(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 309 628 B1**

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification: **15.07.92**

(51) Int. Cl.[5]: **A45D 19/18**

(21) Application number: **87308703.5**

(22) Date of filing: **01.10.87**

(54) **Hair streaking caps.**

(43) Date of publication of application:
05.04.89 Bulletin 89/14

(45) Publication of the grant of the patent:
15.07.92 Bulletin 92/29

(84) Designated Contracting States:
DE ES FR GB IT NL

(56) References cited:
BE-A- 484 230
FR-A- 2 238 446
GB-A- 1 012 851
US-A- 4 267 850
US-A- 4 281 417

(73) Proprietor: **Duchess Limited**
622 Oakley Place
Alexandria Virginia 22302(US)

(72) Inventor: **Ramik, Vincent**
4966 Sabra Lane
Annandale Virginia 2203(US)

(74) Representative: **Enskat, Michael Antony Frank et al**
Saunders & Dolleymore 9, Rickmansworth Road
Watford Hertfordshire WD1 7HE(GB)

Rank Xerox (UK) Business Services

Description

The present invention relates to hair streaking caps. Hair streaking caps of the type which include a generally hemi-spherical body formed of resilient polymeric or copolymeric plastic material are described in United States patent No. 4,267,850 in the name of Eileen Barrett which issued on May 19, 1981. In this patent the hair streaking cap includes the relatively large opening in the crown through which projects the hair in a pony-tail fashion. However, a similar cap is also conventional absent the large hole in the crown for tinting, streaking or otherwise treating relatively short hair, and the present invention is equally applicable to both types of hair streaking caps.

The hair streaking cap of patent No. 4 267,850 has been used for several years, and while very effective in achieving the objectives thereof, several problems were noted. Among the problems was the difficulty of accommodating a single cap size to different size heads of users. If, for example, the cap was large relative to the head size of a user and fitted loosely thereupon, there was little pain involved in pulling the groups of strands of hair through openings in the cap utilizing a crochet needle in a conventional fashion, but if the treating liquid found its way into the interior of the cap through the multiplicity of openings over the surface thereof, this looseness permitted the liquid to flow downwardly toward and beyond the user's forehead, ears, neck nape, etc. Obviously, such is totally undesirable as is the reciprocal of a tight cap, namely, no leakage or bleeding; yet more pain due to the tightness of the cap upon the head and hair of a user.

Incident to overcoming the latter-noted problems, the present invention also resulted in the creation of an unobvious method of altering a mould in which the hair streaking cap is formed to effectively change its size from a larger to a smaller size. Thus, while this method is predominently directed toward moulding caps between a male plunger which is received in a female cavity to form a cap therebetween, it is equally applicable to virtually any article manufactured by this conventional technique.

According to the present invention there is provided a hair streaking cap of the type which comprises a generally hemi-spherical body formed of resilient polymeric or copolymeric plastic material, the body comprising a generally hemi-spherical wall having inner and outer hemi-spherical surfaces, the hemi-spherical wall comprising a crown wall portion, a peripheral-free edge wall portion, and a generally annular wall portion therebetween, said wall portions having a plurality of openings through which a hook-like implement may be inserted for pulling groups of strands of hair therethrough which can be treated with a liquid applied thereto exteriorly of the hemi-spherical body, characterised in that least one radially inwardly directed continuous circumferential rib means is provided which projects from the inner hemi-spherical surface for (1) preventing internal leakage downwardly in a direction from the crown wall portion toward the peripheral free edge wall portion, (2) decreasing the resilience of a semi-hemi-spherical body in a circumferential area of the circumferential rib means, and (3) reducing the internal diameter of the annular wall portion at the circumferential rib means to effect a relatively tight fit of the cap upon the head of the user in the latter area while permitting ease of penetration of a hook-like element and the withdrawal of groups of strands of hair thereby in the absence of attendant pain.

The hair streaking cap may include at least one other radially inwardly directed circumferential rib means as and spaced from the latter-mentioned circumferential rib means, and the two circumferential rib means collectively defining therebetween a radially inwardly opening reservoir for receiving and housing liquid which may leak past an uppermost of the circumferential rib means when in use during liquid treatment of hair.

The streaking cap may include a plurality of exterior annular radially outwardly projected ribs located between the circumferential rib means through which a hook-shaped implement is adapted to be inserted into the reservoir.

One method of manufacturing the hair streaking cap of the present invention corresponds to a method of decreasing the effective internal diameter of an injection-moulded, compression-moulded or like article of a generally cup-like configuration defined between a male plug having an outer surface and a female cavity having an inner surface with the latter surfaces being in relatively close relationship and defining a wall of the cup-shaped article, the inner concave surface of the cup-like article having a diameter established by the outer convex surface of the male plug. The method includes the steps of cutting a circumferential groove into the outer surface of the male plug to a radial depth equal to one-half of that desired with respect to the original radius, thereafter moulding a cup-like article in the cavity thus formed, filling the circumferential groove and creating a circumferential rib on the interior of the cup-like article and thereafter removing the cup-like article from the mould with the internal circumferential rib therein representing in the radial dimension the decrease in the size of the cup-like article as compared to an article formed in the same mould prior to the formation of the circumferential rib therein.

A hair streaking cap embodying the present invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a perspective view of the hair-streaking cap;

Figure 2 is a bottom elevational view of the hair streaking cap of Figure 1; and

Figure 3 is a fragmentary sectional view to an enlarged scale taken generally along line 3-3 of Figure 2.

As shown, a hair streaking cap 10 includes a generally hemi-spherical body 11. The hemi-spherical body 11 of the hair streaking cap 10 is formed of resilient polymeric or copolymeric plastic material by injection-moulding, compression-moulding or the like. The hemi-spherical body 11 comprises a generally hemi-spherical wall 12 having inner and outer hemi-spherical surfaces 13, 14, respectively. The hemi-spherical wall also comprises a crown or crown wall portion 15, a generally annular wall portion 16 and a peripheral free edge or wall portion 17 which is directed generally radially outwardly and upwardly (Figure 3) to define an annular chamber 18 into which liquid can collect during a hair-treating operation.

The crown 15 does not include a large opening therein, but the same can be provided for streaking relatively long hair, but in this case the hair streaking cap 10 is intended more for utilization during the streaking of relatively short hair.

The body 11 includes a plurality of radially directed annular located rings 20 which are designed to locate a hook-like implement, such as a crochet needle, which penetrates the wall 12, is used to then pull groups of strands of hair therethrough in the conventional fashion, and these are then tinted, streaked or otherwise treated by a cosmetologist/hairdresser. While openings O are illustrated in the wall 12, these are simply slight tears or penetrations which are created when the crochet needle is pushed through the wall 12. Stated otherwise, the wall 12 is basically moulded without any openings whatever therein, and those openings O which are formed in the wall 12 are formed by the user of the cap by simply penetrating the wall 12 in the area of each of the annular rings 20.

The cap 10 includes at least one radially inwardly directed circumferential rib means projecting from the inner hemi-spherical surface 13, but three such identical rib means are shown and are designated by the reference numerals 21, 22 and 23. The rib means 21 is uppermost, the rib means 23 is lowermost, and the rib means 22 lies approximately midway therebetween and defines with each of the rib means 21, 23 respective radially inwardly directed annular reservoirs, 25, 26 within which liquid can be accumulated should it penetrate through any of the openings O and leak downwardly past, for example, the rib means 21. Obviously, the rib means 21 functions to prevent liquid from passing downwardly therebeyond but should such occur, it is confined within the reservoir 25 by the rib means 22. Likewise, should for some reason liquid find its way beyond the rib means 22, it should be confined within the reservoir 26 by the circumferential rib means or rib 23. Obviously, the effective diameters of the ribs or circumferential rib means 21 through 23 vary in size because of the shape of the cap, as is best viewed in Figure 3, and essentially the overall size thereof increases from the rib 21 to the rib 22 and from the rib 22 to the rib 23. Thus, if the cap is placed upon a person with a relatively large head, there is a good possibility that all three ribs 21 through 23 will create an effective seal, while in any case when the cap 10 is placed upon a smaller head, perhaps only the ribs 21, 22 will form such a seal or perhaps only rib 21 will come into play. However, in any case the ribs 21 through 23 effectively function for providing a liquid seal to prevent downward leakage of liquid which may be permeated into the interior of the hair streaking cap 10 through the openings O.

The circumferential rib means 21 through 23 are also operative for decreasing the resilience of the hemi-spherical body in the circumferential area of each. This is simply because the cross-sectional thickness in the area of each of the circumferential ribs or rib means 21 through 23 is greater and, thus, the tendency to stretch is reduced. This reduces distortion in the area of the rib means 21 through 23 and, thus, the overall initial size of the cap 10 will be retained for a longer time.

Finally, the rib means 21 through 23 also effectively reduce the overall internal diameter of the annular wall portion 13 corresponding, of course, to the degree or extent of inward projection of the ribs 21 through 23 relative to the internal surface 13 and relative to the position of the ribs 21 through 23 axially along the internal surface 13. Considering the first of these aspects, if the cap 10 were constructed without any of the ribs 21 through 23, the internal surface 13 thereof would progressively increase in diameter from a minimum in the area of the crown wall portion 15 to a maximum in the area of the peripheral wall portion 17. Conventional hair streaking caps are formed exactly in this fashion. The manner in which such conventional hair streaking caps are formed is simply by forming an injection mould having a cavity corresponding in dimensions and depth to the internal surface 13 and the external surface 14. Normally, this cavity is formed by constructing a male plunger having an external generally hemi-spherical or convex configuration

corresponding to the surface 13 and forming a female cavity having an internal hemi-spherical surface corresponding to the exterior hemi-spherical surface 14. The plunger is inserted into the cavity, the surfaces thereof are spaced a slight distance apart, plastic material is injected into the cavity in a conventional manner, and a cap is formed to the configuration illustrated in Figure 3, absent, once again, the ribs 21, 22 and 23. Thus, such a cap would simply have an unribbed hemi-spherical surface 13 and when placed upon the head of the user, could result in the disadvantages heretofore noted, namely, tightness/looseness and/or pain/no pain upon hair withdrawal. The original male plug which simply includes a hemi-spherical outer convex surface was provided with three grooves (not shown) corresponding to mirror images of the ribs 21, 22 and 23. This plug was then associated with the same female mould cavity and the cap 10 formed therein resulting in the ribs 21, 22 and 23 which automatically decreased the overall size of the cap in the area of the three ribs, as compared to the diameter in these same areas prior to the formation of the circumferential ribs 21 through 23. These circumferential grooves in the male plug also automatically decrease the resilience of the body 11 in the circumferential area of the rib means 21 through 23, simply because of the thickening of the material thereat. This renders the cap more stable size-wise over a long period of time.

Finally, by thus reducing the overall thickness of the cap in the area of the ribs 21, 23 these ribs form a tighter fit of the cap on the head of a user, irrespective of the user's head size because one or more of the ribs 21 through 23 will come into play. That is if the user is a person who has a relatively large head, all three ribs 21, 22 and 23 should tightly bear against the user's head, whereas a small user's head might simply have a relatively tight fit only with respect to the smaller diameter circumferential rib 21. However, in all cases where the ribs 21 through 23 or any one thereof forms a relatively tight fit with the head of a user, this tightness is not reflected above the rib 21 and, therefore, there is a relatively loose fit between the user's head and the annular wall portion 14 above the rib 21 and the crown 15. Hence, any hair in the area above the rib 21 can be pulled outwardly through the openings O thereabove in a relatively painless or pain-free fashion.

In view of the foregoing, the novel hair-streaking cap described achieves by the utilisation of a single rib three novel functional and structural features heretofore unprovided for by the prior art, and when two such ribs are placed in adjoining fashion, the reservoirs 25 and/or 26 are also provided to additionally accommodate for any liquid which may seep beyond either or both of the ribs 21, 22.

Claims

1. A hair streaking cap (10) comprising a generally hemi-spherical body (11) formed of resilient polymeric or copolymeric plastic material, said hemi-spherical body (11) comprising a generally hemi-spherical wall (12) having inner and outer hemi-spherical surfaces (13, 14), said hemi-spherical wall (12) comprising a crown wall portion (15), a peripheral free edge wall portion (17), and a generally annular wall portion (16) therebetween, said wall portions having a plurality of openings (O) through which a hook-like implement may be inserted for pulling groups of strands of hair therethrough which can be treated with a liquid applied thereto exteriorly of said hemi-spherical body (11), characterised in that at least one radially inwardly directed continuous circumferential rib means (21) is provided, said rib means (21) projecting from said inner hemispherical surface (13) for preventing internal liquid leakage downwardly in a direction from said crown wall portion (15) toward said peripheral free edge wall portion (17), decreasing the resilience of the hemi-spherical body (11) in a circumferential area of said circumferential rib means (21), and reducing the internal diameter of said annular wall portion (16) at said circumferential rib means (21) to effect a relatively tight fit of said cap (10) upon the head of a user.

2. A hair streaking cap according to Claim 1 including at least one other radially inwardly directed continuous circumferential rib means (22) generally identical to the first-mentioned circumferential rib means (21) and spaced therefrom to define therewith a circumferentially extending radially inwardly directed annular reservoir (25) for receiving and housing liquid which may have leaked past one of said circumferential rib means (21, 22).

3. A hair streaking cap according to Claim 2 including another plurality of openings (O) between said first and second mentioned circumferential rib means (21,22) through which a hook-shaped implement may be inserted through said hemi-spherical wall (12) into said reservoir (25).

4. A hair streaking cap according to Claim 3 including a third radially inwardly directed continuous circumferential rib means (23) generally identical to said first and second mentioned circumferential rib means (21, 22) and defining with said second-mentioned rib means

(22) a second circumferentially radially inwardly directed annular liquid-receiving reservoir (26).

5. A hair streaking cap according to Claim 4 including a further plurality of openings (O) between said second-mentioned (22) and third circumferential rib means (23) through which a hook-shaped implement may be inserted through said hemi-spherical wall (12) into said second reservoir (26).

Revendications

1. Bonnet pour former des mèches de cheveux (10) comprenant un corps (11) de forme générale hémisphérique, réalisé en un matériau plastique résilient en polymère ou copolymère, ledit corps hémisphérique (11) comprenant une paroi (12) de forme générale hémisphérique, présentant une surface interne hémisphérique et une surface externe hémisphérique (14), ladite paroi hémisphérique (12) comprenant une portion de sommet (15), une portion périphérique à bord libre (17), et une portion de forme générale annulaire (16) entre les deux, lesdites portions présentant une pluralité d'ouvertures (O) à travers lesquelles un instrument à forme de crochet peut être inséré pour tirer des groupes de mèches de cheveux au travers afin d'être traitées par un liquide appliqué extérieurement sur ledit corps hémisphérique (11), caractérisé en ce qu'il est muni d'au moins une nervure circonférentielle continue, dirigée radialement vers l'intérieur, ladite nervure faisant saillie de ladite surface interne hémisphérique (13) pour éviter les fuites de liquide interne vers le bas, selon la direction de ladite portion du sommet (15) vers la dite portion périphérique à bord libre (17), diminuant la résilience du corps hémisphérique (11) dans une aire circonférentielle de ladite nervure circonférentielle (21), et réduisant le diamètre interne de la dite portion annulaire (16) au niveau de ladite nervure circonférentielle (21) afin d'obtenir un ajustement relativement étanche dudit bonnet (10) sur la tête de l'utilisateur.

2. Bonnet pour former des mèches de cheveux selon la revendication 1, caractérisé en ce qu'il comprend au moins une autre nervure circonférentielle continue, dirigée radialement vers l'intérieur, généralement identique à la première nervure circonférentielle mentionnée (21), et espacée de celle-ci pour définir avec celle-ci un réservoir (25) circonférentiel, de forme annulaire, s'étendant radialement vers l'intérieur pour loger le liquide pouvant résulter de fuites de l'une desdites nervures circonférentielles (21,22).

3. Bonnet pour former des mèches de cheveux selon la revendication 2, caractérisé en ce qu'il comprend d'autres ouvertures (O) entre lesdites première et seconde nervures circonférentielles mentionnées (21,22), à travers lesquels un instrument en forme de crochet peut être inséré à travers ladite paroi hémisphérique (12) dans ledit réservoir (25).

4. Bonnet pour former des mèches selon la revendication 3, caractérisé en ce qu'il comprend une troisième nervure circonférentielle continu dirigée radialement vers l'intérieur (23), généralement identique auxdites première et seconde nervures circonférentielles mentionnées (21,22) et définissant avec ladite seconde nervure (22) un second réservoir (26) circonférentiel de forme annulaire dirigé radialement vers l'intérieur pour recevoir un liquide.

5. Bonnet pour former des mèches selon la revendication 4, caractérisé en ce qu'il comprend d'autres ouvertures (O) entre ladite seconde nervure mentionée et la troisième nervure circonférentielle (22,23), à travers lesquelles un instrument en forme de crochet peut être inséré à travers ladite paroi hémisphérique (12) dans ledit second réservoir (26).

Patentansprüche

1. Haube zum Formen von Haarsträhnen (10) bestehend aus einer weitgehend halbkugeligen Schale (11), die aus einem elastischen polymeren oder copolymeren Kunststoff geformt ist und eine weitgehend halbkugelige, mit inneren und äußeren halbkugeligen Oberflächen (13, 14) versehene Wand (12) aufweist, wobei die halbkugelige Wand (12) einen Kuppelanteil (15), einen an der Außenfläche befindlichen Wandanteil mit abstehendem Rand (17) und dazwischenliegend einen weitgehend ringförmigen Wandanteil (16) aufweist, und die Wandanteile eine Vielzahl an Öffnungen (O) enthalten, durch die ein hakenförmiges Gerät zum Herausziehen von Büscheln von Haarsträhnen einführbar ist, so daß diese mit Flüssigkeit behandelt werden können, die außerhalb der halbkugeligen Schale (11) aufgebracht wird.
dadurch gekennzeichnet,
daß wenigstens ein radial nach innen gerichteter, kontinuierlich umlaufender, von der inneren halbkugeligen Oberfläche (13) hervorstehender

Wulst (21) vorgesehen ist, um ein inwendiges Durchsickern von Flüssigkeit von dem Kuppelanteil (15) nach unten in Richtung auf den an der Außenfläche befindlichen Wandanteil mit abstehendem Rand (17) zu vermeiden, um die Elastizität der halbkugeligen Schale (11) in einem um den umlaufenden Wulst (21) umlaufenden Bereich zu verringern und um den Innendurchmesser des ringförmigen Wandanteils (16) an dem umlaufenden Wulst (21) zu reduzieren, so daß eine relativ enganliegende Passung der Haube (10) auf dem Kopf eines Benutzers gewährleistet ist.

2. Haube zum Formen von Haarsträhnen nach Anspruch 1 mit wenigstens einem weiteren, radial nach innen gerichteten, kontinuierlich umlaufenden Wulst (22), der im wesentlichen mit dem ersten umlaufenden Wulst (21) identisch und im Abstand von diesem angeordnet ist, um auf diese Weise einen umlaufenden, radial nach innen gerichteten, ringförmigen Speicher (25) zum Aufnehmen und zum Verwahren von Flüssigkeit, die an einem der umlaufenden Wülste (21, 22) durchgesickert ist, zu definieren.

3. Haube zum Formen von Haarsträhnen nach Anspruch 2 mit einer weiteren Vielzahl von Öffnungen (O) zwischen dem ersten und dem zweiten umlaufenden Wulst (21, 22), durch welche ein hakenförmiges Gerät durch die halbkugelige Wand (12) in den Speicher (25) einführbar ist.

4. Haube zum Formen von Haarsträhnen nach Anspruch 3 mit einem dritten, radial nach innen gerichteten, kontinuierlich umlaufenden Wulst (23), der im wesentlichen mit dem ersten und dem zweiten umlaufenden Wulst (21, 22) identisch ist, um mit dem zweiten Wulst (22) einen zweiten, umlaufenden, radial nach innen gerichteten, ringförmigen, Flüssigkeit aufnehmenden Speicher (26) zu definieren.

5. Haube zum Formen von Haarsträhnen nach Anspruch 4 mit einer weiteren Vielzahl von Öffnungen (O) zwischen dem zweiten Wulst (22) und dem dritten umlaufenden Wulst (23), durch welche ein hakenförmiges Gerät durch die halbkugelige Wand (12) in den zweiten Speicher (26) eingeführt werden kann.

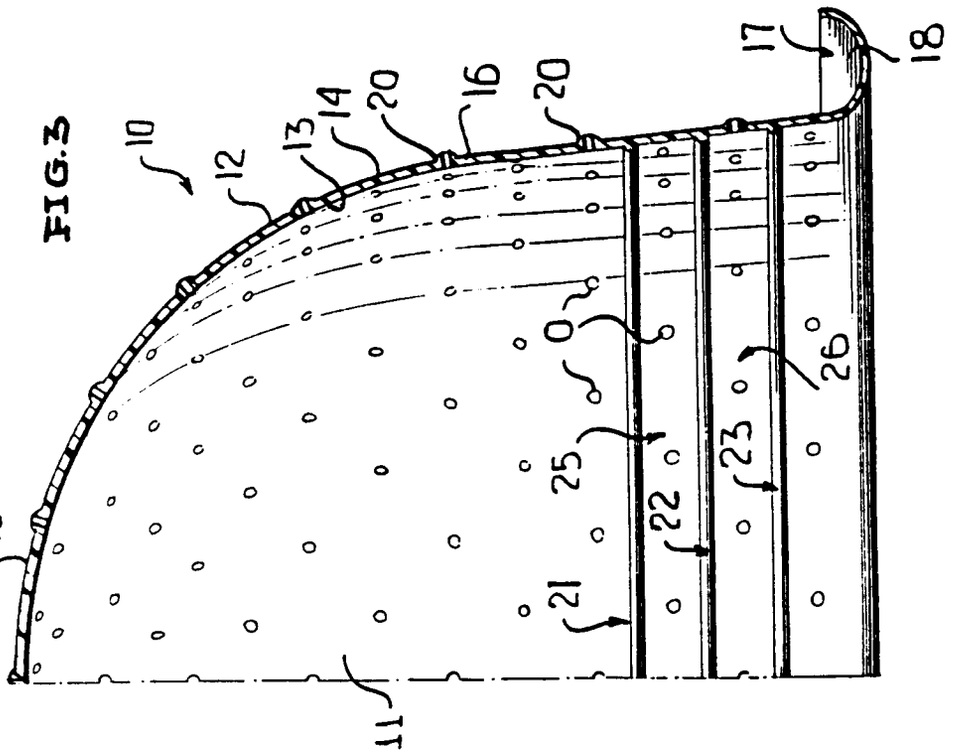
FIG.3
10
12
13
14
20
16
20
17
18
15
11
21
22
23
25
26
0

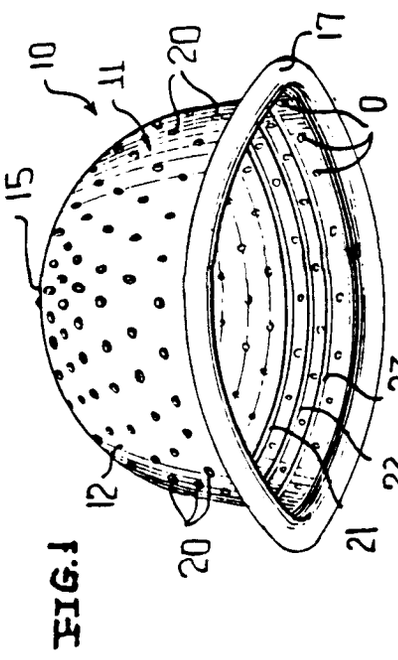
FIG.1
10
11
20
17
15
12
20
21
22
23
0

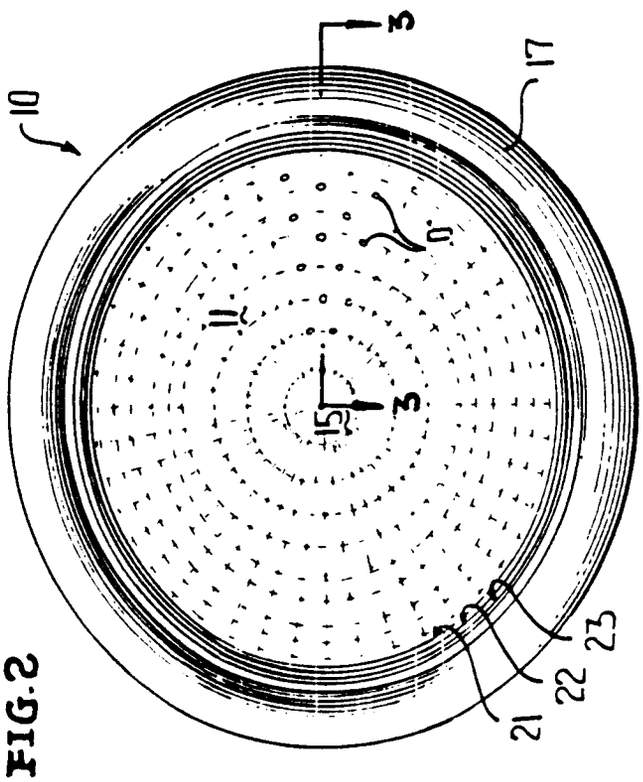
FIG.2
10
3
17
11
15
3
21
22
23
0