

[54] HAIR DRYER CAP

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132/9, 144, 145, 57

[56] References Cited

UNITED STATES PATENTS

1,276,052	8/1918	Gensch	132/57
2,481,407	9/1949	Fluegel	34/99
3,032,891	5/1962	Parker	34/99

3,727,321 4/1973 Waters et al..... 34/99

FOREIGN PATENTS OR APPLICATIONS

1,941,009	6/1966	Germany	34/99
1,175,940	1/1970	Great Britain.....	34/103

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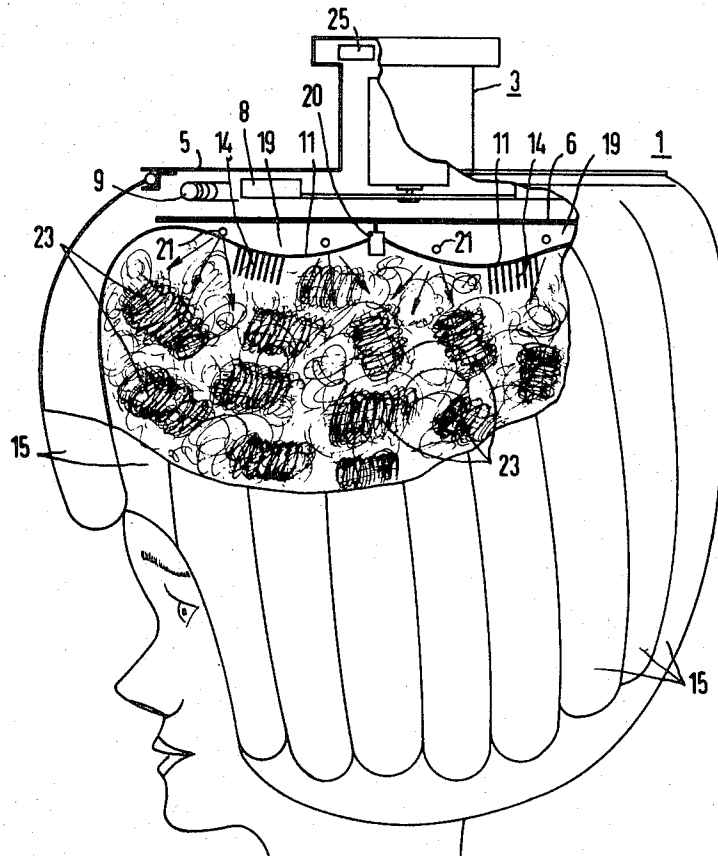
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[57] ABSTRACT

The new dryer cap is provided with a central head member accommodating the entire fan with its electric driving and connecting means. Suspending from the central head member and attached to it in coaxial relation is a double layer flexible manifold which is separated into individual compartments in a manner ensuring a stable and rigid form of the cap after inflation by the drying air stowed within the manifold. Thus, the central head member and the manifold can then be put on the head as a unit like a helmet.

12 Claims, 7 Drawing Figures



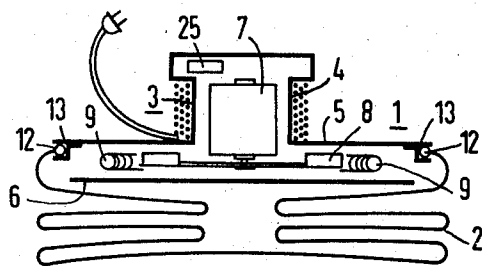


Fig. 1

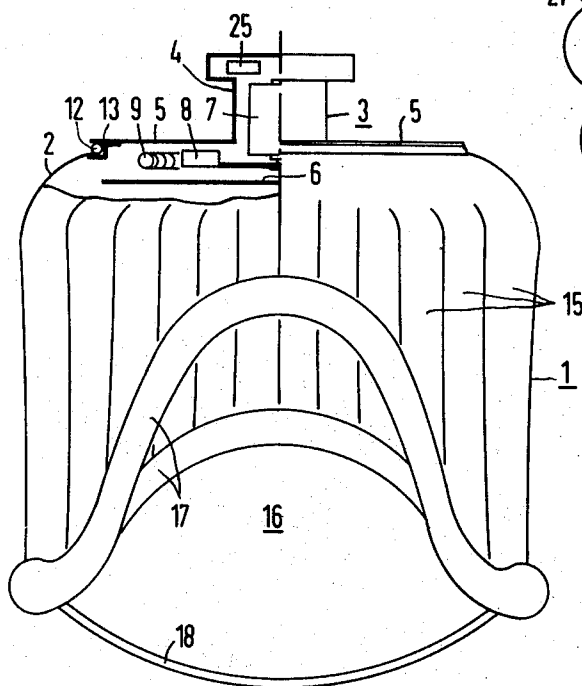


Fig. 2

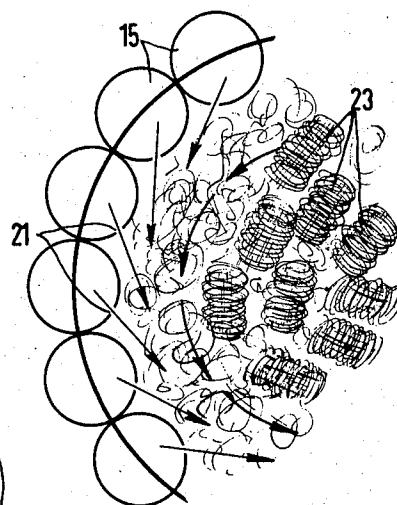


Fig. 4

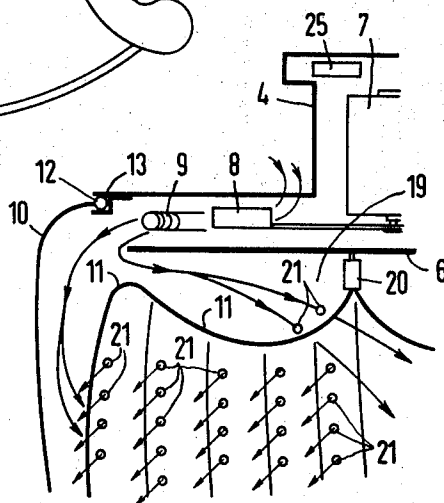


Fig. 3

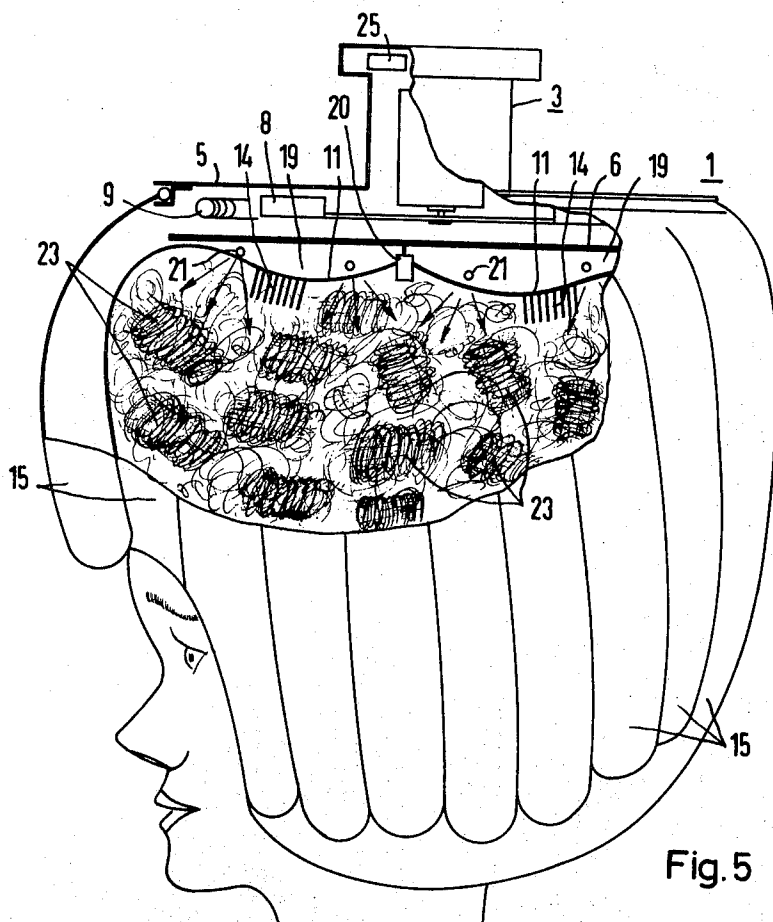


Fig. 5

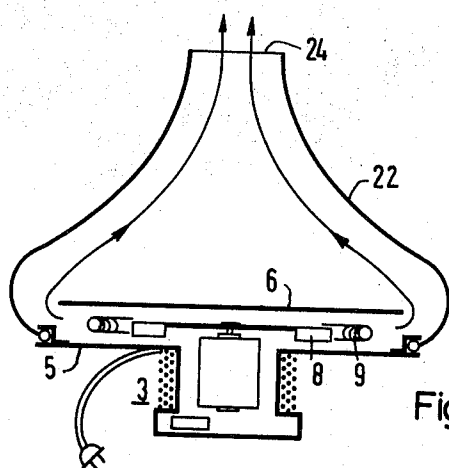


Fig. 6

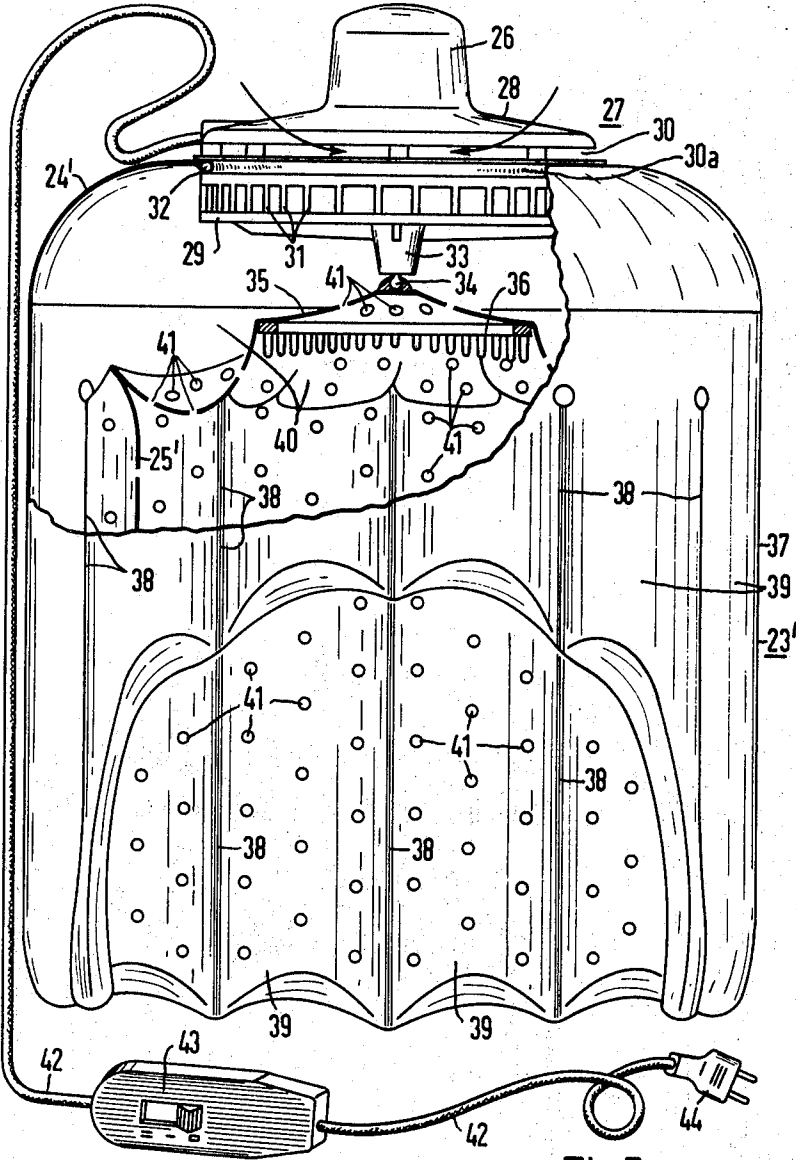


Fig.7

HAIR DRYER CAP

This invention relates to hair dryer caps, more particularly to hair dryer caps operating with electric fan and heater.

Known hair dryer caps for professional and non professional use, either with table or floor stand or of the portable type, have the disadvantage of being uncomfortable in practical use, primarily because they are too heavy and unhandy.

Other prior art hair dryer caps comprise inflatable bonnets made from doublelayer flexible plastic material and having a fan or an air inlet in the rear or side portion at the bottom edge of the bonnet. Dryer caps of the bonnet type are fastened to the head by an elastic band providing an air seal and engaging the head from the forehead to the neck. This is inconvenient and uncomfortable for the user. Furthermore, the hair setting is easily damaged when the bonnet is put on or removed.

It is, therefore, an object of the invention to overcome the disadvantages mentioned above and to provide an improved hair dryer cap which is easy to handle and comfortably to use. A more specific object of the invention is to provide a hair dryer cap of the inflatable type consisting of flexible material, which can be folded for saving space, is of low weight and can be put on like a hat, avoiding the use of a stand.

According to one of the significant features of the invention, the new dryer cap is provided with a central head member accomodating the entire fan with its electric driving and connecting means. Suspending from the central head member and attached to it in coaxial relation is a double layer flexible manifold which is separated into individual compartments in a manner ensuring a stable and rigid form of the cap after inflation by the drying air stowed within the manifold. Thus, the central head member and the manifold can then be put on the head as a unit like a helmet.

The central head member consists of an upper handle part with built-in fan motor and electric connecting means, and a lower plate-like part comprising the fan and the heater and adapted for attachment of the manifold. Its outer layer is imperforate, and only the inner layer has air distributing holes or apertures. The outer layer is detachably secured to the edge of the upper cover of the plate like part. The inner layer of the manifold is secured to the center of the lower cover of the head member and dimensioned such that a toroidal air cushion is formed by the drying air stowed in the inflated manifold. At the bottom side of the top portion of the inner layer holding means are provided, e.g., a circular comb, which serve, in cooperation with the toroidal air cushion, to effectively hold the dryer cap on the hair. Any uncomfortable pressure on the skin of the head is thus avoided. The toroidal air cushion stabilizes the upper portion of the cap. The side walls of the cap, being devided into separate compartments or pads by heat formed seams, are also stabilized by stowed air. Therefore, the entire dryer cap assembly, when inflated, is a rigid self-supporting unit. Nevertheless, it is of very low weight because it consists besides the small central head member substantially of plastic foil. It can also be used for periwigs and the like.

The fan used in the cap should deliver at least 30 cbm air per hour; particularly advantageous is an air delivery of 35 to 40 cbm per hour.

Further features and details of the invention will readily become apparent from the following description of preferred embodiments in connection with the accompanying drawing showing in

5 FIG. 1 a sectional view of a folded hair dryer cap according to the invention;

FIG. 2 a frontview, partly sectional, of the inflated cap;

10 FIGS. 3 and 4 details of the air flow within the cap;

FIG. 5 is a side view, partly sectional, of the cap in operation;

FIG. 6 a protecting cup;

15 FIG. 7 a front view, partly sectional, of another preferred embodiment of the invention.

Referring to FIG. 1, the cap 1 comprises a double-layer inflatable manifold 2 made of a flexible, heat- and crimple-proof foil or sheet. It can be folded and packed into a very small space. The foil may be clear or provided with decorations. As seen from FIGS. 3 and 5, the manifold consist of an outer imperforate layer 10 and an inner layer 11 having holes or apertures 21 for distribution of the drying air. The manifold is attached to a central head member 3 of light plastic material. The head member provides a housing for the entire fan and consists of an upper handle part 4 and a lower plate-like part with walls or covers 5 and 6. The driving motor 7 of the fan is built into the handle part 4. The motor 7 is a D.C. low-voltage motor with permanent magnet which is connected to the mains via a resistor (not shown) and a rectifier 25. The connecting cable can be coiled on the cylindrical portion of the handle part 4.

35 The motor 7 drives the fan wheel 8 positioned between the two walls or covers 5 and 6 and forcing the drying air heated by the heater 9 into the manifold. The outer layer 10 is tightly attached to a groove 13 in the edge of the cover 5 of the head member by means of a rubber band 12. The over-all diameter of the dryer cap is greater than the diameter of the two covers 5 and 6.

The inner layer 11 of the manifold is connected to the center of the lower cover 6 by means of a central releasable snap-on element 20 (see FIGS. 3, 5 and 7). Thus, the manifold can easily be removed for cleaning purposes. It is coaxially fastened to the central head portion and divided into vertical compartments or pads 15 by heat formed seams. When the cap is inflated, the stowed air will produce a toroidal air cushion 19 (see FIGS. 3 and 5) stabilizing the top portion of the cap. It also keeps vibrations off the head skin. Since the vertical pads 15, when inflated, also stabilize the side walls of the cap, the entire cap is a rigid, form-stabilized unit (see FIGS. 2, 4, 5 and 7) which can be put on the hair like a hat or helmet.

As shown in FIGS. 5 and 7, fastening means, consisting of a circular comb 14 is attached to the bottom side of the top portion of the inner layer 11. The comb and the toroidal air cushion cooperate to ensure a good fit of the cap. The fastening means may also consist of plastic pins and can be detachably connected with the foil. The cap has a frontal opening 16 accomodating the face of the user. For stabilisation purposes, the opening may be surrounded by a pad 17 extending also around the neck portion of the cap. A ribbon 18 may be used for fastening the cap under the chin. The cap

must not engage the skin tightly in order to allow the drying air exhaust downward.

Only the inner layer 11 of the manifold is provided with holes or apertures 21 at the side and top portions, admitting heated air into the interior of the cap for drying the hair. The outer layer 10 is free of apertures. The apertures 21 may be arranged at the inner side of the pads 15 in a manner shown by arrows in FIGS. 3 and 4. The air is then directed tangentially with respect to the head and does not impinge directly on the head skin which could result in uncomfortable heat spots. Due to the circular air flow in the interior of the cap, the drying air plays on the hair for a long period of time. Of essential significance is the toroidal air cushion 19 forming between the lower cover 6 of the head member and the top portion of the inner layer 11 (see FIGS. 3 and 5), which prevents the fan built into the head member to exert pressure or vibration on the head skin.

FIG. 5 shows a side view of the cap. The hair is coiled around curlers 23 and it is apparent how the cap is held on the hair by a circular comb 14.

FIG. 6 shows a rigid protecting cup 22 which can be placed on the central head member to protect the flexible manifold (not shown) during transportation. The cup is accommodated by a groove or the like on the platelike part 5, 6 of the head member. The flexible manifold having been removed, as shown in FIG. 6, the head member with the protecting cup attached thereto may be used as a portable hair dryer. The air then emerges from the narrow opening 24 of the cup.

Another embodiment of the invention is shown in FIG. 7. The inflatable flexible manifold 23' comprises an outer layer 24' and an inner layer 25'. A central head member is also provided consisting of a handle part 26 and a flat cylindrical part 27 with an upper cover 28 and a lower cover 29. Both parts accommodate the entire fan assembly including the electric driving and connecting means which have already been shown in FIGS. 1, 2 and 3 and described above.

Under the upper cover 28 there is provided an annular intake opening 30 admitting air to the fan. A grid 31 is placed between the upper cover 28 and the lower cover 29. At the upper edge of the grid 31 is a groove 30a into which the upper end of the outer layer 24' is sealed by means of a rubber band 32. A central extension 33 is fastened to, or formed integral with, the lower cover 29. It carries a little ball peg 34 for snapping on the central portion 33 of the inner layer 25'. For holding the cap on the hair, a circular comb 36 of plastic material is welded to the top portion 35 of the inner layer coaxially to the peg 34. The side portions of the manifold are separated into vertical compartments or pads 39 by heat formed seals 38 connecting the inner and outer layers, respectively. These seals do not fully extend up to the top portion 35 of the inner layer 25'. The top portion is so dimensioned that due to the central attachment of the center of this portion a toroidal air cushion 40 is formed by inflating the manifold. In cooperation with the circular comb 36 the cap is firmly and effectively held on the hair.

The heated air flows from the fan through the grid 31 into the space between the two layers 24' and 25' and then passes through the holes 41 into the interior of the cap impinging on the hair of the user. The cap is stabilized by the toroidal air cushion 40 and the pads 39 inflated by the drying air. The cap is connected to the

main by a cable 42 with two-step-switch 43 and plug 44.

A person skilled in the art will appreciate that the embodiments shown may be changed and modified without departing from the spirit and scope of the invention as defined in the claims.

What is claimed is:

1. A freely portable hair dryer cap comprising a central head member accommodating a fan, an electric motor for driving said fan, a heater, and means for supplying electrical energy to said fan and said heater, said head member having an air intake and an annular air exhaust, an inflatable, flexible, double-walled manifold separated into vertical compartments said manifold having an inner layer provided with a plurality of holes and an outer impermeforate layer, said outer layer being detachably secured to said central head member above said annular air exhaust, the top center of said inner layer being secured only to the bottom center of said central head member below said annular air exhaust and defining with said head member and said outer layer a toroidal air distributing space communicating with said compartments into which said air exhaust extends, seam means joining said inner layer and said outer layer below the top of said inner layer to separate said manifold into said vertical compartments, said vertical compartments being each supplied with air from said toroidal air distributing space which, when inflated, forms a toroidal air cushion.

2. A hair dryer cap according to claim 1, said top center of said inner layer being detachably secured to said central head member.

3. A hair dryer cap according to claim 1, the top of said inner layer being provided with snap-on means for securing it to the bottom center of said central head member.

4. A hair dryer as claimed in claim 1, the top of said inner layer being convex in shape.

5. A hair dryer cap as claimed in claim 1, said central head member including an upper cylindrical handle portion accommodating said motor, and a lower plate-like part, the edges of both said parts forming an annular exhaust comprising numerous air exhaust openings.

6. A hair dryer cap as claimed in claim 4, said central head member having an annular groove for engaging the outer layer of said manifold.

7. A hair dryer cap as claimed in claim 1, said annular groove being formed in the circumference of said plate-like part.

8. A hair dryer cap as claimed in claim 1, said manifold being provided with an inflatable pad extending along the bottom edge.

9. A freely portable hair dryer cap comprising a central head member accommodating a fan, an electric motor for driving said fan, a heater, and means for supplying electrical energy to said fan and said heater, said head member having an air intake and an air exhaust grid, an inflatable, flexible, double-walled manifold having an inner layer provided with a plurality of holes and an outer impermeforate layer, said outer layer, said outer layer being detachably secured to said central head member above said exhaust grid, the top of said inner layer being spaced below said head member and defining with said head member and said outer layer a toroidal air distributing space into which air from said exhaust grid flows, seam means joining said inner layer

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and said outer layer below the top of said inner layer to separate said manifold into vertical compartments, said vertical compartments being each supplied with air from said toroidal air distributing space which, when inflated forms a toroidal air cushion, said inner layer being provided at its underside with fastening means adapted to engage the hair.

10. A hair dryer cap according to claim 9, wherein said fastening means is a circular comb.

11. A freely portable hair dryer cap comprising a central head member accommodating a fan, an electric motor for driving said fan, a heater, and means for supplying electrical energy to said fan and said heater, said head member having an air intake and an annular air exhaust, an inflatable, flexible, double-walled manifold separated into vertical compartments, the outer layer

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of said manifold being imperforate and secured to said central head member above said annular air exhaust, the inner layer being perforate and removably secured to the bottom of said central head member below the air exhaust, thus forming a toroidal air distributing space in the top portion of said manifold into which said annular exhaust extends, said vertical compartments being each supplied with air from said toroidal air distributing space which, when inflated, forms a toroidal air cushion adapted to rest on the top of the head of the user, said inner layer being provided at the lower side of its top portion, with fastening means adapted to engage the hair.

12. A hair dryer cap as in claim 11, said fastening means comprising a circular comb.

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