May 13, 1947. E. J. CULLIGAN ET AL 2,420,358

HAIR DRYING MEANS PROVIDED WITH SILICA GEL

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FIG 1

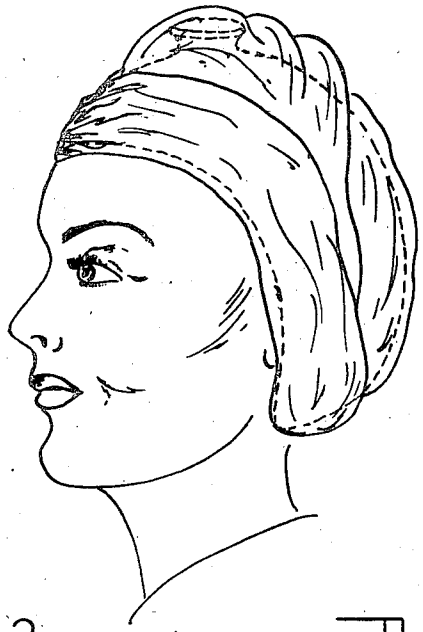


FIG 2

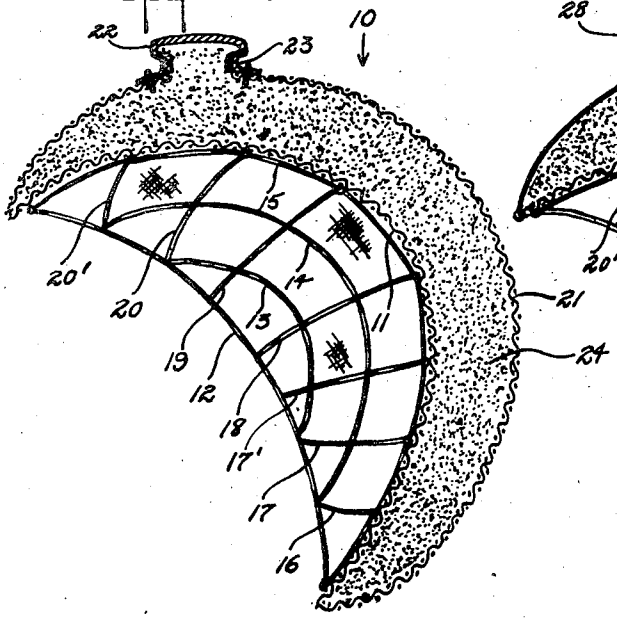
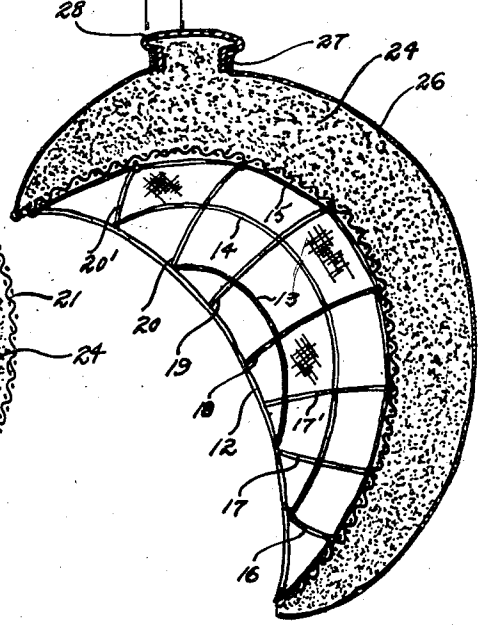


FIG 3



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Fig 4

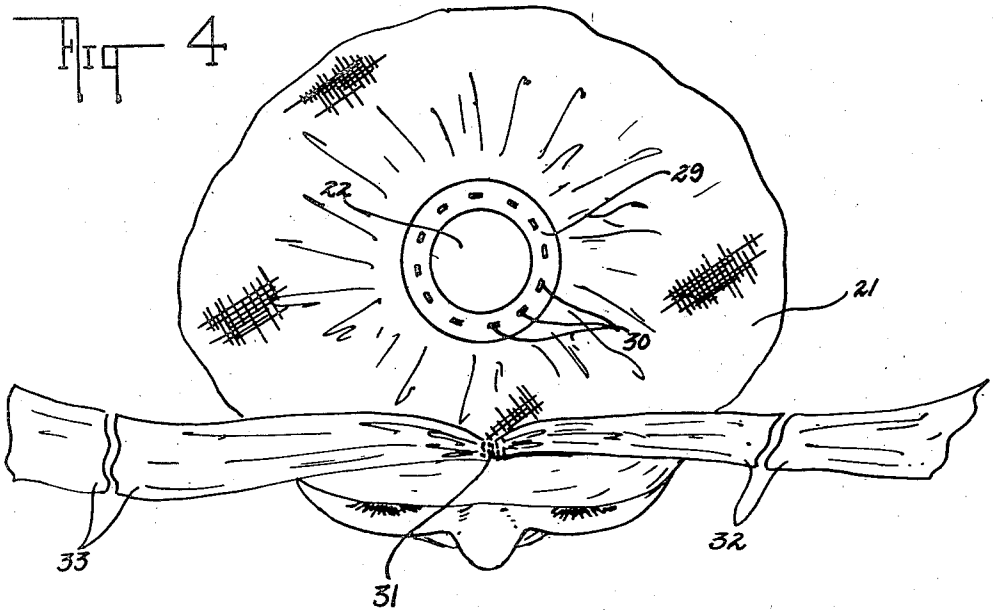
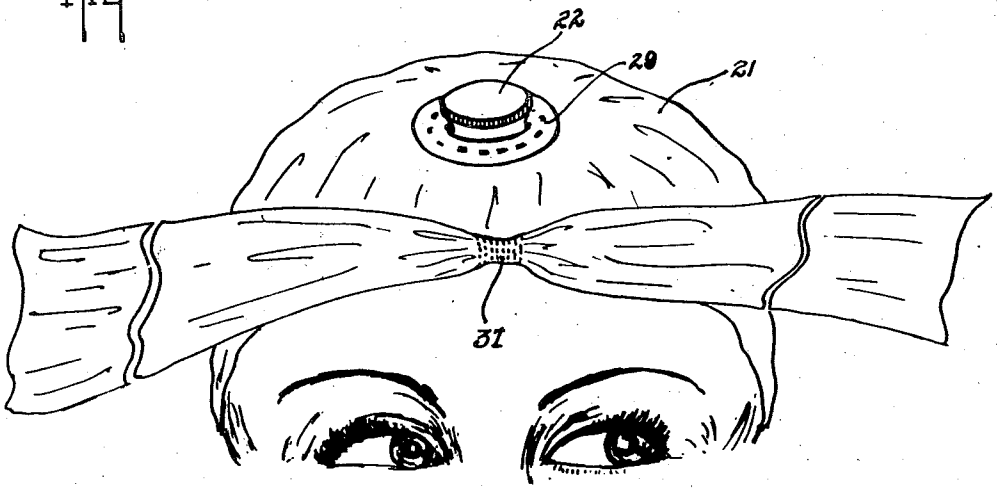


Fig 5



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HAIR DRYING MEANS PROVIDED WITH SILICA GEL

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2 Claims. (Cl. 34—95)

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Our invention relates to an apparatus for drying hair, and has for its object to provide a simple and yet highly efficient arrangement to be applied over the head and upon the hair when it has been wet from any form of treatment, and which will automatically withdraw all moisture from the hair, without the use of any heating means or moving air.

In modern beauty culture the care of the hair, particularly women's hair, is perhaps the most important single feature. Various methods of caring for the hair, setting it by finger waving, permanent waving and other forms of hair treatment, involve the use of liquids which leave the hair wet after the treatment has been applied. This wet hair must, of course, be dried.

In methods employed heretofore, the drying was effected by means of a combination of heat and moving air. In general some kind of a hood is applied over the head with an air space between it and the wet hair and a regulated blast of air is driven under the hood, and at the same time this air is heated to a suitable degree. The complete drying often takes as much as two hours time. Furthermore, not only is the time of the customer thus consumed but there is a condition of discomfort involved in this form of treatment. Also there is a great deal of noise which makes it impossible to hear any one talk and which may, under certain conditions, be injurious to the hearing organs.

We have discovered a very simple and yet highly effective method of drying hair which avoids all the disadvantages of the above form of drying, which does not use moving air or heated air, does not cause any unpleasant noise, and which completes the operation of drying perfectly in an amazingly short time, without any discomfort, with no difficulty as to talking and hearing, and with a perfect drying action. This discovery grows out of the properties of certain dehydrating materials such as silica gel. We have discovered that if a layer of silica gel of suitable thickness, and held to conform to the head of the subject immediately over the wet hair, is employed, the liquid and moisture will be adsorbed in the silica gel very rapidly. The cooling effect of rapid evaporation is offset by the heat released from the silica gel itself, so that no unpleasant or discomforting effect of cooling or heating follows.

As is well known, silica gel may be repeatedly and for an indefinite number of times reactivated to become fully active by merely heating the same under prescribed and known conditions. It follows that a given quantity of silica gel, sufficient

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to effect the rapid and comfortable drying above referred to, may, by means of intervening reactivation, be made to serve the drying purpose over and over again indefinitely.

In carrying out our invention we propose to form a hood-like structure with any desired kind of foraminous supporting structure adjacent the body of the hair as worn, and which includes a chamber back of the contacting surface adapted to be filled with dehydrating material, specifically silica gel. The back of the chamber can be formed either of some cloth material or of solid sheet metal, and in either case will be provided with an opening normally closed by a filling cap through which the silica gel may be introduced into the chamber.

It is a principal object of our invention, therefore, to provide a method of drying the hair which consists in applying to the hair a layer of activated dehydrated material, preferably in granular form, and also preferably silica gel, and to maintain this layer of dehydrated material in an area adjacent the wet or damp hair for a period of time sufficient to permit all the free moisture in and upon said hair to be adsorbed by the silica gel.

It is a further object of our invention to provide a hood-like structure adapted to be worn over the wet or damp hair of a subject wherein the contacting surface adjacent the hair will be of foraminous material and wherein there is provided a chamber in general conforming to the shape of the hood in which is positioned a layer of dehydrating material such as silica gel of a sufficient thickness to readily adsorb all moisture in and upon the hair.

It is a further object of our invention to form the rear wall of the hood-like member with a screw-threaded opening in which a cap may be inserted and held, whereby the dehydrating material such as silica gel may be introduced into the chamber formed therein and from time to time may be withdrawn therefrom for reactivating.

It is a further object of our invention in one of its forms, to form the hood-like member entirely of metal, as with a sheet metal back and a wire gauze front for contacting the wet or damp hair and also having a filling cap for introducing the dehydrating material such as silica gel into the chamber, whereby the entire assemblage, including the silica gel therein, may be transferred to an oven and be properly heated to reactivate the silica gel therein, thus enabling the method and

apparatus to be conveniently and economically used in the home.

It is a further object of our invention to form in connection with the aforesaid hood-like member embodying a chamber filled with silica gel, scarf-like members attached at the center to the upper part of the hood-like member and adapted to be wound about the outside of said member to form in effect a turban enclosing the member, and to in this manner increase the effectiveness of the drying action and retain the latent heat released by adsorbing of the moisture to keep the head warm while the water is being evaporated therefrom.

The full objects and advantages of our invention will appear in connection with the detailed description thereof to be given in the annexed specification, and the novel features of the invention by which the above-named advantageous results are obtained will be particularly pointed out in the claims.

In the drawings illustrating an application of my invention in some of its forms:

Fig. 1 shows the apparatus in position on the head of a subject.

Fig. 2 is a sectional view through a form of the apparatus with reticulate or foraminous cloth material forming both the inner and outer walls.

Fig. 3 is a sectional view similar to Fig. 2, showing the outer wall formed of sheet metal and the inner wall of some foraminous material such as wire gauze, the entire assemblage being of metal.

Fig. 4 is a top plan view of the device of Fig. 2 showing the manner of attachment of the scarfs by which the turban effect of Fig. 1 is obtained.

Fig. 5 is a front elevation view of the device of Fig. 2 as worn, also showing the scarf-like members before the turban is formed.

As illustrated, referring first to Figs. 2, 3 and 4, I provide a hood-like member **10** which is formed with an inner contact wall **11** of some foraminous or reticulate cloth material such as jean cloth, which is shaped to fit over the head of a subject and enclose the hair, as indicated in Fig. 1. This shaping on the inside may be effected by any desired means; as shown, there is a light wire framework comprising transverse wires **12, 13, 14** and **15**, which are interconnected with longitudinal wires **15, 16, 17, 18, 19** and **20**, to make a light open framework upon which is laid the foraminous cover member **11**. As shown in Fig. 2, the back wall **21** is likewise made of foraminous material and has a cap **22** which is threaded into a socket **23** and is used for filling the cap-like member. This is filled with a fairly small grained dehydrated material, preferably silica gel, indicated generally at **24**. When filled, the body of silica gel **24** will extend over the whole contact wall **11** to provide a layer of sufficient depth to furnish abundant dehydrating material to take all of the water from the hair no matter how wet it may be.

The form of the invention shown in Fig. 3 has the same support for the contact member as in Fig. 2, but the contact support **25** in this form will be made of wire gauze instead of cloth fabric and the back **26** of the member will be formed entirely of thin sheet metal. Upon this sheet metal is an internally threaded outwardly extending flange **27** which has screwed into it the filling cap **28**. The two filling caps are identical but in the form of Fig. 2 the socket member **23** is formed with a horizontally extended flange **29** through apertures in which extend sewing threads **30** which secure the socket upon the fabric back cover **21**.

As indicated in unwrapped form in Figs. 4 and 5, and wrapped into a turban in Fig. 1, we provide a long scarf-like member which is secured at its center at **31** to the front upper part of the outer casing **21** (or where the metallic form was used to the outer casing **26**). The ends **32** and **33** of the scarf-like member extend outwardly a sufficient distance so that this scarf may be wrapped over the top and about the dehydrating hood in the form of a turban, as well shown in Fig. 1. This keeps in the heat of adsorption in the silica gel and aids in effecting rapid drying of the hair.

The advantage of our invention will be apparent from the foregoing description thereof. In use, the hair is first treated and set in the customary manner. This treatment leaves the hair wet with the liquids which are employed upon it. The hood member is then carefully placed upon the head so as to enclose the mass of wet hair and at the same time maintain its set. When so positioned upon the head all of the wet or moist hair will be within the member and its outer portions will contact the foraminous contacting wall of the drying member.

After the member has been so positioned, the scarf portions **32** and **33** are wound about the drying member itself and so as to contact the forehead and neck and thus to produce an enclosing turban, which at the same time holds the drying member in position upon the head and insulates the silica gel from loss of heat generated by adsorbing moisture from the outside air, primarily important where the form of Fig. 2 is employed.

A further advantage resides in the fact that the above arrangement is entirely practical and is comfortable and does not interfere with talking, reading, listening or the like. The drying process begins the moment the drying hood is placed upon the set hair. The rapid evaporation of water from the hair tends to cool the hair and the head, but this is largely offset by the heat released from the silica gel in adsorbing the water from the air, giving continuously comfortable temperatures about the head.

A particular advantage is found in the fact that while this drying method is carried on without any discomfort, the drying is effected with great rapidity. Instead of sitting for hours with the head in grave discomfort within a chamber wherein heat and moving air and intolerable noise exist, the subject in my method of drying is required to sit in comfort for only a short time. The drying is also more uniform and more certain to avoid the leaving of damp spots which frequently occur in the heat-blast air dryers now in use.

Another substantial and very genuine advantage comes from the fact that the silica gel can readily be reactivated by the application of heat so as always to be in the best possible condition for quickly taking up moisture and can be used over and over again many times.

In the form of Fig. 3 where the drying member is entirely of metal the reactivation can be made in an oven within a home, so the appliance is thus readily available for repeated home use.

While we have shown in the drawings, as in Figs. 1 and 3, a formed hood-like member which includes the silica gel, and with a front foraminous hair-contacting wall formed either of cloth or woven wire, we do not wish to limit our invention to such a specific construction. Any

means of maintaining a layer of silica gel of suitable thickness upon or in close proximity to a wet head of hair is within the scope of our invention, provided, of course, that the holding means next to the hair must have sufficient opening to the body of silica gel, such as is true of a contact member made of foraminous material.

Thus it is within the scope of our invention and is contemplated by us that the layer of silica gel might be applied to the head by means of a suitable layer of silica gel held between layers of cloth and applied to the wet hair in a turban-like fashion. Also, such an application of the layer of silica gel can be held in position by the use of an elastic band. Other forms of holding the layer of silica gel adjacent or in contact with the hair for drying may be employed without departing from the scope of our invention.

We claim:

1. A hair dryer comprising a hood-like member formed with walls spaced to form a closed chamber between them, the outer wall being of sheet metal, the inner wall being of wire gauze, of a form, size and position to fit over the head of a subject and enclose wet hair therein, the said chamber being filled with silica gel, whereby the entire hair dryer may be subjected to a requisite amount of heat as is a domestic oven to reactivate the dehydrating material, and flexible means to be positioned over the hood-like member to enclose the chamber and the silica gel therein to retain the head adsorption so the cooling effect of evaporation may be neutralized on the head.

2. A hair dryer comprising a hood-like member formed with walls spaced to form a closed chamber between them, the inner wall being of foraminous material of a form, size and position to fit over the head of a subject and enclose wet hair therein, and the space between the walls being filled with silica gel, and a scarf fastened to the member intermediate its ends and adapted to be wrapped about the member in the form of a turban to retain the head adsorption so that the cooling effect of evaporation may be neutralized on the head.

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