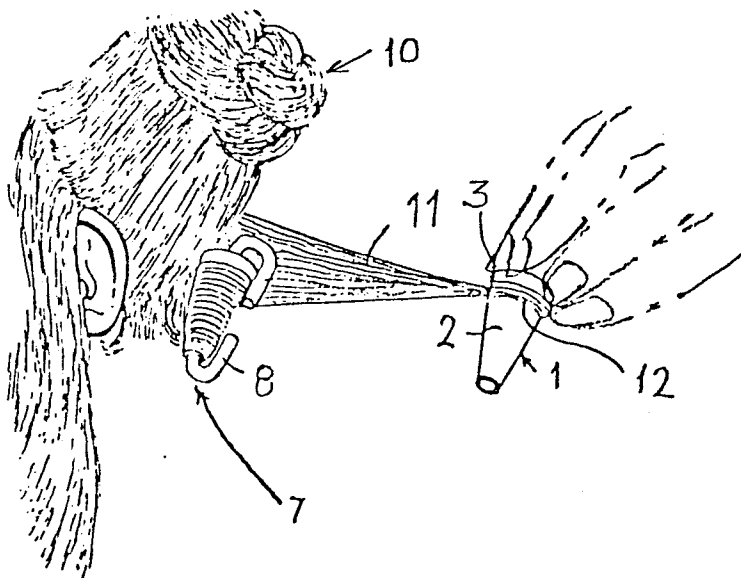
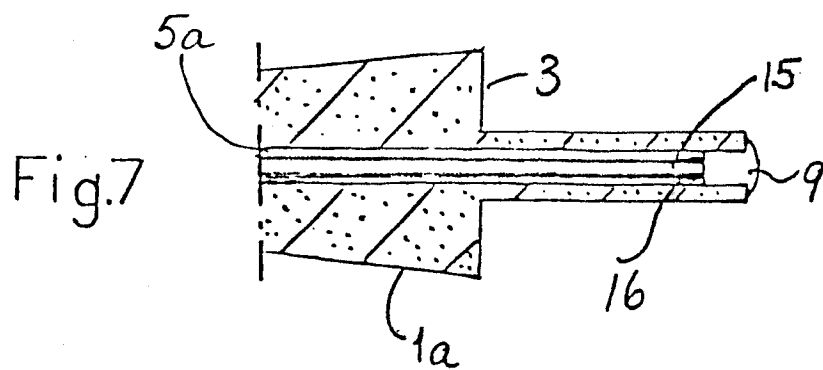
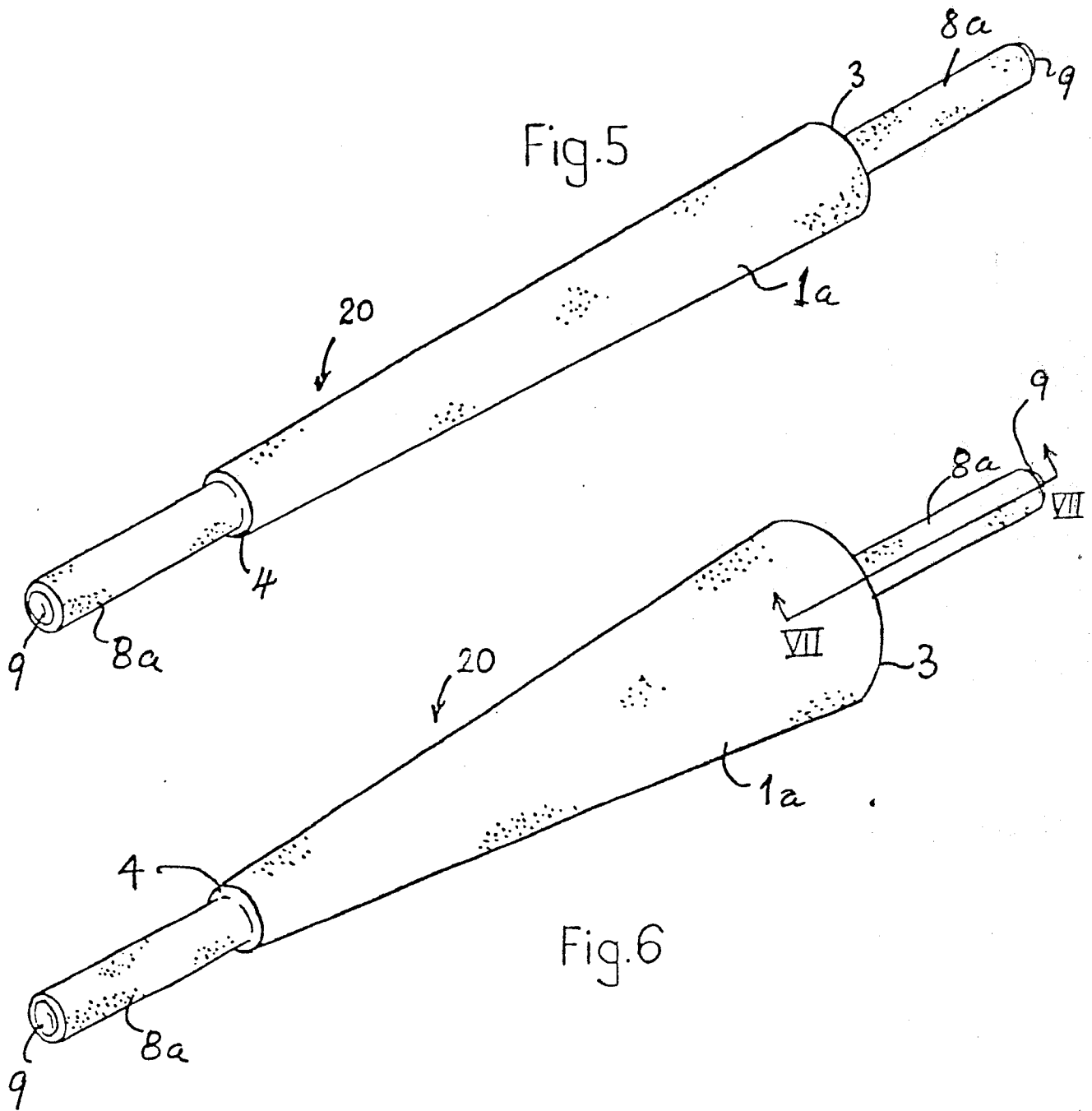


Fig. 4





DOCUMENTS CONSIDERED TO BE RELEVANT			EP 88302401.0
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
X	FR - A - 1 007 774 (ONDAL G.M.B.H) * Fig. 2,3 *	1,2,7	A 45 D 2/18
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X	DE - A1 - 2 915 059 (PREBIO G.M.B.H) * Fig. 1; claim 6 *	1,2,7	
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A	US - A - 13 442 (DAVIS) * Fig. 4 *	1,2,3,4	
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A	US - A - 2 838 054 (FISCHER) * Totality *	1-6	
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A	FR - A - 1 261 901 (GUGLIELMI, DIT GUILLAUME) * Totality *	1-6	
			TECHNICAL FIELDS SEARCHED (Int Cl 4)
			A 45 D 2/00
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 26-06-1988	Examiner PIRKER
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	