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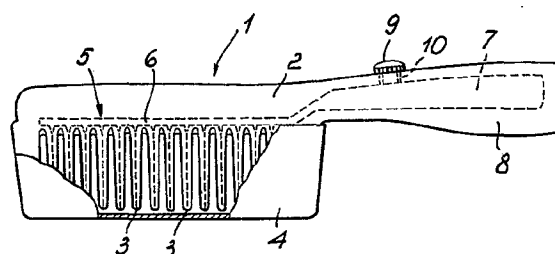
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⑤④ **Applicator for treating hair.**

⑤⑦ A liquid balsam, lotion and dye applicator for treating hair comprising a body (2) defining a handgrip member (8), wherefrom there extend a plurality of teeth (3) which are aligned in at least one array, the body and teeth being provided with internal passageways (5) communicating with a reservoir (7) of the liquid products housed in the body (2) and with dispensing holes formed along the teeth (3). The applicator is so arranged as to become operative only upon contacting the head's skin or hair, thereby the product waste during the application can be substantially reduced.



This invention relates to an applicator for treating hair with balsams, lotions and dyes.

Known is the use of liquid substances of various nature for the hygienic and aesthetic treatment of
5 hair, such as balsams, dyes, lotions, and the like.

Some of these substances affect hair and other the skin or the roots of hair; in general, the action of such substances is the more effective the more correctly is applied the substance to the
10 specific area of application and wherever the application is accompanied by a massage of the specific area affected. Moreover, such substances may happen to be fouling or harmful ones, and in these cases it may not be advisable to apply them
15 directly with one's hands, or be highly volatile and go wasted through the hair bulk before they can reach the precise area where they are intended to be active.

Thus the task of this invention is to
20 provide an applicator for treating hair with balsams, lotions and dyes, which is only allowed to become operative upon contacting the head's skin, or to only affect one's hair, thereby the product waste during the application can be substantially reduced.

25 Within this task it is an object of the invention to afford a means of readily and easily applying hair care products, whereby one's hair can be treated on a daily basis to provide improved effectiveness results.

The aforesaid task and objects are achieved by an applicator for treating hair with balsams, lotions, dyes, and the like liquid products, characterized in that it comprises a body defining a handgrip member, from said
5 body there extending a plurality of depending teeth which are aligned in at least one array, and that said body and teeth are provided with internal passageways communicating with a reservoir of said liquid products accommodated in said body and with dispensing holes
10 formed along said teeth.

Further features and advantages of the invention will be more clearly apparent from the description of a preferred but not limitative embodiment of the applicator according to the invention, with
15 reference to the accompanying exemplary drawings, where:

Figure 1 is a side view of an applicator;

Figure 2 shows a modification of a detail of the applicator reservoir; and

20 Figures 3 and 4 are cross-sectional views of applicator teeth, shown in two modified embodiments thereof.

With reference to the drawing figures, there is generally indicated at 1 an applicator for hair
25 balsams, lotions and dyes, which comprises a body 2 from which there depend a plurality of downward projecting teeth 3.

A protective case 4, which encloses and protects

the teeth 3 of the applicator 1, is removably attached to said body 2, preferably through a jointed connection of the contact surfaces. The body 2 and teeth 3 are formed with an internal passageway 5 which includes, of preference, a manifold 6 extending longitudinally to the body and communicating with a reservoir 7 formed in said body, advantageously inside that portion of the body which defines a handgrip member 8.

10 The reservoir 7 may be made of a deformable material (in which case it would be provided with a closure plug 9 for engagement in a filling hole 10), or of a rigid material, in which case it would be provided with an actuator plug 11 accommodated
15 in the throughgoing filling hole 10 of the reservoir such that it can be slipped off when required. Said actuator plug 11 comprises of preference (Figure 2) a housing formed from a deformable material such as a rubber-like material, which defines an inner cavity
20 12 communicating at the top with the outside through a hole 13 and at the bottom with the reservoir through a hole 14.

From the manifold 6, there branch off a number of small ducts 15 which extend through each tooth 3
25 and are terminated with outlet holes 16 formed through the tooth surface.

Dispensing means 17, preferably formed from either fibrous or porous materials, which include a small spongy, felt, or the like material pad,
30 may be inserted into the outlet holes 16. These

dispensing means are effective to draw out by capillary action the liquid products contained in the internal passageway 5 and issue and distribute said liquids during the product application.

5 Figure 3 is a detail view of dispensing means 17 inserted into seats 18 formed at the tip of each tooth 3, said dispensing means being formed from either a spongy or felt-like material.

10 In the embodiment of Figure 4, the dispensing means preferably comprises pads 19 of annular configuration, which are advantageously formed from a porous material, encircle a tooth 3, and are seated in recesses 20 located at the outlet holes 16 of the passageway 5.

15 The applicator of this invention operates as follows.

20 Liquid products or fluid creams utilized for the application are contained in the specially provided reservoir 7 and are preferably pumped into the passageway 5 by exerting a slight pressure on the reservoir interior through deformation of its walls, or respectively by depressing the actuator plug 11 with the fingers. In this latter case, the hole 13 of the actuator plug is closed and the inner
25 cavity 12 is squeezed, thereby the air contained therein is transferred into the reservoir to increase the internal pressure of the latter; upon releasing the actuator plug 11, the inner cavity 12 is again filled with air through the hole 13, whilst the hole
30 14 creates a barrier against the outflow of the

liquid products from the reservoir 7.

In actual practice, it has been found that the invention as described hereinabove affords the possibility of applying lotions and balsams directly and effectively to the head's skin without such products being wasted over the hair, and of applying dyes or decolorants to one's hair while preventing the substance used from contacting the head's skin or scalp. Furthermore, the simple operation involved by the application enables the aesthetic treatment of hair to be carried out on a daily basis, thus increasing the effectiveness of the products being utilized.

Finally, the protective cap provided for the applicator, in addition to protecting the applicator teeth from dust and mechanical damage, also prevents the liquid which permeates the dispensing holes and means from fouling one's hands or any objects kept adjacent the applicator.

The invention as described is susceptible to many modifications and variations without departing from the purview of the instant inventive concept. Thus, for example, to prevent possible clogging of the passageways 15, pins may be mounted therein for sliding movement in a longitudinal direction, which pins would be made rigid through their top ends with a supporting plate to be actuated by means of a pushbutton. Moreover, the dispensing holes may affect the entire profile of some teeth, whereas

other teeth may be made longer and without such dispensing holes, in order to prevent the products to be applied from contacting one's scalp or head skin.

- 5 Lastly, the actuator plug 11 of the reservoir may be replaced with a cylinder-piston unit suitably arranged to force the liquid products from the reservoir to the dispensing holes.

- 10 In practicing the invention, the materials employed, as well as the shapes and dimensions, may be any selected ones depending on individual requirements, without departing from the scope of this invention as specified in the appended claims.

C L A I M S

1 1. An applicator for treating hair with balsams,
2 lotions, dyes and the like liquid products, character-
3 ized in that it comprises a body (2) defining a hand-
4 grip member (8), from said body there extending a
5 plurality of depending teeth (3) which are aligned
6 in at least one array, and that said body (2) and
7 teeth (3) are provided with internal passageways (5)
8 communicating with a reservoir (7) of said liquid
9 products accommodated in said body (2) and with
10 dispensing holes (16) formed along said teeth (3).

1 2. An applicator according to Claim 1, charac-
2 terized in that said holes (16) are provided with
3 dispensing means (17) formed from fibrous, porous
4 or the like materials adapted to draw out by capillary
5 action the liquid products to be applied and being
6 contained in said passageways (5) and to issue and
7 distribute said liquid products during the applica-
8 tion.

1 3. An applicator according to Claim 1, charac-
2 terized in that said dispensing holes (16) are formed
3 at the tips of said teeth (3) for application of the
4 liquid products to the head's skin or scalp.

1 4. An applicator according to Claim 1, charac-
2 terized in that said dispensing holes (16) are formed
3 along the sides or flanks of said teeth (3) for
4 application of the liquid products to the hair.

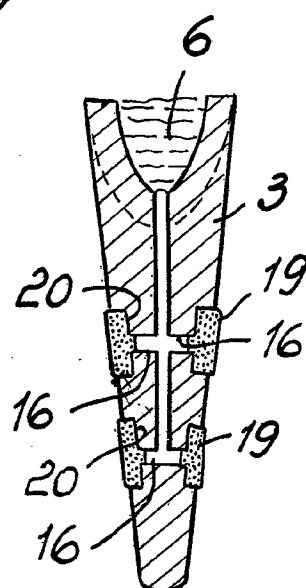
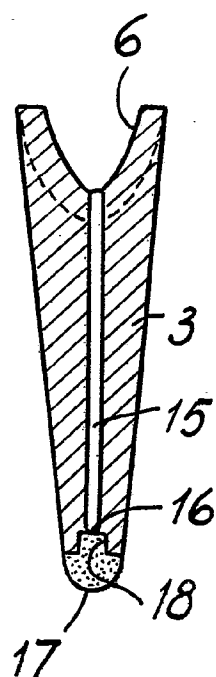
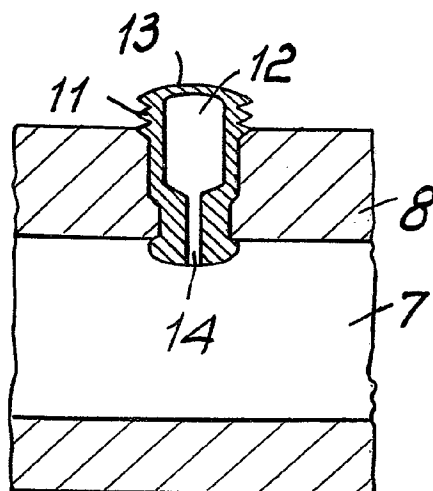
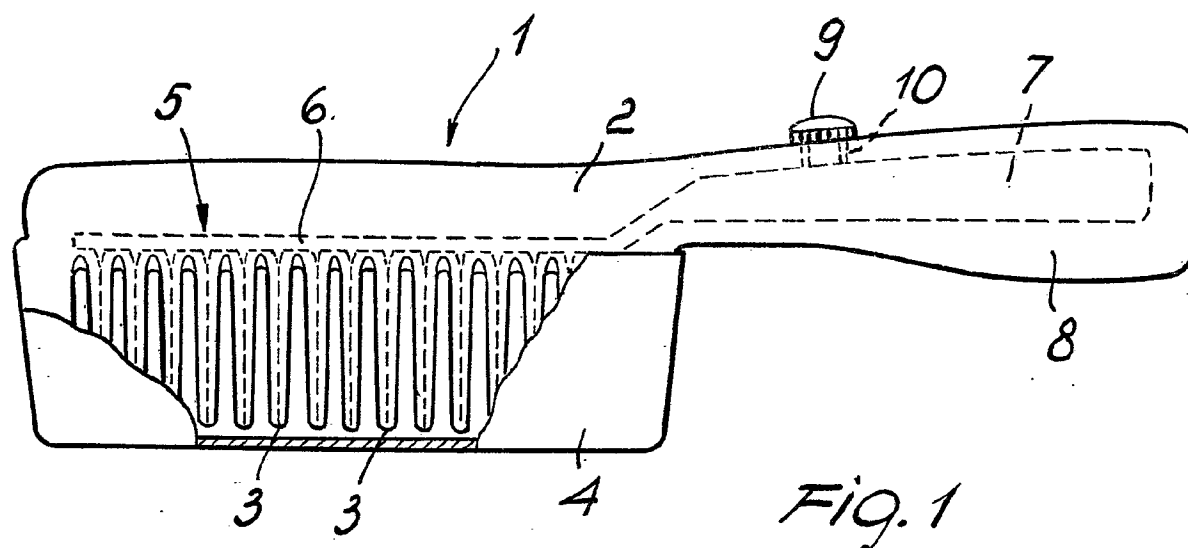
1 5. An applicator according to Claim 1, charac-
2 terized in that said teeth (3) can be slipped off
3 a protective case (4) which is removably attached to

4 said body (2) by means of a jointed connection pro-
5 vided between the respective contact surfaces.

1 6. An applicator according to Claim 1, charac-
2 terized in that said reservoir (7) is provided with
3 a through hole (10) equipped with a respective closure
4 plug (11) for filling said reservoir (7) with liquid
5 products.

1 7. An applicator according to Claim 6, charac-
2 terized in that said reservoir (7) is arranged internal-
3 ly to said body (2) of the applicator, advantageous-
4 ly made of a semirigid material of the type of plastics,
5 and deformable under a slight pressure exerted with
6 one's hand for the delivery of the liquids to be
7 applied.

1 8. An applicator according to Claim 6, charac-
2 terized in that the walls of said reservoir (7) are
3 rigid, and that said closure plug (11) includes a
4 deformable actuator plug effective to prevent the
5 emptying of said reservoir (7) and transmit a slight
6 pressure to the reservoir interior by means of a sub-
7 stantial deformation of said actuator plug, for the
8 delivery of the liquids to be applied.





European Patent
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EUROPEAN SEARCH REPORT

0043519
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EP 81 10 4964

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	US - A - 2 031 774 (HELFRICH) * Whole document * --	1,4,6, 7	A 45 D 24/22
X	US - A - 2 293 634 (SLUSS) * Whole document * --	1,4,6	
X	US - A - 2 376 065 (KUSZYK) * Whole document * --	1,3,7	
X	FR - A - 2 422 359 (FARCY) * Page 3, line 11 - page 4, line 2; figure 1 * -- DE - C - 59 426 (WICHELMANN) * Whole document * -- FR - A - 1 025 274 (MILLAT) * Whole document * -- US - A - 2 519 740 (CALL) * Figures 1,2 * -- US - A - 1 876 033 (STARR) * Page 2, lines 13-26; figures 1,2 * -- ./.	1,3,7 2,8 2,3 3 5	TECHNICAL FIELDS SEARCHED (Int. Cl.) A 45 D B 65 D
			CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search The Hague	Date of completion of the search 30-09-1981	Examiner SIGWALT	



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