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SCALP INVIGORATOR

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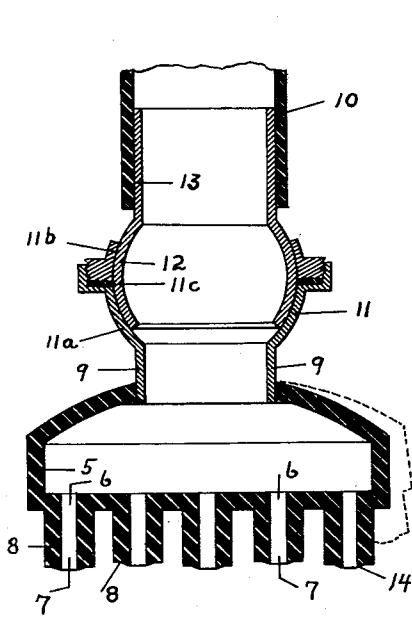


Fig. 1

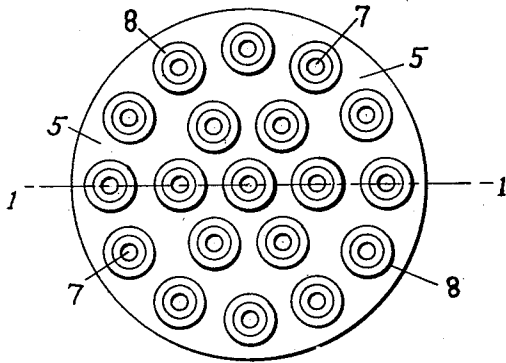


Fig. 2

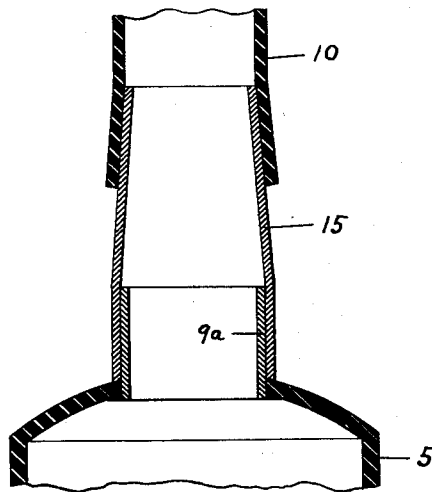


Fig. 3

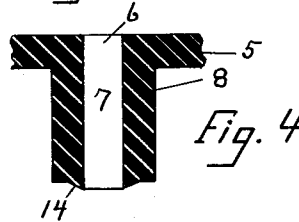


Fig. 4

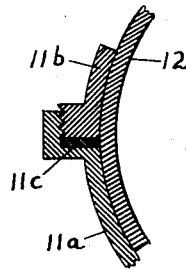


Fig. 5

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## UNITED STATES PATENT OFFICE

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## SCALP INVIGORATOR

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6 Claims. (Cl. 128—297)

Our invention relates to means for invigorating the human scalp, although it is adapted for more general use, as will be seen; more specifically, it relates to devices for massaging the skin and, by suction and manipulation, to loosen the skin where it tends to become bound and to stimulate the circulation of blood therein. When used on the scalp it not only massages the latter but loosens any dandruff which may be present and, by reason of the suction produced, removes the dandruff and other foreign matter. As is well understood, dandruff is not, in itself, so much a source of scalp trouble as an indication of the presence of some other and more serious condition which causes the dandruff to accumulate and which, when rectified, will leave a healthy scalp, with the result that the dandruff disappears, the scalp becomes looser and the hair is invigorated.

As stated, the invention is adapted to uses other than the treatment of the human scalp. The suction is so applied as to cause the applicator to adhere to the skin so that, as the applicator is moved about with a slight rectilinear or curvilinear motion, the skin is moved with it; or if the applicator be lifted, the skin will be pulled, all of which motions loosen the skin, stimulate the circulation of blood therein and thus promote a healthy condition. If hair be present, it will be benefited, as above set forth. It is obvious, therefore, that the invention is adapted to the treatment of certain hair and skin troubles of animals as well as of the human scalp.

In the accompanying drawing, Fig. 1 is a central longitudinal section taken on the line 1—1 of Fig. 2; Fig. 2 is a bottom plan view of the applicator; Fig. 3 is a view similar to Fig. 1 but showing a part only of the applicator and a modified form of connection leading to the suction-producing device; Fig. 4 is a central, longitudinal section through one of the nipples of the applicator, the same being on an enlarged scale, and Fig. 5 is a view on an enlarged scale of a portion of the structure shown in Fig. 1.

The applicator comprises a hollow body 5, the upper wall of which is preferably dome-shaped, as shown and for a purpose hereinafter set forth. It is preferably made of elastic material, such as rubber or rubber composition, although other suitable materials may be employed. This body may be of any desired peripheral outline, although the circular form shown is at present preferred. In its lower wall it is provided with a plurality of openings 6 forming the inner ends of ducts or passages 7. These ducts are at the

axial centers of nipples 8, the latter being preferably molded integrally with the body portion, so that the applicator is formed in a single piece. This simplifies and also strengthens the structure. While the dimensions of the parts may be varied, Figs. 1 to 3 show a full-sized applicator, the walls of the body and of the nipples being one-eighth of an inch in thickness and the nipples approximately one-half of an inch in length, while the ducts or passages 7 are one-eighth of an inch in diameter. The nipples are, therefore, relatively short and stiff, it being understood that if they were long and slender they would collapse and flex in use and would not pull the scalp. As shown, they are substantially cylindrical although they may be made in any desired form. In the upper dome-shaped wall is a large central aperture in which fits a metallic ferrule 9. The cross-sectional area of the opening through the ferrule is at least equal to and is preferably greater than the aggregate of the cross-sectional areas of the ducts or passages 7, thus assuring that the full suctional effect will be transmitted to the outer ends of the nipples.

When the device is in use, the body is moved back and forth or with a circular motion, while the outer ends of the nipples contact with the scalp or other body being treated. Since this body seldom has a flat surface, the applicator must necessarily be rocked to keep the ends of the nipples in contact. To facilitate this rocking movement, we prefer to provide the connections between the applicator body and the hose 10, which leads to the suction apparatus (not shown), with a universal-joint. To this end, the ferrule 9 is provided with a globular portion 11, the inner surface of which is a socket. Within this socket is the ball-like head 12 of a tubular member 13 which connects with the hose 10, as shown. Any suitable apparatus may be employed for producing suction, but it is usually most convenient to use the ordinary vacuum cleaner to which the tube 10 leads, as will be understood. With the universal-joint structure shown, the applicator may be tilted in any direction, as indicated by the dotted lines in Fig. 1. For convenience in manufacture and assembly, the globular portion 11 of the ferrule is made in two parts, 11a and 11b, threaded together, as best shown in Fig. 5. Between these parts is an elastic gasket 11c, which not only prevents leakage between the parts 11a and 11b but, being compressible, can be forced against the ball-like head 12 and thus prevent leakage between said head and its socket.

As shown in Fig. 2, the nipples 8 are rather closely spaced, yet are separated sufficiently to prevent the accumulation of dirt or dandruff or to facilitate cleaning if such accumulation should take place. In the circular form of applicator, the nipples are preferably arranged in concentric rows. As shown, there is one nipple at the center. This is surrounded by a row of six, and that row by an outer row of twelve, making a total of nineteen nipples. We have found that the nineteen ducts 7 are adequate for all practical purposes and so restrict the passage of the air through the applicator as to cause it to flow into the nipples at a velocity which is sufficient to draw the loosened dandruff out of the hair. The smooth, dome-shaped inner surface of the upper wall of the applicator facilitates the passage of the air to the ferrule 9 and hose-pipe 10 and also to prevent the accumulation of dirt and dandruff within the body 5. Moreover, since the entire applicator is made of materials which are not deleteriously affected by ordinary antiseptics, it is an easy matter to maintain it free from living germs of disease or decay.

If all the nipples 8 were of precisely the same length and were all brought into contact with a flat surface, there could be no flow of air through the passages 7 and the device would largely cease to function as a cleaner. Therefore, we prefer to vary slightly the lengths of the nipples. In Fig. 1, the six nipples in the middle row are slightly shorter than those in the outer row or the one at the center. However, the shorter nipples may be placed in any positions desired.

As stated, the wall of a nipple outside the duct 7 is approximately one-eighth inch thick and the duct is one-eighth inch in diameter. If the outer end of the nipple were a single plane surface it would slide over the scalp without loosening the dandruff thereon and, moreover, it would be difficult if not impossible to seal the outer end of the duct so as to cause the nipple to draw up or pull the scalp. We therefore form the nipple as best shown in the enlarged view, Fig. 4, by extending a lip 14 about the outer end of the duct. The extreme edge of this lip is so thin that it readily engages and loosens the dandruff and, being elastic, it effectually seals the duct when it is brought into contact with the scalp or other surface under treatment.

In the form shown in Fig. 3, the ferrule 9a is a simple tube to which the hose 10 may be directly attached if it be of the correct size. But the hose-pipes provided with suction cleaners vary somewhat; and, to make the applicator adaptable for use with all such cleaners, we provide an intermediate connector 15 which tapers slightly so that the hose-pipe 10 may be pushed thereover until it contacts the said member and forms an air-tight seal. This member may also be used with the structure shown in Fig. 1, being applied about the tubular member 13 as it is shown applied about the ferrule 9a of Fig. 3.

While we have shown and described what we now consider the preferred form of our invention, we realize that details of its construction may be modified, and the following claims are

not intended to be limited to such details any further than their specific terms make necessary.

Having described our invention, we claim:

1. A device of the character described comprising a hollow body member, one side of which is substantially flat and the opposite side dome-shaped with a smooth dome-shaped interior surface, said body member having an opening at the center of the dome-shaped side through which the air within the member may be drawn, a plurality of nipples projecting from the flat side of the body member, each of said nipples having a duct therethrough communicating at its inner end with the hollow of the member and opening at its outer end at the end of the nipple, a ferrule projecting through the opening in the body member and terminating substantially at the interior dome-shaped surface, whereby the air has a smooth and unobstructed path to the interior of said ferrule, and means connected with the ferrule for drawing the air from the body member, the cross-sectional area of the passage through the ferrule being as great as the aggregate of the cross-sectional areas of the ducts through the nipples, and the walls of the nipples being of such thickness relative to the lengths of the nipples that the latter will not collapse under suction or flex when in use.

2. A device as set forth in claim 1 in which the hollow body member is circular in peripheral outline and in which the nipples are arranged in concentric rows, certain of the nipples being longer than others, for the purpose specified.

3. A device as set forth in claim 1 in which each of the nipples is provided with a thin lip surrounding the outer end of the duct, for the purpose specified.

4. A device of the character described comprising a hollow body member having an opening in one of its walls through which the air within the member may be drawn, a plurality of nipples projecting from said member, each of said nipples having a duct therethrough communicating at its inner end with the hollow of the member and opening at its outer end at the center of the outer end of the nipple, the cross-sectional area of the said opening, through the wall of the body member being as great as the aggregate of the cross-sectional areas of the said ducts and the walls of the nipples being of such thickness relative to the lengths of the nipples that the latter will not collapse under suction or flex when in use, and a thin annular lip on the outer end of each of said nipples, said lips surrounding the outer ends of the respective ducts, for the purpose specified.

5. A device as set forth in claim 4 in which the nipples are of unequal lengths, for the purpose specified.

6. A device as set forth in claim 4 in which the diameters of the ducts through the nipples are substantially equal to the thickness of the walls of the nipples which surround the said ducts.

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