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HAIR DRIER

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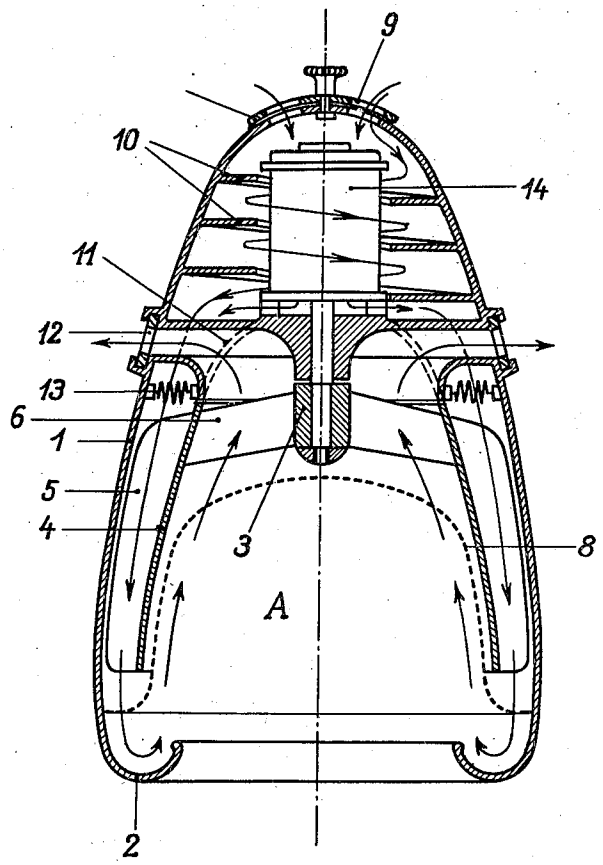

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HAIR DRIER

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My present invention relates to hair dryers. It is an object of my present invention to provide a hair dryer which has a very good drying capacity.

It is a further object of my present invention to provide a hair dryer which is simple in construction and efficient in operation.

It is known to use for drying of the hair a drying apparatus which has the shape of a closed helmet surrounding the hair and drying it by means of a stream of heated air. Although such apparatus constitute an important step forward in this field compared with the previously used dryer types, I have found that they have still considerable disadvantages.

One of these disadvantages consists in the fact that no adequate means are provided to enable the heated air after saturation with vapors to leave the helmet.

Usually hair dryers of the above-described type are provided with circulating means by which the vapor saturated air is again returned to the circulating fan and the heating elements; after passage through this circulating fan and the heating elements the thus reheated air is again guided into contact with the hair to be dried.

However, such reheated air still contains the previously absorbed moisture and is nearly saturated so that it has a very limited drying effect. This results in relatively long drying periods which in turn cause reduced efficiency of the dryer; furthermore such long drying periods not only annoy the person using it but also reduce the efficiency of the dryer.

In accordance with my present invention I avoid all above disadvantages by providing a hair dryer which is constructed so that the fan which removes the vapor saturated air from the hair is equipped with a conduit which leads directly outside into the space surrounding the dryer.

Furthermore, my present invention includes various other improvements which relate to the construction of the same.

The novel features which I consider as characteristic for my invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawing, in which a longitudinal section of a hair dryer according to my present invention is shown.

In the drawing reference number 1 indicates

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the dryer helmet which is provided with an inwardly and upwardly bent bottom rim 2 and forms a free space A for the head of the person using the dryer. The drying helmet 1 furthermore contains a fan 3 which is driven in well known manner by means of the electric motor 14.

In accordance with my present invention the fan 3 consists of two sets of fan blades 5 and 6 which are spaced from each other by means of a substantially conical dividing wall 4.

The outer fan blades 5 are inclined and directed so as to force the air as indicated by arrows downwards from the top to the bottom of the fan blades and from there against the inwardly and upwardly bent bottom rim 2 of the helmet 1. The upwardly bent inner edge of the bottom rim 2 guides the air upwards along the hair of the person using the dryer.

The inner fan blades 6 are oppositely inclined so as to suck the air upwards as indicated by arrows and to force it through the conduits 11 outwards into the space surrounding the helmet 1.

In the space above the fan blades 5 I provide the heating elements 13 and above these heating elements, i. e. within the upper part of the helmet 1 I arrange a spiral shaped member 10 surrounding the electric motor 14.

At the top of the helmet 1 I arrange several air inlet openings which can be opened or closed by means of a slidable closure plate 9 of well known type. By means of this closure plate 9 it is not only possible to open or close the air inlet openings at the top of the helmet but it is also possible to adjust their size.

The outer ends of the conduits 11 are covered by the annular member 12 which is provided with outlet openings; by turning of this annular member 12 it is possible not only to close and open the conduits 11 but also to adjust the size of the outlet openings.

Within helmet 1 I provide a substantially hemispherical wire netting 8 which prevents contact between the rotating fan blades and the hair of the person using the dryer.

My new hair dryer is used and operated as follows:

Before use the helmet 1 is adjusted so that the hair and the upper part of the head of the person using it is located within the space A in the helmet. Then the electric motor 14 is connected with the electric circuit and operates the fan. During rotation of the fan blades the outer fan blades 5 suck fresh air through the air inlet openings of the closure plate 9 and the spiral shaped channel formed between the single blades of the

screw shaped spiral member 10. Part of the air sucked in by the fan blades 5 is passing through the motor 14 itself, thereby sufficiently cooling the same.

The thus sucked in air is then passing past the heating elements 13 by which it is heated and then reaches the fan blades 5 which force it downward as described above.

The heated air then impinges against the inwardly and upwardly bent bottom rim 2 of the helmet 1 whereby it is upwardly directed and passes through the hair of the person using the dryer.

During the drying process the hot and dry air reaching the hair is saturated with vapor and sucked upwards by the fan blades 6; these blades 6 then guide the vapor saturated partly cooled air through the conduits 11 outwards, without recirculating the same.

Thus the wet hair is dried only by hot and dry air which is adapted to absorb and carry the maximum amount of vapor. Therefore the drying effect of a dryer of the type proposed by me is far superior to the drying effect of a dryer of known type where, as set forth above, the hair is mainly dried by recirculated hot wet air. Such recirculated hot wet air can of course not have the same drying effect as hot dry air.

In order to obtain optimal drying effect I propose to shape the fan blades 5 so that the air leaving the same passes along a spiral path during which it contacts the hair. Such spiral guiding of the air can be obtained by extending the fan blades 5 downwardly nearly into the bottom rim 2 of the helmet.

Furthermore I have found that by use of two sets of ventilator blades 5 and 6 one of which is forcing the hot air against the hair to be dried and the other of which sucks the air after drying from the hair, it is possible to greatly increase the efficiency of my new dryer; this is due to the fact that by an arrangement of the above described type it is practically possible to prevent entry or exit of air between the edge of the bottom rim 2 of the dryer and the head of the person using the same.

I have also found that the combination of the two blade sets 5 and 6 in one single fan constitutes a substantial simplification.

Finally, adjustment of the air by the turnable closure plate 9 and/or the annular member 12 makes it possible to regulate the supply of air as necessary for particular cases.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of dryers differing from the types described above.

While I have illustrated and described the invention as embodied in hair dryers, I do not intend to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of my invention.

Without further analysis, the foregoing will so fully reveal the gist of my invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a hair dryer in combination a dryer helmet having an open bottom end; a hair drying chamber within said dryer helmet accessible through said open bottom end thereof into which the upper head portion of the person using the dryer helmet fits; air inlet means in the wall of said dryer helmet spaced from said bottom end thereof; at least one air inlet conduit leading from said air inlet means to said open bottom end of said dryer helmet and from there into said hair drying chamber; an electric motor arranged within said air conduit; heating means arranged also in said air inlet conduit between said motor and said open bottom end of said dryer helmet; first fan means driven by said electric motor arranged also within said air inlet conduit adapted to suck in cold air through said air inlet means and force said cold air past said electric motor cooling the same and thereafter past said heating means whereby said sucked in air is heated, and finally along said open bottom end of said dryer helmet into said hair drying chamber within the same; air outlet means arranged in the wall of the dryer helmet spaced from said open bottom end thereof; at least one air outlet conduit connecting the upper end of said hair drying chamber within said dryer helmet with said air outlet means; and second fan means arranged within said hair drying chamber in said dryer helmet and driven also by said electric motor so as to force vapor saturated air from said hair drying chamber through said air outlet conduit and said air outlet means into the space surrounding the said dryer helmet without recirculating the same.

2. In a hair dryer in combination a dryer helmet having an open bottom end, a hair drying chamber within said dryer helmet accessible through said open bottom end thereof into which the upper head portion of the person using the dryer helmet fits; air inlet means in the wall of said dryer helmet spaced from said bottom end thereof; at least one air inlet conduit leading from said air inlet means to said open bottom end of said dryer helmet and from there into said hair drying chamber; an electric motor arranged within said air conduit; heating means arranged also in said air inlet conduit between said motor and said open bottom end of said dryer helmet; first fan means driven by said electric motor arranged also within said air inlet conduit adapted to suck in cold air through said air inlet means and force said cold air past said electric motor cooling the same and thereafter past said heating means whereby said sucked in air is heated, and finally along said open bottom end of said dryer helmet into said hair drying chamber within the same; air outlet means arranged in the wall of the dryer helmet spaced from said bottom end thereof; at least one air outlet conduit crossing said air inlet conduit and connecting the upper end of said hair drying chamber within said dryer helmet with said outlet means; and second fan means combined with said hair drying chamber and said air outlet conduit and driven also by said electric motor so as to force vapor saturated air from said hair drying chamber through said air outlet conduit and said air outlet means into the space surrounding said dryer helmet without recirculating the same.

3. In a hair dryer in combination a dryer helmet having an open bottom end; a drying chamber within the lower part of the dryer helmet accessible through the bottom end thereof into which the upper head portion of the person using

said dryer helmet fits; a partition wall within said dryer helmet above said hair drying chamber forming an air inlet compartment within the upper part of said dryer helmet; inlet means in the wall of said dryer helmet leading into said air inlet compartment; an electric motor arranged within said air inlet compartment; air inlet conduits leading from said air inlet compartment along the wall of said dryer helmet to the open bottom end thereof; heating means arranged within said air inlet conduits; first fan means driven by said electric motor arranged also within said air inlet conduits adapted to suck in cold air through said air inlet means and force said cold air through said air inlet compartment past said electric motor cooling the same and thereafter past said heating means whereby said sucked in air is heated and finally in heated state along said open bottom end of said dryer helmet into said hair drying chamber within the same; air outlet means arranged in the wall of the dryer helmet spaced from the open bottom end thereof; air outlet conduits connecting the upper end of said hair drying chamber within said dryer helmet with said air outlet means; and

second fan means arranged within said hair drying chamber in said dryer helmet and driven also by said electric motor so as to force vapor saturated air from said hair drying chamber through said air outlet conduits and said air outlet means into the space surrounding the said dryer helmet without recirculating the same.

ALOIS KVĚTOŇ.

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