Feb. 18, 1930. H. P. ADAMS 1,747,342

HAIR DRYING APPARATUS

Filed Jan. 15, 1929

Fig. 1.

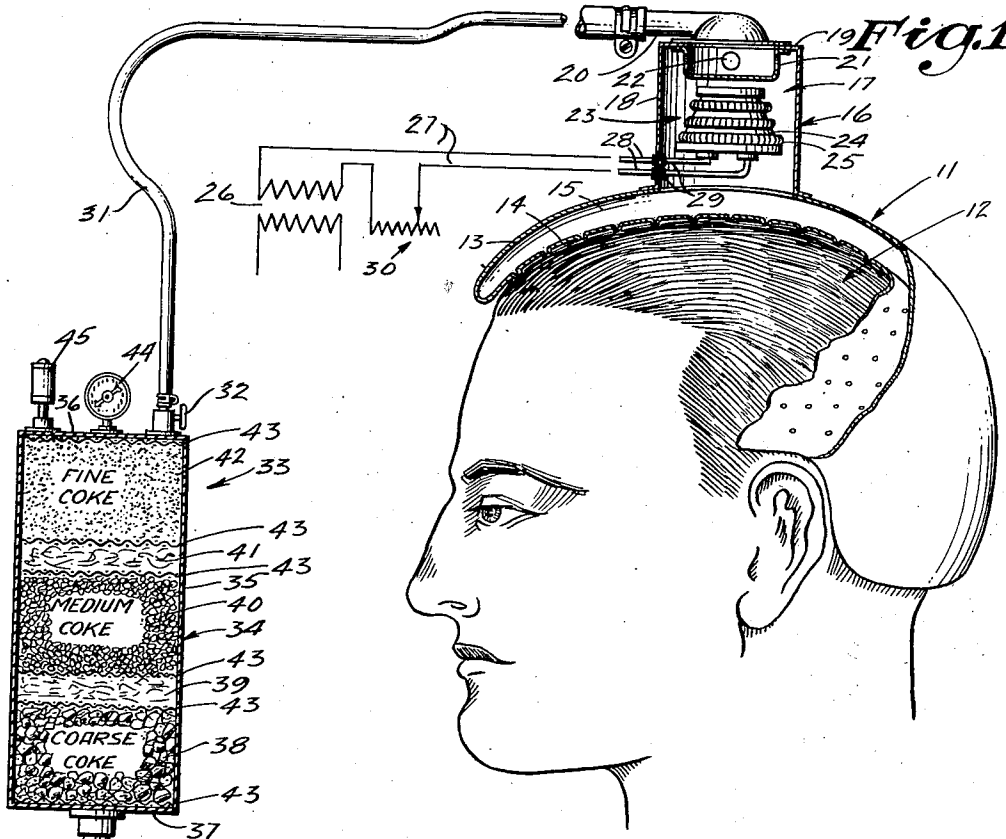
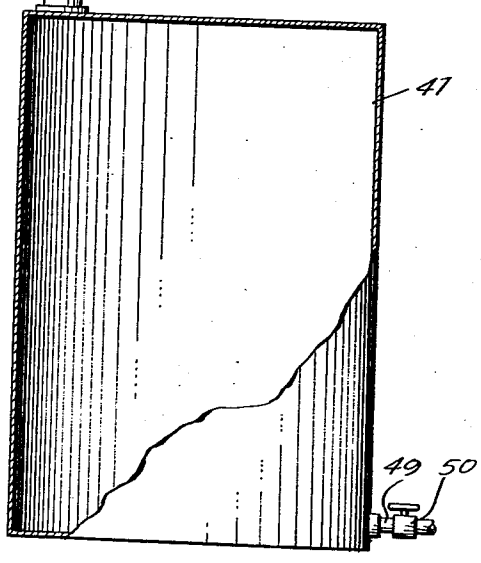
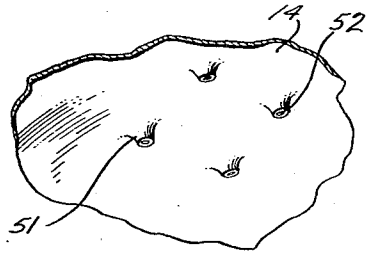


Fig. 2.





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HAIR-DRYING APPARATUS

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My invention relates to drying appliances, and more particularly to devices for drying the hair on the head.

The operation has been a very lengthy one prior to my invention because it has been the practice to discharge the drying medium into contact with the surface of the hair. The hair in its wet state, being cohesive, prevents the penetration of the drying medium, so that the air discharged against the surface of the hair exerts the drying effect upon that surface and passes off without penetrating to or exerting a drying effect upon the hair beneath the surface and adjacent to the scalp. As the outer surface of the hair is dried the air is permitted to penetrate to a slightly greater extent, and it has been necessary prior to my invention to continue the drying operation until sufficient of the hair has been dried to permit the air to come into contact with the scalp.

It is an object of my invention to provide a method of drying hair which comprises the discharge of a drying medium into contact with the scalp.

It is desirable that after the drying medium in the form of warm dry air is discharged into contact with the scalp it should pass through and circulate around the hair.

It is an object of my invention to provide a method of drying hair which comprises the discharge of warm dry air into contact with the scalp and the circulation of this air through and around the hair.

It is desirable that the apparatus for putting into operation this method of drying hair should be one which will not subject the individual whose hair is being dried to pain or discomfort.

It is an object of my invention to provide a hair drying apparatus adapted for discharging warm dry air into contact with the scalp and circulating this air through and around the hair. It is a further object of my invention to provide such an apparatus which will not subject the individual whose hair is being dried to pain or physical discomfort.

The drying effect of the air employed in the hair drying operation is materially increased if that air is heated to a temperature somewhat above that of normal body temperature; however, if such a heating means is employed it is obviously desirable that the temperature of the air should be easily controlled in order to avoid danger of discomfort to the individual whose hair is being dried caused by excessively high temperatures.

It is another object of my invention to provide an apparatus of the class described which includes heating means adapted for warming the air employed in the drying operation and adapted for quick and easy control by the operator.

I have found that the drying operation is shortened if the moisture content of air employed is reduced. Moreover, it is desirable that there should be removed from the air any solid impurities therein, such as dirt, grit, etc.

It is still another object of my invention to provide an apparatus of the class described which includes means adapted for lowering the moisture content and removing solid impurities from the air used in the drying process.

It is another object of my invention to provide an apparatus of the class described which includes means for varying the rate of discharge of the air into contact with the scalp and hair.

It is a further object of my invention to provide an apparatus of the class described which is rugged and economical in construction and simple and positive in operation.

Further objects and advantages will be made evident in the following description which may be better understood by reference to the accompanying drawings in which:

Fig. 1 is a view, partly diagrammatic of the apparatus of my invention in operation; and

Fig. 2 is a fragmentary view of the surface of the inner wall of the helmet of my invention adapted to contact the head of the individual whose hair is to be dried.

Referring to the drawings and particularly to Fig. 1, the apparatus of my invention includes a cap or helmet 11 adapted to fit upon the head 12 of the individual whose

hair is to be dried, and to cover the entire scalp. The helmet 11 includes an outer member or wall 13 and an inner member or wall 14 with a passage or chamber 15 therebetween.

Attached to the top of the outer wall 13 is a heating means 16. The heating means 16 includes a container 17 having side walls 18 attached to the outer wall 13 of the helmet 11 so that the interior of the container 17 communicates with the passage or chamber 15. The heating means 16 includes also an end 19 associated with the side walls 18 and forming the top of the container 17. Attached to the end 19 in such a manner as to communicate with the interior of the container 17 is a pipe 20 adapted for supplying air to the heating means 16. A downwardly depending cup-shaped baffle 21 having openings 22 in its sides may be attached to the inner surface of the end 19 to cause the air supplied through the pipe 20 to circulate in the container 17.

Disposed in the container 17 is a heating element 23 which may be in the form of a conical core 24 of any suitable non-conductive material with coils 25 formed of conductors of a high resistance wound thereon. The coils 25 may be connected to a source of electrical energy 26 as by wires 27 led through the side walls 18 and into the container 17 through conduits 28.

An additional safeguard against energization of the helmet 13 may be provided by suitably insulating the conduits 28 from the side wall of the container 17 as indicated by the numeral 29 in Fig. 1. The heating effect of the coils 25 is readily controlled by a control means in the form of a rheostat 30 connected to one of the wires 27 between the source of power 26 and the heating element 23 in a manner well known in the art.

The pipe 20 is connected by a flexible hose 31 to a valve 32 communicating with the interior of a drying means 33. The drying means 33 includes a cylindrical tank 34 comprising a side wall 35 and top and bottom ends 36 and 37 respectively. The tank 34 may be filled with any suitable drying and cleaning medium.

I have found a very successful medium to be that illustrated in the drawings comprising a layer 38 of relatively coarse particles of coke in the bottom of the tank 34 separated by a layer 39 of long-fibre cotton from a layer 40 of coke of smaller particles, which in turn is separated by another layer 41 of long-fibre cotton from a layer 42 of very fine particles of coke, the layer 42 being uppermost in the tank 34. A copper screen 43 may be positioned between adjoining layers and at the top and bottom of the layers 42 and 38 respectively to retain the drying and cleaning medium in proper relative positions in the tank 34. A pressure gauge 44 may be associated with the tank 34 to indicate the pressure therein, and a safety valve 45 may likewise be connected with the interior of the tank 34 to prevent excessive pressure in the tank.

Attached to the bottom 37 of the tank 34 is a pipe 46 adapted to connect the interior of the tank 34 to the interior of a compressed air tank 47. The pipe 46 may be provided with a valve means in the form of a valve 48 between the cleaning and drying means 33 and the tank 47 to regulate the flow of gas to the tank 34.

The compressed air tank 47 may be of a conventional design and preferably adapted to contain gas at a pressure up to approximately 170 pounds per square inch. The tank 47 may be provided with a pipe 49 communicating with the interior of the bottom of said tank to lead out any liquid condensed therein. The pipe 49 may be provided with a valve 50 adapted to regulate the flow of liquids through the pipe.

The inner wall 14 of the helmet 11 has formed thereon inwardly extending projections or discharge nozzles 51 as best indicated in Fig. 2. Formed in each of the projections 51 is a passage or an orifice 52 extending through the inner wall 14 and communicating with the passage or chamber 15.

The operation of my invention is as follows:

The helmet 11 is positioned upon the head 12 of the individual whose hair is to be dried, as indicated in Fig. 1, so that it covers all of the scalp of the head 12. If the valve 48 is now opened, compressed air from the tank 47 is admitted to the lower end of the tank 34 of the cleaning and drying means 33 and is forced upwardly therein through the alternate layers of coke and cotton to the upper end of the container 34.

If the valve 32 is opened, the compressed air is forced from the container 34 through the hose 31 into the pipe 20. Air passes from the pipe 20 into the baffle 21 in the upper end of the container 17 and is discharged from the baffle 21 through the openings 22 therein in such a manner as to cause its circulation in the container 17 about the coils 25 of the heating element 23.

The air thus cleaned and dried by the cleaning and drying means 33 and warmed by the heating means 16 is forced into the passage or chamber 15 of the helmet 11. The clean, dry, warmed air is forced from the passage or chamber 15 through the orifices 52 in the projections 51. The helmet 11 having been positioned upon the head 12 so that the projections 51 extend through the hair into contact with the scalp, the air thus discharged through the orifices 52 comes into contact with the scalp immediately after its discharge and passes from the scalp outward through the hair. Inasmuch as there are a great number of the projections 51 and orifices 52 closely spaced on the inner wall 14 of

the helmet 11, the scalp is subjected to the drying effect of a great number of these jets of air simultaneously.

After the air has contacted the scalp and passed outward therefrom, circulating through the hair, it passes between the hair and the helmet 11 to the edges of the walls 13 and 14 and passes off into the atmosphere.

Inasmuch as the helmet 11 is adapted to fit the head 12 rather snugly, the air thus circulating between the helmet 11 and the head 12 is retained in intimate association with the head 12 so that the maximum drying effect of the air is achieved after its discharge into contact with the scalp and its passage through the hair.

From the foregoing description of the operation of the apparatus of my invention it should be apparent that I have provided a method of drying hair which comprises the discharge of a drying medium into contact with the scalp. Moreover, since the air after its discharge into contact with the scalp is compelled to circulate between the scalp and the inner wall 14 of the helmet 11 until it can escape from the outer edges of the helmet 11, it is apparent that I have provided a method of drying hair which comprises a discharge of warm dried air into contact with the scalp and the circulation of this air through and around the hair.

Inasmuch as the helmet 11 and the heating means 16 may be made of light metal or any other suitable material so that it does not exert upon the head of the individual sufficient pressure to render the operation of drying hair a painful one, or if it be desired the apparatus can be supported so that no weight at all rests upon the head, it is obvious that I have provided an apparatus for discharging warm dry air into contact with the scalp and circulating this air through and around the hair, which apparatus will not subject the individual whose hair is being dried to pain or physical discomfort. Moreover, by providing the rheostat 30 I have provided a means for quick and easy control by the operator of the heating element adapted to warm the air employed in the drying operation.

Because the flow of air to the cleaning and drying means and from the cleaning and drying means to the heating means is easily controlled as by the valves 48 and 32 respectively, it should be apparent that I have provided an apparatus of the class described which includes means for supplying clean dry air for the drying operation at any pressure which may be desired.

Although that form of embodiment of my invention herein illustrated and described is fully capable of performing all of the objects primarily stated, I do not wish to be restricted to this form, for my invention is capable of embodiment in various other forms all coming within the scope of the claims to follow.

I claim as my invention:

1. A method of drying hair comprising the discharge of a drying medium into immediate contact with the scalp whereby said discharged medium first engages the scalp and then flows outwardly through the hair.

2. A method of drying hair comprising the expansion of warm dry gas into immediate contact with the scalp whereby said discharged gas first engages the scalp and then flows outwardly through the hair.

3. A method of drying hair comprising: heating a dry gas; expanding said gas into immediate contact with the scalp; and circulating said gas from the scalp outwardly through the hair.

4. In a hair drying apparatus, the combination of: a helmet adapted to fit the head, said helmet providing two walls with a passage therebetween; means adapted for providing gas to said passage; and means associated with said helmet adapted for discharging said gas into immediate contact with the scalp whereby said discharged gas first engages the scalp and then flows outwardly through the hair.

5. In a hair drying apparatus the combination of: a helmet adapted to fit the head, said helmet being provided with a passage therein; supplying means adapted for providing gas to said passage; warming means adapted for warming said gas; and means associated with said helmet adapted for discharging said gas into immediate contact with the scalp whereby said discharged gas first engages the scalp and then flows outwardly through the hair.

6. In a hair drying apparatus the combination of: a cap adapted to fit the head, said cap providing an inner and an outer wall with a passage therebetween; supplying means associated with said cap, said supplying means being adapted for providing gas to said passage; heating means adapted for raising the temperature of said gas; and discharge nozzles associated with said inner wall of said cap and adapted for discharging gas from said passage in said cap into immediate contact with the scalp whereby said discharged gas first engages the scalp and then flows outwardly through the hair.

7. In a hair drying apparatus the combination of: a helmet comprising an inner and an outer wall with a chamber therebetween, said outer wall being adapted to be associated with a means for supplying gas to said chamber, and said inner wall being so formed as to discharge said gas from said chamber into immediate contact with the scalp whereby said discharged gas first engages the scalp and then flows outwardly through the hair.

8. In a hair drying apparatus the combination of: a helmet comprising an inner and

an outer wall with a chamber therebetween, said inner wall being so formed as to discharge said gas from said chamber into immediate contact with the scalp; a heating means associated with the outer wall of said helmet and communicating with said chamber, said heating means being adapted for warming gas and supplying it to said chamber; and means for providing gas to said heating means.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 9th day of January, 1929.

HARRY P. ADAMS