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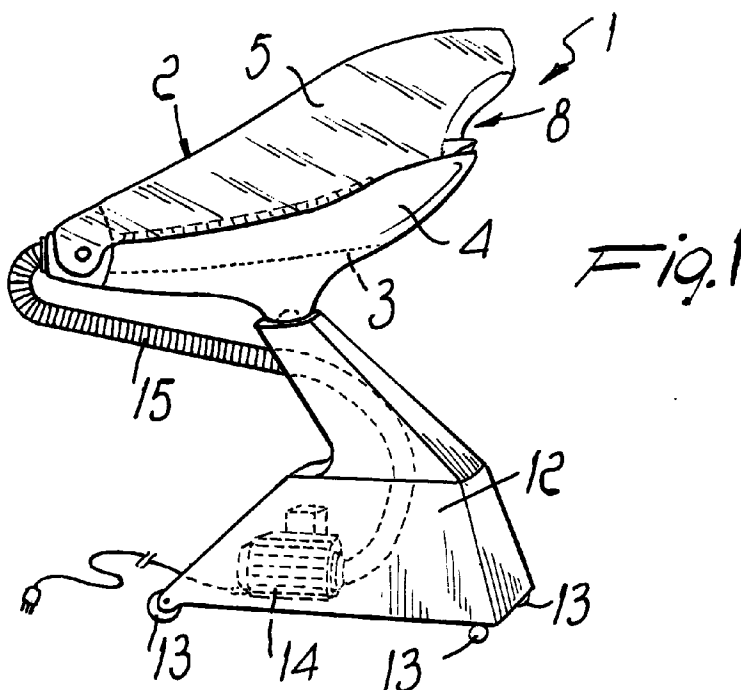
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(54) **Hair dryer, for home or professional use, particularly for drying long hair**

(57) A hair dryer, for professional or home use, particularly for drying long hair, comprises a structure (2) with at least one perforated surface (3) for supporting and resting the hair to be dried, and means (14,15) for con-

veying a flow of warm air through and above the perforated surface (3) to dry the hair arranged on the perforated surface.



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Description

The present invention relates to a hair dryer for professional or home use, particularly for drying long hair.

Conventional hair dryers, commonly termed "fon" in Italian, generally comprise a body that forms a handle and accommodates an impeller that is driven by an electric motor and generates an air flow from an inlet, formed at one end of the hair dryer body, to an outlet formed at the opposite end of the hair dryer body. Electric resistors are interposed between the impeller and the outlet and appropriately heat the air flow generated by the impeller. The hair dryer body has a handle, through which the appliance is held by the user and directed towards the hair to be dried.

Overhead hair dryers are also known; they are generally meant for professional use, but have become widespread in a domestic context as well; they have a hood-shaped body inside which a hollow is provided for accommodating the head of the user. Inside the casing of the appliance, in a region separated from the hollow that receives the head of the user, there is an impeller, which is driven by an electric motor so as to generate an air flow from the outside towards the hollow. In this type of appliance, too, electric resistors are provided for heating the air flow generated by the impeller.

Appliances for substantially fully professional use are also known; they are equipped with a plurality of infrared lamps arranged around a region adapted to receive the head of the user.

These appliances effectively perform their task in drying short or medium-length hair.

In drying long hair, instead, and particularly for long hair that is not entirely straight, for example with curls or even simply with slight waves, problems arise while drying with these appliances.

Hood-like appliances are in fact scarcely adapted for drying long hair, since the hair, in order to be placed inside the hood, would have to be gathered around the head of the user and therefore an unacceptable drying would be obtained, with creases induced along the hair.

Use of infrared appliances also entails problems and drawbacks, since the infrared radiation is highly scattered to reach the large mass of the hair and is therefore scarcely effective and requires excessive drying times.

Accordingly, the use of handheld hair dryers is preferred in drying long hair.

However, even the use of these hair dryers is not free from problems.

Since drying is performed with the hair spread loosely on the shoulders of the user, the hair, due to its weight, further increased by the presence of water, is stretched and no longer has any natural waviness.

If drying is performed in these conditions, the unwanted effect of completely eliminating the natural waviness of the hair is obtained.

Furthermore, the wet hair of the surface layer contrasts the passage of warm air towards the underlying layers of hair, hindering their drying. To avoid excessive

drying times thus required, the flow of air and its temperature are increased, with the drawback of overheating the surface layers of the hair.

A principal aim of the present invention is to solve the above mentioned problems by providing a new hair dryer for professional or home use, particularly for drying long hair, which allows to dry hair while respecting its natural waviness.

Within the scope of this aim, an object of the invention is to provide a hair dryer that allows to achieve high effectiveness in drying, considerably reducing drying times while operating with temperatures that are significantly lower than those required by conventional appliances.

Another object of the invention is to provide a hair dryer that is simple and easy to use.

Another object of the invention is to provide a hair dryer that is structurally simple and can be manufactured at low costs.

This aim, these objects, and others which will become apparent hereinafter are achieved by a hair dryer, for professional or home use, particularly for drying long hair, characterized in that it comprises a structure with at least one perforated surface for supporting and resting the hair to be dried, and means for conveying a flow of warm air through and above said perforated surface.

Further characteristics and advantages of the invention will become apparent from the following detailed description of a preferred but not exclusive embodiment of the hair dryer according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a perspective view of a hair dryer according to the invention;

figure 2 is a perspective view of a portion of the hair dryer according to the invention, with the lid removed and with a component shown in exploded view for greater clarity;

figure 3 is a top plan view of the same detail of figure 2;

figure 4 is a front elevation view of the same detail of figures 2 and 3;

figure 5 is a lateral elevation view of the same detail of figures 2 to 4; and

figure 6 is a view of the use of the hair dryer according to the invention.

With reference to the above figures, the hair dryer according to the invention, generally designated by the reference numeral 1, comprises a structure 2 having at least one perforated surface 3 for resting and supporting the hair to be dried and means for conveying a flow of warm air through and above the perforated surface 3.

More particularly, the structure 2 is conveniently constituted by a box-like casing composed of a lower portion 4 and of a lid 5 that form, as a whole, a drying cham-

ber 6 that is meant to contain part of the head of the user and the hair to be dried.

The perforated surface 3 is arranged in a region that is spaced from the bottom of the lower portion 4, and in addition to said perforated surface 3 it is possible to provide additional perforated surfaces 7 to be arranged inside the chamber 6 in regions that are appropriately spaced vertically from one another and from the perforated surface 3 so as to allow to arrange the hair to be dried, inside the chamber 6, in superimposed and mutually spaced layers.

The casing constituted by the lower portion 4 and by the lid 5 has, on the front side, an opening 8 through which the head of the user is partially inserted in the chamber 6.

The lower portion 4 has, at the opening 8, a contoured region 9 that forms a support for the nape of the user's neck.

The perforated surface 3 can be simply constituted by a mesh, made of a material adapted to withstand the operating temperatures of the hair dryer, which is associated internally with the lower portion 4, at a level that is appropriately spaced from the bottom of the lower portion 4, so as to divide the chamber 6 into two parts.

The additional perforated surfaces 7 can also be constituted by a mesh and are preferably associated with the lower portion 4, at a level that is spaced from the perforated surface 3, in a detachable manner so that they can be removed and associated sequentially with the lower portion 4 while arranging the hair of the user inside the chamber 6, as will become apparent hereinafter.

The additional perforated surfaces 7 have, on their front side, a recess 10 so as to avoid hindering in any way the insertion of the head of the user inside the chamber 6.

The additional surfaces 7 are furthermore laterally provided with hook-shaped regions 11 that engage the lateral edges of the lower portion 4 of the casing, as shown in particular in figure 4.

The lid 5 is conveniently pivoted to the lower portion 4 proximate to its rear end, so that it can be easily lifted to facilitate the insertion of the head of the user in the chamber 6 and allow correct arrangement of the hair to be dried on the perforated surfaces 3 and 7.

The casing, constituted by the lower portion 4 and by the lid 5, is appropriately mounted on a footing 12 that is provided, in a downward region, with wheels 13 so as to be easily movable according to the requirements.

The means for conveying the flow of warm air inside the chamber 6 comprise a blower, which is composed for example, in a per se known manner, of an electric motor 14 and of an impeller the outlet whereof is connected to a tube 15 connected to the casing constituted by the lower portion 4 and by the lid 5, preferably at its rear end.

At said rear end of the casing a seat 16 is provided which accommodates means for heating the air flow generated by the blower. Said heating means can be constituted by electric resistors 17.

The seat 16 is preferably separated from the chamber 6 by a wall 18, in which holes 19 are formed for the passage of the air arriving from the tube 15 into the chamber 6, with distribution of the air flow below the perforated surface 3, between the perforated surfaces 3 and 7, and above said perforated surfaces.

The use of the hair dryer according to the invention is as follows.

The user, with the lid 5 raised and with the additional perforated surfaces 7 removed, rests the nape of his or her neck on the contoured region 9 and the wet hair is spread partly on the perforated surface 3 and partly on the additional perforated surfaces 7, which are arranged in the chamber 6 in sequence, so that the mass of hair to be dried is uniformly distributed on the various perforated surfaces 3 and 7.

It should be noted that the resting of the wet hair on the perforated surfaces 3 and 7 practically eliminates the effect of the force of gravity on the hair, which can thus assume its natural shape, with any waviness.

After the hair has thus been rested on the perforated surfaces 3 and 7, the lid 5 is lowered onto the lower portion 4 and the hair dryer is operated, supplying power to the electric motor 14 that drives the impeller and to the electric resistors 17.

The flow of warm air that passes simultaneously below the perforated surface 3 and between the various parts into which the chamber 6 is divided due to the presence of the perforated surfaces 3 and 7 strikes the hair and dries it.

The flow of warm air, by passing through the perforations of the surfaces 3 and 7, besides uniformly striking the hair resting on said surfaces, also produces its dynamic support, further contrasting the force of gravity and thus ensuring a drying of the hair that respects its natural waviness.

Furthermore, by virtue of the fact that the flow of warm air simultaneously strikes the entire mass of hair, it is possible to work with air temperatures that are significantly lower than the temperatures normally used in conventional hair dryers, achieving uniform drying in a significantly shorter time and without damaging the hair.

In practice, it has been observed that the hair dryer according to the invention fully achieves the intended aim, since it allows to dry long hair in a short time, respecting the structure of the hair and its natural waviness.

A further advantage of the hair dryer according to the invention is that it allows the user to keep a relaxed position during drying.

Although the hair dryer according to the invention has been conceived particularly for drying long hair, it can nonetheless also be used to dry short hair.

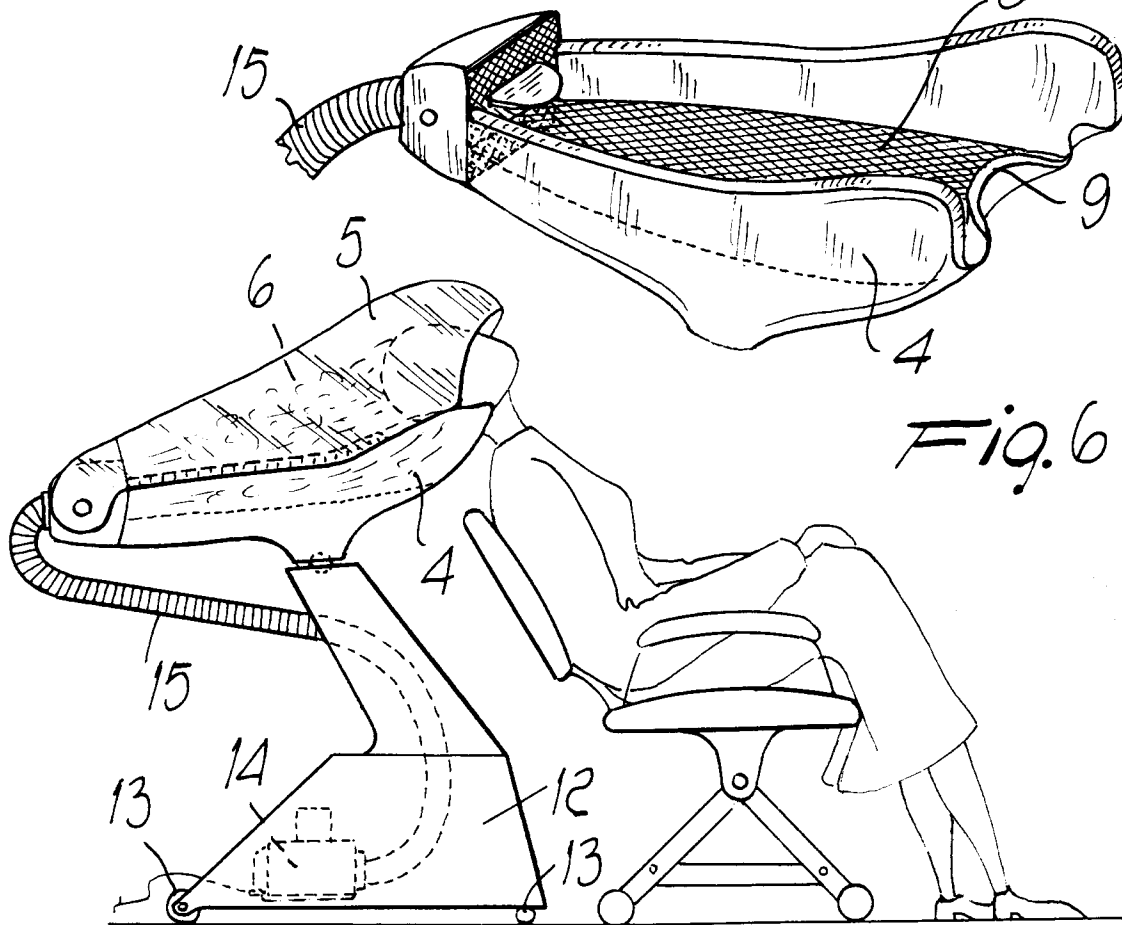
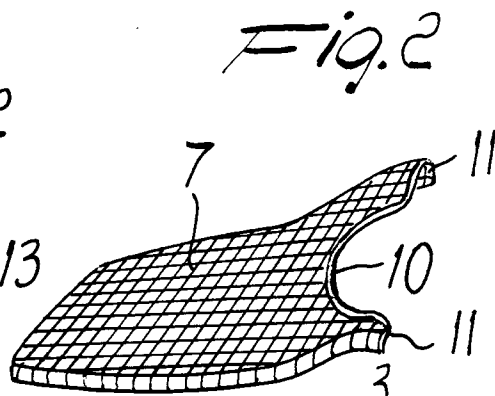
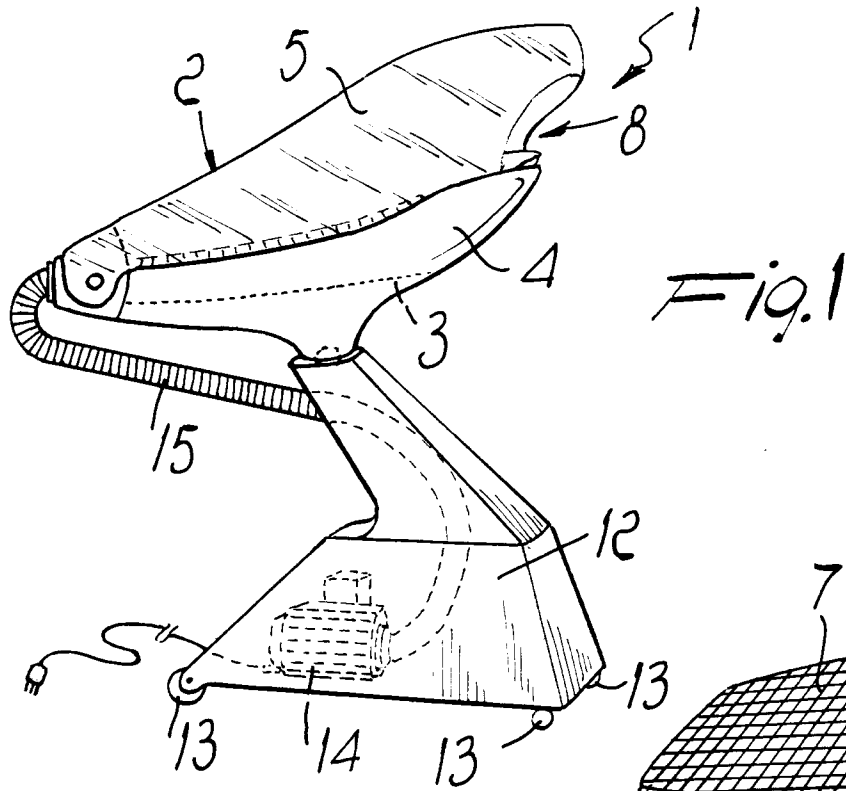
The hair dryer thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept; all the details may furthermore be replaced with other technically equivalent elements.

In practice, the materials employed, as well as the contingent shapes and dimensions, may be any according to the requirements and the state of the art.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. Hair dryer, for professional or home use, particularly for drying long hair, characterized in that it comprises a structure (2) with at least one perforated surface (3) for supporting and resting the hair to be dried, and means (14, 15) for conveying a flow of warm air through and above said perforated surface (3). 15
2. Hair dryer according to claim 1, characterized in that said structure (2) comprises a box-like casing (4, 5) which is provided, at the front, with a contoured opening (8) with a region (9) for resting the user's head, said box-like casing internally forming a drying chamber (6) that is connected to said means (14, 15) for conveying the flow of warm air. 20
3. Hair dryer according to claims 1 and 2, characterized in that said box-like casing has, in an upward region, a movable lid (5) for placing the hair inside said chamber (6). 25
4. Hair dryer according to one or more of the preceding claims, characterized in that said at least one perforated surface (3) is spaced from the bottom of said box-like casing (4, 5) and divides said chamber (6) into at least two parts connected to said means (14, 15) for conveying the flow of warm air. 30
5. Hair dryer according to one or more of the preceding claims, characterized in that it comprises a plurality of perforated surfaces (7) for supporting and resting the hair, said perforated surfaces (7) being superimposed inside said chamber (6) and being at least partially detachably associated with said casing (4, 5) to arrange the hair in layers sequentially on the various perforated surfaces. 35
6. Hair dryer according to one or more of the preceding claims, characterized in that said means for conveying the flow of warm air comprise a blower (14) that is connected, by virtue of its delivery duct (15), to a rear region of said box-like casing (4, 5), said rear region accommodating means (17) for heating the incoming air flow and means (19) for distributing the air in the parts of said chamber (6) that are mutually divided by said at least one perforated surface (3). 40
7. Hair dryer according to one or more of the preceding claims, characterized in that said heating means are constituted by electric resistors (17). 45
8. Hair dryer according to one or more of the preceding claims, characterized in that said at least one perforated surface (3) is constituted by a mesh. 50
9. Hair dryer according to one or more of the preceding claims, characterized in that said box-like casing (4, 5) is connected above a footing (12) provided with wheels (13). 55
10. Hair dryer for professional or home use, particularly for drying long hair, characterized in that it comprises one or more of the described and/or illustrated features.



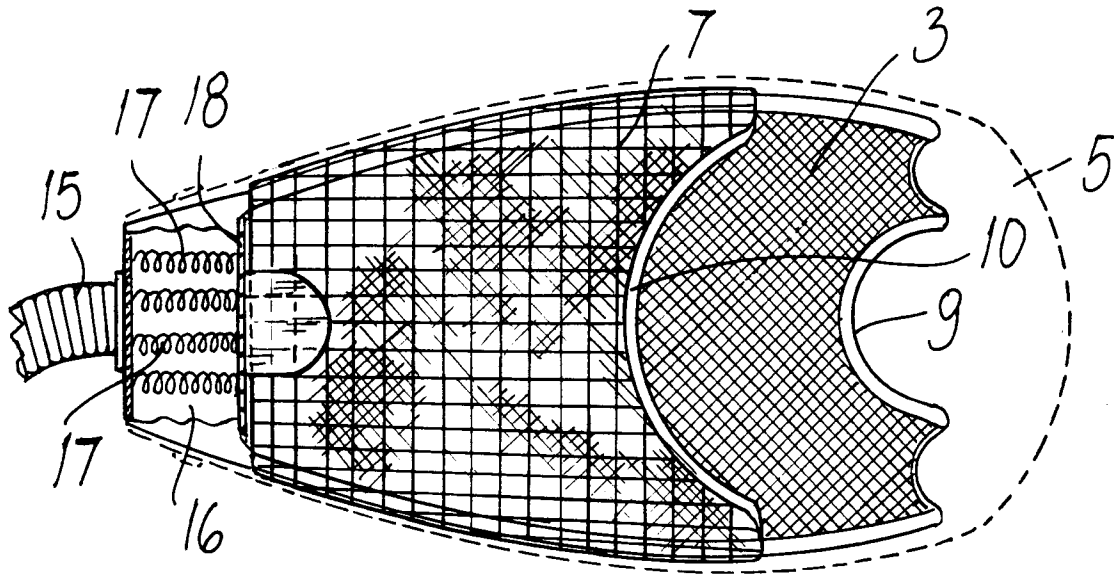


Fig. 3

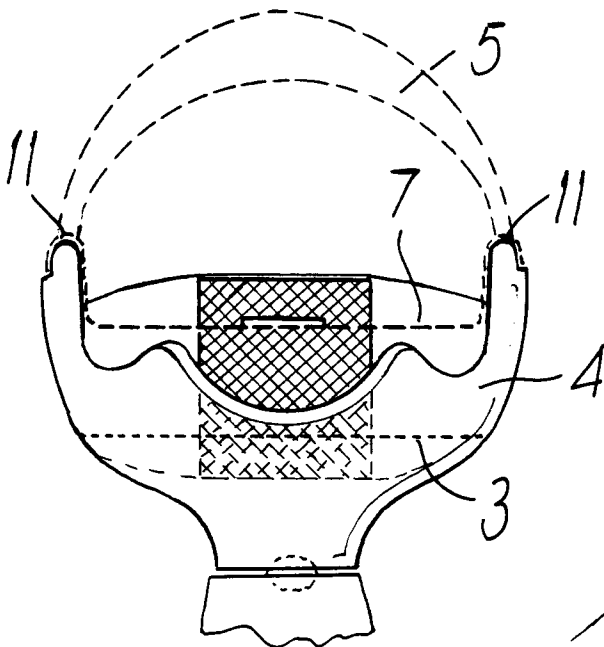


Fig. 4

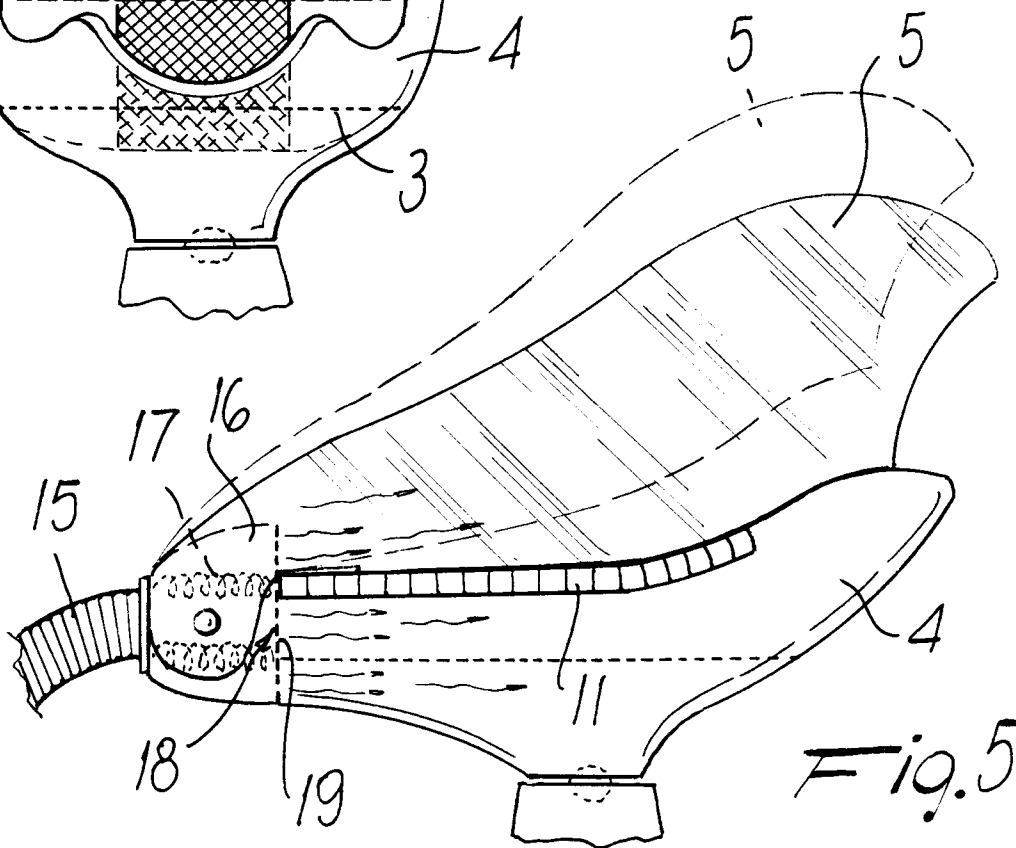


Fig. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 95 11 8151

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US-A-3 816 940 (COURNOYER H) 18 June 1974 * column 2, line 15 - column 4, line 23; figures *	1-10	A45D20/02 A45D20/22
X	FR-A-2 307 489 (L'OREAL) 12 November 1976 * page 4, line 33 - page 7, line 4; figures *	1,2,4-10	
X	FR-A-321 257 (HORNUNG) 6 January 1903 * page 1, line 14 - page 2, line 13; figures *	1-3,8-10	
X	GB-A-147 260 (DYER) 12 August 1920 * page 2, line 99 - page 3, line 79; figures *	1-3,7-10	
X A	DE-C-130 146 (HORNUNG) 23 April 1902 * the whole document *	1-3,8-10 6	
X	US-A-5 271 160 (GREINER CARYL J ET AL) 21 December 1993 * column 3, line 6 - column 4, line 44; figures *	1,7-10	
X	DE-C-220 182 (STAB) 19 March 1910 * the whole document *	1,7,10	
X	DE-C-56 571 (KIELHORN) 11 May 1891 * page 1, column 1, last paragraph - page 2, column 1, line 3; figures *	1,10	
A	DE-C-146 664 (URBACH) 12 December 1903		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22 March 1996	Examiner Vistisen, L
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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