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(54) Hair volumizing appliance

(57) According to one aspect, the invention provides a hair volumizing appliance (1) for increasing a hair (8) volume near a person's scalp (7) according to the present invention. The appliance comprises an insertion member (2) to be inserted between the scalp (7) and the hair (8) when in use. The insertion member (2) comprises an unheated scalp facing part (3) to be positioned adjacent to the scalp (7) when in use, and a convex shaped hair supporting part (4) supporting the hair (8) when in use. The hair supporting part (4) comprises at least one heating zone (5) arranged on a side facing away from the scalp facing part (3). The convex shaped part is in contact with the hair (8) when heated, so as to cause a bending of the hair (8) near the root (9), thereby increasing the volume of the hair (8) near the scalp (7).
The hair volumizing appliance is particularly suited for volumizing sleek hair without introducing curls.

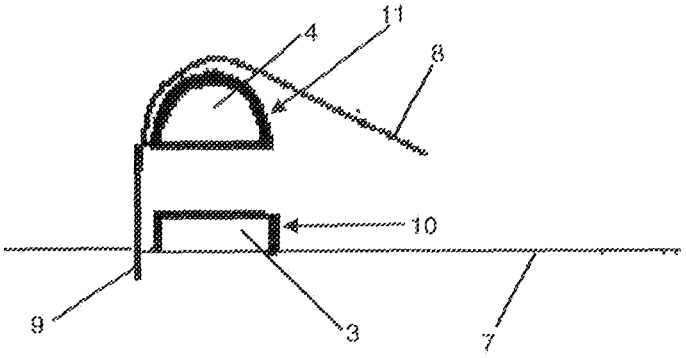

Figure 3B

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Description

FIELD OF THE INVENTION

[0001] The invention relates to the field of hair styling appliances and more particularly to appliances for volumizing hair.

BACKGROUND OF THE INVENTION

[0002] Traditionally, the volume of hair is increased by introducing curls in the hair. In the beginning, hair curling clamps were used for that purpose, as e.g. described in US2115229. A more modem appliance for volumizing hair is a crimper. An example of a crimper is shown in prior art publication US2004089317.

[0003] A problem with the known volumizing appliances is that they are not designed to create more volume in sleek hair without introducing curls. Volumizing sleek hair is one of the main challenges in current hair styling, both in the professional as in the domestic domain.

[0004] It is an object of the present invention to solve this problem and provide an appliance for volumizing sleek hair.

SUMMARY OF THE INVENTION

[0005] According to one aspect, the invention provides a hair volumizing appliance for increasing a hair volume near a person's scalp. The appliance comprises an insertion member to be inserted between the scalp and the hair when in use, wherein the insertion member comprises an unheated, scalp facing part to be positioned adjacent to the scalp when in use, and a convex shaped hair supporting part supporting the hair when in use. The hair supporting part comprises at least one heating zone arranged on a side facing away from the scalp facing part, the convex shaped part being in contact with the hair when heated, so as to cause a bending of the hair near the root, thereby increasing the volume of the hair near the scalp.

[0006] An advantage of this configuration may be that volume may be created in sleek hair without introducing curls.

[0007] According to another aspect, the invention provides a hair volumizing appliance, wherein the scalp facing part and the hair supporting part are provided on a scalp facing member and a hair supporting member respectively. The scalp facing member and the hair supporting member are adjustably connected, the appliance further comprises an adjustment mechanism to adjust a distance between the scalp facing member and the hair supporting member, so as to vary the increase of volume in the hair.

[0008] It may be an advantage of this configuration that the increase of volume may be varied by varying the distance between the scalp facing member and the hair supporting member.

[0009] According to yet another aspect, the invention provides a hair volumizing appliance, wherein the heating element is a thermal electric cooler (TEC) and wherein the cold side of the thermal electric heater is positioned in thermal contact with the unheated scalp facing part and the hot side of the thermal electric heater is positioned in thermal contact with the at least one heating zone of the hair supporting part.

[0010] The use of a TEC may have the advantage that the hair volumizing appliance may be designed in a particularly compact and an energy-efficient way.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

FIG. 1 is an exemplary embodiment of a hair volumizing appliance according to the present invention.
FIG. 2 is a second embodiment of a hair volumizing appliance according to the present invention.
FIG. 3 shows a front view of the second embodiment as shown in FIG. 2 in a substantially closed position (FIG. 3A) and in an open position (FIG. 3B) when in use.

DESCRIPTION OF THE EMBODIMENTS

[0012] FIG. 1A shows an embodiment of a hair volumizing appliance 1 for increasing a hair volume near a person's scalp according to the present invention. The appliance comprises an insertion member 2 to be inserted between the scalp 7 and the hair 8 when in use. The scalp 7 and the hair 8 are best seen in FIG. 1B. In this application, the term hair is broadly used and includes e.g. locks of hair. The insertion member 2 comprises an unheated scalp facing part 3 to be positioned adjacent to the scalp 7 when in use, and a convex shaped, hair supporting part 4 supporting the hair 8 when in use. The hair supporting part 4 comprises at least one heating zone 5 arranged on a side facing away from the scalp facing part 3. The contact with the at least one heating zone on the convex shaped hair supporting part causes the hair to be bent. The at least one heating zone may be heated when in contact with the hair. The at least one heating zone may also be pre-heated before being inserted into the hair.

[0013] Typical dimensions of the insertion member 2 are a width 21 of 12 - 20 millimeters, a height 22 of 10 - 20 millimeters and a length 23 of 150 millimeters.

[0014] When in use, the convex shaped, hair supporting part 4 supports the hair 8 and the hair 8 is in contact with an also convexly shaped heating zone 5 provided on the hair supporting part 4. Thus, the hair 8 may be bent to increase the volume in the hair. In FIG. 1B, a front view of the embodiment shown in FIG. 1A when in use, seen in the direction of arrow 6 it is shown that by using a substantially flat scalp facing part 3, the scalp facing part 3 and also the convex shaped hair supporting part

4, may be positioned near or on the scalp 7. Thus, the hair 8 may be bent near the root 9 of the hair 8 to increase the volume near the scalp 7 without curling the hair 8.

[0015] Preferably, the convex shaped hair supporting part 4 has a substantially semi circular shape, however variants on the semi circular shape may be possible. In one particular variant, which is best seen in FIG. 2, the semi circle is flattened on the sides and on the top. Depending on the amount of flattening, this variant may even approach a semi square.

[0016] In one embodiment, the convex shaped hair supporting part 4 comprises a base with a convex shaped hair supporting element on top of the base, wherein the convex shaped hair supporting element is removable attached to the base. In this configuration, different convex shaped supporting elements may be attached to the base depending on the desired volumizing effect and depending on the type of hair 8. The convex shaped elements are preferably made of ceramic material, to avoid harming the hair 8.

[0017] In the embodiment shown in FIG. 1, the scalp facing part 3 is unheated in a passive way. In alternative embodiments, the scalp facing part 3 may be actively cooled, e.g. by using a heat sink like a copper rod, a fluid streaming along the inner side of the scalp facing part 3 or air blowing through the scalp facing part 3.

[0018] In this embodiment, the temperature of the heating zone 5 may be 150°C. Depending on the quality of the hair 8 and the desired styling effect the temperature of the heating zone 5 may vary between 80°C and 300°C. Preferably the heating element has a controllable heating rate to choose the temperature depending on e.g. the thickness and sensitivity of the hair 8.

[0019] In the embodiment from FIG. 1, wherein no active cooling of the unheated scalp facing part 3 is applied, the unheated scalp facing part 3 and the heating zone 5 of the hair supporting part 4 may be separated by an insulating member (not shown), so as to avoid a negative impact of the heating zone 5 on the unheated scalp facing part 3 and vice-versa.

[0020] In this embodiment, the hair volumizing appliance 1 comprises a heating element configured for heating the heating zone 5 of the hair supporting part 4. In other embodiments, the hair volumizing appliance 1 may be a top-piece or and end-piece for a multi functional hair styling body. In that case, the body comprises the heating element and several top- or end-pieces may be connected to the body, e.g. a piece for curling straight hair 8, a piece for straitening curled hair 8 or a piece for volumizing straight hair 8 without curling.

[0021] In one embodiment, the heating element is a thermal electric cooler (TEC), based on the Peltier effect. A TEC usually has a cold and a hot side. In this embodiment, the cold side of the TEC is positioned in thermal contact with the unheated scalp facing part 3 and the hot side of the TEC is in thermal contact with the heating zone 5 of the hair supporting part 4. The use of a TEC may result in a particularly compact hair styling appliance and an energy- efficient design. Besides, a TEC permits for controllable heating and cooling rates, if wished. They may be provided in various sizes and with various maximum temperature differences.

[0022] Also in other embodiments of the hair volumizing appliance, the heating element may comprise a Peltier element. A Peltier element may easily be integrated into a hair styling appliance due to its relatively small size and weight. Besides, Peltier elements may be dimensioned to allow for mains operation or for battery operation.

[0023] An alternative way of heating the hair 8 is by emitting infra-red light between 6000 and 40000 nanometers. An advantage of using infra-red light of this wavelength range is that it may not harm the hair 8. Instead, it may even have a protective function by letting the inner organization of the hair 8 get more nourished.

[0024] In another embodiment of the hair volumizing appliance 101 according to the present invention as shown in FIG. 2, the scalp facing part 3 and the hair supporting part 4 are provided on a scalp facing member 10 and a hair supporting member 11 respectively. The scalp facing member 10 and the hair supporting member 11 are adjustably connected and the volumizing appliance comprises an adjustment mechanism to adjust a distance between the scalp facing part 3 and the hair supporting part 4, so as to vary the increase of volume in the hair 8.

[0025] In this embodiment, the scalp facing member 10 and the hair supporting member 11 are hinged connected by means of hinge 12. The adjustment mechanism is arranged to adjust an angle α 13 between the scalp facing part 3 and the hair supporting part 4.

[0026] In the embodiment shown in FIG. 2, a front part 14 of the insertion member 2, the front part 14 being the part that is inserted between the scalp 7 and the hair 8 first when in use, is bluntly formed, so as to prevent injuring the scalp 7 when the insertion member 2 is inserted. To further prevent injuring the scalp, the front part may also be unheated.

[0027] In another embodiment, to ease insertion, the front part 14 of the insertion member 2 may be thinner than the rest of the insertion member 2. The insertion member 2 may e.g. be duckbill shaped, which means that the insertion member 2 has a relatively narrow, blunt front that may conically widen and increase in height towards an end portion of the insertion member 2.

[0028] The adjusted front part shapes may of course also be applied to embodiment 1 as shown in FIG. 1.

[0029] FIG. 3 shows a front view in the direction of arrow 15 from FIG. 2 of embodiment 101 when in use. Reference numbers in FIG. 3 are identical to the reference numbers in FIG. 1. FIG. 3A shows embodiment 101 in a substantially closed position and FIG. 3B shows embodiment 101 in an open position. The hair volumizing appliance is preferably inserted into the hair 8 in the closed position, to enable easy insertion. In closed position, the increase of volume is relatively small. Once inserted, the hair volumizing appliance 101 may be opened

to heat a larger part of the hair 8 and to further increase the volume of the hair 8.

[0030] The detailed drawings, specific examples and particular formulations given serve the purpose of illustration only. Furthermore, other substitutions, modifications, changes, and omissions may be made in the design, operating conditions, and arrangement of the exemplary embodiments without departing from the scope of the invention as expressed in the appended claims.

[0031] In the claims, any reference signs placed between parentheses shall not be construed as limiting the claim. The word 'comprising' does not exclude the presence of other features or steps then those listed in a claim. Furthermore, the words 'a' and 'an' shall not be construed as limited to 'only one', but instead are used to mean 'at least one', and do not exclude a plurality. The mere fact that certain measures are recited in mutually different claims does not indicate that a combination of these measures cannot be used to advantage.

Claims

1. Hair volumizing appliance (1) for increasing a hair (8) volume near a person's scalp (7), the appliance comprising
an insertion member (2) to be inserted between the scalp (7) and the hair (8) when in use, wherein
the insertion member (2) comprises

i) an unheated scalp facing part (3) to be positioned adjacent to the scalp (7) when in use, and
ii) a convex shaped hair supporting part (4) supporting the hair (8) when in use, the hair supporting part (4) comprising at least one heating zone (5) arranged on a side facing away from the scalp facing part (3), the convex shaped part being in contact with the hair (8) when heated, so as to cause a bending of the hair (8) near the root (9), thereby increasing the volume of the hair (8) near the scalp (7).

2. The hair volumizing appliance according to claim 1, wherein the unheated scalp facing part (3) is substantially flat.

3. The hair volumizing appliance according to claim 1, wherein the convex shaped hair supporting part (4) has a substantially semicircular shape.

4. The hair volumizing appliance according to claim 1, wherein the scalp facing part (3) and the hair supporting part (4) are provided on a scalp facing member (10) and a hair supporting member (11) respectively, wherein the scalp facing member (10) and the hair supporting member (11) are adjustably connected, the appliance further comprising an adjustment mechanism to adjust a distance between the scalp facing part (3) and the hair supporting part (4), so as to vary the increase of the volume in the hair (8).

5. The hair volumizing appliance according to claim 4, wherein the scalp facing member (10) and the hair supporting member (11) are hinged connected and wherein the adjustment mechanism is arranged to adjust an angle between the scalp facing member (10) and the hair supporting member (11).

6. The hair volumizing appliance according to claim 1, wherein a front part (14) of the insertion member (2), the front part (14) being the part that is inserted between the scalp (7) and the hair (8) first when in use, is bluntly formed, so as to prevent injuring the scalp (7) when the insertion member (2) is inserted.

7. The hair volumizing appliance according to claim 1, wherein a front part (14) of the insertion member (2), the front part (14) being the part that is inserted between the scalp (7) and the hair (8) first when in use, is unheated, so as to prevent injuring the scalp (7) when the insertion member (2) is inserted.

8. The hair volumizing appliance according to claim 1, wherein the hair volumizing appliance further comprises a heating element configured for heating the at least one heating zone (5).

9. The hair volumizing appliance according to claim 8, wherein the heating element is a thermal electric cooler (TEC) and wherein the cold side of the thermal electric heater is positioned in thermal contact with the unheated scalp facing part (3) and the hot side of the thermal electric heater is positioned in thermal contact with the at least one heating zone (5) of the hair supporting part (4).

10. The hair volumizing appliance according to claim 8, wherein the heating element comprises a Peltier element.

11. The hair volumizing appliance according to claim 8, wherein the heating element has a controllable heating rate.

12. The hair volumizing appliance according to claim 1, wherein the unheated scalp facing part (3) and the at least one heating zone (5) of the hair supporting part (4) are separated by an insulating member, so as to prevent heating of the unheated scalp facing part (3).

Figure 1

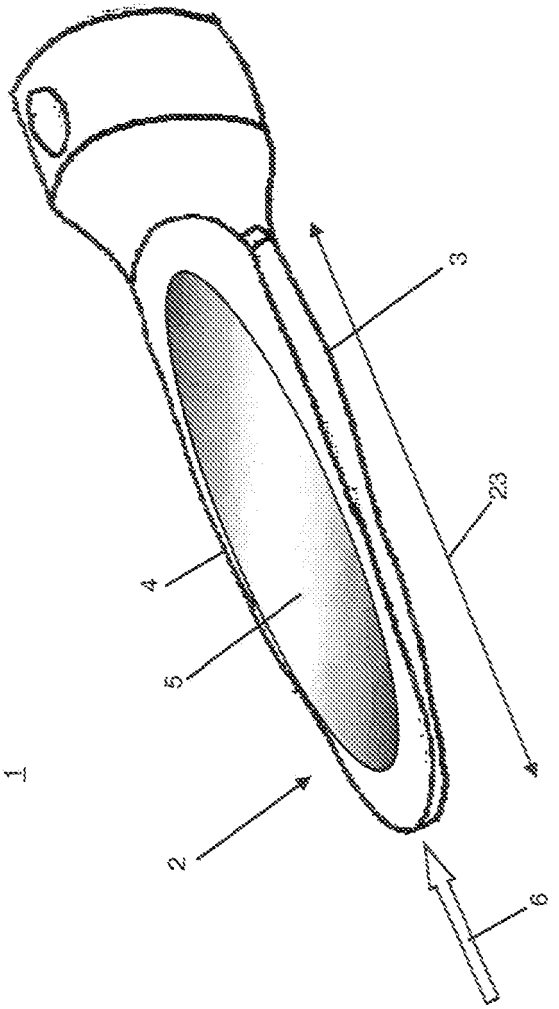

Figure 1A

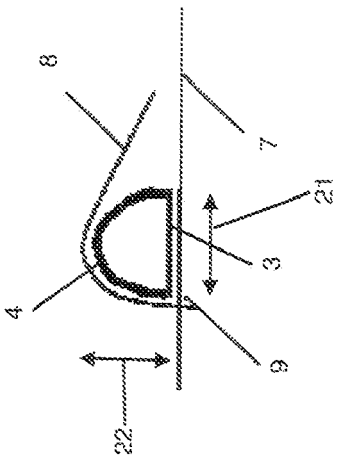

Figure 1B

Figure 2

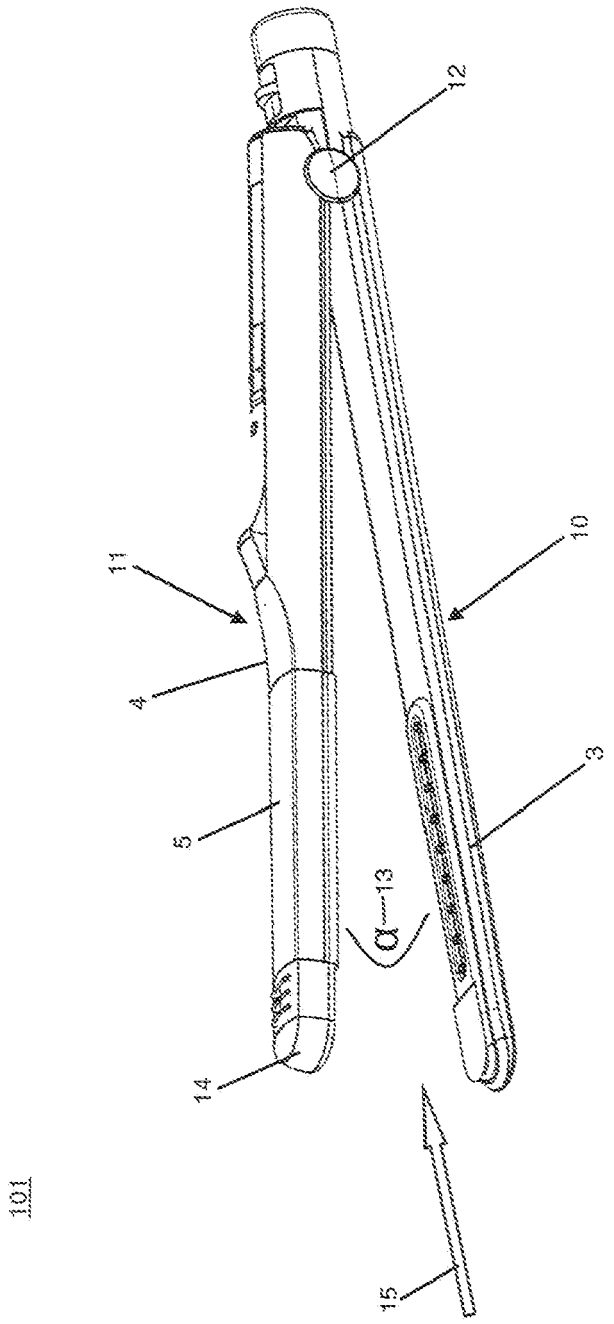

Figure 3

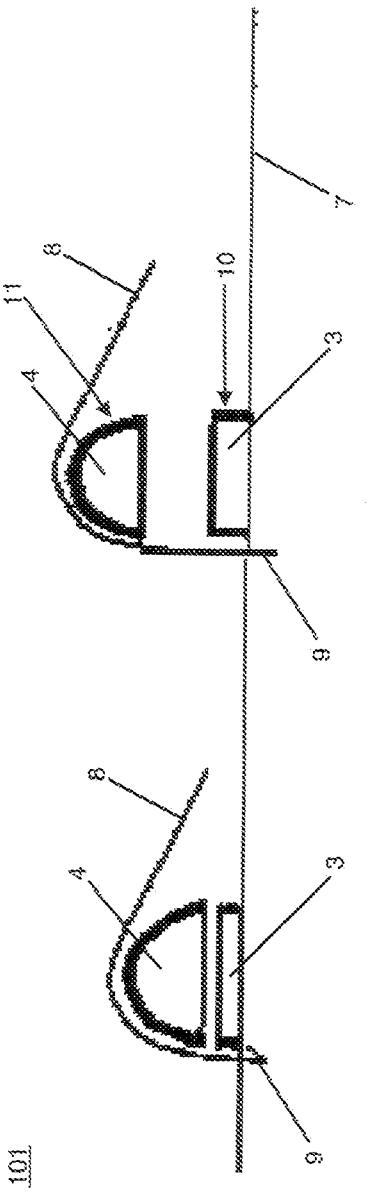

Figure 3A

Figure 3B

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EUROPEAN SEARCH REPORT

Application Number
EP 09 16 4417

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X A	WO 2008/032978 A1 (YEOM DAE KWON [KR]) 20 March 2008 (2008-03-20) * page 1, lines 5-9; figures 1-3b * * page 4, lines 20-22 * * page 8, line 15 - page 10, line 11 * * page 11, line 23 - page 12, line 20 * -----	1-2,6, 8-10,12 4	INV. A45D1/16 A45D2/14 A45D2/36
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	14 January 2010	Escudero, Raquel

CATEGORY OF CITED DOCUMENTS

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EUROPEAN SEARCH REPORT

Application Number
EP 09 16 4417

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	14 January 2010	Escudero, Raquel

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L : document cited for other reasons

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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