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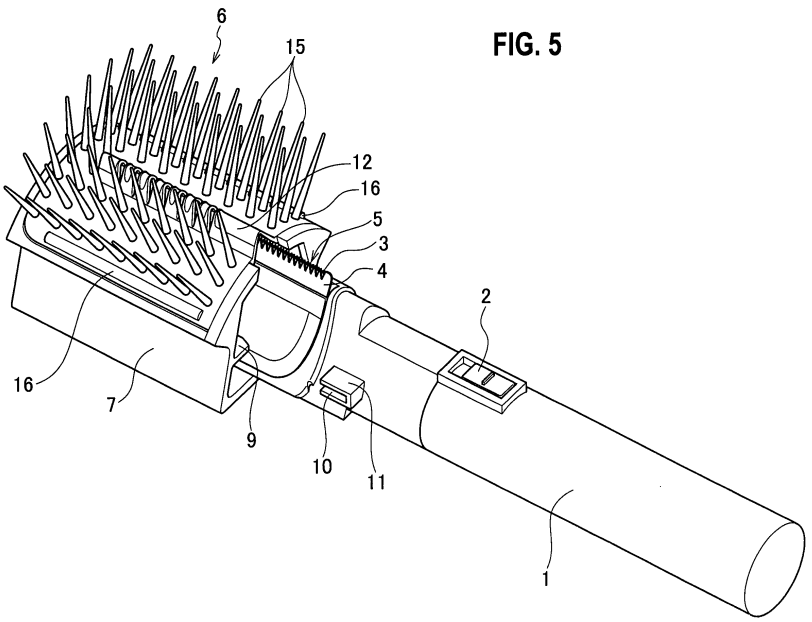
(54) **HAIR CUTTER**

(57) A hair cutter includes a cutter body 1, a blade block 5, and hair thinning means which includes a ridge portion 12 covering a cutting edge of the blade block while having multiple openings into which part of hairs are introduced, so as to form hair thinning blades. The hair cutter nips the hairs between the blades of the blade block and thereby thins the nipped hairs. The hair cutter includes a comb member 6 having, on a block portion 7 thereof, multiple comb pieces 15 extending in a protruding direction of the blade block, the comb pieces being provided on both sides of the ridge portion 12 in a cutting direction of the blade block, each comb piece having a base end 15a located below the cutting edge of the blade block while a tip end 15b protruding further than the cutting edge of the blade block 5.

FIG. 5



EP 2 062 702 A1

Description

TECHNICAL FIELD

[0001] The present invention relates to a hair cutter capable of thinning hair.

BACKGROUND ART

[0002] A hair cutter is configured to convert rotational motion of a motor or the like into reciprocating motion, to transmit the reciprocating motion to a movable blade, to reciprocate the movable blade relative to a fixed blade, and thereby to cut hairs introduced to the comb-shaped fixed blade that slidably contacts the movable blade. For example, JP-A 55-47885 proposes a hair cutter capable of thinning hair.

[0003] Figs. 18(a) and 18(b) as well as Figs. 19(a) and 19(b) show an example of a hair cutter capable of thinning hair. To enable hair thinning, a hair thinning attachment 104 for enabling hair thinning is attached to a cutter body 103, which includes a blade block 102 formed of a fixed blade 100 and a movable blade 101, so that the hair thinning attachment 104 covers the blade block 102.

[0004] The hair thinning attachment 104 is fixed to the cutter body 103 in a way that a hook 106 is fitted into a retention hole 105 formed on the cutter body 103. This hair thinning attachment 104 is formed into a cap shape, and includes, on a tip end thereof, cut protectors 108 for restricting cutting of hairs 107 at constant intervals and grooves 109 for enabling cutting of the hairs 107.

[0005] The hairs 107 that enter the grooves 109 are cut by the fixed blade 100 and the movable blade 101. However, the hairs 107 that contact the cut protectors 108 are protected from being cut out. Therefore, the use of this hair thinning attachment 104 allows imitative hair thinning on the hair surface without cutting all the hairs that contact the blades.

DISCLOSURE OF THE INVENTION

[0006] However, as shown in Fig. 18(b), a thickness T of the cut protectors 108 is extremely small. For this reason, when the hair thinning attachment 104 is pressed excessively against the hair, the length of the hairs 107 become extremely short, to eventually have the same length as the thickness T of the cut protectors 108. This produces a noticeable difference in the lengths of the hairs 107 between the portion not using the hair thinning attachment 104 and the portion using it, thereby causing a so-called "spot" (bald) state where only part of the hairs 107 gets short.

[0007] Meanwhile, since the hair cutter has such a structure that the hair cutter is used from the top of the head down to hairlines (so as to stroke downward from the top), a line is likely to be produced at a portion where the cutter body 103 contacts the hairs 107 (because the cutting is started from the portion where the cutter body 103 contacts), and this is likely to cause unnatural finish. According to this hair cutter, a proportion of the length of hairs to be cut out is increased particularly in the case of a woman having long hairs. Therefore, only part of the hairs becomes short and thus causes unnatural finish.

[0008] Accordingly, the present invention has been made to solve the above-described conventional problem and an object thereof is to provide a hair cutter capable of reducing an amount of hair without shortening only part of the hairs, and finishing the hair with natural variation in position of their tips without causing the hairs to have a constant length, merely by operating the hair cutter so as to comb the tip portions of the hairs.

[0009] An aspect of the present invention provides a hair cutter which includes a cutter body, multiple comb-shaped blades overlapping and slidably contacting each other, driving means reciprocating at least one of the comb-shaped blades, and one of hair thinning means which includes a ridge portion covering cutting edges of the comb-shaped blades while having multiple openings into which part of hairs are introduced, so as to form hair thinning blades, and hair thinning means which provides the cutting edge of at least one of the comb-shaped blades with an anti-introduction portion preventing introduction of part of hairs, so as to form hair thinning blades, the hair cutter nipping the hairs between the blades of the comb-shaped blades and thereby thinning the nipped hairs. The hair cutter is characterized by including comb means having, on a block portion thereof, multiple comb pieces extending in a protruding direction of the comb-shaped blades, the comb pieces being provided on both sides of the hair thinning means in a cutting direction of the comb-shaped blades, each comb piece having a base end located below the cutting edges of the comb-shaped blades and a tip end protruding further than the cutting edges of the comb-shaped blades.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

[Fig. 1] Fig. 1 is a perspective view showing a hair cutter of Embodiment 1 when viewing a cutter body from one direction.

[Fig. 2] Fig. 2 is a perspective view showing the hair cutter of Embodiment 1 when viewing the cutter body from another direction.

[Fig. 3] Fig. 3 is a perspective view of comb means integrated with hair thinning means that is attachable to and detachable from the cutter body of Embodiment 1.

[Fig. 4] Fig. 4 is a plan view of the comb means integrated with the hair thinning means that is attachable to and detachable from the cutter body of Embodiment 1.

[Fig. 5] Fig. 5 is a perspective view showing the hair cutter of Embodiment 1 and showing a state in the course of attaching the comb means integrated with

the hair thinning means to the cutter body.

[Fig. 6] Fig. 6 is a perspective view showing the hair cutter of Embodiment 1 and showing a state after completion of attaching the comb means integrated with the hair thinning means to the cutter body.

[Fig. 7] Fig. 7 is an enlarged front view of Fig. 6.

[Fig. 8] Fig. 8 is a view showing an example of thinning hair by using the hair cutter of Embodiment 1.

[Fig. 9] Fig. 9 (a) is a view showing an example in which no tension is applied to hairs and Fig. 9(b) is a view showing an example in which the tension is applied to the hairs.

[Fig. 10] Fig. 10 is a perspective view showing a hair cutter of Embodiment 2 and showing a state after hair thinning means out of the hair thinning means and comb means being provided as independent components is mounted on a cutter body.

[Fig. 11] Fig. 11 is a perspective view showing the hair cutter of Embodiment 2 and showing a state where the comb means is mounted on the cutter body.

[Fig. 12] Fig. 12 is a perspective view showing a state before attaching the hair thinning means of Embodiment 2 to a blade block.

[Fig. 13] Fig. 13 is a perspective view showing a hair cutter of Embodiment 3 and showing a state of forming a hair thinning blade by providing a fixed blade with anti-introduction portions and attaching a comb member to a cutter body provided with the hair thinning blade.

[Fig. 14] Fig. 14 is an enlarged view of principal part of a blade block in the hair cutter of Embodiment 3.

[Fig. 15] Fig. 15 is a perspective view showing a hair cutter of Embodiment 4 and showing a state before multiple pieces of hair thinning means and comb means are mounted on a cutter body.

[Fig. 16] Fig. 16 is a perspective view showing the hair cutter of Embodiment 4 and showing a state after the multiple pieces of the hair thinning means and the comb means are mounted on the cutter body.

[Fig. 17] Fig. 17 is an enlarged front view of Fig. 16.

[Fig. 18] Fig. 18(a) is a perspective view showing an example of a conventional hair cutter and showing the hair cutter in which a hair thinning attachment for enabling hair thinning is attached to a cutter body, and Fig. 18 (b) is a view showing a state of cutting hairs with the hair cutter.

[Fig. 19] Fig. 19 (a) is a front view of the hair thinning attachment showing the example of the conventional hair cutter and Fig. 19 (b) is an enlarged perspective view of principal part showing a tip end portion of the hair cutter.

BEST MODES FOR CARRYING OUT THE INVENTION

[0011] Concrete embodiments applying the present invention will be described below in detail with reference to the accompanying drawings.

(Embodiment 1)

[0012] Fig. 1 is a perspective view showing a hair cutter of Embodiment 1 when viewing a cutter body from one direction. Fig. 2 is a perspective view showing the hair cutter of Embodiment 1 when viewing the cutter body from another direction. Fig. 3 is a perspective view of comb means integrated with hair thinning means that is attachable to and detachable from the cutter body of Embodiment 1. Fig. 4 is a plan view of the comb means integrated with the hair thinning means that is attachable to and detachable from the cutter body of Embodiment 1. Fig. 5 is a perspective view showing the hair cutter of Embodiment 1 and showing a state in the course of attaching, to the cutter body, the comb means integrated with the hair thinning means. Fig. 6 is a perspective view showing the hair cutter of Embodiment 1 and showing a state after completion of attaching, to the cutter body, the comb means integrated with the hair thinning means. Fig. 7 is an enlarged front view of Fig. 6. Fig. 8 is a view showing an example of using the hair cutter of Embodiment 1 for hair thinning. Fig. 9 (a) is a view showing an example in which tension is not applied to hairs. Fig. 9 (b) is a view showing an example in which the tension is applied to the hairs.

[0013] As shown in Fig. 1 to Fig. 7, the hair cutter includes a cutter body 1, a switch handle 2 for turning on and off operation of this cutter body 1, a blade block 5 combining a fixed blade 3 and a movable blade 4 which are comb-shaped blades overlapping and slidably contacting each other, and a comb member 6 which is comb means integrated with hair thinning means capable of thinning hair.

[0014] The cutter body 1 is provided with driving means (illustration omitted therein) such as a motor for reciprocating the movable blade 4 in a right-to-left direction relative to the fixed blade 3. When a switch is turned on by sliding the switch handle 2, the driving means is operated to convert rotational motion of the motor into reciprocating motion, thereby swinging the movable blade 4 in the right-to-left direction relative to the fixed blade 3. At this time, head hairs or body hairs enter between respective blades of the fixed blade 3 and the movable blade 4, whereby these head hairs or body hairs (the body hairs include those of humans and of animals other than humans) are cut out (severed). This embodiment will be described as an example of cutting head hairs.

[0015] The blade block 5 includes the fixed blade 3 formed into a saw-like shape and the movable blade 4 similarly formed into a saw-like shape. The fixed blade 3 is fixed to the cutter body 1 while the movable blade 4 is attached to the cutter body 1 so as to be reciprocated in the right-to-left direction relative to the fixed blade 3. In Embodiment 1, the fixed blade 3 and the movable blade 4 are each formed into a comb-shaped blade which includes multiple angled blades with sharp tip ends that are formed at a predetermined pitch in a longitudinal direction.

[0016] The comb member 6 includes a block portion 7 to be mounted on a tip end portion of the cutter body 1. A housing portion 8 for allowing the blade block 5 to be inserted and housed therein is formed on the block portion 7, the blade block 5 being the tip end portion of the cutter body 1. Moreover, an anti-rotation piece 9 for preventing the block portion 7 from rotating about its axis relative to the cutter body 1 is formed on an inner wall surface 8a of this housing portion 8. The anti-rotation piece 9 is formed to have a tongue-like shape extending inward from an opening of the housing portion 8. This anti-rotation piece 9 is inserted and engaged with a groove portion 10 provided on the cutter body 1, thereby preventing the block portion 7 from rotating in its axial direction relative to the cutter body 1. Note that this groove portion 10 is formed into a protruding piece 11 having a substantially square-cornered U-shape in a plan view and protruding from a side face of the cutter body 1.

[0017] Hair thinning means is provided at a central part of a top surface of the block portion 7. The hair thinning means is formed as a ridge portion 12 that is a central portion of an arcuate top surface 7a of the block portion 7 formed into an inverted V-shape in a cross-sectional view to protrude upward. This ridge portion 12 is formed so as to correspond to a position where the blade block 5 is provided and so as not to contact the fixed blade 3 and the movable blade 4 which constitute the blade block 5. Moreover, openings 13 which cover a cutting edge of the blade block 5 and meanwhile introduce part of hairs into the blade block 5, and anti-introduction portions 14 which prevents introduction of the hairs are alternately formed on this ridge portion 12. Each opening 13 is formed into a substantially rhombic shape in a plan view and introduces only part of the hairs to the inside.

[0018] Meanwhile, multiple comb pieces 15 are provided on both sides of the ridge portion 12 in cutting directions (a direction of an arrow A and a direction of an arrow B in Fig. 7) of the blade block 5. Each comb piece 15 is formed into a narrow cone shape gradually tapered from a base end 15a to a tip end 15b. These comb pieces 15 play a role in straightening hairs before cutting and a role in retaining a constant distance from a head skin to the blade block 5. In the comb piece 15, the base end 15a is located below the cutting edge of the blade block 5 while the tip end 15b protrudes further than the cutting edge of the blade block 5. Moreover, the comb pieces 15 are each provided on the top surface 7a of the block portion 7 such that the tip ends 15b thereof may draw an arc as a whole.

[0019] Meanwhile, the block portion 7 is provided, on the top surface 7a, with rubber members 16 with enhanced friction resistance which play a role in promoting introduction of hairs into the openings 13 formed on the ridge portion 12 by applying tension to the hairs. The rubber members 16 are formed on both side edges in the cutting directions of the block portion 7 in the longitudinal direction thereof. Peaks 16a thereof are arranged closer to the tip ends of the comb pieces than a root surface of the comb pieces and in positions below a peak of the blade block 5.

[0020] In order to perform hair thinning by using the hair cutter configured as described above, the driving means is made to start driving by sliding the switch handle 2 to the on position. Thereafter, as shown in Fig. 8, the cutter body 1 is brought into contact with hairs 17 from the inside from any desired position to start cutting hair. Then, the comb member 6 having the hair thinning means (the ridge portion 12) integrate with the block portion 7 is rotated toward the tips of the hairs in association with the movement of a wrist. Thereby, the hairs 17 are straightened by the comb pieces 15 and the tension is applied to the hairs 17 by the rubber member 16 as shown in Fig. 9(b), thus guiding the hairs 17 to the ridge portion 12. When no rubber member 16 is present, no tension is applied to the hairs 17 as shown in Fig. 9(a), thus making it impossible to guide the hairs 17 to the ridge portion 12 which is a hair thinning blade.

[0021] When the hairs 17 are guided to the ridge portion 12, part of the hairs 17 are introduced to the openings 13 to be cut out by the fixed blade 3 and the movable blade 4 of the blade block 5 provided in the back of the openings 13. Meanwhile, the hairs 17 that contact the anti-introduction portions 14 are not cut out. In this way, by merely operating the hair cutter so as to pass the comb pieces 15 through tip portions of the hairs 17, it is possible to reduce the amount of hair without shortening only part of the hairs, and to finish the hair with natural variation in position of their tips without causing the hairs to have a constant length.

[0022] As described above, according to the hair cutter of this embodiment, it is possible to reduce the amount of hair without shortening significantly only part of the hairs, and to finish the hair with natural variation in position of their tips without causing the hairs to have a constant length, merely by operating the hair cutter so as to comb the hairs from the root of the hairs toward the tips thereof. In the present invention, cut points move by the combing operation. In addition, since a hair thinning method having originally employed by a barber (to raise the hair to cut the hair on an inner side instead of cutting the hair on the surface side) is employed, lines on the hair surface are less likely to be produced even when the operation direction of the hair cutter is changed to a direction toward the top of the head (the hair is lifted upward from the bottom). Accordingly, a finish closer to that made by a professional barber ("hair thinning" of thinning the amount of hair without noticeably changing the whole hairstyle) can be achieved without failure.

[0023] Moreover, according to the hair cutter of this embodiment, the number of components can be reduced as the hair thinning means (the ridge portion 12) is integrated with the comb means (the comb member 6).

[0024] Moreover, according to the hair cutter of this embodiment, the comb pieces 15 are each disposed on the block portion 7 such that the tip ends 15b thereof may draw an arc as a whole. Therefore, it is possible to pro-

mote the rotational motion of the cutter body 1, and to apply the tension to the hairs 17 easily by the rotating motion of the hand so as to guide the hairs 17 to the hair thinning blade (the ridge portion 12).

[0025] Moreover, according to the hair cutter of this embodiment, the top surface 7a of the block portion 7 is provided with the rubber members 16. The rubber members 16 make it possible to apply the tension to the hairs 17 to thereby guide the hairs 17 to the hair thinning blade.

[0026] Moreover, according to the hair cutter of this embodiment, the peaks 16a of the rubber members 16 are arranged closer to the tip ends of the comb pieces than the root surface of the comb pieces and in positions below the peak of the blade block 5. Therefore, the tension can be applied to the hairs 17 to promote introduction of the hairs 17 to the blade block 5 without failing to introduce the hair 17 to the hair thinning blade (the ridge portion 12).

[0027] Moreover, by detaching the comb member 6, the hair cutter of this embodiment can be used as a usual hair clipper and not for hair thinning. Specifically, according to the hair cutter of this embodiment, since the comb member 6 can be detached from the cutter body 1, usual cutting can be performed without thinning hair by using the comb-shaped blades by detaching the comb member 6 when hair thinning is not necessary. Therefore, according to the hair cutter of this embodiment, it is possible to switch between hair thinning and original cutting.

(Embodiment 2)

[0028] Fig. 10 is a perspective view showing a hair cutter of Embodiment 2 and showing a state where hair thinning means out of the hair thinning means and comb means being provided as independent components is mounted on a cutter body. Fig. 11 is a perspective view showing the hair cutter of Embodiment 2 and showing a state where the comb means is mounted on the cutter body. Fig. 12 is a perspective view showing a state of the hair thinning means of Embodiment 2 before being mounted on a blade block.

[0029] As shown in Fig. 10 and Fig. 11, the hair cutter of Embodiment 2 includes a ridge portion 12 being the hair thinning means and a comb member 6 being the comb means as independent components. As shown in Fig. 12, openings 13 and anti-introduction portions 14 are formed alternately on this ridge portion 12 as similar to Embodiment 1. Moreover, engaging concave portions 19 to be engaged with engaging protrusions 18 and an engaging concave beam portion 21 to be engaged with an engaging protrusion beam 20 are formed on the ridge portion 12, the engaging protrusions 18 and the engaging protrusion beam 20 provided on the cutter body 1.

[0030] Each engaging protrusion 18 is formed into a semispherical shape and provided in a protruding manner on one of tip end side portions of the cutter body 1, the tip end side portions sandwiching the blade block 5 in between. Each engaging concave portion 19 is formed as a recess in a semispherical shape to be fitted to the engaging protrusion 18. The engaging protrusion beam 20 is formed as a protrusion having a substantially convex shape in a cross section and is provided in a protruding manner on the other one of the tip end side portions of the cutter body 1, the tip end side portions sandwiching the blade block 5 in between.

[0031] A slidable groove portion 22 for inserting the ridge portion 12 is formed at a central part of the block portion 7 of the comb member 6. The ridge portion 12 which is fitted to the cutter body 1 so as to cover the blade block 5 of the cutter body 1 is inserted to this slidable groove 22.

[0032] According to the hair cutter of this Embodiment 2, hair cutting of cutting the hairs 17 by stroking the surface of the hairs 17 in a conventional manner can be performed by fitting only the ridge portion 12 to the cutter body 1 as shown in Fig. 10. At this time, the ridge portion 12 does not fall off the cutter body 1 as the engaging concave portions 19 are engaged with the engaging protrusions 18 and the engaging protrusion beam 20 is engaged with the engaging concave beam portion 21.

[0033] Moreover, according to the hair cutter of this Embodiment 2, by attaching the comb member 6 as shown in Fig. 11, hair thinning can be performed similarly to Embodiment 1 while straightening the hairs with comb pieces 15 and applying the tension to the hairs 17.

(Embodiment 3)

[0034] Fig. 13 is a perspective view showing a hair cutter of Embodiment 3 and showing a state where a comb member is mounted on a cutter body provided with a hair thinning blade formed by providing a fixed blade with anti-introduction portions. Fig. 14 is an enlarged view of principal part of a blade block in the hair cutter of Embodiment 3.

[0035] As shown in Fig. 13 and Fig. 14, the hair cutter of Embodiment 3 is an example which is different from Embodiment 2 in that a blade block 5 itself is formed into the hair thinning blade instead of a ridge portion 12 being hair thinning means. The structure of the comb member 6 is the same as that in Embodiment 2.

[0036] The blade block 5 of this Embodiment 3 includes a movable blade 4 having the same shape as that in the above-described Embodiments 1 and 2, but includes a fixed blade 3 in a different shape. Specifically, anti-introduction portions 23 for preventing introduction of hairs are formed on the fixed blade 3 in the blade block 5 of Embodiment 3. Each anti-introduction portion 23 is formed as a flat face in a tip end portion of a cutting edge so that the hairs contacting the flat face are prevented from being cut out by the movable blade 4.

[0037] According to the hair cutter of this Embodiment 3, the blade block 5 itself is formed as the hair thinning blade. Hence, conventional hair thinning can be performed without using the ridge portion 12 as in Embodiment 2. Moreover, by attaching the comb member 6, cut-

ting according to the present invention can be performed as similar to Embodiment 1, the cutting performed by guiding the hairs 17 to the hair thinning blade while straightening the hairs 17 with the comb pieces 15 and applying tension to the hairs 17.

(Embodiment 4)

[0038] Fig. 15 is a perspective view showing a hair cutter of Embodiment 4 and showing a state before multiple pieces of hair thinning means and comb means are mounted on a cutter body. Fig. 16 is a perspective view showing the hair cutter of Embodiment 4 and showing a state after the multiple pieces of the hair thinning means and the comb means are mounted on the cutter body. Fig. 17 is an enlarged front view of Fig. 16.

[0039] The hair cutter of this Embodiment 4 includes: a cutter body 1 with two sets of blade blocks 5 each formed of a fixed blade 3 and a movable blade 4; and a comb member 6 in which two sets of ridge portions 12 are formed on the block portion 7, the ridge portions 12 being the hair thinning means to be fitted so as to respectively cover the blade blocks 5. The two sets of the blade blocks 5 are provided in parallel on the tip end side of the cutter body 1. Each blade block 5 has the same structure as that of the blade block 5 of Embodiment 1. Each ridge portion 12 has the same structure as that of the ridge portion 12 in Embodiment 1 as similar to the blade blocks 5, and is provided on the large block portion 7 including multiple comb pieces 15.

[0040] According to the hair cutter of Embodiment 4, since the two sets of hair thinning blades (the ridge portions 12) are provided, hair thinning can be performed quickly. Moreover, as there are multiple cutting points, the hairs can be more nonuniform in length as compared to the case of providing the single hair thinning blade.

[0041] Moreover, according to the hair cutter of Embodiment 4, the multiple pieces of the hair thinning means and the comb means are provided on the cutter body 1 to have multiple cutting lines. Thereby, it is possible to finish hair with natural variation in position of their tips without causing the hairs to have a constant length at a smaller number of operations than that in the case of the single blade.

INDUSTRIAL APPLICABILITY

[0042] According to the present invention, it is possible to reduce the amount of hair without shortening significantly only part of the hairs, and to finish the hair with natural variation in position of their tips without causing the hairs to have a constant length, merely by operating the hair cutter so as to comb the hairs from the root of the hairs toward the tips thereof. In the present invention, cut points move by the combing operation. In addition, since a hair thinning method having originally employed by a barber (to raise the hair to cut the hair on an inner side instead of cutting the hair on the surface side) is employed, lines on the hair surface are less likely to be produced even when the operation direction of the hair cutter is changed to a direction toward the top of the head (the hair is lifted upward from the bottom). Accordingly, a finish closer to that made by a professional barber ("hair thinning" of thinning the amount of hair without noticeably changing the whole hairstyle) can be achieved without failure.

Claims

1. A hair cutter including:

a cutter body;
a plurality of comb-shaped blades overlapping and slidably contacting each other;
driving means reciprocating at least one of the comb-shaped blades; and
one of hair thinning means which includes a ridge portion covering cutting edges of the comb-shaped blades while having plurality of openings into which part of hairs are introduced, so as to form hair thinning blades, and hair thinning means which provides the cutting edge of at least one of the comb-shaped blades with an anti-introduction portion preventing introduction of part of hairs, so as to form hair thinning blades, the hair cutter nipping the hairs between the blades of the comb-shaped blades and thereby thinning the nipped hairs, the hair cutter comprising:

comb means having, on a block portion thereof, a plurality of comb pieces extending in a protruding direction of the comb-shaped blades, the comb pieces being provided on both sides of the hair thinning means in a cutting direction of the comb-shaped blades, each comb piece having a base end located below the cutting edges of the comb-shaped blades and a tip end protruding further than the cutting edges of the comb-shaped blades.

2. The hair cutter according to claim 1, wherein
the comb pieces are each disposed on the block portion such that tip ends of the comb pieces draw an arc as a whole.

3. The hair cutter according to claim 1, wherein
the hair thinning means including the ridge portion so as to form the hair thinning blades is attachable to and detachable from the cutter body, and
the comb means is attachable to and detachable from the cutter body.

4. The hair cutter according to claim 1, wherein

the hair thinning means including the ridge portion so as to form the hair thinning blades is integrated with the comb means.

5. The hair cutter according to claim 1, wherein a member having enhanced friction resistance is disposed on a root surface of the comb pieces of the block portion.

6. The hair cutter according to claim 5, wherein a peak of the member having the enhanced friction resistance is disposed closer to the tip ends of the comb pieces than the root surface of the comb pieces and is disposed below peaks of the comb-shaped blades.

7. The hair cutter according to claim 1, wherein a plurality the hair thinning means and a plurality of the comb means are provided to the cutter body.

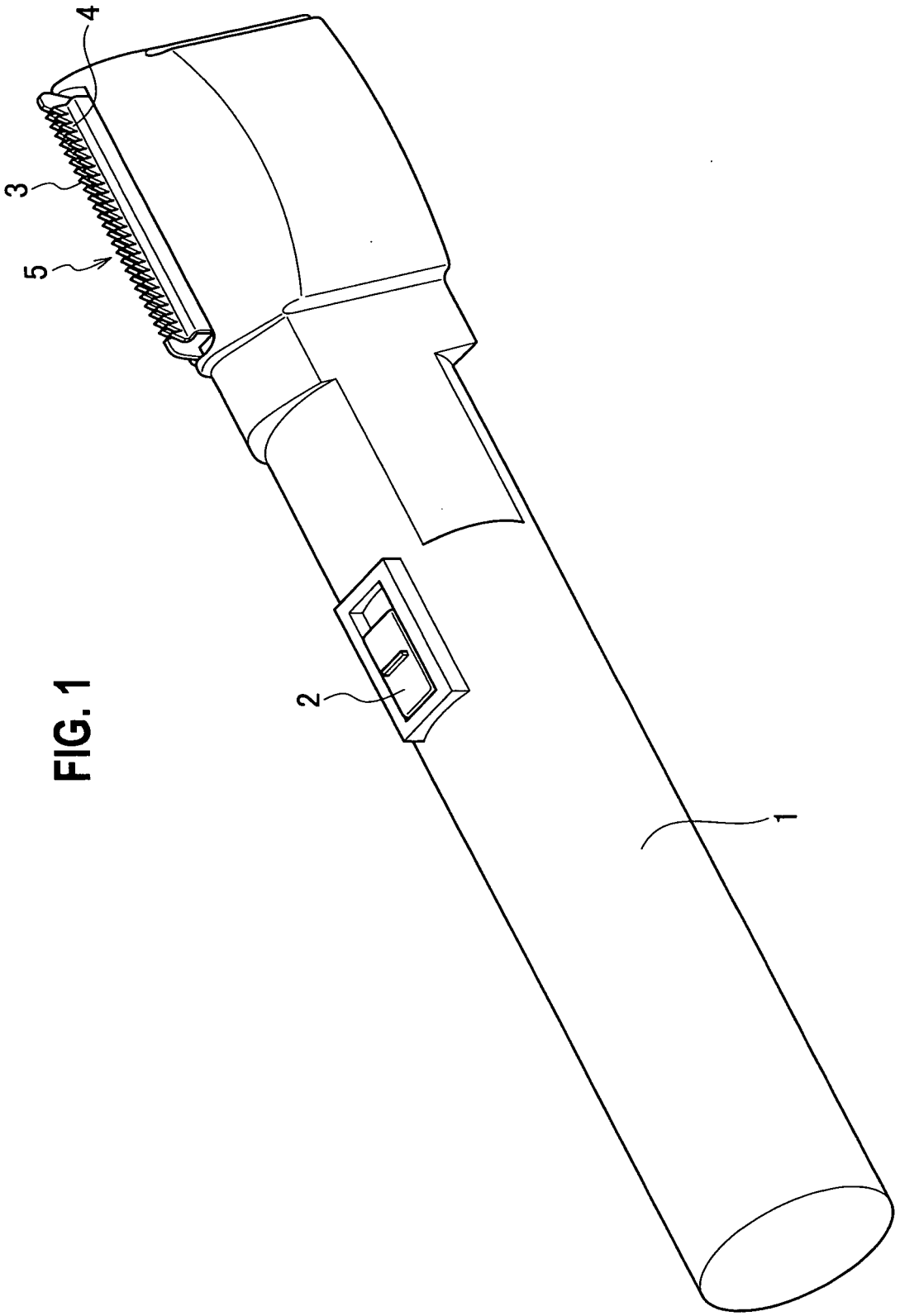


FIG. 1

FIG. 2

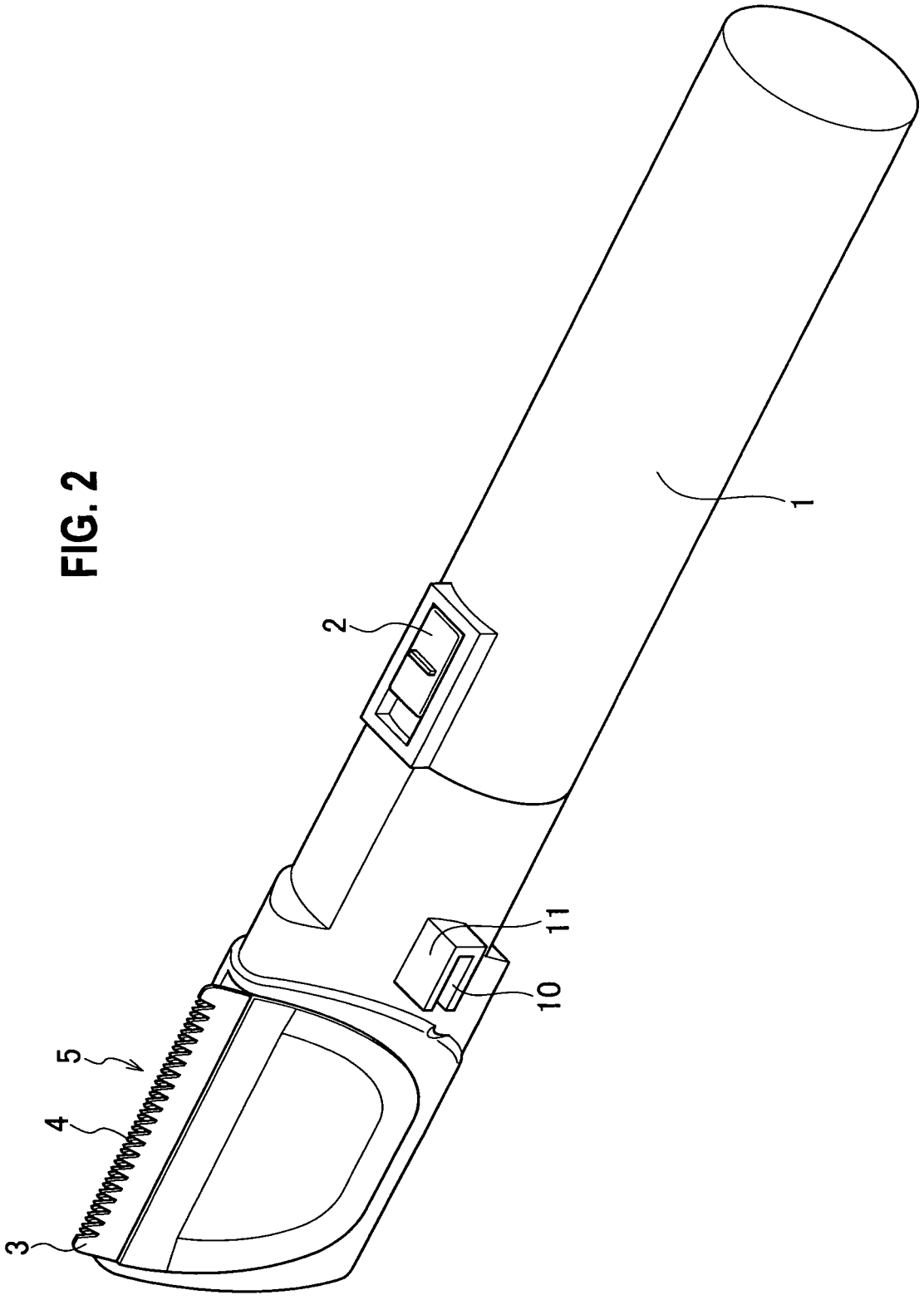


FIG. 3

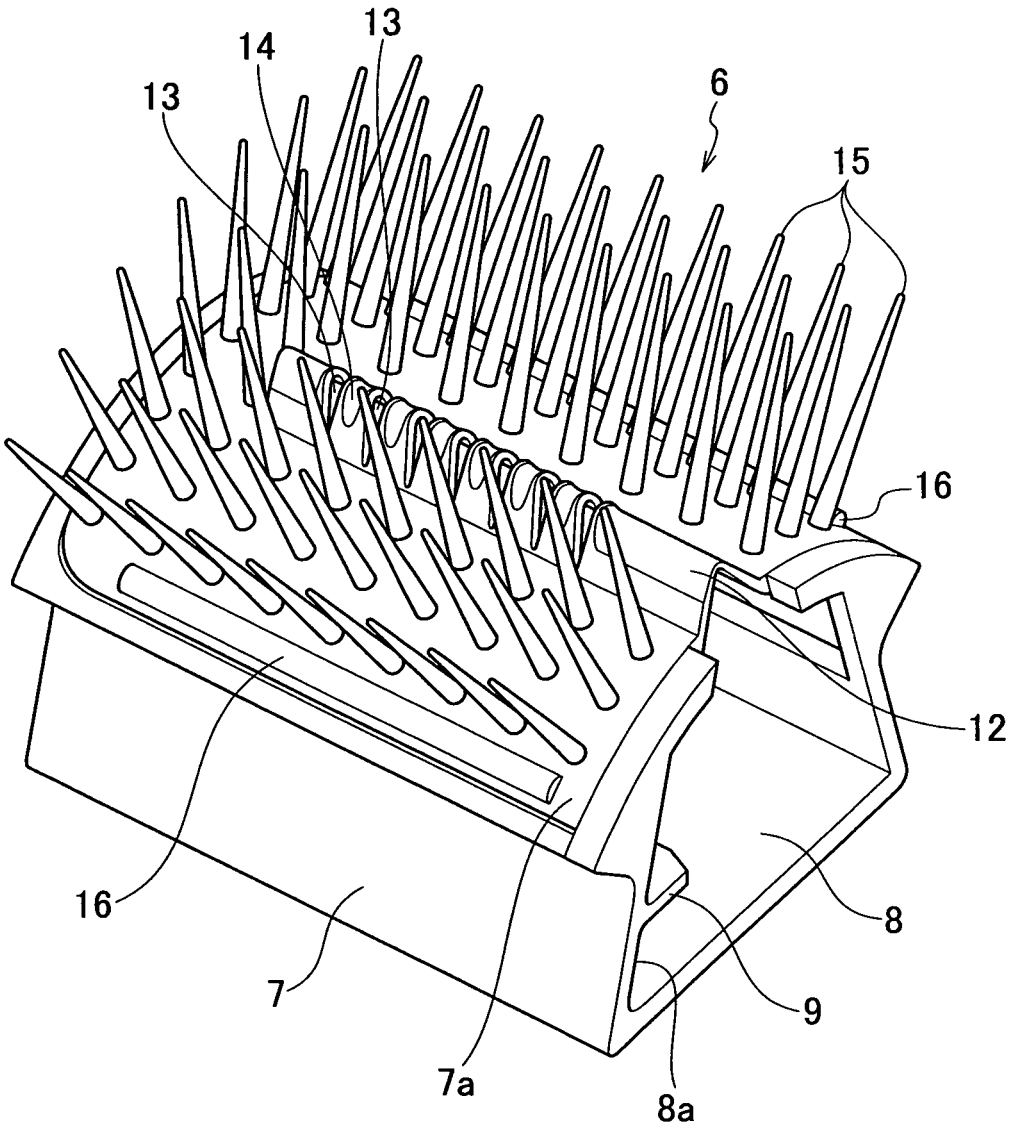


FIG. 4

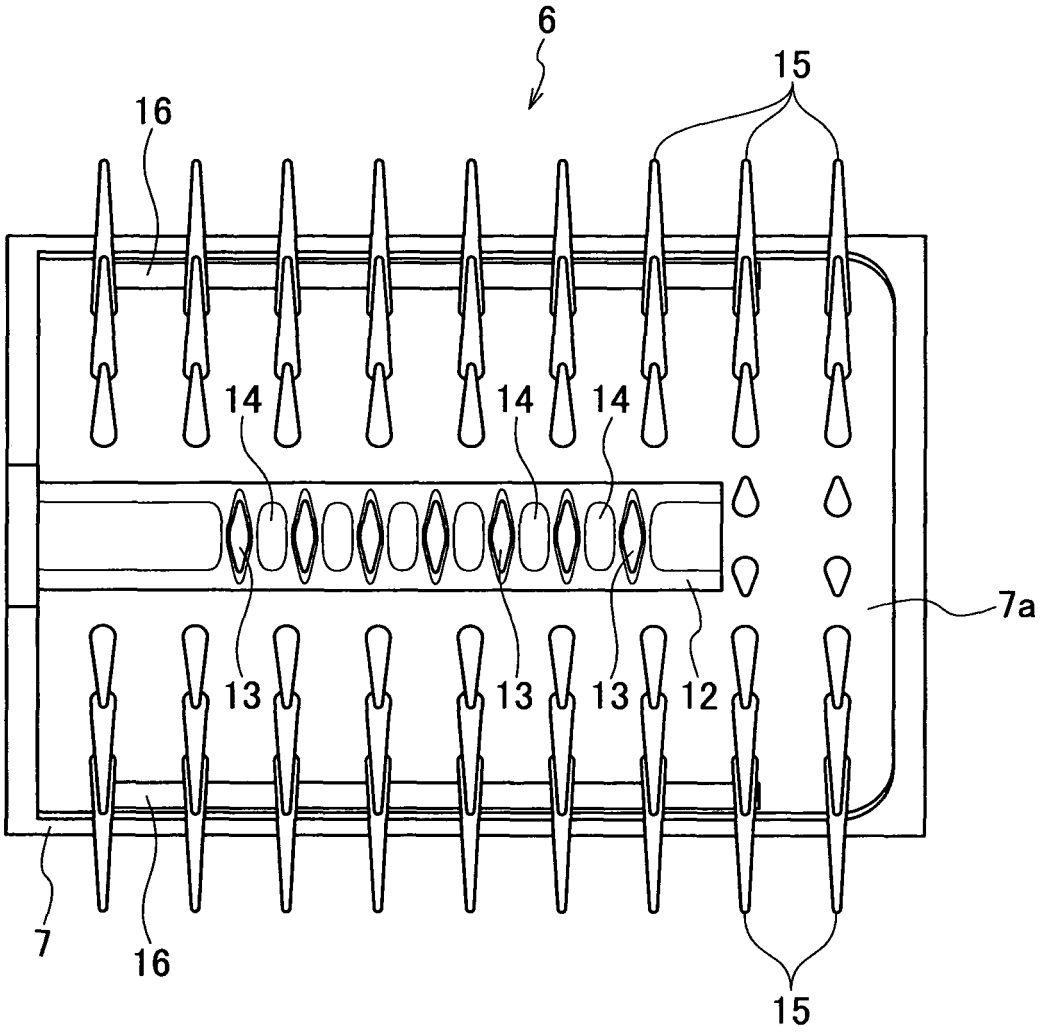


FIG. 5

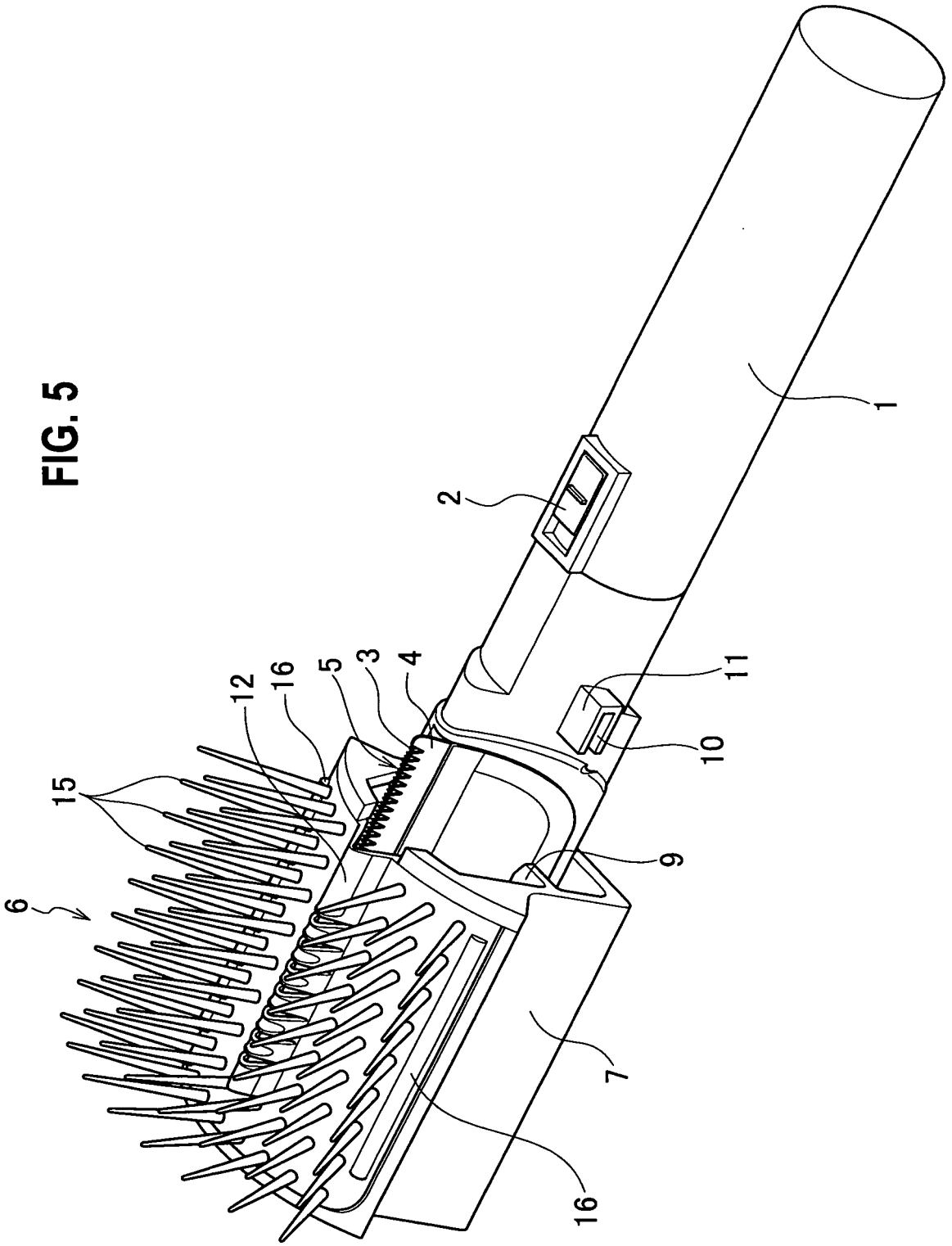


FIG. 6

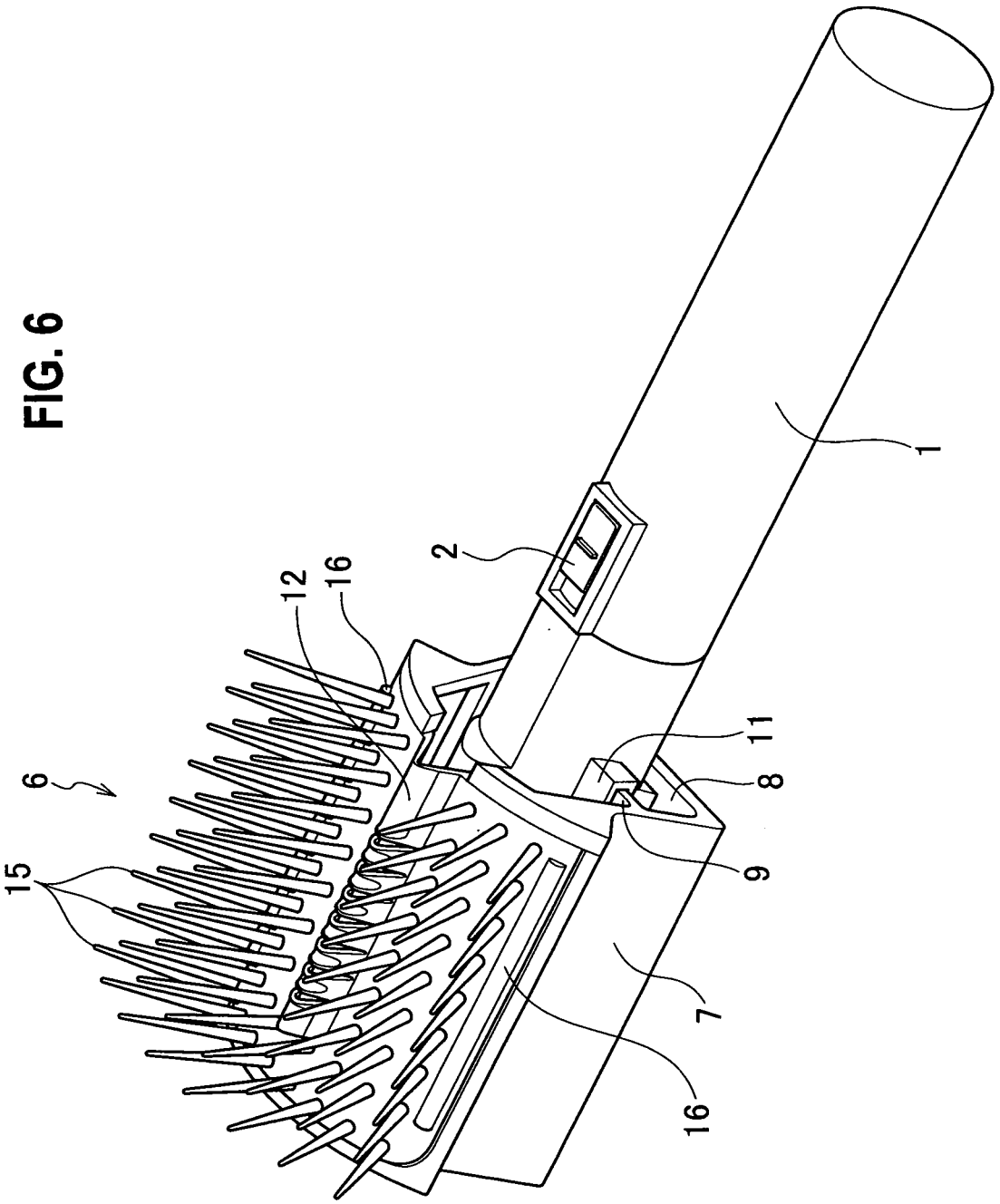


FIG. 7

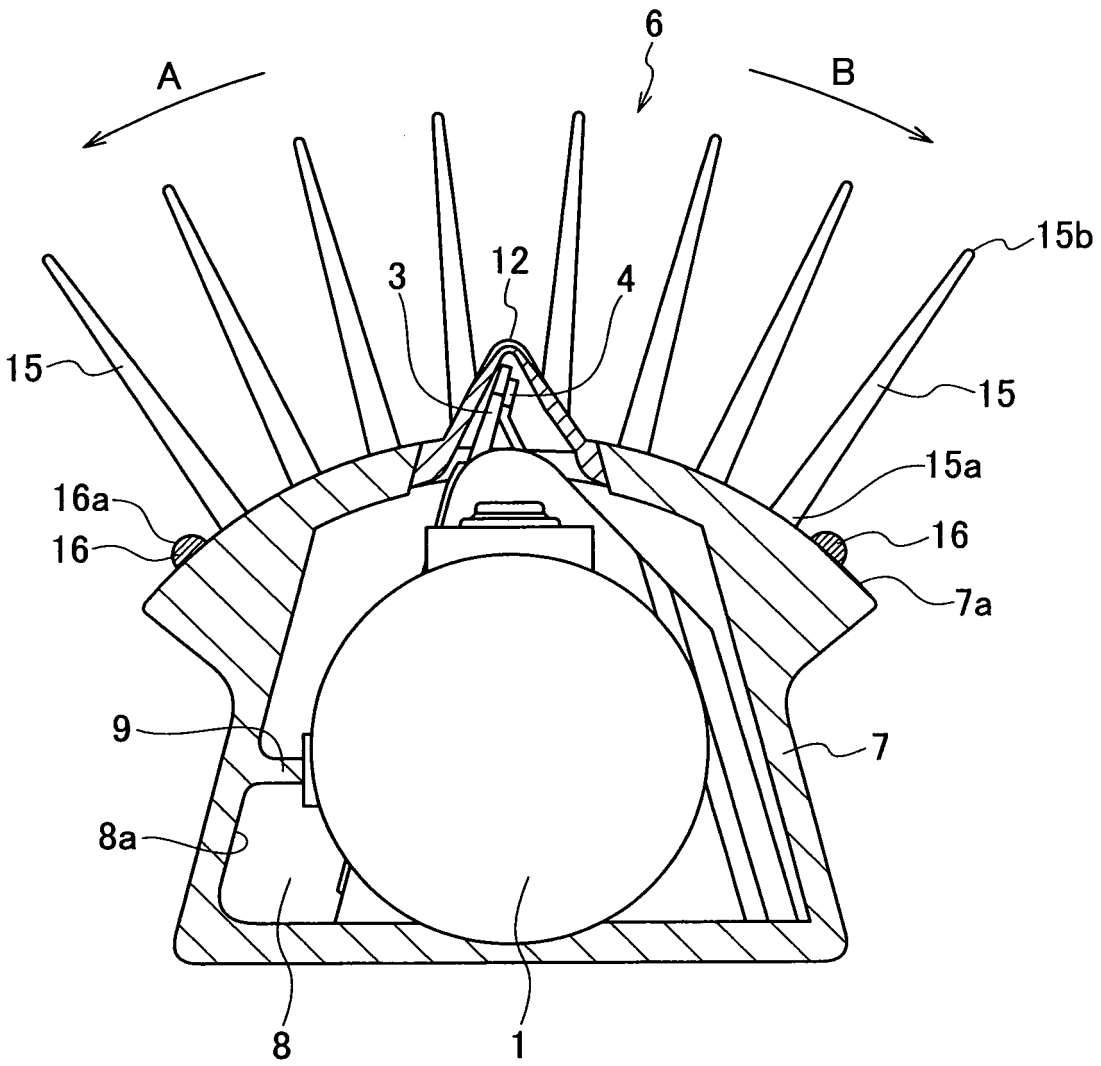


FIG. 8

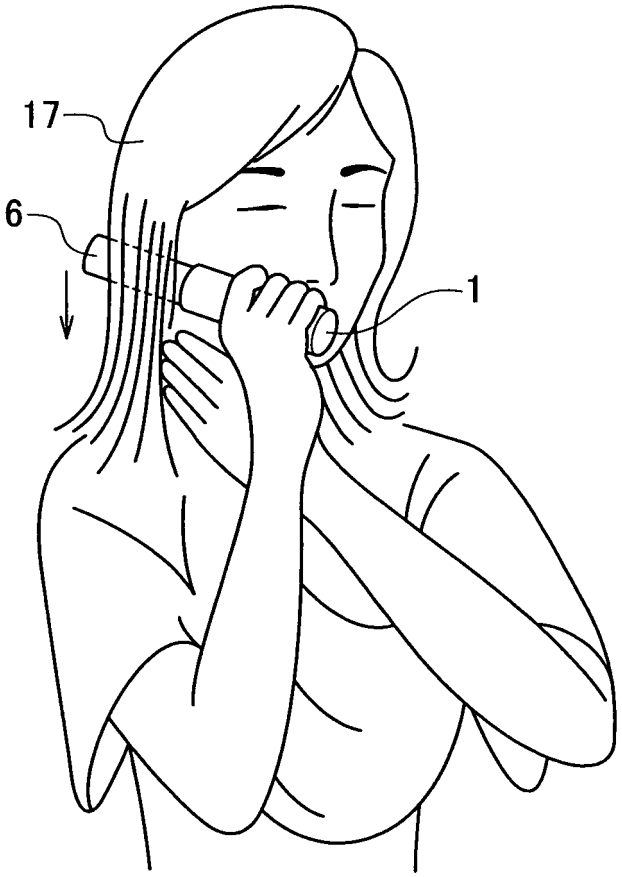


FIG. 9

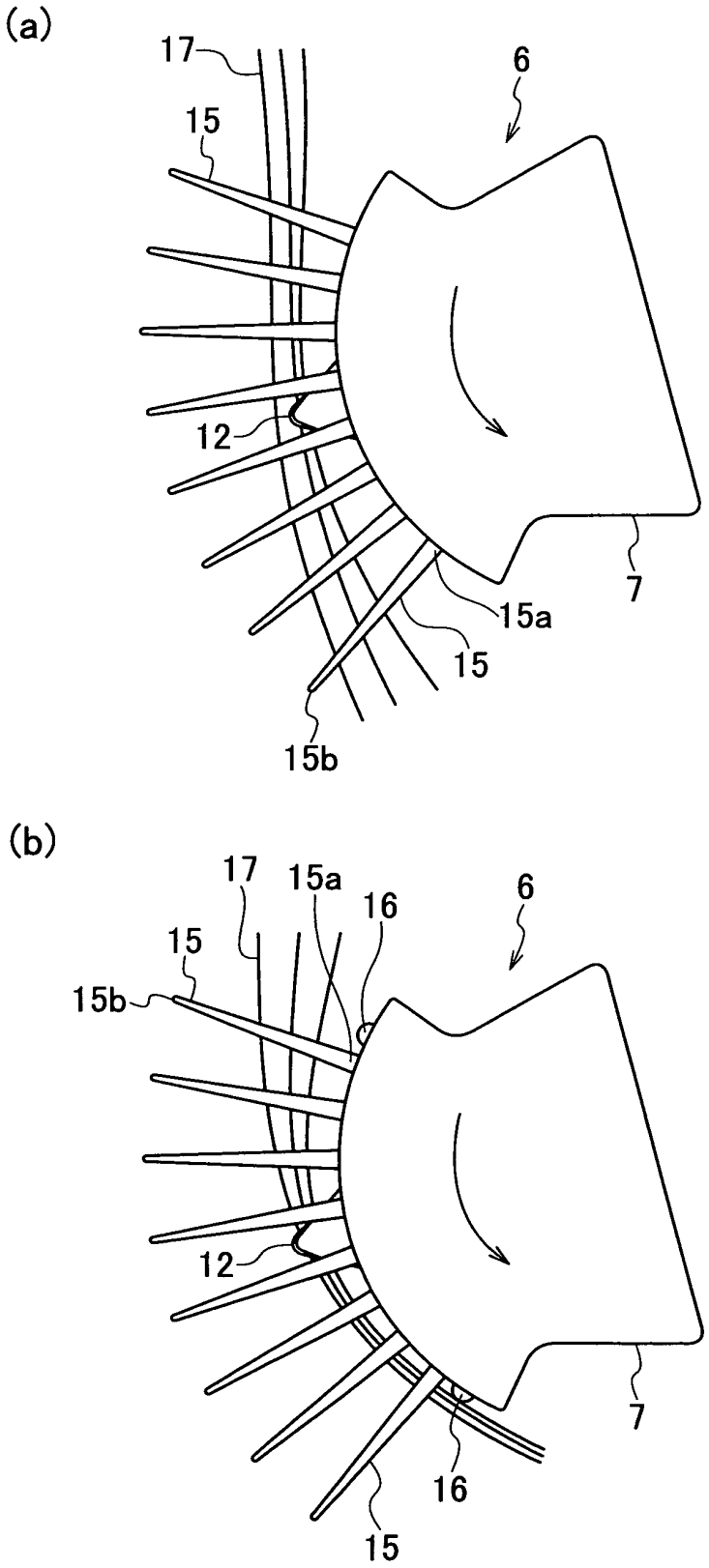


FIG. 10

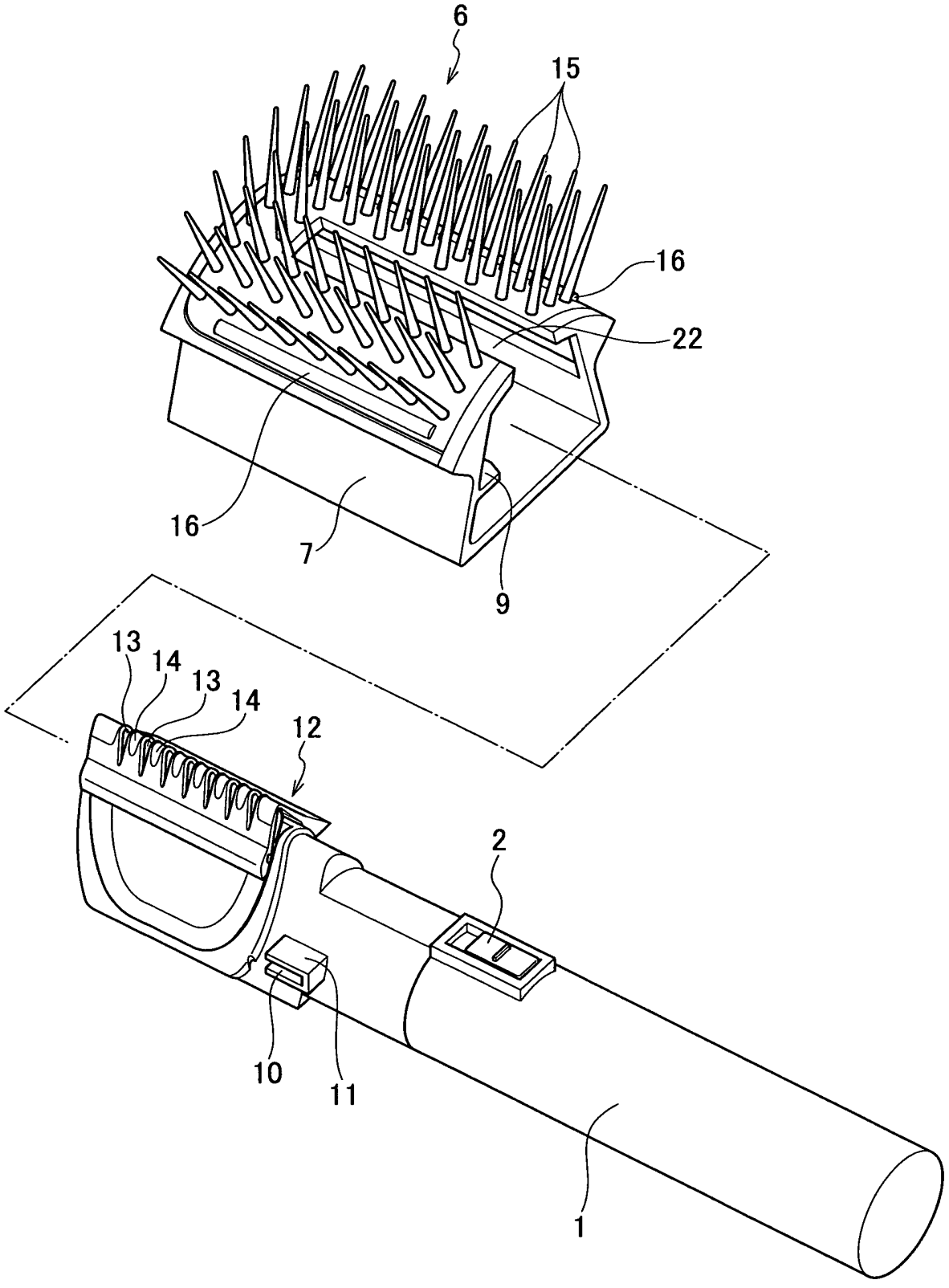


FIG. 11

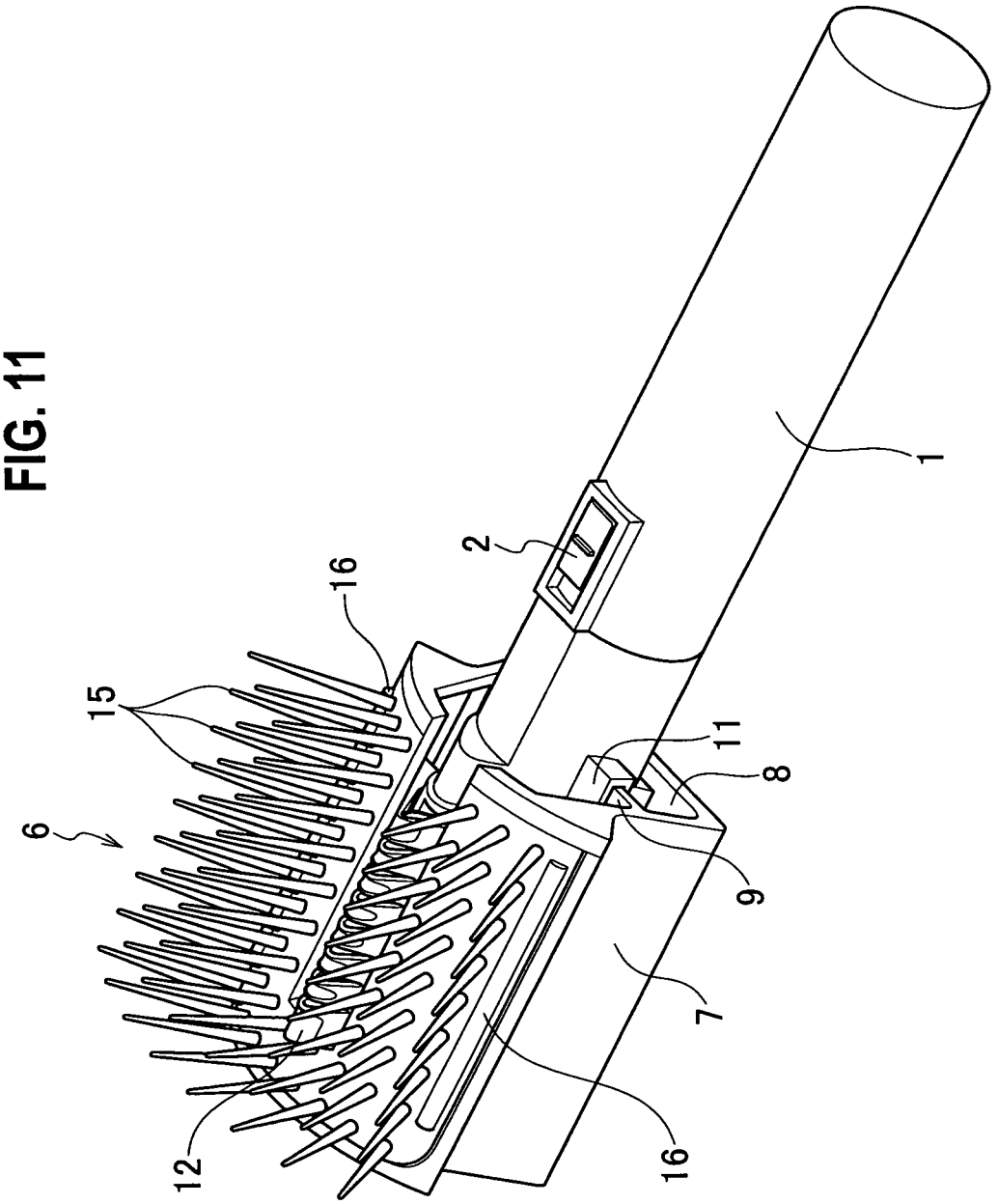


FIG. 12

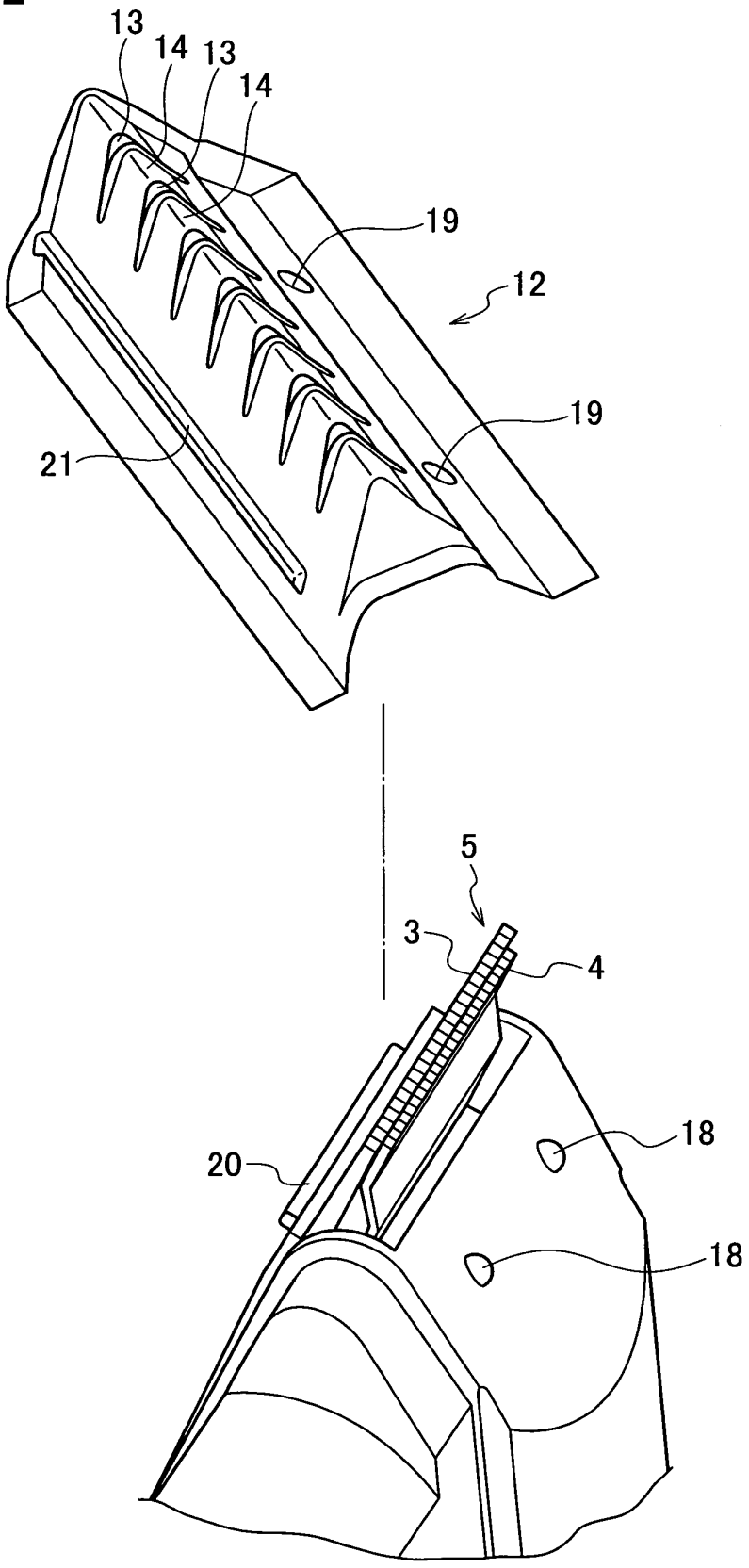


FIG. 13

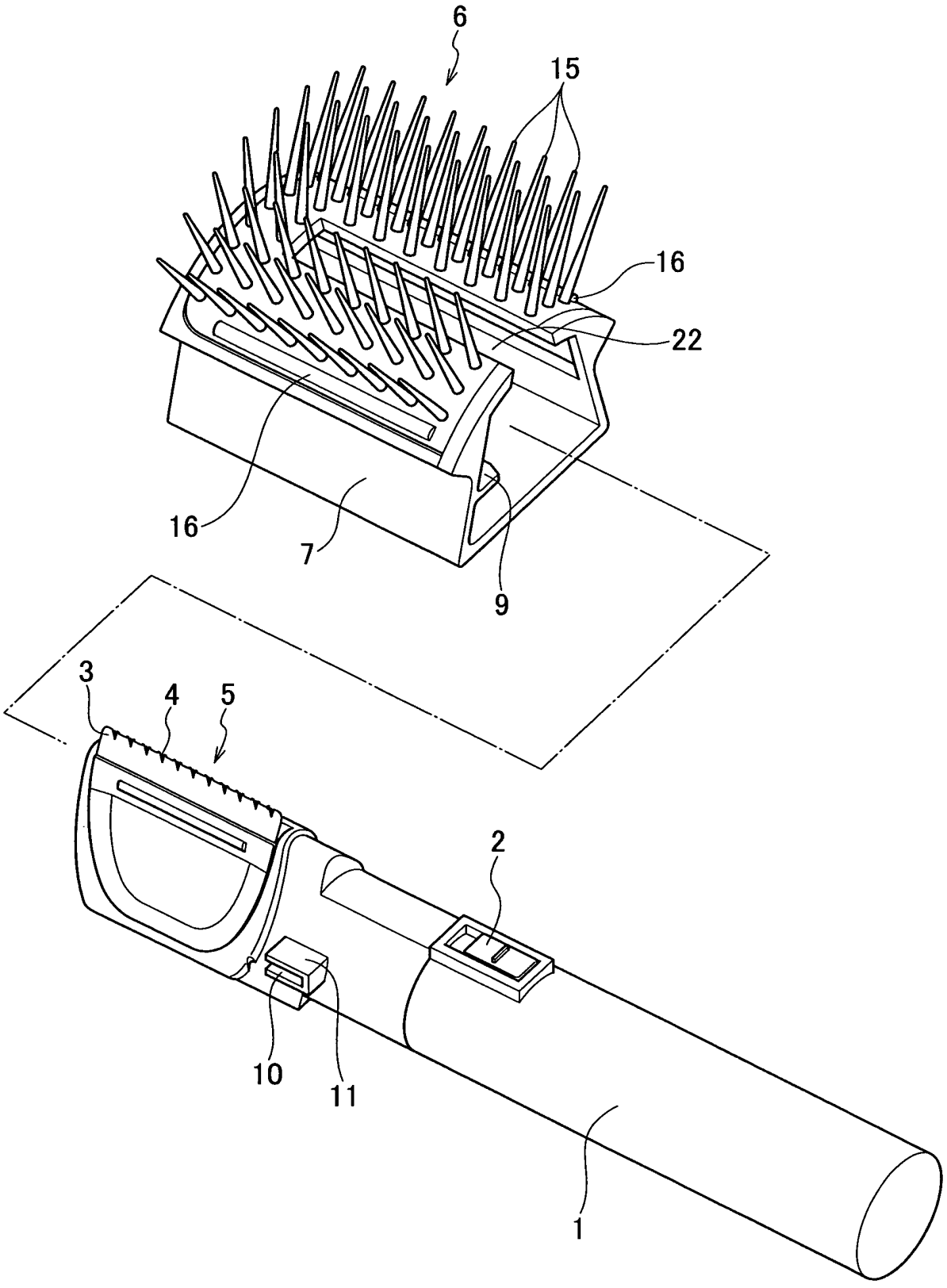


FIG. 14

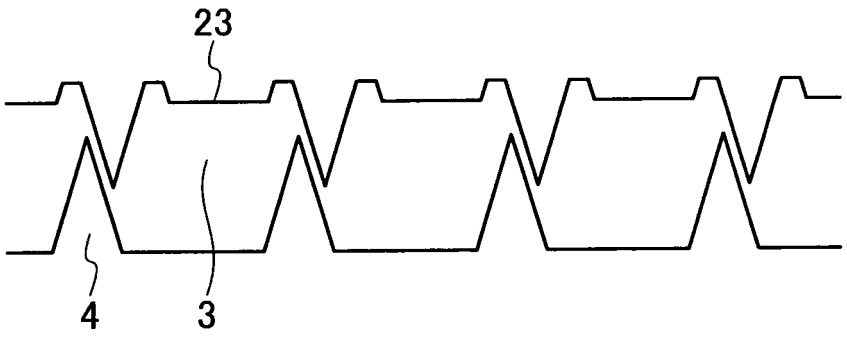


FIG. 15

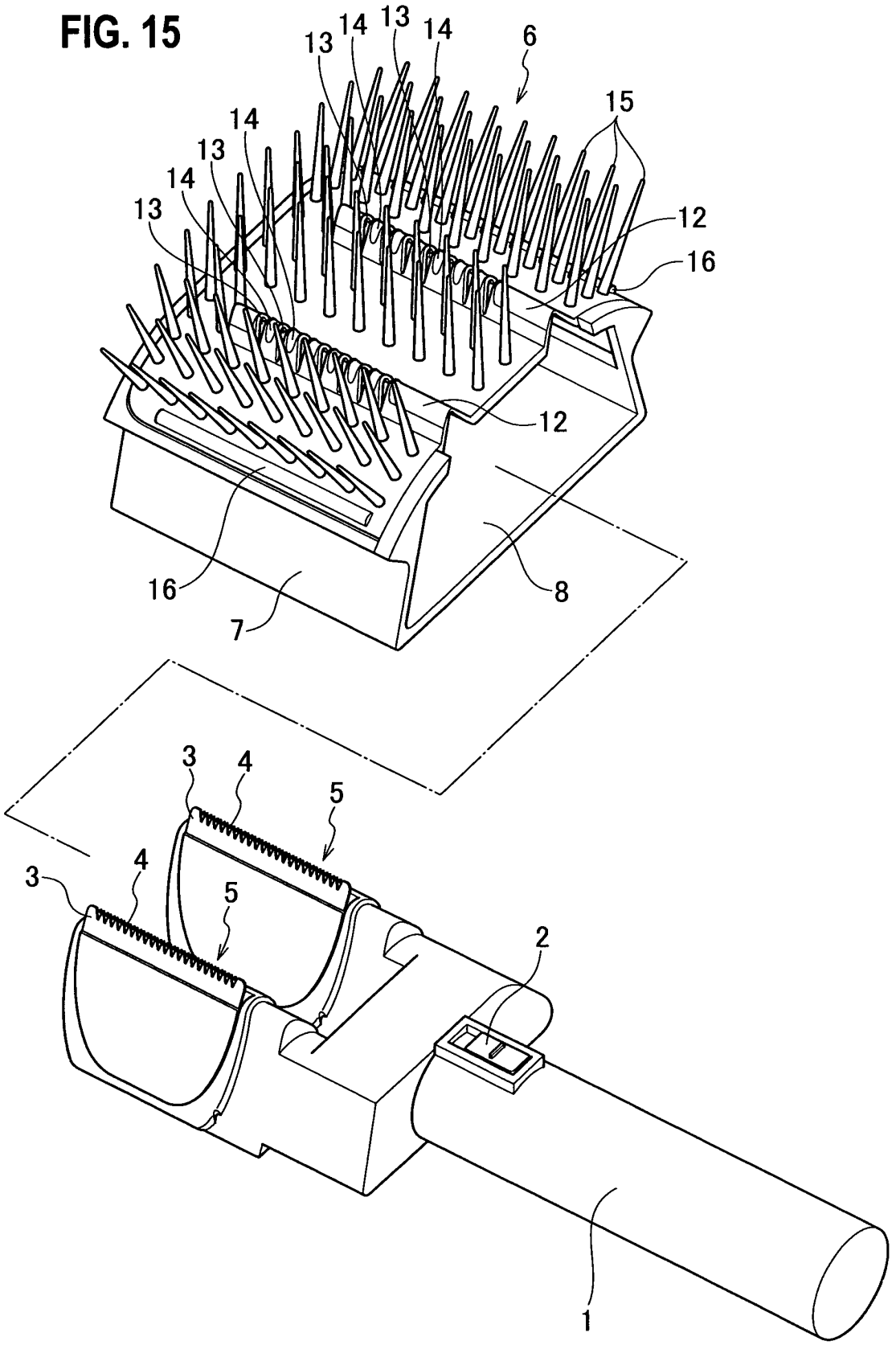


FIG. 16

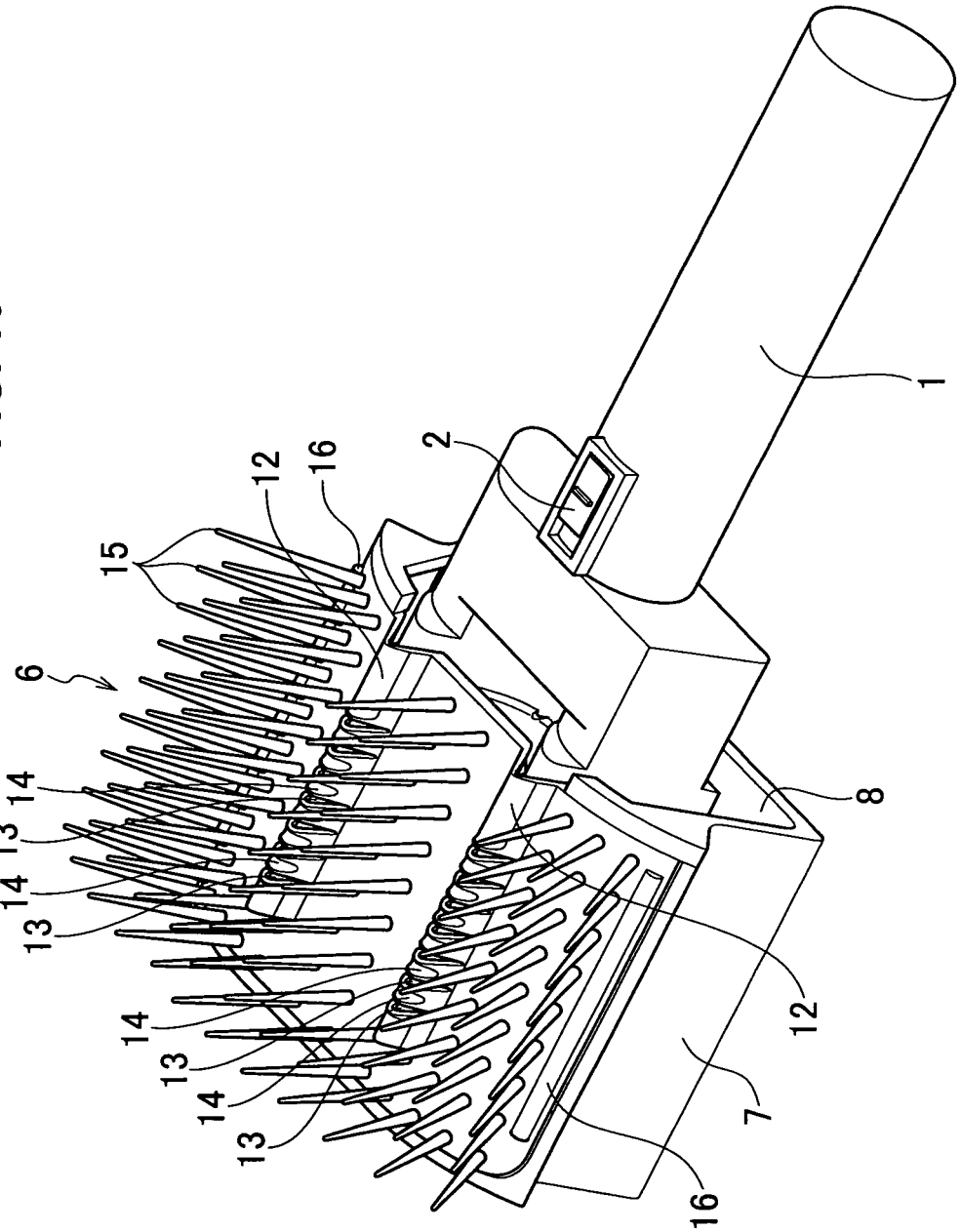


FIG. 17

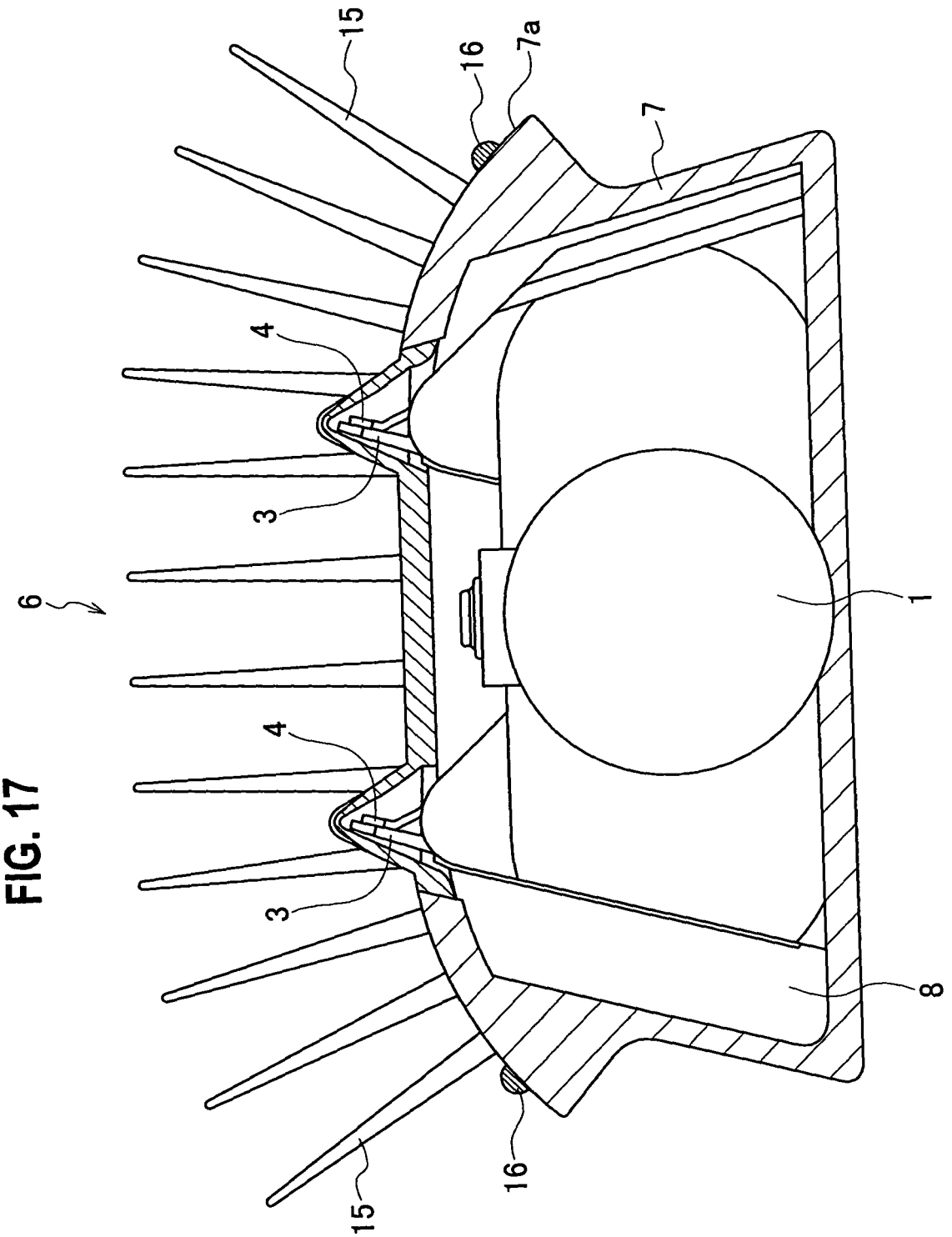


FIG. 18

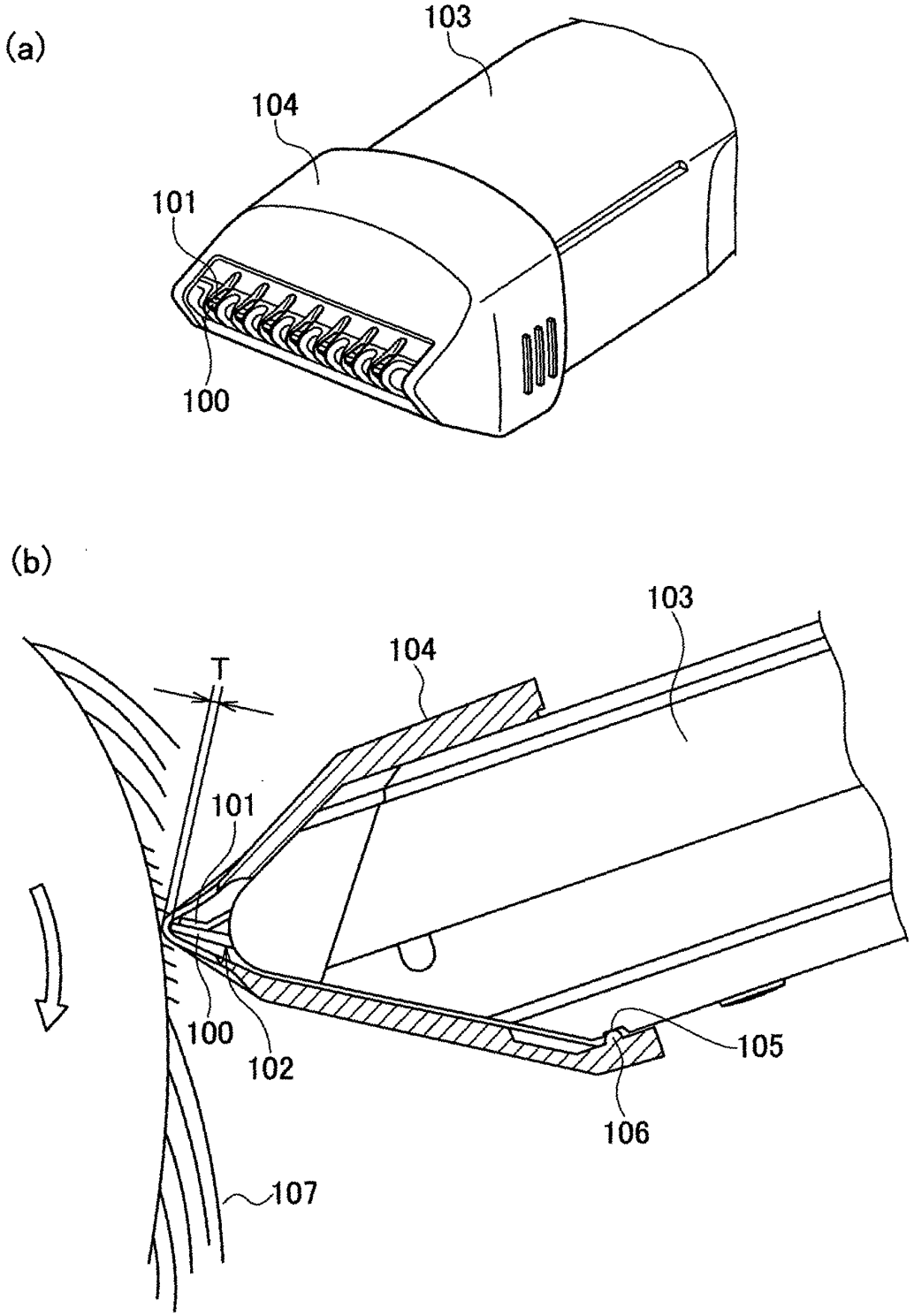
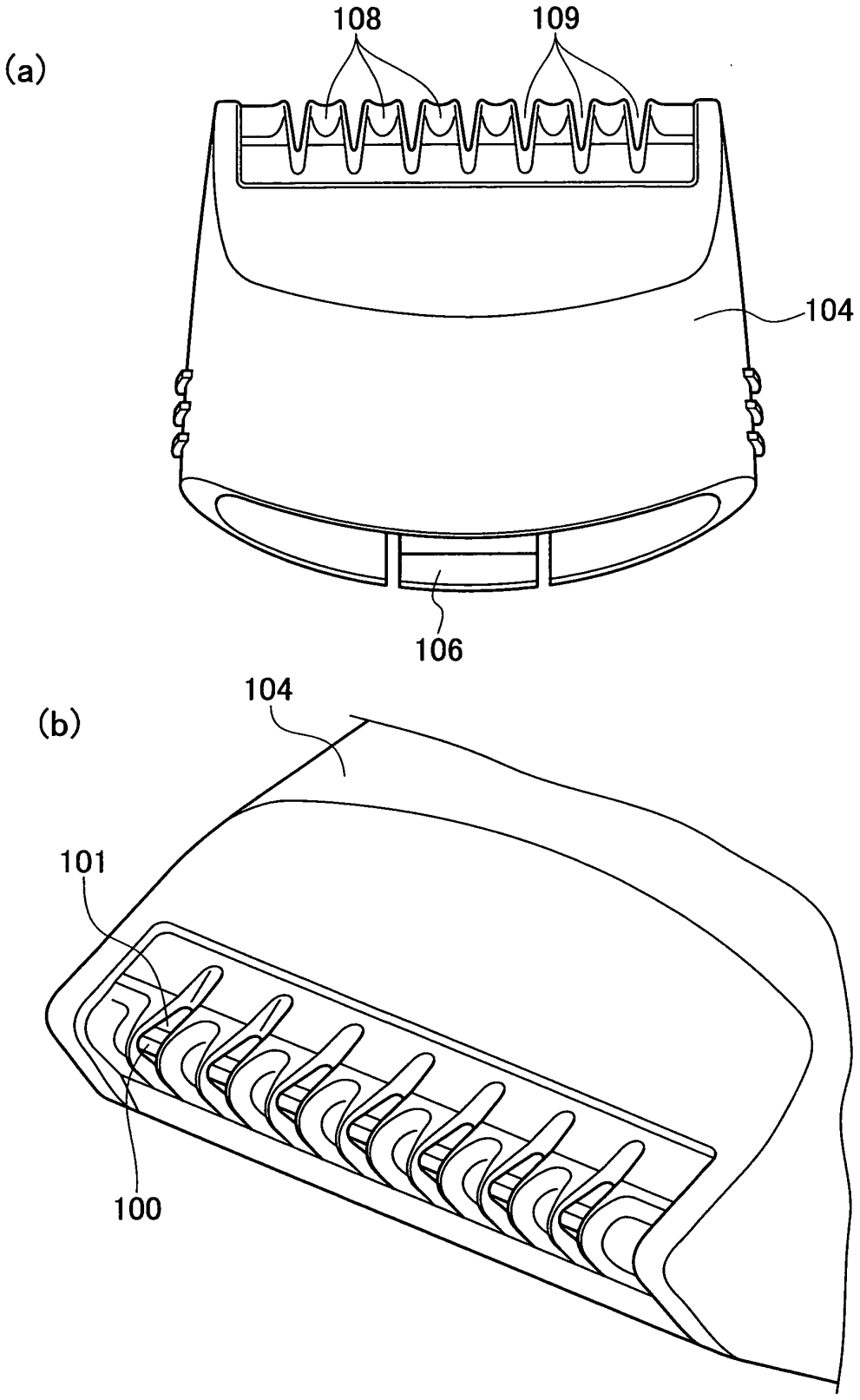


FIG. 19



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2007/069503

A. CLASSIFICATION OF SUBJECT MATTER
B26B19/22(2006.01)i

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)
B26B19/20-19/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2007
Kokai Jitsuyo Shinan Koho 1971-2007 Toroku Jitsuyo Shinan Koho 1994-2007

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 55-47885 A (Matsushita Electric Works, Ltd.), 05 April, 1980 (05.04.80), Page 1, right column, lines 4 to 6; page 2, upper left column, line 8 to upper right column, line 11; Figs. 2, 6, 7 (Family: none)	1-4 5-7
Y A	JP 8-33779 A (Matsushita Electric Works, Ltd.), 06 February, 1996 (06.02.96), Par. Nos. [0015] to [0018]; Figs. 1 to 4 (Family: none)	1-4 5-7

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
25 October, 2007 (25.10.07)	06 November, 2007 (06.11.07)
Name and mailing address of the ISA/ Japanese Patent Office Facsimile No.	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2007/069503

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 6-238071 A (Matsushita Electric Works, Ltd.), 30 August, 1994 (30.08.94), Figs. 1 to 5, 15 to 17 (Family: none)	1-3 4-7
Y A	JP 3076533 U (Koketsu Kigyo Yugen Koshi), 06 April, 2001 (06.04.01), Fig. 3 (Family: none)	1-3 4-7
Y	DE 1028620 C1 (Wahl GmbH), 30 October, 2003 (30.10.03), Fig. 2B & EP 1375090 A1	2
Y	JP 11-253670 A (Wahl Clipper Corp.), 21 September, 1999 (21.09.99), Figs. 2, 3 & US 5937526 A & EP 0925885 A1	2
Y	US 2918723 A (Charles Levin & Co.,), 29 December, 1959 (29.12.59), Fig. 2 (Family: none)	2
Y	JP 52-116357 A (Matsuoka Denki Barikan Kabushiki Kaisha), 29 September, 1977 (29.09.77), Page 2, upper left column, line 6 to upper right column, line 3; Figs. 1, 2 (Family: none)	3
A	JP 2004-526534 A (Talaver, Victor, C.), 02 September, 2004 (02.09.04), & US 2004/0045168 A1 & EP 1381496 A1	1-7
A	US 5884402 A (Victor C. Talavera), 23 March, 1999 (23.03.99), (Family: none)	1-7

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Patent documents cited in the description

- JP 55047885 A **[0002]**