

Dec. 16, 1969

C. PLANEL

3,483,876

HAIR CURLER AND ITS HEATING APPARATUS

Filed Feb. 3, 1967

4 Sheets-Sheet 1

FIG.2

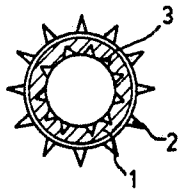


FIG.4

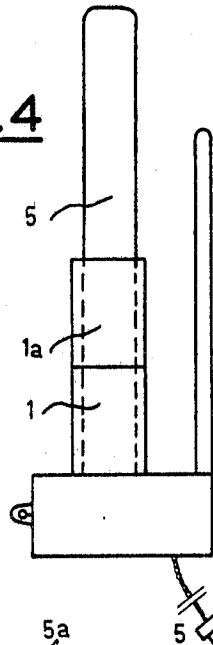


FIG.1

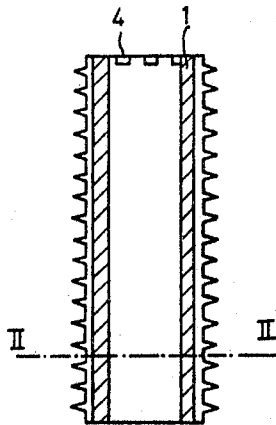
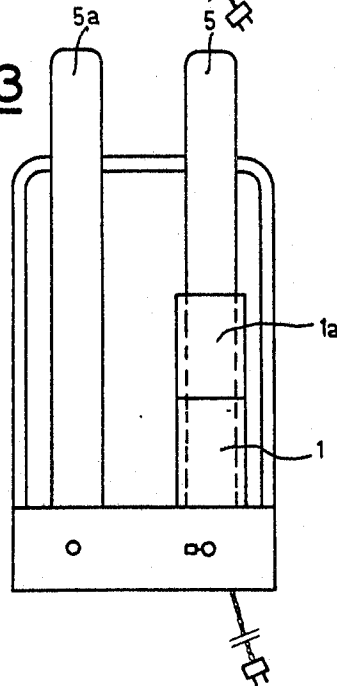


FIG.3



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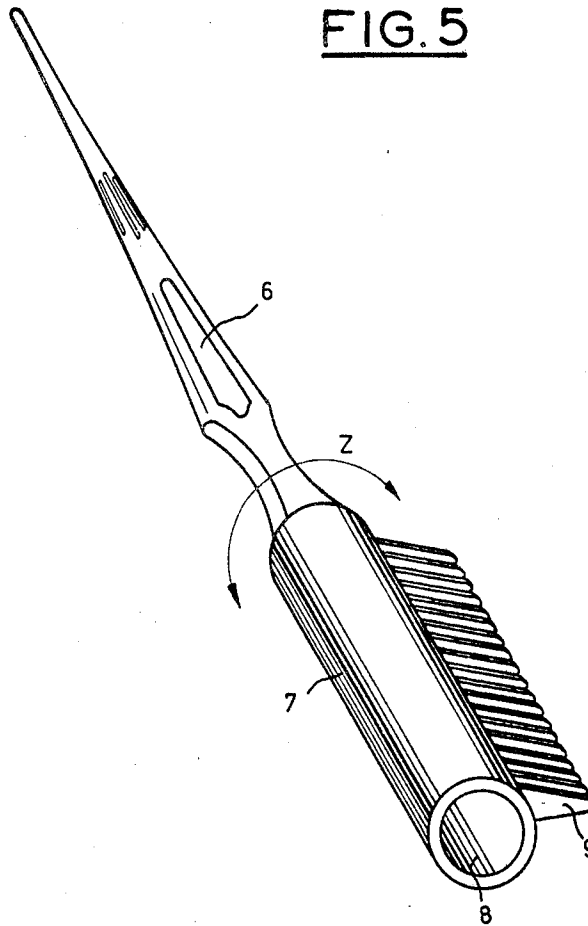
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FIG. 5



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FIG. 6

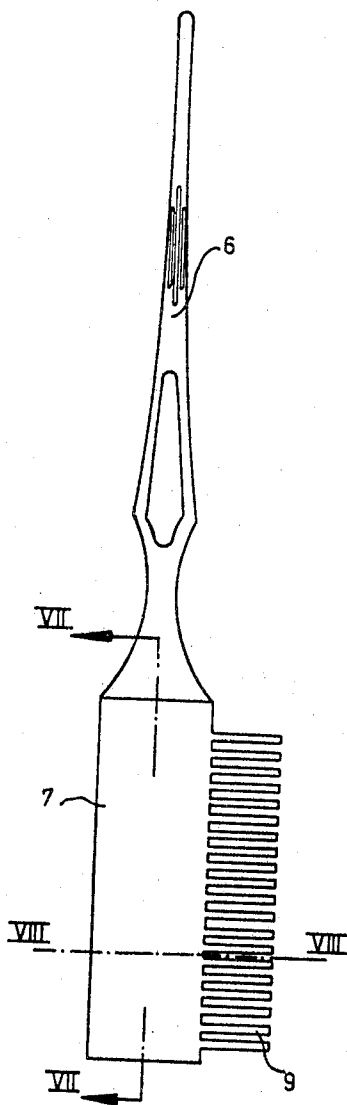


FIG. 8

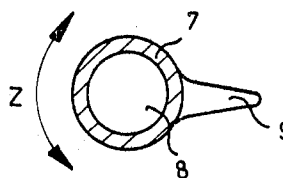
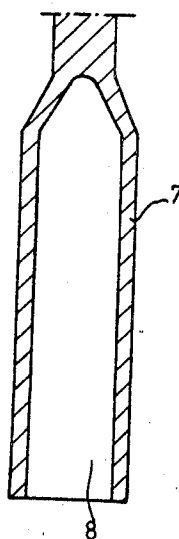


FIG. 7



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FIG.9

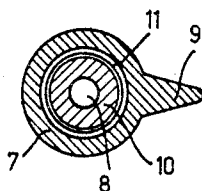
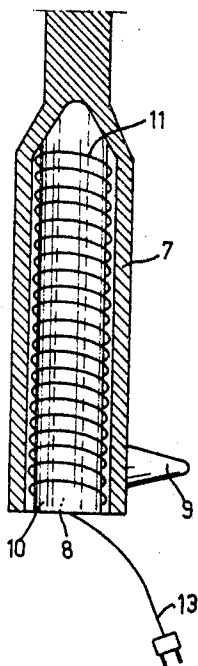


FIG.10



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HAIR CURLER AND ITS HEATING APPARATUS
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Calor Appareils Electro-Domestiques, Lyon, France
Filed Feb. 3, 1967, Ser. No. 613,866
Claims priority, application Great Britain, July 22, 1966,
32,965

Int. Cl. A45d 2/12

U.S. Cl. 132—33

1 Claim

ABSTRACT OF THE DISCLOSURE

This disclosure is concerned with hair shaping means intended to be applied hot to dry hair and including a hollow metal cylinder covered on its exterior cylindrical surface by a plastic envelope constituted of plastic resistant to temperatures of 60–80° C., the hollow metal cylinder being provided on its inner surface with longitudinal grooves to lighten the same, the envelope having plastic teeth extending radially thereof. There is also disclosed apparatus for heating these means.

From time immemorial, the human hair—or the hair of certain luxury animals—has been put in waves, curls, ringlets, etc. either by means of cold curlers or by means of curling irons heated, according to the times, by live coals, an alcohol or gas flame, or finally by an electric resistance.

In contemporary times, besides the classical curling iron always in use, but requiring a delicate and exact handling, the plastic or metal hair curlers which are applied after having been previously brought to a favorable temperature, relatively high, for obtaining a waving called "permanent" by the temporary destruction of the staggered bisulphate bridges assuring the curling of the hair during a certain lapse of time in the course of which simple setting suffices. This method is only applicable if the hair is previously wet.

The present invention has essentially for its object a hair shaping device, plastic, or metal with a distinct plastic protection, intended to be applied to dry hair after having been brought to a moderate temperature (between about 60° and 80° C.) for shaping the hair (waving or curling) and which does not affect, at that temperature, the internal constituents of the hair, in particular the bisulphide bridges; it has also for its objects a comb for waving or setting after pre-heating.

The present invention provides a shaping device comprising a hollow cylindrical body made either entirely of plastic or of a hollow metal cylinder covered on its exterior surface with plastic, the body being able to be heated to a temperature in the range 60°–80° C. for use.

The shaping device according to the invention is heated by a heating apparatus specially conceived for it, and which is going to be described later on, as well as the curling apparatus itself in its details of structure.

When the cylindrical body is made of a hollow metal cylinder covered with plastic, the conductivity of the metal facilitates the moderate heating of the curling apparatus.

When the cylindrical body is made entirely of plastic the curling apparatus offers the advantage of a notable decrease in weight, very noticeable for example for women, who wear sometimes twenty or more hair curlers at the same time in their hair.

In this case, the plastic body can be made either in one piece, or with an inner hollow cylinder of dimensions and of situation identical to the hollow metal cylinder, but moulded of a hard or semi-hard plastic material, different from that of its protecting envelope which remains unchanged as well as the rest of the assembly.

The hair shaping device can be either a hair curler or a waving comb.

In the accompanying drawings can be seen:

FIGURE 1, an elevation in partial axial section of a hair curler according to the invention;

FIGURE 2, a transverse section along the line II—II of FIGURE 1.

FIGURE 3, the heating apparatus, seen in front elevation, with two curlers to place for their heating;

FIGURE 4, the same, viewed in side elevation seen from the right of FIGURE 3;

FIGURE 5, perspective of one embodiment of a waving comb according to the invention;

FIGURE 6, lateral elevation seen from above in FIGURE 5;

FIGURE 7, partial axial section according to line VII—VII of FIGURE 6;

FIGURE 8, a transverse sectional view, taken along line VIII—VIII of FIGURE 6;

FIGURES 9 and 10 are the same as FIGURES 7 and 8, respectively for another embodiment of the invention.

The device (FIGURES 1 and 2) has the classical general shape of a hollow cylinder 1; it is entirely of metal with heat-resistant plastic protection 2 and it can have the following supplementary characteristics:

(a) Its inner wall can have a series of longitudinal grooves 3, parallel to themselves, whose depths and spacing are designed for lightening the metal cylinder as much as possible while said metal cylinder constitutes a radiator of optimum effect and without compromising the resistance of the device to mechanical stresses, moments of torsion or other forces of any order.

(b) One of the ends of the cylinder 1 can be cut-off if needed, to provide castellations 4 to permit the connecting of an elastic or other thread-like filament to retain the hair.

(c) The outer wall of the plastic 2 is provided with outwardly extending teeth to engage the hair

As such, the device or curler, before its introduction into the hair, is previously brought to the moderate temperature mentioned in the preamble; this heating is assured, according to the invention, by a small apparatus (cf. FIGURES 3 and 4) comprising at least one heated element 5 brought to the desired temperature by an electric resistance. The drawing shows (FIGURE 3) two of these branches 5 and 5a, but their number is not limited; similarly, the drawing only shows two curlers 1 and 1a in place, so as not to overload the figures.

Each curler is then withdrawn to be placed in the hair which remains dry or slightly dampened.

The type of heating apparatus, while responding to the criteria here-above explained, can undergo constructional variations without departing from the scope of the invention, for example in the number, the length and the inclination of the elements. The diameter of these latter is uniform, as well as the interior diameter of the curlers, whatever be the height of the latter.

The hair curling or waving comb according to FIGURES 5 to 8 comprises a handle 6 conveniently profiled for easy gripping and manipulation; this handle, moulded in plastic, makes it possible for the body with the cylindrical sleeve or body 7 whose inner wall 8 has a diameter permitting it to be mounted on the heating element and has a thickness permitting a calorific accumulation. It does not comprise any metallic part.

On its outer side, the sleeve 7 carries, moulded with it, a certain number of lateral teeth 9 of flat profile, preferably tapering towards the exterior, but all the outer ends of which are rounded.

The comb is heated at will by the user on the element described (5 or 5a), after which it is passed into the hair with a movement of rotation around its longitudinal axis

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(arrow Z) in one direction or the other according to its position in the hair. The combination of the cylindrical sleeve 7 and the lateral teeth 9 brought to the requisite temperature, assures to the user at the same time the combing and the waving of the hair combining the separate effects of a comb and a curler.

A modification of construction consists in incorporating a wound electric resistance on a core housed in the hollow cylinder of the curler or comb. It will suffice then to connect the curler or comb to an electric socket with the aid of an appropriate contact plug. Thus an antonomous heating of the curler or comb will be obtained without the use of a separate heating apparatus.

This modification offers two advantages:

(1) More rapid heating since it is effected without the intermediary of the separate heating apparatus;

(2) A longer conservation of the heat, the interior resistance serving to accumulate the heat.

The exterior aspect and the use of the curler and comb rest practically unchanged with respect to the principle models.

The embodiment shown on FIGURES 9 and 10 comprises a body 7 bearing teeth 9 and having internally of its inner wall 8 an electrical heater comprising element 10 surrounded by a electrical resistance winding 11 which can be connected by lead 13 to a source of electrical current. Naturally this lead can be replaced by a male socket embedded in the opening of inner wall 8. This inner heater which heats up very rapidly keeps heat for a long time and behaves like a heat storage device which does not transmit its heat to the plastic envelope 7 and

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therefore loses fewer calories. The external appearance of the modification is the same as that of the previous one.

With this embodiment however, it is not necessary to have recourse the heating apparatus shown on FIGURES 4 and 5. Two advantages result therefrom.

(1) The heating is more rapid in view of the elimination of the need for the heating apparatus 5.

(2) Heat is retained by the device longer owing to the internal heater which acts as a heat storage.

What is claimed is:

1. Hair shaping device comprising an inner hollow cylindrical thick body of metal resistant to high temperature covered on its external surface by a thinner envelope of plastic material in direct and overall contact therewith, said plastic material being resistant to temperatures of 60 to 80° C., the hollow cylindrical body being provided on its inner surface with longitudinal spaced grooves to lighten the same, said plastic envelope having a plurality of plastic teeth intergral therewith and extending radially outwardly thereof, and said body having castellations at at least one end to facilitate fixing the device in hair of the user.

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ROBERT PESHOCK, Primary Examiner