

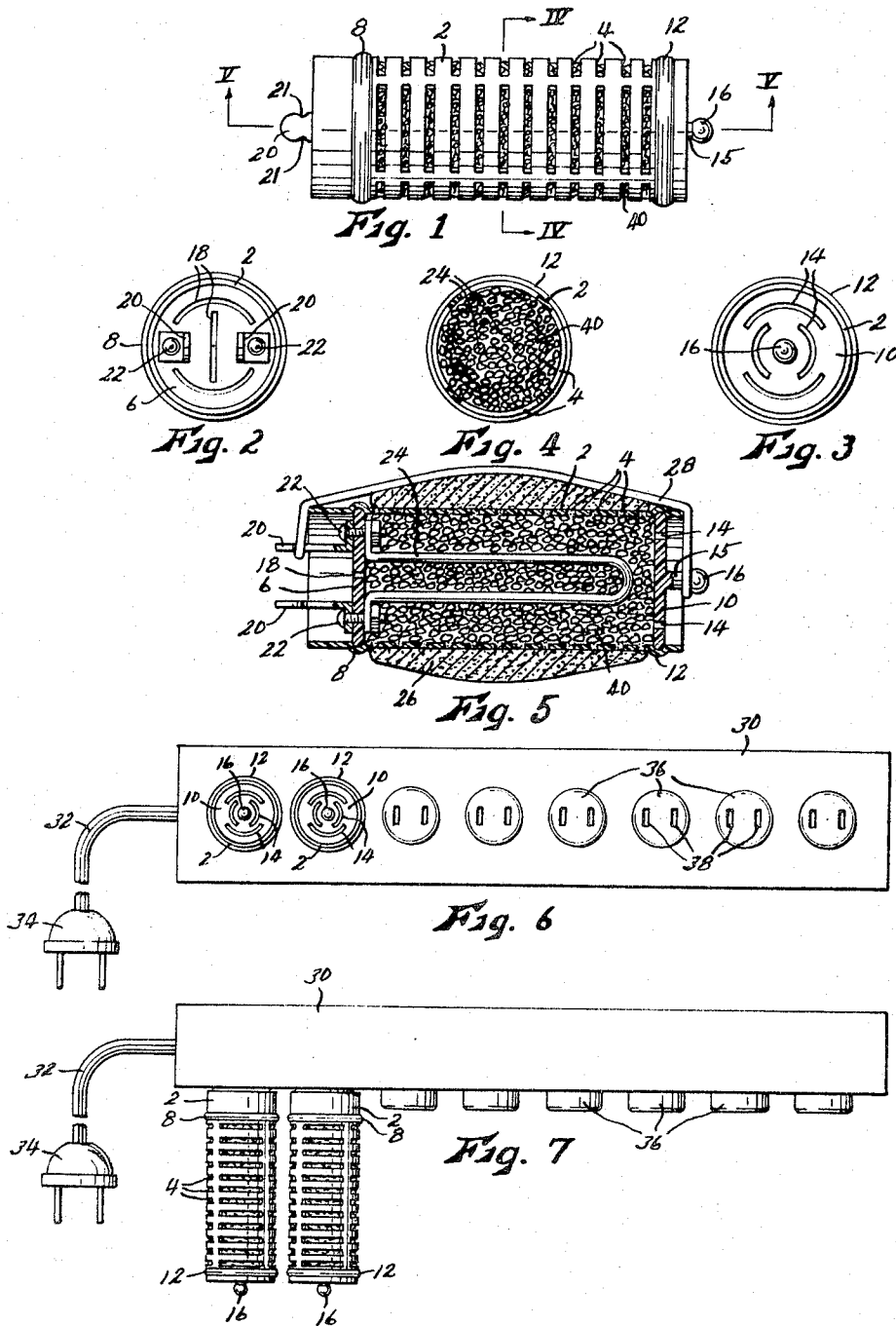
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HAIR DRYING HAIR ROLLER

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HAIR DRYING HAIR ROLLER

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3 Claims

ABSTRACT OF THE DISCLOSURE

A hair roller comprising a foraminous tubular body member filled with a desiccant material and adapted to have a lock of hair wrapped and secured peripherally thereabout, an electrical heating element mounted in said body member within said desiccant material, and means for completing an operative electrical circuit to said heating element.

This invention relates to new and useful improvements in hair drying and curling apparatus, and has particular reference to that class of devices commonly known as "hair rollers," which in general constitute cylindrical body members about which locks of hair may be wrapped and secured while wet or moist, and then dried in this position.

An important object of the present invention is the provision of a hair roller of the character described having novel means for facilitating and speeding the drying of a lock of hair wrapped thereabout, whereby to shorten the drying time required. Generally, this object is accomplished by making the roller body hollow and with foraminous walls, and filling it with a desiccant material capable of absorbing large quantities of water.

Another object is the provision of a hair roller of the character described wherein the drying period is still further shortened by so shaping the foramina or openings of the roller body that the hair actually directly contacts the desiccant material contained in the roller body. This arrangement requires the use of a desiccant material which will not deteriorate or soften appreciably in the presence of water, nor dissolve to form a "mud" with the water, both to avoid dirtying of or foreign deposits in the hair. The use of a specific desiccant material is therefore an essential feature of this phase of my invention.

A further object is the provision of a hair roller of the character described having novel means for reactivating the desiccant material for further use by driving off the moisture absorbed therein when it becomes saturated. Generally, this means comprises an electric heater disposed within the mass of desiccant material inside the roller body, said heater having suitable terminal posts adapted to be inserted either into an ordinary electrical outlet, or into outlets provided therefor in a special "strip board," whereby a large number of rollers may be reactivated simultaneously if desired.

Other objects are simplicity and economy of construction, efficiency and dependability of operation, long life, and ease of servicing when required.

With these objects in view, as well as other objects which will appear in the course of the specification, reference will be had to the accompanying drawing, wherein:

FIG. 1 is a side elevational view of a hair roller embodying the present invention,

FIG. 2 is a left end view of the roller as shown in FIG. 1,

FIG. 3 is a right end view of the roller as shown in FIG. 1,

FIG. 4 is a sectional view taken on line IV—IV of FIG. 1,

FIG. 5 is a sectional view taken on line V—V of FIG. 1, with a lock of hair secured thereabout,

FIG. 6 is an elevational face view of a special electrical

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outlet box for furnishing electric power to the roller heaters, two rollers being shown applied operatively thereto, and

FIG. 7 is a top plan view of the elements shown in FIG. 6.

Like reference numerals apply to similar parts throughout the several views, a single roller as contemplated by the present invention being detailed in FIGS. 1-4. Said roller includes a hollow cylindrical body member 2 preferably formed of an insulating material, a semi-rigid plastic having been found entirely satisfactory. A series of elongated slots 4 are formed through the wall of the body member, said slots being closely spaced over the major portion of the body member area. The major axes of said slots extend peripherally of the body member. As shown, each slot extends about one-quarter of the circumference of the body member. While the angular extent of each slot is not particularly critical, it should be sufficiently great as related to the wall thickness of the body member, that when hair 26 is wrapped peripherally about the body member as shown in FIG. 5, portions of the hair will enter through said slots into the interior of the body member, also as shown in FIG. 5, whereby to directly contact the desiccant material 40 occupying the interior of the body member.

The left end of the body member, as viewed in FIG. 1, is closed by an end disc 6 formed of an insulating material, the periphery of said disc being engaged in an internal groove of the body member formed by offsetting a portion of said body member outwardly as indicated at 8. Said disc has slots 18 formed therein, and is formed of a sufficiently flexible material such as plastic, that it may be resiliently compressed to slip into engagement with groove 8. Similarly, the right end of the body member is closed by an end disc 10 having slots 14 formed therein, and the periphery of which is engaged in an internal groove of the body member formed by offset 12 thereof. End disc 10 is provided at its outer surface with an axially projecting neck 15 terminating in an enlarged spherical head 16 spaced outwardly from the associated end of the body member.

Disposed generally axially in body member 2, so as to be embedded in the desiccant material 40 therein, is an electrical heating element 24 which is illustrated schematically as an elongated U-shaped loop extending nearly the entire distance between end discs 6 and 10 and having each end terminal thereof secured to end disc 6 by means of a bolt 22. Also secured to each bolt 22 is an outwardly extending male electrical prong 20, said prongs being partially recessed within the body member, but extending somewhat outwardly from the associated end of the body member. The spacing of the two prongs 20 is such that they can be inserted in the female sockets 38 of an electrical outlet 36, whereby to cause element 24 to be heated to dry the desiccant 40.

The outlets 36 for a plurality of rollers may be mounted in a common outlet box or "strip board" 30, current for all of the outlets 36 being furnished through a flexible electrical cable 32 having at its free end a common plug 34 for insertion in the standard household electrical outlet. Each outlet 36 is preferably a cylindrical protrusion from box 30 as shown, said protrusion being of a size to enter the end of the body member adjacent end disc 6. This prevents a roller from being plugged into the standard household outlet wherein the female sockets are disposed flush with a wall surface, since the prongs 20 could not then be inserted into the sockets deeply enough to make electrical contact. This provision is valuable especially whereby the voltage to each roller must be reduced by means within box 30, so that plugging a roller directly into the household outlet could damage the roller heating element. Also, the partial recessing of the prongs 20 into the end of the

roller body member greatly reduces any tendency of said prongs to become entangled with the hair.

While for some purposes nearly any desiccant material 40 could be used in the body member, a calcined diatomaceous earth has been found to possess certain properties highly pertinent to the present invention. The specific properties primarily of concern are that it strongly resists powdering or deterioration due either to rubbing or abrasion of the grains thereof during handling, or due to repeated wetting and drying thereof, and that it is not dissolved and hence does not form a "mud" even when thoroughly wetted. The grain size of the calcined earth also can be closely controlled, and should be sufficiently large to prevent its escape through slots 4, 14 and 18.

In use, a lock of hair 26 is shown peripherally around the exterior surface of body member 2, as indicated in FIG. 5, and secured by a rubber band 28 or the like laid thereover longitudinally of the body member, one end of the rubber band loop being engaged over neck 15 of end disc 10, whereon it is releasably secured by head 16, and the other end of the rubber band loop being engaged over the projecting end portion of one of prongs 20. Both of said prongs may be necked as indicated at 21 to further assist in preventing accidental disengagement of the rubber band therefrom. Offsets 8 and 12 of the body member form easily detectable guides indicating to the user the portion of the body member about which hair should be wrapped. Air will then circulate freely through the hair, slots 4 and desiccant 40, moisture from the hair thus being transferred to and absorbed by the desiccant. The time needed for drying the hair is thus greatly reduced from that which would be required if, as in the usual roller, no desiccant were used. Slots 14 and 18 of the end discs also assist in providing free circulation of air through the body member. In this connection, the resistance of calcined diatomaceous earth to powdering or deterioration by abrasion or water becomes important. Other desiccants not possessing this property must be bagged or sacked, as, for example, in a cloth bag, to prevent particles thereof from escaping, and this bag inhibits the circulation of air. Calcined diatomaceous earth, on the other hand, requires no bagging, and hence the air can circulate more freely to promote faster and more efficient drying.

The specific formation of slots 4, in that a straight line connecting the ends of each slot extends into the interior of the body member along a chordal line, is also of substantial importance. It provides that when hair 26 is wrapped about the body member as shown, some of the hair will actually enter the interior of the body member and directly contact the desiccant 40. This provides substantially faster drying of the hair, in that moisture will flow by capillary attraction along and between the strands of hair to the areas of contact with the desiccant grains, and be absorbed directly in liquid form into the desiccant. This type of drying relieves the moisture of the necessity of first being vaporized into the air, and then transported to the desiccant by air circulation, and is of course much faster, especially during the earlier stages of the hair drying operation when water of flowable quantity is still present in the hair. In this connection, the "anti-mudding" property of the calcined diatomaceous earth is extremely important. If, as in the case of other desiccants, it were dissolved to form a suspension of particles thereof in water, or in other words to "mud," the desiccant material itself would be deposited in the hair, and this would, of

course, be highly objectionable. The calcined earth, on the other hand, is not soluble in water, nor does it form a suspension in water, and therefore is not transferred to the hair.

When the hair has been thoroughly dried, the rollers are, of course, removed from the hair. The desiccant material 40 is, of course, then largely saturated with water. To reactivate the rollers for further use, the prongs 20 of each roller are plugged into the sockets 38 of one of outlets 36 of strip board 30, whereby heater elements of the rollers are energized and raised to a sufficiently high temperature to vaporize and drive off the moisture present in the desiccant. The desiccant may easily be completely dried in no more than a few minutes.

While I have shown and described a specific embodiment of my invention, it will be readily apparent that many minor changes of structure and operation could be made without departing from the spirit of the invention as defined by the scope of the appended claims.

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

1. A hair roller comprising:

- (a) a foraminous tubular body member adapted to have a lock of hair wrapped and secured peripherally thereabout, and
- (b) a granular desiccant material loosely filling said body member, in combination with
- (c) an electric heating element mounted in said body member within the desiccant material disposed therein, and
- (d) means for completing an operative electrical circuit including said heating element.

2. A hair roller as recited in claim 1 wherein said means for completing the operative electrical circuit for said heating element comprises:

- (a) a pair of male electrical prongs mounted on said body member and extending outwardly therefrom, said prongs being electrically connected to the respective terminals of said heating element, and
- (b) an electrical outlet having a pair of female sockets with the terminals of an electric circuit being disposed respectively in said sockets, said prongs being adapted to be inserted respectively into said sockets.

3. A hair roller as recited in claim 2 wherein said body member has a recess formed at one end thereof and opening axially thereof, said prongs being at least partially contained in said recess and extending parallel to the axis thereof, and wherein said electrical outlet includes a protuberance through the outer end of which said sockets open, whereby said protuberance enters said body member recess as said prongs are inserted in said sockets.

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