United States Patent [19]

Schulman

[11] **3,746,015**

[45] **July 17, 1973**

[54] **NATURAL HEAT CAP**

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[22] Filed: **July 2, 1971**

[21] Appl. No.: **159,197**

[52] **U.S. Cl.** **132/9**

[51] **Int. Cl.** **A45d 20/18**

[58] **Field of Search** 132/9, 7, 46, 49, 132/148; 128/76, 171, 164; 34/95; 2/174, 7, 171.2

[56] **References Cited**

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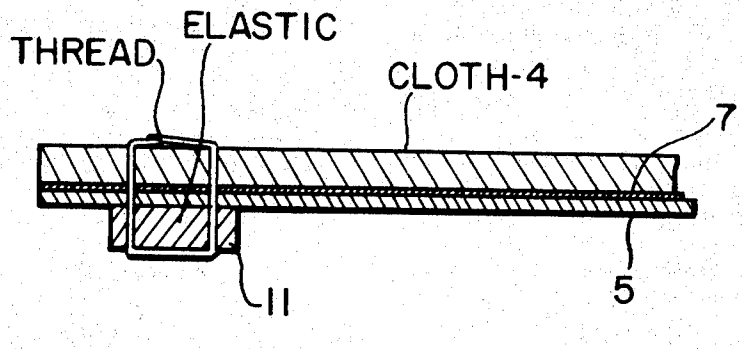
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[57] **ABSTRACT**

A natural heat cap shaped to cover the head and confine the hair and scalp of the wearer comprising an outer layer of pliable material, an inner layer of pliable material secured to said outer layer, the inner surface of said inner layer being highly reflective, and fastening means on said cap for holding at least the marginal edges of said cap tightly about the head of the user.

5 Claims, 3 Drawing Figures



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FIG. 1



FIG. 2

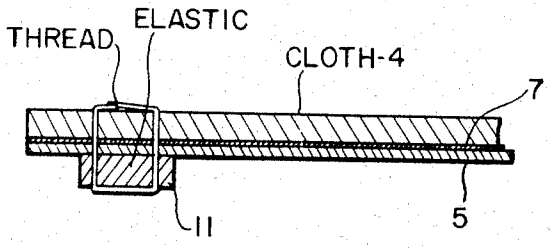
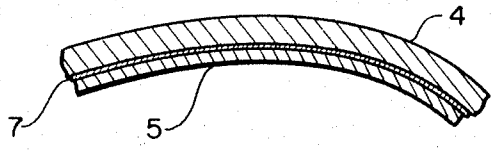


FIG. 3



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NATURAL HEAT CAP

The present invention relates to a novel cap useful, for instance, in the acceleration of hair or scalp treatment or conditioning process as for same. A variety of hair or scalp conditioner formulations have been marketed and are extensively used both at home and in beauty parlors to revitalize or otherwise restore the hair or scalp to a more healthful state. With many of these formulations a heat treatment is recommended to hasten or accelerate the conditioning process. It is known, for example, to cover the hair with a cap after the conditioning or treating formulation has been applied and then subject the capped hair to heat treatment by externally applied heat. For instance, the capped head is most conveniently put under a hair drier for a few minutes or the cap itself is supplied with heating coils or the like. At home the application of heat may take the form of hot towels wrapped about the hair and scalp or by subjecting the conditioner-containing hair or scalp to other common sources of radiant or hot air heat means. Most of these cases by and large impair the persons mobility and require her to remain in a fixed position for a period of time. Another common complaint resides with these externally applied heat treating methods since care must be taken during the application of the heat so that temperatures and heat periods do not damage the hair or scalp in the presence of a particular hair conditioning or treating liquid. Yet another shortcoming of prior art caps is their inability to sufficiently contain the conditioning or treating material during the treating process.

An object of the invention is to provide a simple and economical cap by which the hair or scalp conditioning or treating process may be accelerated.

Another object of the invention is to provide a cap for the heat treatment of conditioner-containing hair or scalp which renders unnecessary the application of external or artificial heat.

Yet another object of the invention is to provide a cap which permits use of the wearer's natural body heat for the heat treatment so as to give the scalp and hair a natural deep conditioning necessary to make the scalp healthy and the hair easy to manage.

Another object of the invention is to provide a cap which retains the moisture of the treating or conditioning composition on the hair necessary for proper conditioning of the hair during the entire heat treatment.

A further object of the invention is to provide a cap which is sturdy, conveniently portable and hand washable.

These and other objects of the invention are obtained by a cap device shaped to substantially cover the head and confine the hair and scalp of the wearer which cap comprises an outer layer of pliable material, an inner layer of pliable material secured to the outer layer, the inner surface of the inner layer being highly heat reflective and fastening means on said cap for holding at least the marginal edges of said cap tightly about the head of the wearer.

The features of the invention believed to be novel are set forth with particularity in the appended claims. This invention itself, both as to its organization and manner of operation, together with further objects and advantages thereof, may be best understood by reference to the following description taken in connection with the accompanying drawing in which:

FIG. 1 is a perspective view of the cap device of the invention fitted onto the head of the wearer;

FIG. 2 is a sectional view of the cap device of the invention taken along line 2 — 2¹ of FIG. 1;

FIG. 3 is another sectional view of the cap device taken along line 3 — 3¹ of FIG. 1.

Referring to the drawing, the cap device, indicated generally as number 1 comprises an outer layer 4 which may be made of any suitable pliable flexible material such as for instance fabrics of natural and synthetic fibers, either woven or unwoven; pliable synthetic plastic sheet materials, and the like. Suitable fabrics for use as the outer layer include, natural fabrics of wool, cotton, silk, flax, etc.; fabrics of synthetic fibers such as polyester, cellulose acetate, etc.; and fabrics of blends of natural and synthetic fibers such as cotton-polyester mixtures. Illustrative of suitable plastic sheet materials which may be used as the outer layer may be mentioned, polyvinyl chloride, polystyrene, polyesters such as polyethylene terephthalate, polyethylene, polypropylene, nylon and the like.

An inner layer 5 of pliable material is secured to the inner surface of the outer layer 4 to form an inner liner. The inner liner may likewise be formed of any suitable flexible material so long as its inner surface, that is the surface facing the hair and scalp of the wearer, is a highly heat reflective surface. Suitable highly heat reflective surfaces include surfaces having a low emissivity at ambient temperatures of no greater than about 0.1, preferably no greater than about 0.05. Thus, the inner layer may constitute a thin sheet of a heat reflective metal such as aluminum, silver, copper, chromium, tin and the like. Alternatively, the inner layer 5 of the invention may take the form of a thin pliable substrate such as a plastic sheet material provided on its inner surface with a layer of a heat reflective material. This latter arrangement can be fabricated for instance, by using any of the well known metal deposition techniques of the art such as, for example, vacuum or electro-chemical deposition of the metal onto the surface of the substrate. Also, if desired, the highly reflective surface may be provided the inner layer 5 by laminating to the inner surface of the inner layer substrate a thin film of a reflective metal. It is usually preferred that the inner layer be essentially non-hygroscopic and substantially water-impermeable. The reason for this is that unlike for instance hair drying caps where the escape of water is desired, in the heat treatment of a conditioned hair or scalp, it is important to retain or confine the moisture for the duration of the conditioning period.

In a preferred embodiment of the invention, an intermediate layer 7 of pliable material is disposed between the inner layer and outer layer and bounded to both by any suitable means. The intermediate layer 7 may be formed of any pliable flexible material such as those discussed with reference to the outer layer.

Securing of the respective layers to each other may be accomplished in any suitable manner such as adhesive bonding, stitching, sewing, etc. Most conveniently, the bonding is effected by laminating the respective layers to each other employing one of the variety of laminating adhesives available for this purpose.

The means for fastening the cap device of the head of the wearer likewise may take any desired form. The preferred arrangement, however, is the provision of an elastic band 11 or the like near the marginal edge of the cap which stretches to fit the head of any wearer. Other

means such as tie strings and the like will come readily to the mind of those skilled in this art.

The shaping and construction of the cap device of the invention may be undertaken in a number of different ways. A simple method involves first cutting out of a pliable nylon sheet a circle 18 to 20 inches in diameter which shall constitute the outer layer of the cap device. A second circle is then cut out of a thin pliable sheet, say of about ⅛ to ½ mil in thickness of polyethylene terephthalate having vacuum deposited on one surface thereof a mirror-like, reflective surface of aluminum, the diameter of the circle being preferably slightly less than the diameter of the circle of nylon. Yet a third circle having a diameter substantially equal to that of the circle of polyethylene terephthalate is cut out of a cotton fabric and the circles of polyethylene terephthalate and circle of cotton fabric are laminated together with a suitable laminating adhesive such an epoxy resin in a manner that leaves the reflective surface facing outwardly. The resulting laminant is then laminated to the outer layer **4** in a similar manner. To complete the fabrication of the cap device of the invention an elastic band approximately 15 inches in length is sewn approximately 1 inch from the marginal edge of the three layer composite.

If desired, decorative elements can be provided on the outer layer **4**. These elements can take the form of plastic or fabric components, decorative or plain in design and secured to the outer layer **4** by sewing or bonding with suitable adhesive.

The cap device of the invention finds a number of uses but it particularly applicable as aforementioned in the heat treatment of hair or scalp to which a conditioner or other treating medium has been applied and to which the application of heat is beneficial or advantageous for proper conditioning. For example, once a lanolin or a similar hair or scalp conditioner has been applied to the head or hair of the wearer, the wearer puts on the cap of the invention. Thereafter, the wearer is free to carry on her normal domestic or other duties for the time period prescribed for completion of the hair or scalp conditioning process. During this time, the natural body heat eminating from the wearer's head and scalp will be reflected by the heat reflective surface of the inner layer. In this manner, the heat of one's own body gives the hair and scalp the deep conditioning necessary to improve the health of the scalp and hair and make the hair easier to manage. Since the inner body is essentially hygroscopic and impermeable to water vapor and liquid, there is little or no loss of the wet conditioning or treating formulations applied during the conditioning process. Upon completion of the treatment, the cap device is removed and the wearer may complete the hair or scalp processing such as by rinsing, setting, etc. After use, the cap device may be hand washed without damage so that it is ready for reuse.

Although the cap device has been described primarily with regard to processes for the treatment of scalp or hair, it is not limited thereto and will find use in other areas. For example, the cap device has also been found useful in hair dyeing or tinting applications.

While the particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

It is claimed:

1. A cap device shaped to cover the head and confine the hair and scalp of the wearer comprising an outer layer of pliable material, an inner layer of pliable material secured to said outer layer, the inner surface of said inner layer being metalic and highly heat reflective and being co-extensive with said outer surface, and fastening means on said cap for holding at least the marginal edges of said cap tightly about the head of the user.

2. The cap device of claim **1** wherein the outer layer is of a pliable plastic material.

3. The cap device of claim **1** including an intermediate layer of pliable material bonded on one side to the outer layer and on the other side to the inner layer.

4. The cap device of claim **1** wherein the fastening means is elastic attached to the edge of said cap.

5. The cap device shaped to cover the head and confine the hair and scalp of a wearer comprising an outer layer of fabric material, an inner layer of a pliable, plastic sheet material bonded on one surface to said outer fabric layer, said inner layer of plastic material having a highly heat reflective metalic inner surface and being co-extensive with said outer surface, and an elastic means provided near the marginal edges of said cap for holding the cap tightly onto the head of the wearer.

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