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(54) Title: HAIR STYLING DEVICE WITH GRIP-TIP

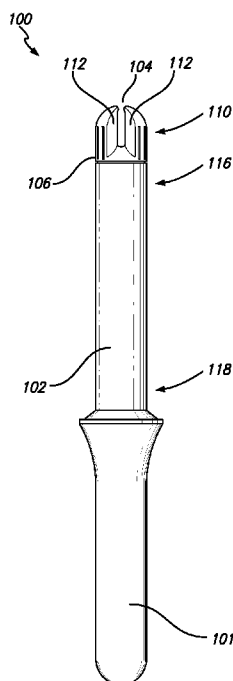


FIG. 1

(57) Abstract: A hair styling device comprises a handle, a heatable elongated member having a longitudinal axis, a distal portion and a proximal portion. The proximal portion of the elongated member is connected to the handle. The device has a hair retention slot at the distal portion of the elongated member sized to receive and retain a section of a user's hair. Also described is an attachment for a hair styling device providing such a hair retention slot and a method of using the device and the attachment.

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— *with international search report (Art. 21(3))*

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HAIR STYLING DEVICE WITH GRIP-TIP**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims the benefit of United States Provisional Patent Application No. 61/878,987 titled "Hair Styling Device With Grip-Tip," filed on September 17, 2013, the contents of which are incorporated herein by reference in their entirety.

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BACKGROUND

[0002] Many people desire to curl or style their hair. In many heated hair styling devices, a user manually holds their hair with one hand and holds the device with their other hand. Thus the user has both hands utilized and is unable to do anything else. Also a user may need to wear a glove to avoid burns while holding hair against a heated surface.

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[0003] There are manual and automatic hair styling devices that avoid these problems by providing a built-in arm for clamping hair against a heated surface. This design frees up a user's hand. However, the arm can create undesirable creases in the user's hair. Moreover it cannot be used for retrofitting conventional devices.

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[0004] Consequently, there is a need for an improved hair styling device with a feature to hold the user's hair in place while the hair is positioned on or in a heated hair styling device without creating creases.

SUMMARY

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[0005] The present invention overcomes several of the deficiencies, disadvantages and undesired parameters associated with the known hair styling devices. The invention allows the user to hold the user's hair on or against the hair styling device without the use of a clamp or heat gloves, as well as to easily release the hair from the hair styling device after the hair is styled.

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[0006] The invention is directed to a hair styling device, such as a curling rod, that is able to receive and retain a section of a user's hair on or against the device. In one embodiment, the device comprises a handle and a heated elongated member having a distal portion and a proximal portion. The proximal portion of the elongated member is connected to the handle. The device also comprises a hair retention slot extending through the distal portion of the elongated member or an attachment for the elongated member, the attachment providing the

5 retention slot. The retention slot has a side wall and is sized to receive and retain a section of a user's hair. The side wall preferably is made of elastomeric material such as silicone, and can have bristles extending inwardly from the side wall.

[0007] The slot can have a longitudinal axis that can be aligned or not aligned with the longitudinal axis of the elongated member. The slot has a first width at the slot proximal portion,
10 and a second width at the slot distal portion, where the first width can be larger or smaller than the second width.

[0008] The invention also provides methods for using the hair styling devices described above. The devices can be used by first activating the heater. A user's hair to be styled is placed into the slot. The user's hair is then wound around the elongated member and heated. Once the
15 desired amount of heat is attained, the user's hair is removed from the elongated member. Alternatively, the user's hair can be first wound around the elongated member and then placed into the slot.

DRAWINGS

[0009] These and other features, aspects, and advantages of the present invention will
20 become better understood with regard to the following description, appended claims, and accompanying drawings.

[0010] Figure 1 is a perspective view of a first hair styling device having features of the present invention.

[0011] Figure 2 is an expanded view of a portion of the device of Figure 1.

25 [0012] Figures 3A, 3B, and 3C are perspective views of alternate slot shapes of the hair styling device.

[0013] Figure 4 is a cross-sectional view of the device of Figure 1.

[0014] Figure 5A is a perspective view of an attachment having features of the present invention, the attachment being useful for heated hair styling devices.

30 [0015] Figure 5B is an expanded view of a portion of the device of Figure 5A.

[0016] Figures 6A, 6B, 6C and 6D are perspective views of a method of using the hair styling device.

- 5 **[0017]** Figures 7A and 7B are perspective views of a second version of the hair styling device having features of the present invention, the device being in a closed position and an open position, respectively.

DESCRIPTION

Definitions

- 10 **[0018]** As used herein, the following terms and variations thereof have the meanings given below, unless a different meaning is clearly intended by the context in which such term is used.

[0019] The terms “a,” “an,” and “the” and similar referents used herein are to be construed to cover both the singular and the plural unless their usage in context indicates otherwise.

- 15 **[0020]** As used in this disclosure, the term “comprise” and variations of the term, such as “comprising” and “comprises,” are not intended to exclude other additives, components, integers ingredients or steps.

[0021] The term “elastomeric” means a material that bends under stress, such as pressure, is applied, and returns to its substantially original configuration when the stress is removed.

- 20 **[0022]** The term “elongated member” refers to a rod-shaped extension, around which hair can be wrapped.

[0023] The term “hair styling device” refers to a tool to style hair. The tool can be a manual or automatic curling iron, flat iron, InStyler®, or the like.

[0024] The term “slot” refers to an opening longer than it is wide.

- 25 **[0025]** The term “removably” refers to the ability of the user to manually remove an attachment from a hair styling device without the use of tools.

Hair Styling Device With Slot

- 30 **[0026]** The invention is directed to a hair styling device 100 that is able to retain a section of the user’s hair against a heated portion of the device in order to style the user’s hair. The hair styling device can be any device such as a manual or automatic curling iron, flat iron, InStyler®, or the like. One such device 100, as shown in Figures 1, 2, 3, 4, 5 and 6 comprises a handle 101, an elongated member 102, and a hair retention slot 110.

5 **[0027]** As can be seen in Figure 1, the elongated member 102 has a longitudinal axis, a distal portion 116 and a proximal portion 118. The proximal portion 118 of the elongated member 102 is connected to the handle 101.

10 **[0028]** The device also has a heater 108 in the handle 101 for heating the elongated member 102, as shown in Figure 4. The handle 101 can also contain a temperature control 114. This allows the user to select different temperatures depending on hair type and the desired hair style.

15 **[0029]** The slot 110 is typically a structure with a side wall 112 typically located at or near the distal portion 116 of the elongated member 102 of the hair styling device 100, and is a way to retain the hair 120 in proximity to the heated portion of the hair styling device 100 without the user having to manually hold the hair 120 in place against the device 100. The slot 110 provides enough lateral tension to prevent the hair 120 from slipping out of the slot 110.

20 **[0030]** The slot 110 can be positioned anywhere along the elongated member 102. The slot 110 can be located near the handle 101, but preferably the slot 110 is located on or near the distal portion 116 of the elongated member 102. Alternatively, the slot 110 can be at any angle relative to the elongated member 102. Alternatively, the device 100 can have more than one slot 110. The slots 110 can be located anywhere along the elongated member 102, and the slots 110 can also be at any angle relative to the elongated member 102.

25 **[0031]** The slot 110 is bounded by a side wall 112 and is sized to receive and retain a section of a user's hair 120. As shown in Figures 1 through 6, the side wall 112 can be opposed side walls 112. As can be seen in Figure 2 and Figure 5B, the side wall 112 can support projections 202 extending into the slot 110. The projections 202 can be any structure that can hold the hair, for example, bristles, protrusions, teeth, pins, or a combination thereof.

30 **[0032]** The slot 110 can be round, oval, or a parallelogram such as rectangular in horizontal cross-section. Typically the slot 110 can extend into the elongated member 102.

30 **[0033]** Alternatively, the slot 110 can be a separate device, which can be permanently or removably attached to a hair styling device. Also the shape of the slot 110 in horizontal cross-section can be different in different portions of the slot 110. Thus the slot 110 need not be uniformly shaped.

5 [0034] As can be seen in Figures 3A through 3C, the slot 110 has a proximal portion 106 proximate to the elongated member 102 and an opposed distal portion 104. Referring now to Figure 3A, the distal portion 104 can be wider than the proximal portion 106 to provide a wide opening for ease in placing hair in the slot 110.

[0035] Alternatively, referring now to Figure 3B, the proximal portion 106 can be wider than
10 the distal portion 104 for accommodating a large amount of hair where the narrower distal portion 104 prevents the hair from sliding out of the slot 110.

[0036] Alternatively, referring now to Figure 3C, the slot 110 can be generally hour glass shaped to provide a wide opening at the distal portion 104 for placement of hair in the slot 110, a wide proximal portion 106 to accommodate a large amount of hair, where a narrow mid-
15 section 122, which is narrower than both the proximal portion 106 and the distal portion 104, retains hair in the proximal portion 106 of the slot 110. In contrast, the second width of the slot 110 proximal portion 106 can be larger than the first width of the slot distal portion 104. The slot 110 can be any depth and any width, but typically the slot 110 is between 0.25 inches to 0.5 inches deep, and the slot 110 is from 0.125 inches to 0.25 inches wide.

20 [0037] Preferably the side wall 112 is made of a material that is heat resistant. The heat resistant material can be, for example, an elastomeric material such as foam rubber or silicone.

[0038] In one embodiment, the slot 110 has a longitudinal axis that is aligned with the longitudinal axis of the elongated member 102. In another embodiment, the slot 110 has a longitudinal axis that is not aligned with the longitudinal axis of the elongated member 102.

25 [0039] Referring now to Figure 4, there can be seen a cross-sectional view of the hair styling device 100. The heater 108 can extend up into the elongated member 102. The hair styling device 100 optionally includes a timer 124 and alarm 126 which tracks the amount of time the section of the user's hair 120 remains heated and wound around the elongated member 102, and generates an alarm such as a beep when it is time for the section of the user's hair 120 to be
30 released from the device. The device 100 can also comprise a power cord 406 which allows the device 100 to draw electricity to power itself. Alternatively, the device 100 can also comprise a temperature control 114.

[0040] The invention also describes a method for styling a user's hair with the device described above, as shown in Figures 6A through 6D. The steps of the method include: (a)
35 activating the heater 108, (b) placing a portion of a section of the user's hair 120 to be styled

5 into the slot 110, (c) winding the section of the user's hair 120 around the elongated member 102, (d) heating the wound section of the user's hair 120 with the heated elongated member 102, and e) removing the section of the user's hair 120 from the elongated member 102. Any portion of the user's hair 120 can be placed in the slot, but generally the portion 120 placed in the slot 110 is the portion of hair near the root of the hair. Alternatively, the portion of hair 120
10 placed in the slot 110 can be the near the tip of the hair or in the middle of the hair. The steps can be performed in a different order, for example, the section of the user's hair 120 can be wound around the elongated member 102 and then the section of the user's hair 120 can be placed into the slot 110. The heater can be turned on at any time in the process. The slot 110 holds the section of the user's hair 120 against the heated elongated member 102, and produces
15 curls without the user having to manually hold the hair 120 against the elongated member 102 and without forming creases.

[0041] Once the section of the user's hair 120 has been heated for the desired amount of time, the user can pull the device away from their head, allowing the section of the user's hair 120 to be released from the slot 110 and slide off the elongated member 102 without the need
20 for the user to manually unwind or unclamp the section of the user's hair 120 from the device, as shown in Figure 6D.

Attachment For Use With a Hair Styling Device

[0042] Another embodiment of the invention is an attachment 502 for a hair styling device, as shown in Figures 5A and 5B. The attachment has a body 504 with a first portion 506 and a
25 second portion 508 opposed to the first portion 506. The first portion 506 has an opening so that it can attach to the hair styling device. The second portion 508 has a slot 110 bordered by a side wall 112. The slot 110 is sized to receive and retain a section of a user's hair 120 during styling. Alternatively, the slot 110 can be placed anywhere on the body 504 of the attachment 502. Alternatively, the attachment 502 can have more than one slot 110, and the slots 110 can
30 be at any angle relative to each other or the hair styling device the attachment 502 is attached to.

[0043] In one aspect, the side wall 112 of the body 504 comprises projections 202 such as, for example, bristles as shown in Figure 5B. The projections 202 aid in retaining the section of the user's hair 120 inside the slot 110.

5 [0044] The attachment 502 can be fitted upon an existing hair styling device such as a hair curler, flat-iron, or rotating iron such as an InStyler® styling device. The attachment can be removably attached to the hair styling device by any means. For example, the first portion 506 of the body 504 can be stretched slightly so as to fit on the end portion of an existing hair styling device, and fitted upon the hair styling device when released so that the attachment
10 remains securely in place. Alternatively, the attachment 502 can be attached to the hair styling device by being slid onto the hair styling device, by being screwed onto the hair styling device or by being locked into position on the hair styling device using a locking mechanism.

[0045] In operation, the user fits the first portion 506 of the body 504 over the end portion of a hair styling device. The attachment 502 is then used as described above for the hair styling
15 device with a slot.

[0046] The attachment 502 can be made out of any suitable heat-resistant material or combination of materials. For example, the attachment 502 can be made out of silicone, foam rubber such as open cell foam rubber or closed cell foam rubber.

Hair Styling Device With Split Iron And a Slot

20 [0047] A second embodiment, as shown in Figures 7A and 7B, comprises a hair styling device 700 with a handle 702 with a release structure 704. The handle 702 is connected to a first elongated member 706 and a second elongated member 708, one or both of which is directly heated. The first and second elongated members 706, 708 have distal portions located opposite a handle 702 and a proximal portion which is located proximate to the handle 702.
25 The first elongated member 706 has a first partial slot 710 at the distal portion of the first elongated member 706. The second elongated member 708 has a second partial slot 712 at the distal portion of the second elongated member 708. The first and second elongated members 706, 708 can be opened to a scissors-like shape, as can be seen in Figure 7B, by the user by engaging the release structure 704.

30 [0048] When the hair styling device is in the closed position, as can be seen in Figure 7A, the first elongated member 706 is proximal to the second elongated member 708. Also in the closed position, the first partial slot 710 comes into close proximity with the second partial slot 712, which creates a complete slot 714.

[0049] In operation, the hair styling device may be used by first activating the heater 108 to
35 heat the first and second elongated members 706, 708. The user then holds the device and

5 engages the release structure 704. The first and second elongated members 706, 708 open to a scissors-like shape. The user places a section of the user's hair 120 into the opening between the first and second elongated members 706, 708 and releases the release structure 704, allowing the first elongated member 706 to come into close proximity with the second elongated member 708. The user then automatically or manually winds the section of hair 120
10 around the heated first and second elongated members 706, 708. The user will then place the section of hair 120 in the slot 714 created by the first and second partial slots 710, 712.

[0050] Once the section of hair 120 has been heated until a desired style or curl is achieved, the user can engage the release structure 704 and pull the device away from their head, allowing the section of hair 120 to release from the slot 714 without the need to unwind or
15 unclamp the section of hair 120 by hand. This produces the desired curls without the user having to manually hold the section of hair 120 in place on the heated first and second elongated members 706, 708, or manually release the section of hair 120 from the heated member.

[0051] Although the present invention has been described in considerable detail with
20 reference to certain preferred embodiments, other embodiments are possible. The steps disclosed for the present methods, for example, are not intended to be limiting nor are they intended to indicate that each step is necessarily essential to the method, but instead are exemplary steps only. Therefore, the scope of the appended features should not be limited to the description of preferred embodiments contained in this disclosure. All references cited
25 herein are incorporated by reference in their entirety.

5 WHAT IS CLAIMED IS:

1. A hair styling device comprising:
 - a. a handle;
 - b. an elongated member having a distal portion and a proximal portion, wherein the proximal portion of the elongated member is connected to the handle;
 - 10 c. a heater to heat the elongated member;
 - d. a hair retention slot extending through the distal portion of the elongated member, the slot having a side wall and sized to receive and retain a section of a user's hair, wherein the side wall comprises elastomeric material; and
 - e. bristles extending from the side wall into the slot.
- 15 2. A hair styling device comprising:
 - a. a handle;
 - b. an elongated member having a longitudinal axis, a distal portion and a proximal portion, wherein the proximal portion of the elongated member is connected to the handle;
 - 20 c. a heater for heating the elongated member; and
 - d. a hair retention slot proximate to the elongated member, the slot sized to receive and retain a section of a user's hair.
3. The hair styling device according to claim 2, comprising a wall bordering the slot.
4. The hair styling device according to claim 3, wherein projections extend from the wall
25 into the slot.
5. The hair styling device according to claim 4, wherein the projections comprise bristles.
6. The hair styling device according to claim 3, wherein the wall comprise an elastomeric material.
7. The hair styling device according to claim 6, wherein the elastomeric material
30 comprises foam rubber.
8. The hair styling device according to claim 6, wherein the elastomeric material comprises silicone.

- 5 9. The hair styling device according to claim 2, wherein the slot has a longitudinal axis aligned with the longitudinal axis of the elongated member.
10. The device according to claim 2, wherein the slot has a longitudinal axis that is not aligned with the longitudinal axis of the elongated member.
11. The hair styling device according to claim 2, wherein the slot has a proximal portion
10 proximate to the elongated member, an opposed distal portion, a first width at the slot proximal portion, and a second width at the slot distal portion, and wherein first width is larger than the second width.
12. The hair styling device according to claim 2, wherein the slot has a proximal portion
15 proximate to the elongated member, an opposed distal portion, a first width at the slot proximal portion, and a second width at the slot distal portion, and wherein second width is larger than the first width.
13. An attachment for a hair styling device, the attachment having a body with a first
portion with an opening for attaching to the hair styling device, the body having a hair retention
slot therein, the body has a wall bordering the slot, the slot being sized to receive and retain a
20 section of a user's hair during styling.
14. The attachment according to claim 13, wherein the wall has projections projecting into the slot.
15. The attachment according to claim 14, wherein the projections comprises bristles.
16. The attachment according to claim 13, wherein the wall comprises an elastomeric
25 material.
17. The attachment according to claim 16, wherein the elastomeric material comprises foam rubber.
18. The attachment according to claim 16, wherein the elastomeric material comprises silicone.
- 30 19. A method for styling a user's hair with the device of claim 2, comprising the steps of:
a. activating the heater;

- 5 b. placing a section of a user's hair to be styled into the slot;
 c. winding the section of the user's hair around the elongated member;
 d. heating the wound section of the user's hair with the heated elongated member;
 and
 e. after step (d), removing the section of the user's hair from the elongated
10 member.

20. The method of claim 19, wherein step (b) is performed after step (c).

21. The method of claim 19, wherein step (b) is performed before step (a).

22. A hair styling device according to claim 2, wherein the slot is proximate to the distal portion of the elongated member.

- 15 23. A hair styling device comprising:
 a. a handle;
 b. an elongated member having a longitudinal axis, a distal portion and a proximal
 portion, wherein the proximal portion of the elongated member is connected to
 the handle;
20 c. a heater for heating the elongated member; and
 d. an attachment to the elongated member, wherein the attachment has a hair
 retention slot, the hair retention slot sized to receive and retain a section of a
 user's hair.

24. The hair styling device according to claim 23, wherein the attachment is removable from
25 the elongated member.

25. The attachment of claim 13, wherein the attachment is removably attached to a hair
styling device, the hair styling device comprising:
 a. a handle;
 b. an elongated member having a longitudinal axis, a distal portion and a proximal
30 portion, wherein the proximal portion of the elongated member is connected to
 the handle; and
 c. a heater for heating the elongated member.

- 5 26. A method of using the attachment of claim 25, the method comprising the steps of:
- a) attaching the attachment onto a hair styling device;
 - b) activating the heater;
 - c) placing a section of a user's hair to be styled into the slot;
 - d) winding the section of the user's hair around the elongated member;
 - 10 e) heating the wound section of the user's hair with the heated elongated member;
 and
 - f) after step (e), removing the section of the user's hair from the elongated
 member.
27. The method of claim 26, wherein step (b) is performed after step (c).
- 15 28. The method of claim 26, wherein step (b) is performed before step (a).

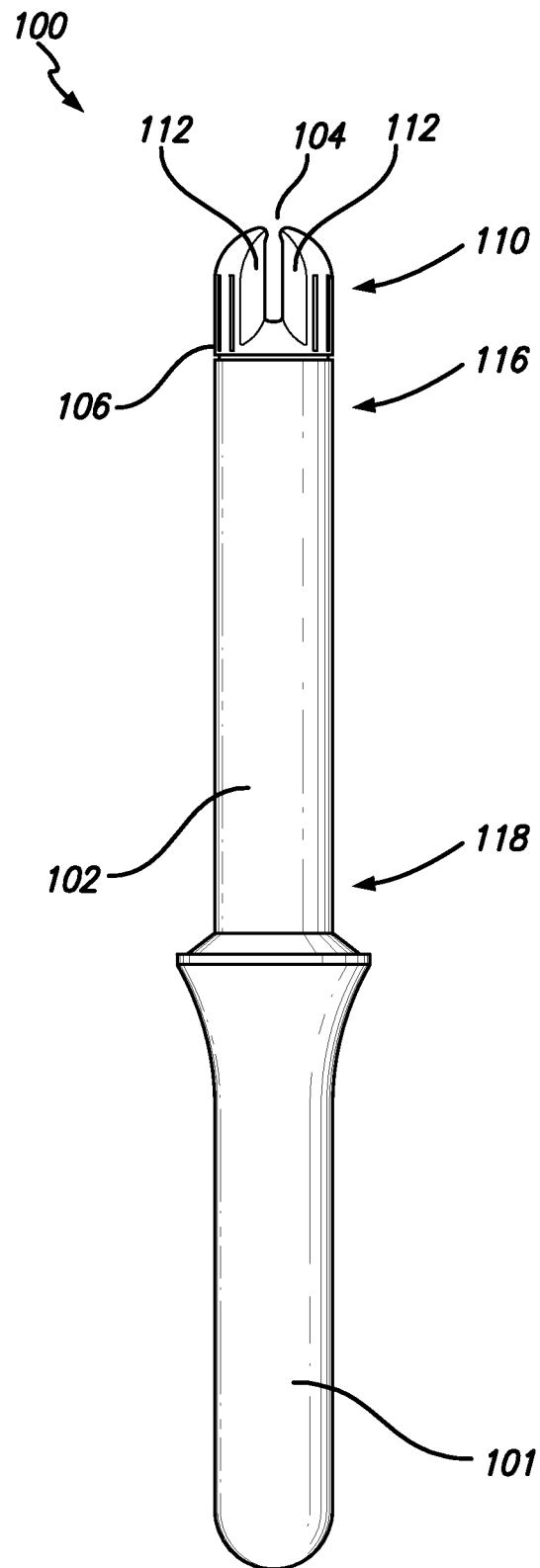


FIG. 1

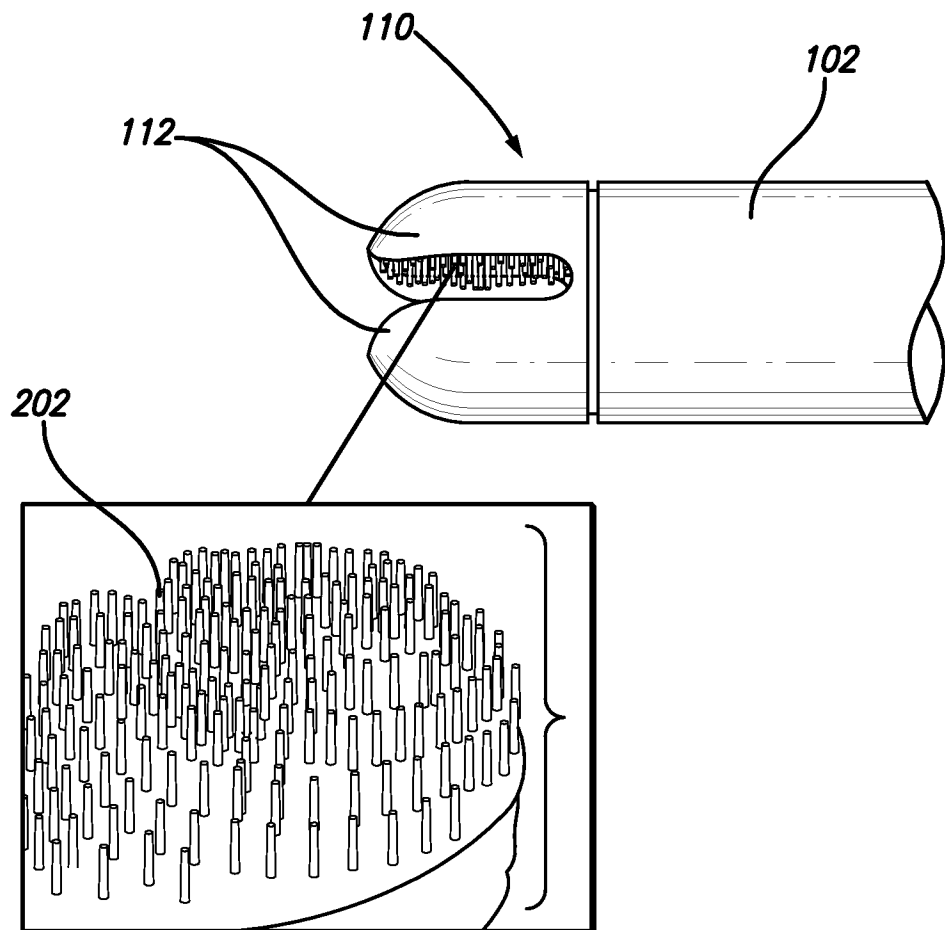
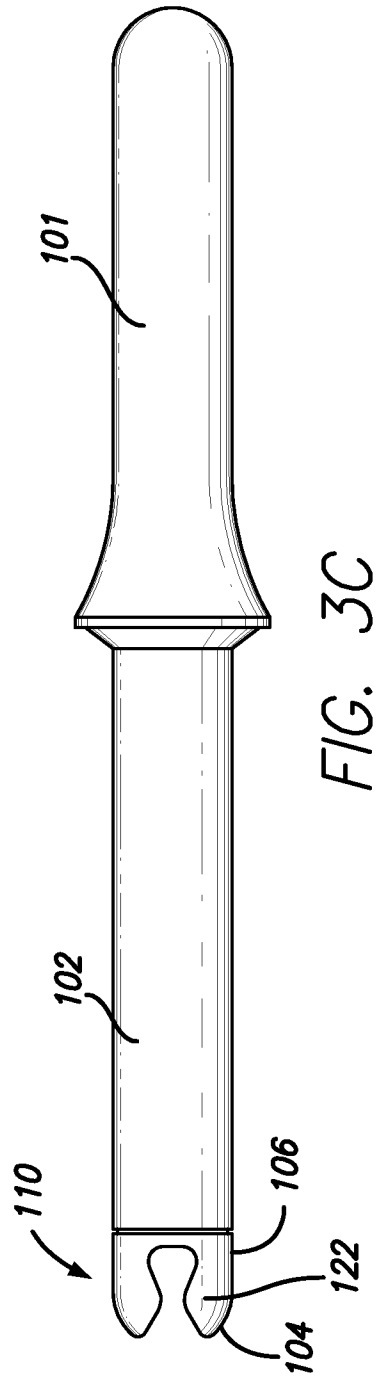
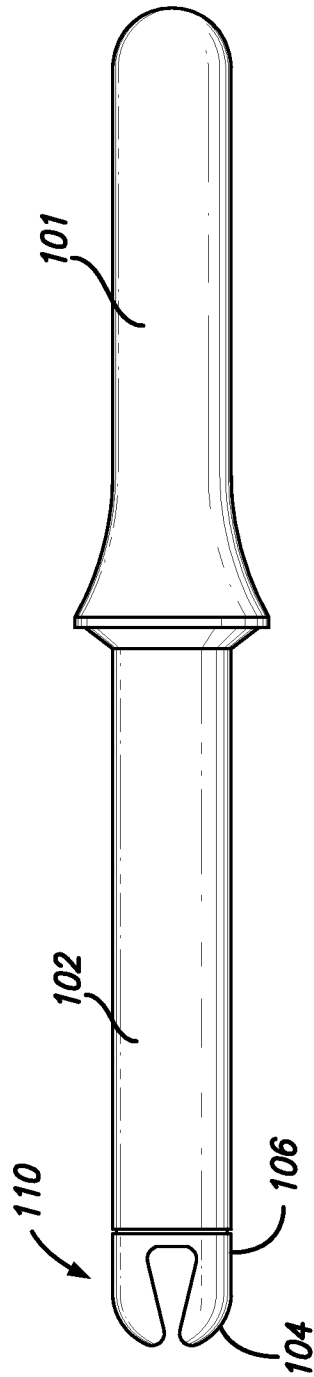
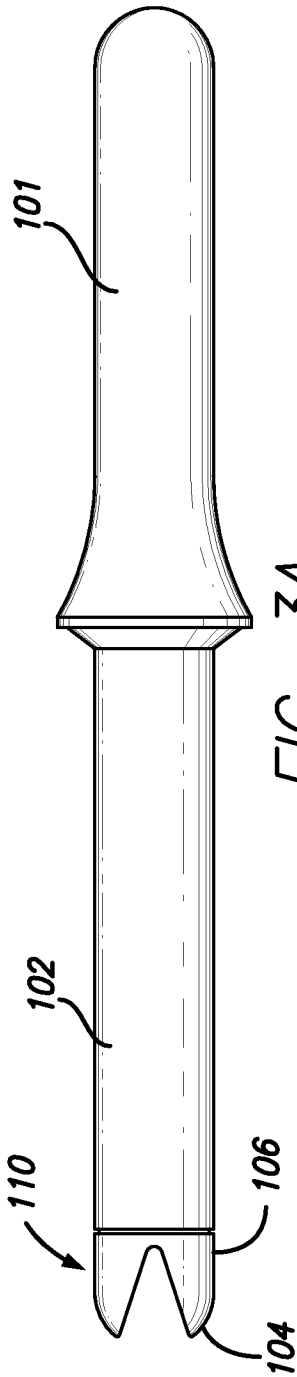


FIG. 2



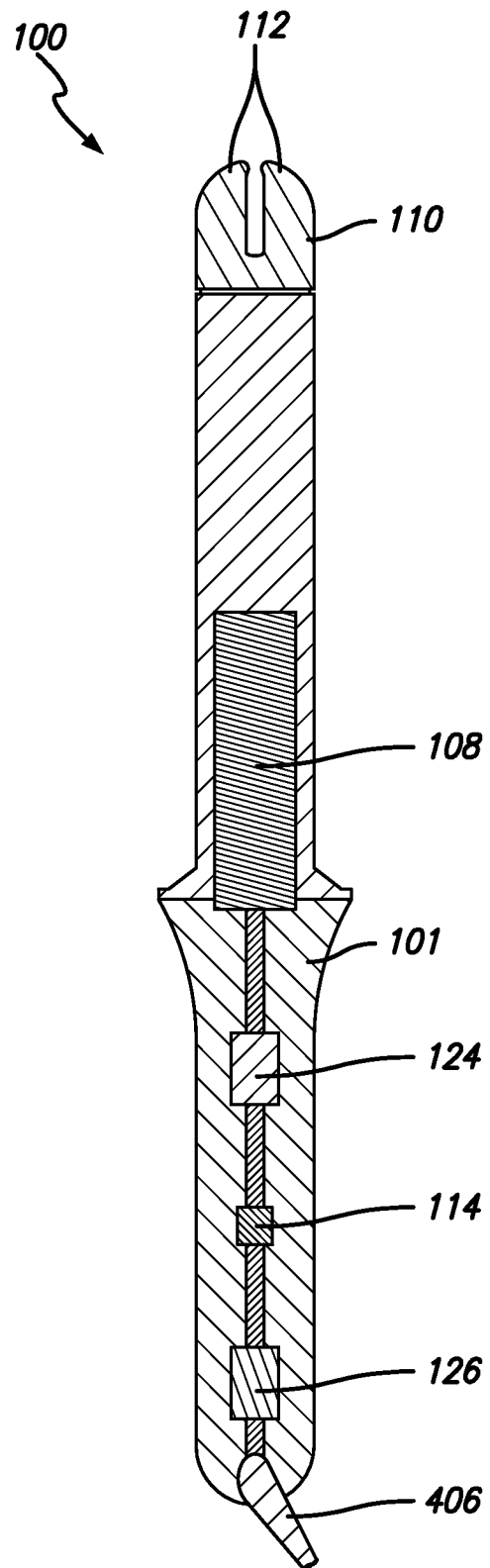


FIG. 4

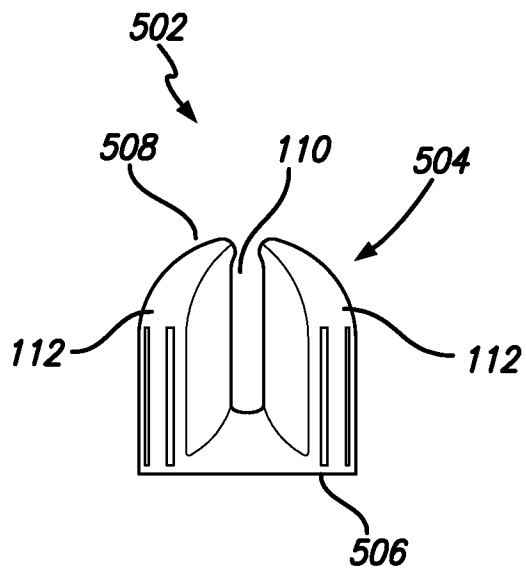


FIG. 5A

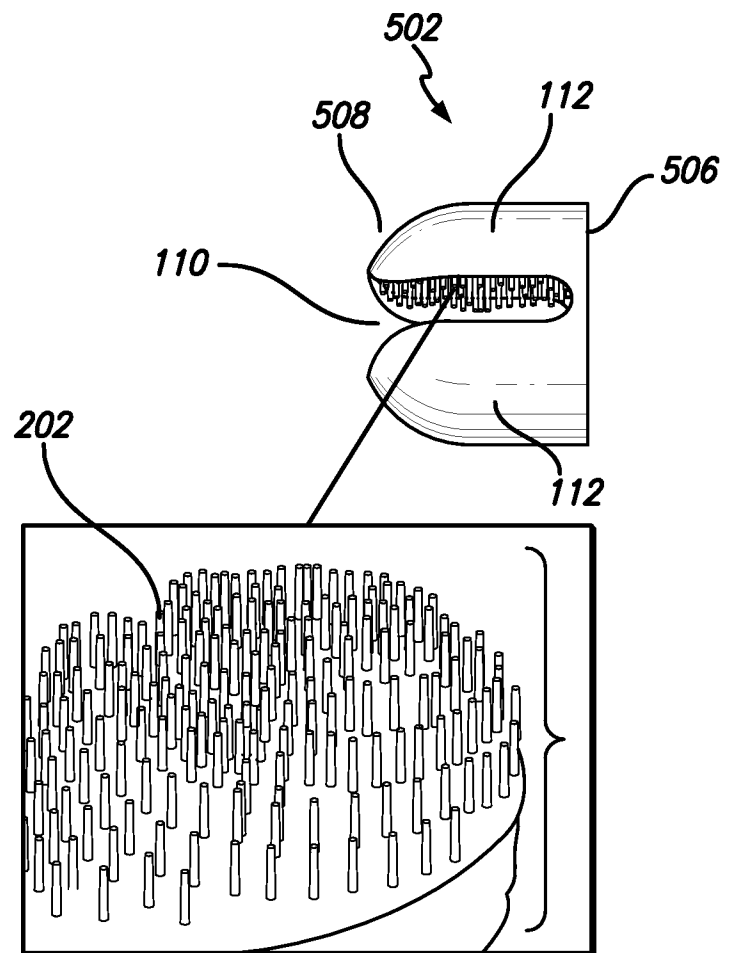


FIG. 5B

FIG. 6A

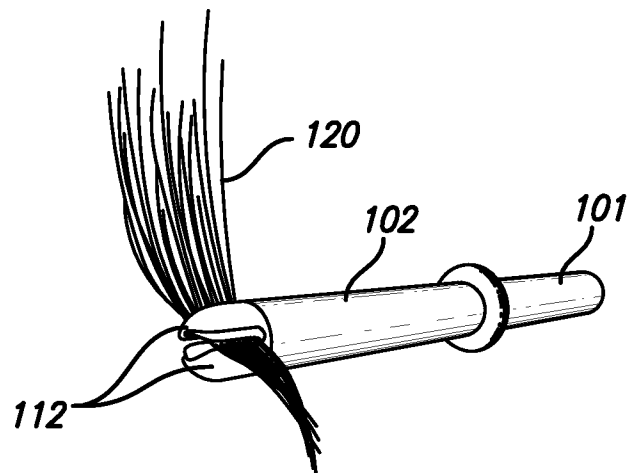


FIG. 6B

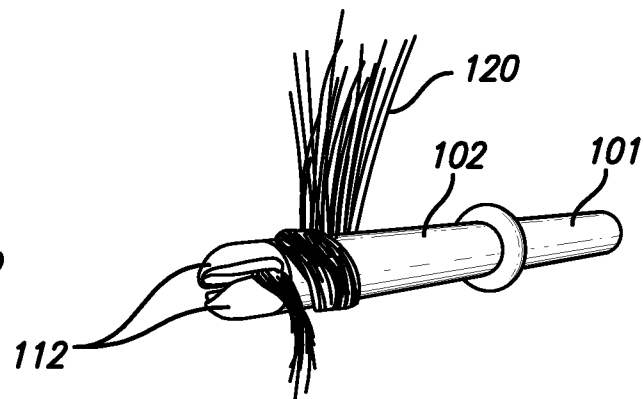


FIG. 6C

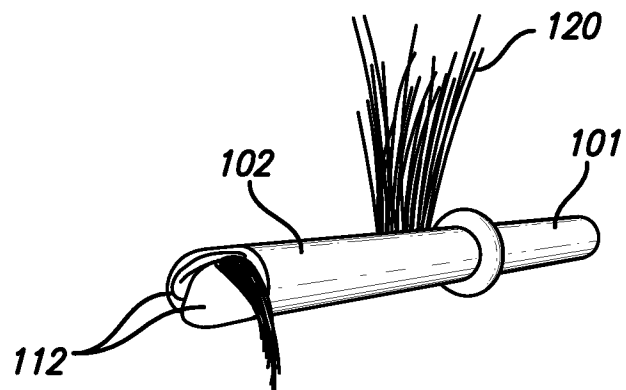
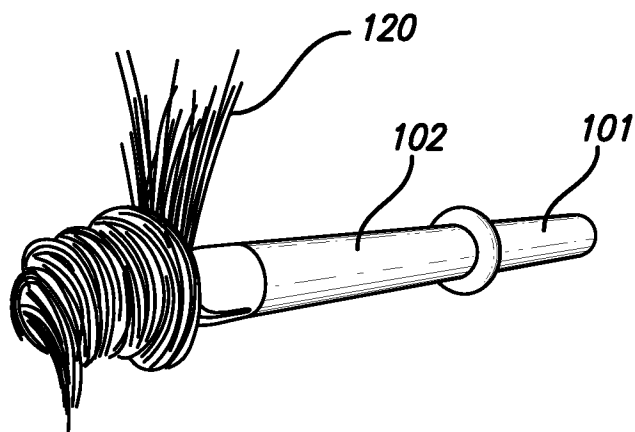


FIG. 6D



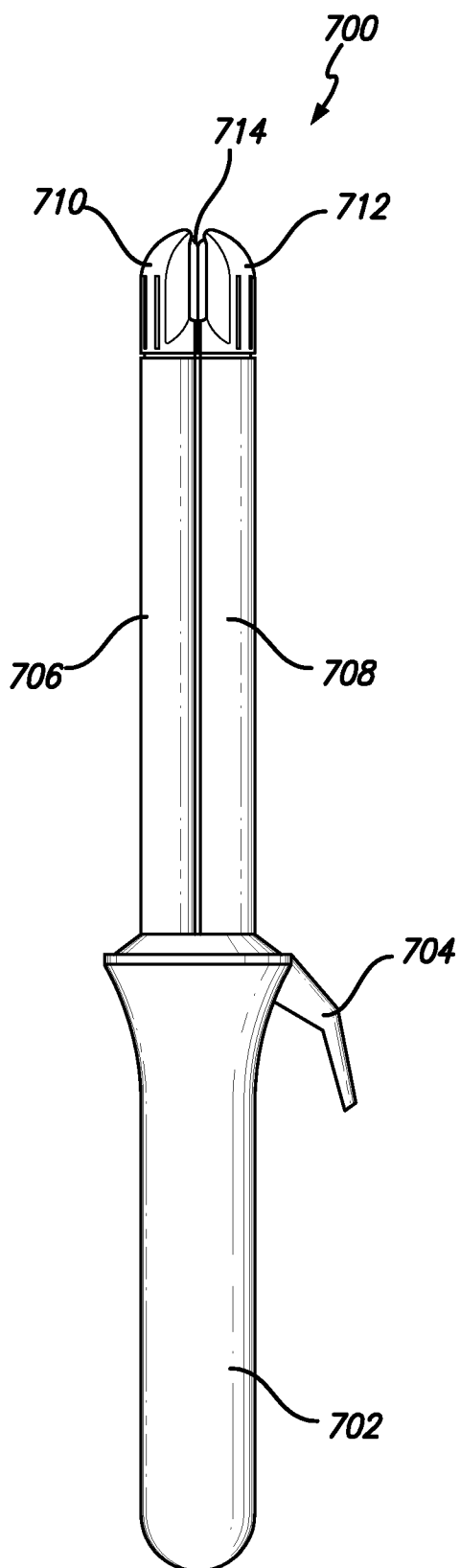


FIG. 7A

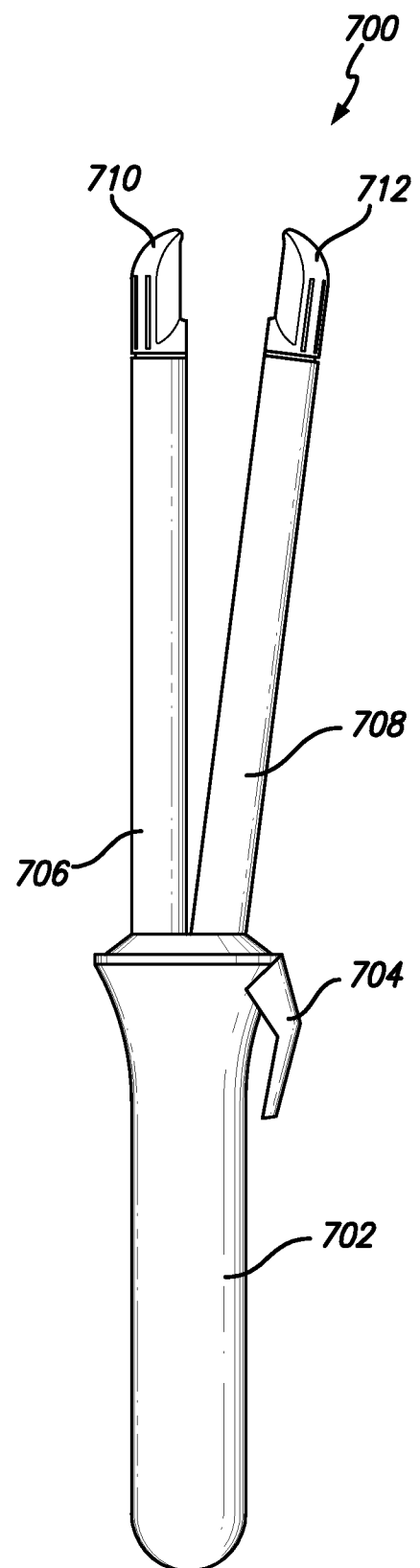


FIG. 7B

INTERNATIONAL SEARCH REPORT

15/054848 18-12-2014

International application No.

PCT/US2014/054848

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A45D 1/04 (2014.01)

CPC - A45D 1/04 (2014.11)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A45D 1/00, 1/04, 2/00 (2014.01)

CPC - A45D 1/04, 1/18; A46B 5/0095 (2014.11)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 132/212; 219/222 (keyword delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase, YouTube, Google Patents, Google Scholar

Search terms used: hair, curler, slot, grip, bristle, elastomeric

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2008/075384 A1 (MORGANDI et al) 26 June 2008 (26.06.2008) entire document	2-3, 9-13, 19-28
Y		1, 4-8, 14-18
Y	US 5,191,907 A (HIRZEL) 09 March 1993 (09.03.1993) entire document	1, 4-8, 14-18
A	US 4,479,047 A (KHAJA et al) 23 October 1984 (23.10.1984) entire document	1-28
A	US 4,549,560 A (ANDIS) 29 October 1985 (29.10.1985) entire document	1-28

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

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Date of the actual completion of the international search

18 November 2014

Date of mailing of the international search report

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