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METHOD FOR WAVING AND STYLING HAIR

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This invention relates to a method of permanently waving and styling hair.

An object of this invention is to provide a method by which permanent waving and temporary styling of hair is combined.

In the past, it has been common to permanent wave hair in a first process and then, following completion of permanent waving, to impart a temporary style or shape the hair in a second process. An object of this invention is to combine these processes into a single operation, in which the permanent configuration conforms more closely to the temporary style or shape.

In order to secure a satisfactory permanent wave it has in the past been necessary to conduct the permanent wave processing (including both reduction and oxidation) on rods having a relatively short circumference or perimeter in the neighborhood of one inch in order to provide sufficient tensioning and deforming or bending of the hair during the processing to yield a satisfactory result. However, the resulting permanent waves from such rods are unsatisfactory as they are too tight to conform to the loose waves desired by many stylists. If the permanent wave processing is conducted on rollers normally used in setting the hair having a relatively large circumference or perimeter in the neighborhood of three inches, sufficient tensioning and deforming is not obtained to yield a satisfactory permanent result. A further object of this invention is to provide a method in which the initial step of hair waving is performed on rods of small diameter to soften the hair and in which the reconstituting or "neutralizing" of the hair is performed on larger rollers of the type used in styling or in which the styling is done in other usual fashions.

A further object of this invention is to provide such a method in which the neutralizing of the styled hair is done with a neutralizing agent which is not rinsed from the hair and leaves no undesirable residue on the hair.

A further object of this invention is to provide such a method in which the neutralizing or reconstituting of shaped hair is done with a neutralizing agent which includes a film-forming agent which assists in holding the styled shape of the hair.

Briefly, in accordance with the method of this invention, hair is wrapped on rods of sufficiently small circumference or perimeter to permit ready reduction and softening thereof, and an agent for reducing the keratin of the hair such as a solution of thioglycolic acid and ammonium hydroxide in water is applied thereto to soften and reduce the keratin of the hair. Then, after the hair has been softened, the hair is rinsed to remove excess curling lotion. The hair is removed from the rods of small circumference either before or after rinsing. The hair is rewrapped on large shaping rollers or otherwise formed into the shape desired in styling or setting of the hair as in pin curls or the like. Then, a setting or neutralizing and oxidizing lotion is applied to the hair containing a sufficient amount of hydrogen peroxide to neutralize the reduced keratin and restore the strength of the hair and set the hair. Preferably, the setting lotion also contains a film-forming resin. The setting lotion can be applied before the hair is wrapped on the styling rollers or in pin curls or the hair can be wrapped first and then

the lotion is applied. After setting, the hair is dried and combed out, and the waving and the styling thereof is completed.

Preferably, the rods on which the hair is softened and reduced are of a permieter no greater than 1.2 inches and preferably between ½ and 1 inch in perimeter. Preferably the rods are of circular cross-section but can be of other cross-section if desired. Very good results are obtained using rods of circular cross section and a circumference of ¾ inch. Preferably, the rollers on which styling is accomplished are of larger circumference or perimeter and preferably are of a minimum circumference of 2.2 inches and may be of larger circumference or perimeter up to approximately 5.5 inches in accordance with usual techniques of styling hair. Very good results are obtained using styling rollers of circular cross section and a circumference of 3.3 inches.

The neutralizer solution preferably is an aqueous solution containing approximately 0.75% by weight of hydrogen peroxide but can contain from about 0.25% to 2.0% hydrogen peroxide. Such concentrations are sufficient to cause restoration of the strength of the hair without causing substantial bleaching. Preferably the pH of the neutralizer solution is adjusted to approximately 3.0 with phosphoric acid or other suitable acid. Preferably the solution also contains approximately 1.0% by weight of polyvinylpyrollidone resin or other water soluble, non-toxic film-forming resin suitable for application to the hair.

The following example is given to illustrate the invention in greater detail, but it is to be understood that the example is given primarily by way of example, rather than by way of limitation, and the invention is not intended to be limited thereby except as set forth in the claims. In the example, all parts and percentages are given by weight.

EXAMPLE

A tress of hair was wrapped on a small rod of circular cross-section and having a three-quarter inch (¾ inch) circumference. The tress was saturated with an aqueous reductant solution containing 7.0% thioglycolic acid and sufficient ammonia to provide an excess and give a pH of 9.4. The reductant solution was left on the tress for approximately 10 minutes. The tress was then rinsed thoroughly in tepid water. The tress was unwrapped from the small rod and was then saturated with an aqueous neutralizing solution containing 0.75% hydrogen peroxide, 1.0% polyvinylpyrollidone, 0.1% of ethyleneoxide condensate of iso-octyl phenol (wetting agent) and sufficient phosphoric acid to give a pH of 3.0. The hair was rewrapped on a styling roller of circular cross-section and having a circumference of 3.3 inches and was dried on the styling roller. The permanent configuration conformed more to the shape of the styling roller than the smaller rod used for softening and deforming the hair.

The neutralizing composition and method of treating hair are subject to variation without departing from the spirit and scope of the appended claims.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a process of treating hair to impart a permanent set and style thereto which includes the steps of treating the hair with a reducing agent for keratin and then treating the hair with an aqueous solution of an oxidizing agent for reduced keratin, the improvement which comprises performing the reducing step on a rod of sufficiently small circumference to deform the hair, removing the hair from such rod before performing the oxidizing step, setting the hair, and performing the oxidizing step while the hair is set.

2. A process as in claim 1 in which the oxidizing agent is hydrogen peroxide and in which the solution of oxidizing agent is dried on the hair.

3. A process as in claim 1 in which the oxidizing agent is hydrogen peroxide and in which the oxidizing agent contains a film forming resin and in which the solution of oxidizing agent is dried on the hair.

4. A process as in claim 1 in which the rod on which the reducing step is performed is from one-half inch to one inch in perimeter and in which the hair is styled by wrapping on a roller having a perimeter of from 2.2 inches to 5.5 inches.

5. A process as in claim 1 in which the oxidizing agent is hydrogen peroxide, in which the concentration of hydrogen peroxide in the solution of oxidizing agent is from 0.25% to 2.0% by weight, and in which the solution of oxidizing agent is dried on the hair.

6. A process as in claim 1 in which the rod on which the reducing step is performed is approximately three-quarters inch in perimeter, in which the hair is styled by wrapping on a roller having a perimeter of approximately

3.3 inches, in which the oxidizing agent is hydrogen peroxide, in which the concentration of hydrogen peroxide in the solution of oxidizing agent is approximately 0.75% by weight, in which the solution of oxidizing agent contains approximately 1.0% by weight of a film-forming resin, and in which the solution of oxidizing agent is dried on the hair.

7. A process as in claim 6 in which the film-forming resin in polyvinylpyrollidone.

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