Jan. 8, 1935. E. F. SUTER 1,987,425

HAIR DRIER

Filed Oct. 24, 1929 2 Sheets-Sheet 1

Fig. 1,

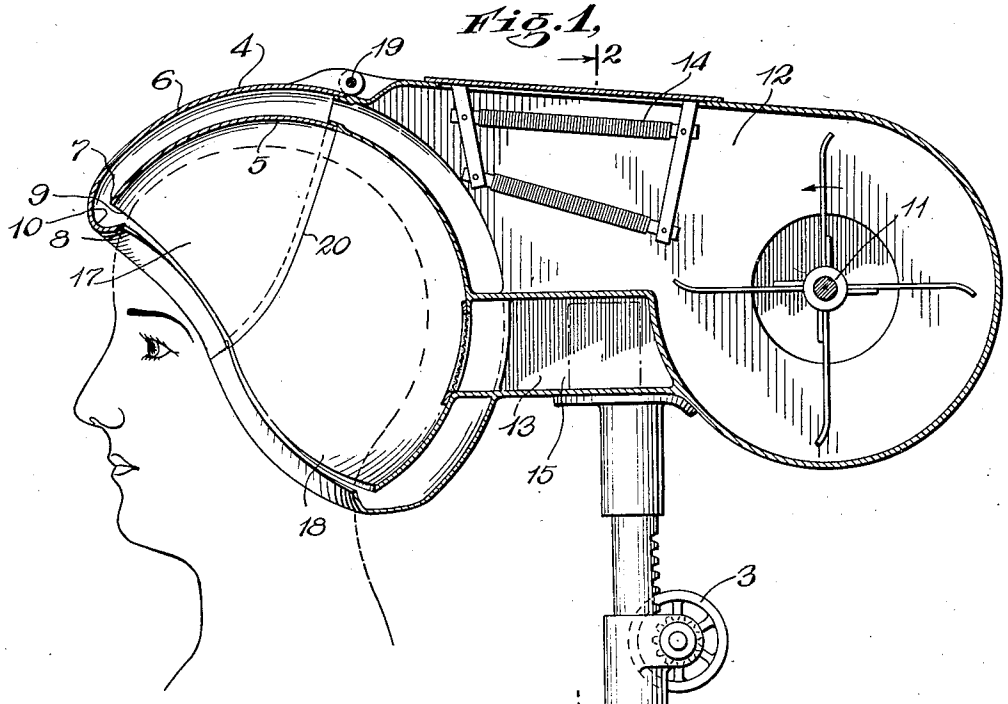
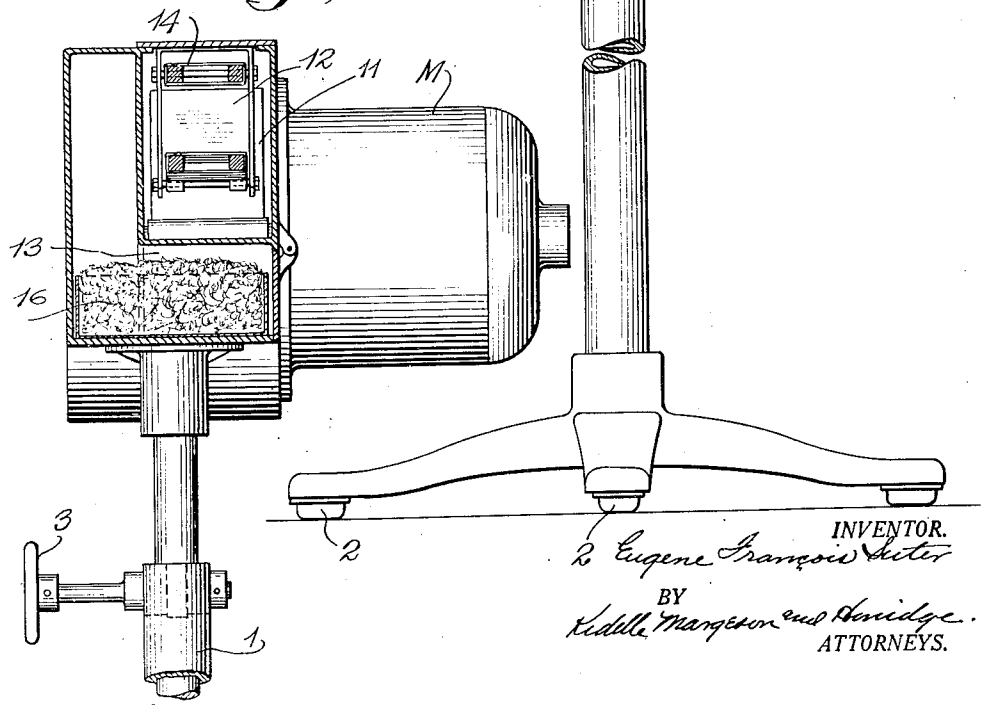


Fig. 2,



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Fig. 3,

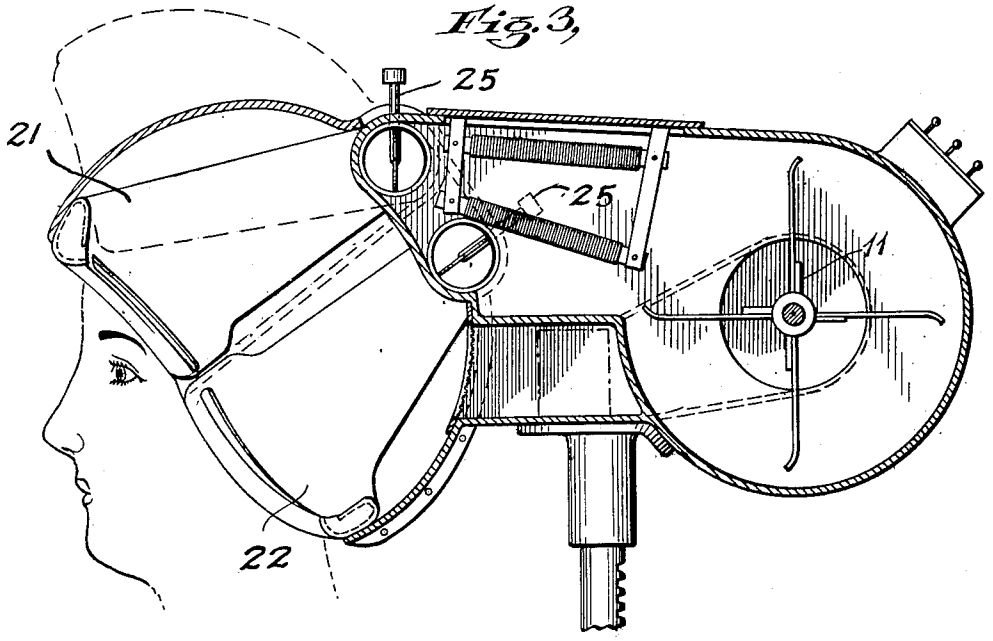


Fig. 4,

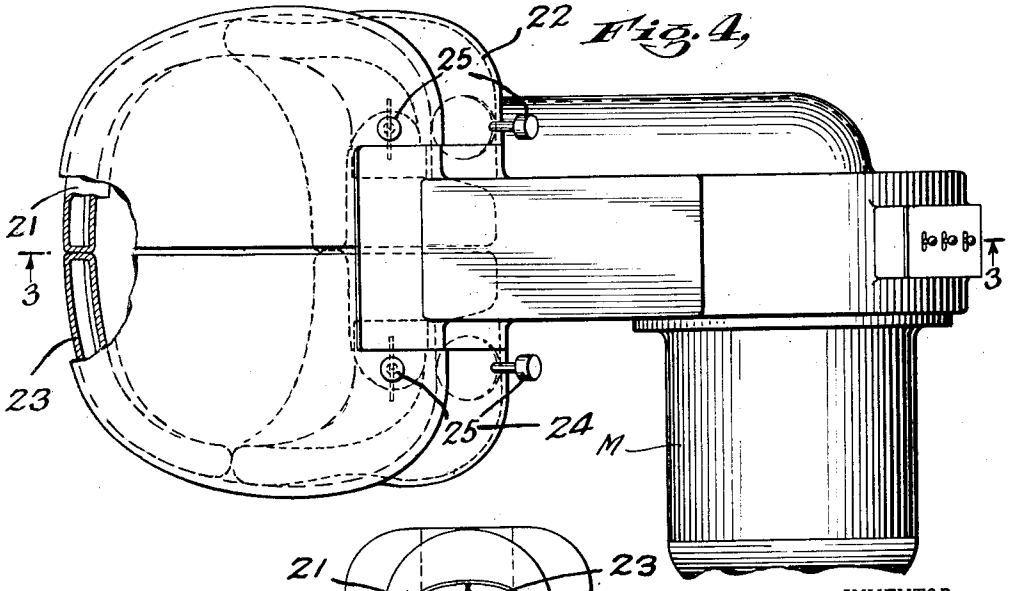
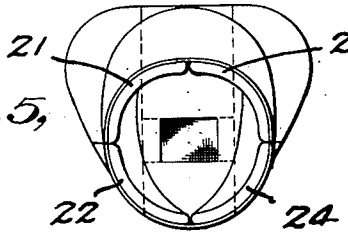


Fig. 5,



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UNITED STATES PATENT OFFICE

1,987,425

HAIR DRIER

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Application October 24, 1929, Serial No. 402,004

9 Claims. (Cl. 34—26)

This invention relates to an improvement in hair drying apparatus and is directed more particularly to that type of hair drying apparatus comprising a device adapted to be applied to the head of the person whose hair is to be dried and in which the hair is dried by the circulation of a heated stream of air through the hair.

One of the objects of my invention is the provision of a hair drying apparatus of the general type above referred to, so constructed and arranged that the air employed is circulated in a closed circuit, that is to say, the air after passing through the hair to be dried has its moisture extracted and is then recirculated. This construction, as will be obvious, possesses advantages over those types of hair driers employing a blower and means for extracting the moisture laden air in that in such devices it is necessary to employ two motors, one for the blower and one for the apparatus which withdraws the air after use, whereas in my construction but one motor and blower are necessary.

A still further object of my invention is the provision of a hair drier of the general type above referred to in which the upper portion of the device which is applied to the head is hinged or pivoted with respect to the lower portion, thereby facilitating the insertion of the head of a person in the apparatus, as distinguished from those types of apparatus commonly used in which the entire apparatus is lowered over the head and raised therefrom.

By pivoting the upper portion it will be apparent that the same may be moved out of operative position, the head inserted in the lower portion of the device and the upper portion moved back into operative position again, thereby insuring that the hair will not be disarranged, and permitting the hair to be inspected from time to time as the drying process proceeds.

A still further object of my invention is the provision of a hair drier of the general type above referred to in which the lower portion or edge of the apparatus at which the air discharges is so shaped that the air after traveling through the apparatus to the front of the head will be deflected rearwardly toward the hair to be dried, thereby effecting a thorough spreading of the air and circulation of the air through and adjacent the hair.

A still further object of my invention is the provision of a hair drying apparatus in which that portion of the apparatus which is applied to the head is made in sections, each section being independently controlled as to the passage of air therethrough, thereby providing a convenient means of enabling the air to be properly distributed over the head, so that the moister or thicker portions of the hair may receive the greatest volume of air.

In the drawings accompanying this application:

Fig. 1 is a sectional elevational view of one embodiment of my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 4 showing a modified form of my invention;

Fig. 4 is a plan view of the apparatus of Fig. 3; and

Fig. 5 is a front elevation thereof.

Referring to the drawings in detail and first of all to the embodiment of my invention shown in Figs. 1 and 2, 1 designates a stand conveniently provided with rollers 2 and adjustable vertically by manipulation of hand wheel 3 on which my entire apparatus is supported.

The apparatus comprises a casing or hood designated 4, constructed of any suitable material and provided at its forward end with an inner shell or helmet 5, the outer wall 6 of the casing or hood being spaced from the wall of the shell 5 to provide an annular air circulating space as will be hereinafter described. The wall or shell 5 is adapted to receive a portion of the head of a person, as will be seen from the drawings, and the shell terminates short of the open end of the casing or hood 4 so as to provide a space between the edge 7 of the shell 5 and the edge 8 of the wall 6 of the casing or hood 4, as shown at 9, to provide for the discharge of air from between the wall 6 of the casing or hood 4 and the shell 5 into the hair which is to be dried. The wall or shell 5 is illustrated as imperforate, but it is to be understood that this wall or shell if desired, may be provided with perforations, as for example at those portions adjacent the thickest part of the hair, adjacent the back of the head for instance. The space or opening 9, as will be understood, extends completely about the edge of the structure. The air which is passed between the members 5 and 6 is supplied thereto from the rear as will be pointed out hereinafter, and inasmuch as this air is conducted to the front of the device I provide a flange 10 on the edge of the wall 6 of the hood or casing 4 extending across the space between the members 5 and 6 to cause a rearward deflection and a spreading of the air as it is about to be discharged from between the two walls. In other words, the forwardly mov-

ing air coming from the rear of the casing or hood 4, striking this inwardly curved portion 10 of the wall 6 is deflected or directed inwardly toward the shell 5 and the hair.

The blower or fan which supplies air to the space between the members 5 and 6 is shown in the rear end of the hood at 11, and it will be seen that this blower discharges air through the passageway 12 within the hood to the space between the members 5 and 6, and withdraws this air back through the shell 5 after the air is directed toward the shell by the flange 10, through the passageway 13 within the hood leading from the underside of the inner wall or shell 5 from the space between the inner wall 5 and the hair, so that with the one blower not only is the air passed forwardly between the members 5 and 6 and discharged adjacent the hair, but it is caused to be drawn from beneath the wall or shell 5 and back into the blower again, so that the air can be circulated in a closed circuit and the use of two motors, one for the blower and one for the exhauster eliminated, the one piece of apparatus in my construction functioning for both purposes.

As above mentioned the air which is supplied between the members 5 and 6 is heated and for this purpose I provide an electric heater 14 within the casing or hood 4 over which the air must pass before reaching the hair.

Inasmuch as the air after passing the hair is to be again recirculated, I may provide at 15, for example, in the conduit 13 or at some point in the air stream intermediate the blower and the forward end of the device 4 a suitable chemical or other means indicated at 16 for drying the exhausted air before the air is again passed through the hair. In this way I am always assured of a stream of dry heated air for performing the drying function, it being understood, however, that it may be found satisfactory in some instances to rely upon the heater for the drying of the air, in which case of course the means at 16 will be omitted. The blower 11 may be driven by a small electric motor shown at M, it being understood that the entire apparatus including this motor is mounted on the stand 1.

As I have mentioned above, the present invention provides a structure adapted to be applied to the head of the person whose hair is to be dried, the upper portion of the structure being pivoted so that the same may be raised. In this connection it will be seen that the device 4 comprises an upper section 17 and a lower section 18, the upper section 17 being pivoted at 19 so that it may be raised with respect to the lower section 18. The division between these two sections shown at 20 is so positioned that when the upper section 17 is raised about its pivot 19 the head may be readily inserted or placed in the lower section 18 after which the upper section will be closed down. This is a very practicable construction, inasmuch as it eliminates any likelihood of the hair to be dried becoming disarranged in the application of the drying apparatus and it also permits of the drying operation to be observed from time to time which is of further advantage.

In the embodiment of my invention illustrated in Figs. 3 to 5, inclusive, I have modified somewhat the construction above described although I have retained the feature of circulation of the air in a closed circuit. In this form or embodiment of my invention the structure 4 is composed of four sections designated 21, 22, 23 and 24. The sections 21 and 23 meet along the top of the head and extend a short distance down over the sides thereof, the sections 22 and 24 covering the sides of the hair and a portion of the rear so that with the four sections in place the hair is completely covered just as in the form of my invention shown in Fig. 1. Each of the members 21, 22, 23 and 24 is in the nature of an outer and an inner wall corresponding to the walls 5 and 6 of Fig. 1, the inner wall lying adjacent the hair to be dried and the two walls being spaced from each other to provide an air passage. The forward end of each of these sections is curved inwardly toward the hair so as to insure the deflecting action described in connection with the portion 10 of the outer wall 6 of Fig. 1. In other words, the forward end of each of the sections 21, 22, etc. is curved inwardly toward the hair to deflect the air stream rearwardly through the hair.

The several sections are supplied with air by the blower 11, each section being provided with a damper shown at 25 so that the supplying of air to any section may be regulated independently of the supplying of air to any of the other sections. This is a practicable advance in this art inasmuch as it enables the air to be applied to that part of the hair where it is most needed.

In this form of my invention I have provided that the two sections 21 and 23 may be raised in a manner similar to the upper section 17 of Fig. 1 to permit of the insertion of the head into the apparatus and also inspection of the hair from time to time during the drying operation.

What I claim is:—

1. Hair drying apparatus comprising in combination a device to be applied to the hair to be dried, a blower for supplying air to said device, said device comprising a double walled upper section and a double walled lower section, the double walled upper section being movable out of operative position with respect to the lower section.

2. Hair drying apparatus comprising in combination an air conducting device adapted to receive the head carrying the hair to be dried, said device comprising an upper and a lower section, the upper section being pivotally mounted so that it may be moved to inoperative position to permit of positioning the head operatively with respect to the lower section.

3. Hair drying apparatus comprising in combination a device to be applied to the hair to be dried, said device comprising a double-walled upper section and a double-walled lower section, the double-walled upper section being movable out of operative position with respect to the lower section, a blower for supplying air to each section of said device, and an independent control for the air stream of each of said sections.

4. Hair drying apparatus comprising in combination a plurality of double-walled air conducting sections adapted to be applied to the head, certain of said sections being pivotally mounted adapting the same for movement to inoperative position independently of the others, the forward end of each section being shaped to effect rearward travel of the air discharging therefrom, a single blower for supplying air to each of said sections, conduits placing the discharge side of said blower in communication with each of said sections, and a damper for

each conduit whereby the air stream through each section may be independently controlled.

5. Hair drying apparatus comprising in combination a plurality of air conducting conduits, the discharge end of each conduit being bent rearwardly of the conduit to provide air deflecting means, certain of said sections providing a head-receiving structure, the others of said sections being movable relative to the first-mentioned sections to permit of positioning the head relative to the first-mentioned sections, all of said sections, when in operative position, providing a device for encompassing the hair to be dried.

6. A hair drier comprising a flanged hood, a shell in the hood, spaced therefrom to provide a circulating space, the flange of the hood extending across said space to direct air therefrom toward the shell, a fan disposed in one end of the hood to force air through the space and to draw the air back through the shell after being directed toward the shell by the flange, and a heater in the path of the air.

7. A hair drier comprising a hood having an open end provided with an inwardly extending flange and adapted to admit the head of the user, a shell having an open end spaced from the outer shell within the hood forming an annular air space, said shell terminating short of the open end of the hod and spaced from the flange, thereby forming a space between the flange and shell, means in the other end of the hood to circulate air in the space between the hood and shell whereby the air may impinge said flange and be directed toward the interior of said shell to be recirculated.

8. A hair drier comprising a flanged casing, a shell in the casing, spaced therefrom to provide a circulating space, the flange of the casing extending across said space to direct air therefrom toward the shell, a fan disposed in one end of the casing to force air through the space and to draw the air back through the shell after being directed toward the shell by the flange, and a heater in the path of the air.

9. A hair drier comprising a casing, an open ended shell in the casing, said shell containing a space adapted to receive a portion of the head of a person and spaced from the casing to provide an air passageway between the casing and the shell, a fan disposed in one end of the casing to discharge air forwardly into said passageway and to draw the air back through said shell in a path including said space and entirely within said casing, a flange extending inwardly from said casing at least partially in front of said passageway to cause air discharged by said fan into said passageway to pass into the air being drawn back through said shell by said fan.

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