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(54) **ELECTRIC SHAVER**

ELEKTRISCHER RASIERAPPARAT

RASOIR ÉLECTRIQUE

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Description

TECHNICAL FIELD

[0001] The present invention relates to an electric shaver.

BACKGROUND ART

[0002] Various types of electric shavers to shave body hair have been developed. Herein, an angle formed by the extending direction of body hair and a skin surface is called a hair rising angle. Although body hair at a large hair rising angle (for example, 45° to 60°) is easy to shave, it is difficult to shave body hair at a small hair rising angle (for example, 30° or less), that is, lying body hair. Thus, electric shavers provided with hair lifting portions in frames of outer blades having a hair lifting ability higher than conventional hair lifting portions have been developed (for example, refer to Patent Document 1).

CITATION LIST

PATENT LITERATURE

[0003] Patent Document 1: Japanese Patent No. 3083548

[0004] In JP 57-39871 a further shaver is disclosed with an outer blade, wherein perpendicular to a shaving direction alternatingly holes and protrusions are formed. The protrusions protrude towards a skin of a user to support lifting the hair to pass through the holes and to improve a shaving performance.

SUMMARY OF THE INVENTION

[0005] In the conventional electric shavers, the hair lifting frames provided with the hair lifting portions are uniformly arranged in the outer blades. Generally, outer blades are formed into an arc-like shape projecting toward the skin surface.

[0006] Therefore, during the use of such electric shavers, the skin contact surface located on the front side of the outer blade in the traveling direction on the basis of the top portion of the outer blade comes into contact with the skin in a different manner from the skin contact surface located on the rear side in the traveling direction, in which a hair lifting ability of second hair lifting frames provided on the skin contact surface on the rear side tends to be lower than that of first hair lifting frames provided on the skin contact surface on the front side.

[0007] Thus, it is an object of the present invention to provide an electric shaver capable of lifting body hair up more efficiently by reducing the differences in hair lifting ability between first hair lifting frames provided on the front side and second hair lifting frames provided on the rear side in the traveling direction on the basis of a top portion of an outer blade.

[0008] In order to solve the above-described problem, the claimed invention provides an electric shaver according to independent claim 1.

[0009] According to the present invention, the second hair lifting portions have the hair lifting ability higher than the first hair lifting portions. Therefore, during the use of the electric shaver, the second hair lifting portions, which are provided on the skin contact surface on the rear side in which a contact pressure with the skin surface is low, can come into contact with the skin surface 37 more easily. As a result, the differences in hair lifting ability between the first hair lifting portions and the second hair lifting portions can be reduced, so as to lift the body hair up more efficiently.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

FIG. 1 is a front view showing an electric shaver according to an embodiment of the present invention.
FIG. 2 is a perspective view showing an inner blade of a blade unit shown in FIG. 1.
FIG. 3 is a perspective view showing a head unit of FIG. 1.
FIG. 4 is an explanatory view of an outer blade of FIG. 3.
FIG. 5 is an enlarged perspective view of a part of the outer blade of FIG. 1.
FIG. 6 is a cross-sectional view taken along the line A-A in FIG. 5.
FIG. 7 is a cross-sectional view taken along the line B-B in FIG. 5.
FIG. 8(a) is a cross-sectional view taken along the line C-C in FIG. 5, and
FIG. 8(b) is an enlarged cross-sectional view of a hair lifting portion.
FIG. 9 is an enlarged perspective view around a frame in a longitudinal direction of FIG. 8.
FIG. 10 is a cross-sectional view taken along the line D-D in FIG. 9.
FIG. 11 is an explanatory view showing a state in which the outer blade of FIG. 3 is in contact with skin.

DESCRIPTION OF THE EMBODIMENTS

[0011] Hereinafter, an embodiment according to the present invention will be described in detail below with reference to the drawings. FIGS. 1 to 11 are views showing an electric shaver according to the embodiment of the present invention.

[0012] As shown in FIG. 1, an electric shaver 1 according to the present embodiment is mainly composed of a shaver main body 3, a blade unit 4 provided on the top of the shaver main body 3, and a driving unit (not shown in the figures.) to drive the blade unit 4.

[0013] The shaver main body 3 according to the present embodiment is divided into a grip portion 7 held

by a user, and a head unit 5 connected to the upper end of the grip portion 7. The head unit 5 is provided with the blade unit 4 to remove body hair, and the grip portion 7 is provided with a push-button switch 9 to control the driving unit to operate (turn on and off) the blade unit 4.

[0014] As shown in FIGS. 2 and 3, the blade unit 4 includes outer blades 11 exposed on the top end surface of the shaver main body 3, and inner blades 13 provided inside the outer blades 11 (below the outer blades 11) and configured to reciprocate in a longitudinal direction 23.

[0015] The outer blades 11 according to the present embodiment include a first net blade 17, a second net blade 19 and a third net blade 21, which are arranged parallel to each other in a short-side direction 25 that is the traveling direction (the shaving direction) of the electric shaver 1. In particular, the first to third net blades 17, 19 and 21 extend in the longitudinal direction 23 perpendicular to the short-side direction 25. The first net blade 17 and the second net blade 19 are located on both sides (on one side and the opposite side) in the short-side direction 25, and the third net blade 21 is located between the first net blade 17 and the second net blade 19.

[0016] The first to third net blades 17, 19 and 21 composing the outer blades 11 are each formed into an arc-like shape projecting toward the skin of a user (toward the upper side in the present embodiment) as shown in FIG. 4. According to the present embodiment, the first to third net blades 17, 19 and 21 are formed into an inverted U-shape in cross-section in the short-side direction 25 each having a top portion 27 and both side surfaces 29 and 29. The inner blades 13 are formed to conform to the inner shape of the respective net blades 17, 19 and 21.

[0017] As shown in FIG. 5, the outer blades 11 are provided with a number of blade holes 36 that introduce body hair thereinto. The inner blades 13 move relative to the outer blades 11 (reciprocate in the longitudinal direction 23) so that the inner blades 13 cut the introduced body hair in cooperation with the outer blades 11.

[0018] The blade holes 36 are defined by frames 32. In other words, the frames 32 of the outer blades 11 include transverse frames 35 extending in an inverted U-shaped manner in the short-side direction 25 and vertical frames 30 extending in the longitudinal direction 23, and the blade holes 36 are defined by the transverse frames 35 and the vertical frames 30. The blade holes 36 have the dimension sufficient to introduce the body hair thereinto. Note that, in the figure, a dashed-dotted line Y is a center line (the top) passing through the middle of the top portion 27 in the short-side direction 25.

[0019] The vertical frames 30 according to the present embodiment include first frames 31 having the cross-sectional shape shown in FIG. 6, second frames 34 having the cross-sectional shape shown in FIG. 7, and hair lifting frames 33 having the cross-sectional shape shown in FIG. 8(a).

[0020] As shown in FIG. 6, each first frame 31 includes a surface (a skin contact surface) 31a formed into an approximately flat shape located on the skin side (on the upper side in the figure) to come into contact with the skin, a bottom surface 31b formed into a flat shape located on the inner blade 31 side (on the lower side in the figure), and side surfaces 31c and 31c smoothly connecting the surface (the skin contact surface) 31a and the bottom surface 31b in the short-side direction. The first frame 31 is thus formed into a barrel-vaulted shape. In addition, sliding contact portions 31e projecting toward the inner blade 13 to slidably come into contact with the inner blade 13 are formed on both sides of a bottom portion 31d in the short-side direction of the first frame 31 to cut the body hair together with the inner blade 13. According to the present embodiment, each short-side edge 31g of an upper portion 31f of the first frame 31 is formed into a semicircular shape in cross-section having a radius of curvature of R1. The R1 is preferably 10 μm, for example. Note that a surface 37 of the transverse frame 35 is located closer to the skin than the surface 31a of the first frame 31, and the vertical distance between the surface 31a of the first frame 31 and the surface 37 of the transverse frame 35 is set to L1.

[0021] Meanwhile, as shown in FIG. 7, each second frame 34 is formed into substantially the same outer shape as the first frame 31, and includes a surface (a skin contact surface) 34a formed into an approximately flat shape, a bottom surface 34b, and side surfaces 34c and 34c smoothly connecting the surface 34a and the bottom surface 34b in the short-side direction. The second frame 34 is thus formed into a barrel-vaulted shape. The surface 34a of the second frame 34 is located closer to the skin than the surface 31a of the first frame 31, and the vertical distance between the surface 34a of the second frame 34 and the surface 37 of the transverse frame 35 is set to L3.

[0022] As shown in FIG. 8(a), each hair lifting frame 33 is formed into an approximately V-shape in cross-section. In particular, a plate portion 33a formed into an approximately flat plate is formed in the middle portion in the short-side direction, and inclined portions 33b provided on both sides of the plate portion 33a in the short-side direction inclined upward in the short-side direction from the flat plate portion 33a. The inclined portions 33b are formed into a tapered shape tapering toward the both ends in the short-side direction from the plate portion 33a. Both short-side edges 331 of the inclined portions 33b are provided with hair lifting portions 33c to lift the body hair up. The hair lifting portions 33c have a function to efficiently lift the body hair at a small angle to the skin surface (that is, the lying body hair). Namely, according to the present embodiment, each hair lifting frame 33 is provided with one hair lifting portion 33c (on the right side in FIG. 8) to function to lift the body hair up when moving mainly in one direction of the shaving direction (from left to right in FIG. 3), and the other hair lifting portion 33c (on the left side in FIG. 8) to function to lift the body hair up when moving mainly in the opposite direction of the

shaving direction (from right to left in FIG. 3).

[0023] In addition, each hair lifting frame 33 is composed of an upper flat surface 33d of the plate portion 33a, upper inclined surfaces 33e of the inclined portions 33b, a bottom surface 33f of the plate portion 33a, and lower inclined surfaces 33g of the inclined portions 33b. The vertical distance between the short-side edge 331 of each hair lifting portion 33c and the surface 37 of the transverse frame 35 is set to L2. Thus, the hair lifting frames 33 are arranged in an offset manner so as to satisfy the magnitude relation of $L2 \leq L3 < L1$.

[0024] Further, as shown in FIG. 8(b), the short-side edge 331 of each inclined portion 33b is formed into a semicircular shape in cross-section having a radius of curvature of R2. The magnitude relation among R1, R2 and R3 is set to be R2<R1=R3. The R2 is preferably 3 μm, for example. Here, a clearance angle α formed by the upper inclined surface 33e and a reference line 57 in the short-side direction indicated by the chain double-dotted line is set larger than the clearance angle formed by the surface 31a of the first frame 31 and the reference line 57 in the short-side direction (that is 0°) and the clearance angle formed by the surface 34a of the second frame 34 and the reference line 57 in the short-side direction (that is 0°).

[0025] As shown in FIGS. 8 and 9, each longitudinal end portion 33j of the hair lifting frame 33 extends substantially linearly in cross-section from a side wall 59 of the transverse frame 35 in the longitudinal direction. Each longitudinal end portion 33j is connected to a longitudinal center portion 33k via a gently-curved boundary 33m. A radius of curvature of the boundary 33m is preferably 10 μm, for example.

[0026] As described above, the vertical frames 30 include the hair lifting frames 33 provided with the hair lifting portions 33c having a hair lifting ability higher than the first and second frames 31 and 34, the first frames 31 provided in such a manner that the surface 31a is located closer to the inner blade 13 than the short-side edges 331 of the hair lifting portions 33c, and the second frames 34 provided in such a manner that the surface 34a is located closer to the skin than the surface 31a of the first frame 31.

[0027] According to the present embodiment, the hair lifting portions (second hair lifting portions) 33c provided on the rear side in the traveling direction on the basis of the top Y of the respective outer blades 11 have a hair lifting ability higher than the hair lifting portions (first hair lifting portions) 33c provided on the front side.

[0028] In particular, according to the present embodiment, as shown in FIGS. 5 and 11, a pair of hair lifting frames 33A and 33B (the hair lifting frames 33 described above) having the identical shape are provided on one side (on the right side in FIG. 11) and on the other side (on the left side in FIG. 11) in the traveling direction on the basis of the top Y of the outer blade 11. The first frames 31 are provided between the pair of the hair lifting frames 33A and 33B.

[0029] Therefore, when the right side in FIG. 11 is defined as the front side in the traveling direction, for example, the first frames 31 are arranged in front of the hair lifting frame 33B having the second hair lifting portions 33c and adjacent to the hair lifting frame 33B. Note that the second frames 34 are provided on the outer sides of the pair of the hair lifting frames 33A and 33B. Thus, since the first frames 31 are provided on the front side of the hair lifting frame 33B, the space in front of the second hair lifting portion (the hair lifting portion located on the right side of the hair lifting frame 33B in FIG. 11) 33c is increased so that the skin surface 37 enters more deeply into the space towards the inner blade 13 side. Therefore, during the use of the electric shaver 1, the second hair lifting portions 33c can easily come into contact with the skin surface 37. As a result, the differences in hair lifting ability between the first hair lifting portions 33c and the second hair lifting portions 33c can be reduced, so as to lift the body hair up more efficiently.

[0030] In addition, according to the present embodiment, since the first frames 31 are provided between the pair of the hair lifting frames 33A and 33B, even when the shaving direction of the electric shaver 1 is reversed (that is, in the case in which the left side is defined as the front side in the traveling direction in FIG. 11), the above-described effects can also be achieved.

[0031] As described in detail above, in the electric shaver 1 according to the present embodiment, the second hair lifting portions 33c provided on the rear side in the traveling direction on the basis of the top Y of the respective outer blades 11 have the hair lifting ability higher than the first hair lifting portions 33c provided on the front side.

[0032] Therefore, during the use of the electric shaver 1, the second hair lifting portions 33c, which are provided on the skin contact surface on the rear side having a low contact pressure with the skin surface 37, can come into contact with the skin surface 37 more easily. As a result, the differences in hair lifting ability between the first hair lifting portions 33c and the second hair lifting portions 33c can be reduced, so as to lift the body hair up more efficiently. In addition, due to the increase in hair lift efficiency, it is possible to improve performance of introduction of the lying body hair into the outer blades 11, and enhance the shaving ability of the electric shaver 1.

[0033] Further, according to the present embodiment, the frames 32 of the outer blades 11 include the pair of the hair lifting frames 33A and 33B provided with the first and second hair lifting portions 33c and 33c having the identical shape, and the first frames 31 provided in such a manner that the skin contact surface 31a that comes into contact with the skin is provided closer to the inner blade 13 than the first and second hair lifting portions 33c and 33c, in which the first frames 31 are provided between the pair of the hair lifting frames 33A and 33B and adjacent to these hair lifting frames.

[0034] Accordingly, the second hair lifting portions 33c can easily come into contact with (can easily dig into) the

skin surface 37, and the hair lifting ability of the second hair lifting portions 33c can be increased with respect to the first hair lifting portions 33c.

[0035] Still further, according to the present embodiment, each hair lifting frame 33 is provided with one hair lifting portion 33c (on the right side in FIG. 8) to function to lift the body hair up when moving mainly in one direction of the shaving direction (from left to right in FIG. 3), and the other hair lifting portion 33c (on the left side in FIG. 8) to function to lift the body hair up when moving mainly in the opposite direction of the shaving direction (from right to left in FIG. 3). In addition, the hair lifting frames 33 are provided on one side and the other side on the basis of the top Y of the respective outer blades 11, and the first frames 31 are provided between the pair of the hair lifting frames 33A and 33B.

[0036] Therefore, regardless of whether the electric shaver 1 moves forward or backward in the shaving direction, the effect that the second hair lifting portions 33c located on the rear side in the traveling direction can have the hair lifting ability higher than the first hair lifting portions 33c located on the front side is achieved. Thus, the differences in hair lifting ability between the first hair lifting portions 33c and the second hair lifting portions 33c can be reduced so as to lift the body hair up more efficiently whichever direction the electric shaver 1 moves, forward or backward in the shaving direction. Accordingly, the effect of improving usability for a user can be achieved.

[0037] Still further, according to the present embodiment, the frames 32 include the vertical frames 30 extending in the longitudinal direction 23 of the outer blades, and the transverse frames 35 extending in the short-side direction 25, in which the hair lifting frames 33 having the hair lifting portions 33c are provided in the vertical frames 30. Thus, the body hair lifted by the hair lifting frames 33 is easily inserted into the blade holes 36 so as to shave the body hair easily.

[0038] Still further, according to the present embodiment, the hair lifting portions 33c of the hair lifting frames 33 are formed into a tapered shape inclined upward and extending toward the outer surfaces of the outer blades 11 (in the upper direction in the figure). Since the short-side edges 331 are formed into a tapered shape in cross-section, the hair lifting portions 33c having a simple configuration can be provided. In addition, the tapered shape of the hair lifting portions 33c inclined upward and extending toward the outer surfaces of the outer blades 11 (in the upper direction in the figure) can prevent the body hair at a small hair rising angle from entering the gap between the hair lifting portions 33c and the skin, and can lift the lying body hair up more reliably.

[0039] Still further, according to the present embodiment, the longitudinal end portions 33j of the hair lifting frames 33 are formed into an approximately linear shape in cross-section, the inclined portions 33b are provided in the longitudinal center portions 33k, and the longitudinal end portions 33j located on both sides are respectively connected to the longitudinal center portions 33k via the gently-curved boundaries 33m. Due to the gently-curved boundaries 33m connecting the respective longitudinal end portions 33j located on both sides and the longitudinal center portions 33k of the hair lifting frames 33, an influence (damage) on the skin surface 37 caused by the boundaries 33m can be prevented when sliding the outer blades 11 along the skin surface 37.

INDUSTRIAL APPLICABILITY

[0040] According to the present invention, the differences in hair lifting ability between the first hair lifting portions provided on the front side in the traveling direction and the second hair lifting portions provided on the rear side in the traveling direction on the basis of the top of the respective outer blades can be reduced. Accordingly the electric shaver capable of lifting the body hair up more efficiently can be obtained.

Claims

1. An electric shaver (1), comprising:

a shaver main body (3);
an outer blade (11) having blade holes (36) defined by frames (32);
an inner blade (13) provided inside the outer blade (11) to reciprocate relative to the outer blade (11) in a longitudinal direction and cut body hair inserted into the blade holes (36), and hair lifting portions (33) provided on the frames (32) of the outer blade (11) to come into contact with the body hair and lift the body hair from the skin surface when moving on a skin surface,
wherein the outer blade (11) is formed into an arc-like shape projecting toward the skin surface in a cross section along a short-side direction (25) perpendicular to the longitudinal direction (23), and the outer blade (11) is exposed on a top end surface of the shaver main body (3),
wherein the short-side direction (25) corresponds to a shaving direction and a direction of motion of the shaver main body (3) being moved along the shaving direction is defined as a traveling direction of the shaver main body (3),
wherein the hair lifting portions (33) include first hair lifting portions (33c) provided on a front side in the traveling direction of the shaver main body (3) and second hair lifting portions (33c) provided on a rear side in the traveling direction of the shaver main body (3) based on a top portion of the outer blade (11),
wherein the first and second hair lifting portions (33c) are formed into an identical shape,
wherein the second hair lifting portions (33c) have a hair lifting ability higher than the first hair lifting portions (33c),

wherein the frames (32) comprise vertical frames (30) extending in the longitudinal direction (23) and transverse frames (35) extending in the short-side direction (25),
wherein the vertical frames (30) comprise:

first hair lifting frames (33A) each including a first hair lifting portion (33c) configured to come into contact with the body hair and lift the body hair from the skin surface when moving on the skin surface in the traveling direction;
second hair lifting frames (33B) each including a second hair lifting portion (33c) configured to come into contact with the body hair and lift the body hair from the skin surface when moving on the skin surface in the traveling direction;
first frames (31) each having a contact surface (31a) that comes into contact with a skin; and
second frames (34) each having a contact surface (34a) that comes into contact with a skin,

wherein the first frames (31) are provided between the first hair lifting frames (33A) and the second hair lifting frames (33B) and adjacent to the second hair lifting frames (33B),
wherein the second frames (34) are provided adjacent to the first hair lifting frames (33A) on front sides of the first hair lifting frames (33A) in the traveling direction of the shaver main body (3),
wherein a vertical distance between a short-side edge (33l) of the first and second hair lifting portions (33c) of each of the first and second hair lifting frames (33A, 33B) and a surface (37) of the transverse frame (35) is set to L2,
wherein a vertical distance between the contact surface (31a) of each of the first frames (31) and the surface (37) of the transverse frame (35) is set to L1,
wherein a vertical distance between the contact surface (34a) of each of the second frames (34) and the surface (37) of the transverse frame (35) is set to L3, and
wherein the first and second hair lifting frames (33A, 33B), the first frames (31), and the second frames (34) are arranged in an offset manner so as to satisfy the magnitude relation of $L2 \leq L3 < L1$.

Patentansprüche

1. Elektrischer Rasierapparat (1), aufweisend:

einen Rasierapparathauptkörper (3);
eine äußere Klinge (11) mit Klingenlöchern (36), die durch Rahmen (32) definiert sind;
eine innere Klinge (13), die innerhalb der äußeren Klinge (11) vorgesehen ist, um sich relativ zu der äußeren Klinge (11) in einer Längsrichtung hin und her zu bewegen und Körperhaar zu schneiden, das in die Klingenlöcher (36) eingeführt ist, und
Haaranhebeabschnitte (33), die an den Rahmen (32) der äußeren Klinge (11) vorgesehen sind, um mit dem Körperhaar in Kontakt zu kommen und das Körperhaar von der Hautoberfläche anzuheben, wenn sie sich auf einer Hautoberfläche bewegen, wobei die äußere Klinge (11) in Form ausgebildet eines Bogens ist, der in einem Querschnitt entlang einer zu der Längsrichtung (23) senkrechten Richtung (25) der kurzen Seite in Richtung der Hautoberfläche vorspringt, und die äußere Klinge (11) auf einer oberen Endfläche des Rasierapparathauptkörpers (3) freiliegt,
wobei die Richtung (25) der kurzen Seite einer Rasierrichtung entspricht und eine Bewegungsrichtung des Rasierapparathauptkörpers (3), der entlang der Rasierrichtung bewegt wird, als eine Bewegungsrichtung des Rasierapparathauptkörpers (3) definiert ist,
wobei die Haaranhebeabschnitte (33) erste Haaranhebeabschnitte (33c), die auf einer vorderen Seite in der Bewegungsrichtung des Rasierapparathauptkörpers (3) vorgesehen sind, und zweite Haaranhebeabschnitte (33c), die auf einer hinteren Seite in der Bewegungsrichtung des Rasierapparathauptkörpers (3) vorgesehen sind, basierend auf einem oberen Abschnitt der äußeren Klinge (11) umfassen,
wobei die ersten und zweiten Haaranhebeabschnitte (33c) in einer identischen Form ausgebildet sind,
wobei die zweiten Haaranhebeabschnitte (33c) eine Haaranhebefähigkeit aufweisen, die höher als die der ersten Haaranhebeabschnitte (33c) ist,
wobei die Rahmen (32) vertikale Rahmen (30), die sich in der Längsrichtung (23) erstrecken, und transversale Rahmen (35), die sich in der Richtung (25) der kurzen Seite erstrecken, aufweisen,
wobei die vertikalen Rahmen (30) aufweisen:

erste Haaranheberahmen (33A), die jeweils einen ersten Haaranhebeabschnitt (33c) umfassen, der konfiguriert ist, um mit dem Körperhaar in Kontakt zu kommen und das Körperhaar von der Hautoberfläche anzuheben, wenn er sich auf der Hautoberfläche in der Bewegungsrichtung bewegt;
zweite Haaranheberahmen (33B), die je-

weils einen zweiten Haaranhebeabschnitt (33c) umfassen, der konfiguriert ist, um mit dem Körperhaar in Kontakt zu kommen und das Körperhaar von der Hautoberfläche anzuheben, wenn er sich auf der Hautoberfläche in der Bewegungsrichtung bewegt;
erste Rahmen (31), die jeweils eine Kontaktfläche (31a) aufweisen, die mit einer Haut in Kontakt kommt; und
zweite Rahmen (34), die jeweils eine Kontaktfläche (34a) aufweisen, die mit einer Haut in Kontakt kommt,

wobei die ersten Rahmen (31) zwischen den ersten Haaranheberahmen (33A) und den zweiten Haaranheberahmen (33B) und neben den zweiten Haaranheberahmen (33B) vorgesehen sind,
wobei die zweiten Rahmen (34) neben den ersten Haaranheberahmen (33A) auf vorderen Seiten der ersten Haaranheberahmen (33A) in der Bewegungsrichtung des Rasierapparathauptkörpers (3) vorgesehen sind,
wobei ein vertikaler Abstand zwischen einer Kante (33l) der kurzen Seite der ersten und zweiten Haaranhebeabschnitte (33c) von jedem der ersten und zweiten Haaranheberahmen (33A, 33B) und einer Oberfläche (37) des transversalen Rahmens (35) L2 beträgt,
wobei ein vertikaler Abstand zwischen der Kontaktfläche (31a) von jedem der ersten Rahmen (31) und der Oberfläche (37) des transversalen Rahmens (35) L1 beträgt,
wobei ein vertikaler Abstand zwischen der Kontaktfläche (34a) von jedem der zweiten Rahmen (34) und der Oberfläche (37) des transversalen Rahmens (35) L3 beträgt, und
wobei die ersten und zweiten Haaranheberahmen (33A, 33B), die ersten Rahmen (31) und die zweiten Rahmen (34) in einer versetzten Weise angeordnet sind, um die Größenbeziehung von $L2 \leq L3 < L1$ zu erfüllen.

Revendications

1. Rasoir électrique (1) comprenant :

un corps principal de rasoir (3) ;
une lame externe (11) ayant des trous de lame (36) définis par des bâtis (32) ;
une lame interne (13) prévue à l'intérieur de la lame externe (11) pour aller et venir par rapport à la lame externe (11) dans une direction longitudinale et couper le poil corporel inséré dans les trous de lame (36), et
des parties de soulèvement de poil (33) prévues sur les bâtis (32) de la lame externe (11) pour venir en contact avec le poil corporel et soulever le poil corporel de la surface cutanée lors du déplacement sur une surface cutanée, dans lequel la lame externe (11) est formée selon une forme d'arc faisant saillie vers la surface cutanée dans une section transversale le long d'une direction du côté court (25) perpendiculaire à la direction longitudinale (23), et la lame externe (11) est exposée sur une surface d'extrémité supérieure du corps principal de rasoir (3),
dans lequel la direction de côté court (25) correspond à une direction de rasage et une direction de mouvement du corps principal de rasoir (3) qui est déplacé le long de la direction de rasage est définie comme étant une direction de déplacement du corps principal de rasoir (3),
dans lequel les parties de soulèvement de poil (33) comprennent des premières parties de soulèvement de poil (33c) prévues sur un côté avant dans la direction de déplacement du corps principal de rasoir (3) et des secondes parties de soulèvement de poil (33c) prévues sur un côté arrière dans la direction de déplacement du corps principal de rasoir (3) sur la base d'une partie supérieure de la lame externe (11),
dans lequel les première et seconde parties de soulèvement de poil (33c) sont formées selon une forme identique,
dans lequel les secondes parties de soulèvement de poil (33c) ont une capacité de soulèvement de poil supérieure aux premières parties de soulèvement de poil (33c),
dans lequel les bâtis (32) comprennent des bâtis verticaux (30) s'étendant dans la direction longitudinale (23) et des bâtis transversaux (35) s'étendant dans le direction de côté court (25),
dans lequel les bâtis verticaux (30) comprennent :

des premiers bâtis de soulèvement de poil (33A) comprenant chacun une première partie de soulèvement de poil (33c) configurée pour venir en contact avec le poil corporel et soulever le poil corporel de la surface cutanée lors du déplacement sur la surface cutanée dans la direction de déplacement ;
des seconds bâtis de soulèvement de poil (33B) comprenant chacun une seconde partie de soulèvement de poil (33c) configurée pour venir en contact avec le poil corporel et soulever le poil corporel de la surface cutanée lors du déplacement sur la surface cutanée dans la direction de déplacement ;
des premiers bâtis (31) ayant chacun une surface de contact (31a) qui vient en contact avec une peau ; et

des seconds bâtis (34) ayant chacun une surface de contact (34a) qui vient en contact avec une peau,

dans lequel les premiers bâtis (31) sont prévus entre les premiers bâtis de soulèvement de poil (33A) et les seconds bâtis de soulèvement de poil (33B) et de manière adjacente aux seconds bâtis de soulèvement de poil (33B),
dans lequel les seconds bâtis (34) sont prévus de manière adjacente aux premiers bâtis de soulèvement de poil (33A) sur des côtés avant des premiers bâtis de soulèvement de poil (33A) dans la direction de déplacement du corps principal de rasoir (3),
dans lequel une distance verticale entre un bord de côté court (33I) des première et seconde parties de soulèvement de poil (33c) de chacun des premiers et seconds bâtis de soulèvement de poil (33A, 33B) et une surface (37) du bâti transversal (35) est définie à L2,
dans lequel une distance verticale entre la surface de contact (31a) de chacun des premiers bâtis (31) et la surface (37) du bâti transversal (35) est définie à L1,
dans lequel une distance verticale entre la surface de contact (34a) de chacun des seconds bâtis (34) et la surface (37) du bâti transversal (35) est définie à L3, et
dans lequel les premiers et seconds bâtis de soulèvement de poil (33A, 33B), les premiers bâtis (31) et les seconds bâtis (34) sont agencés d'une manière décalée de sorte à satisfaire la relation d'amplitude de $L2 \leq L3 < L1$.

FIG.1

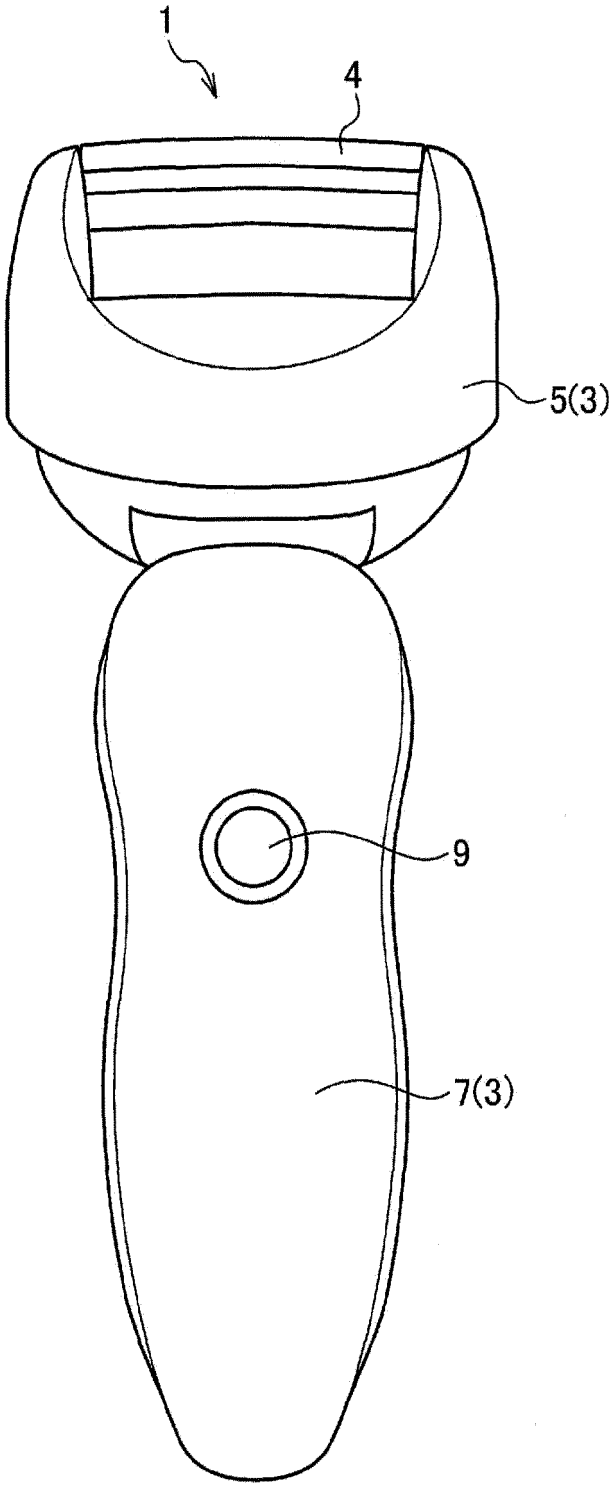


FIG.2

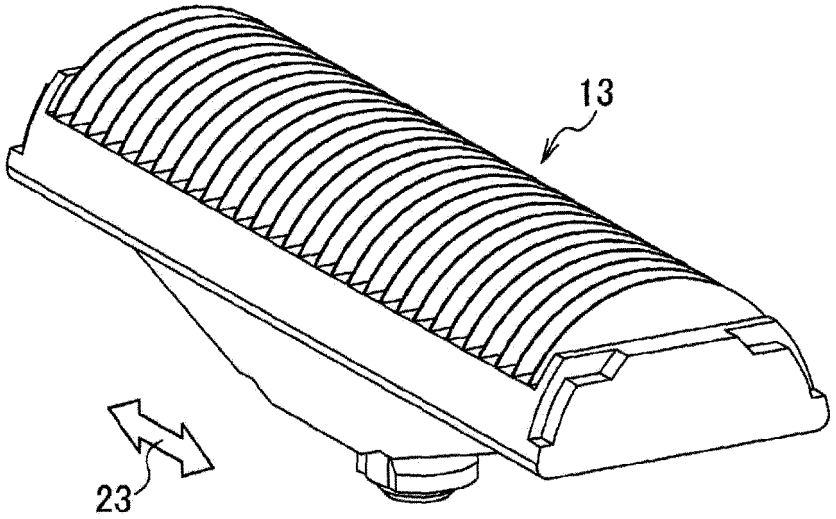


FIG.3

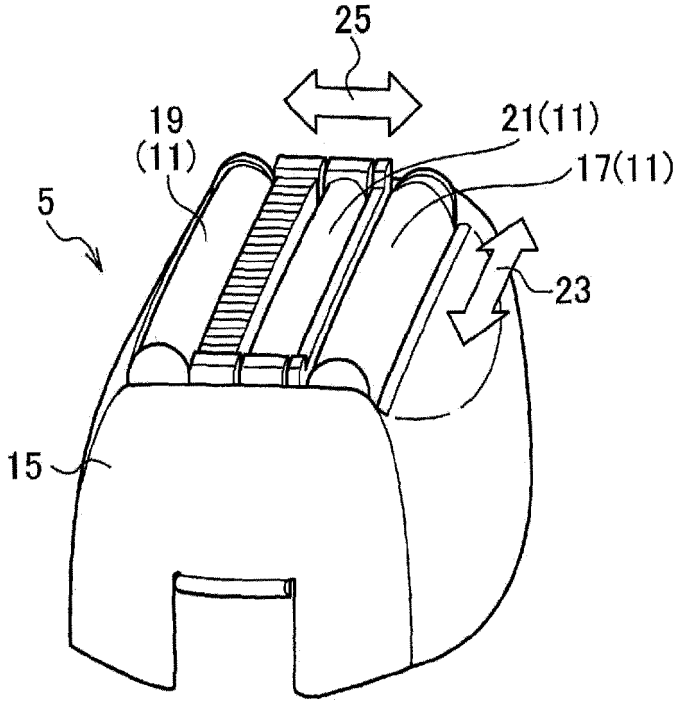


FIG.4

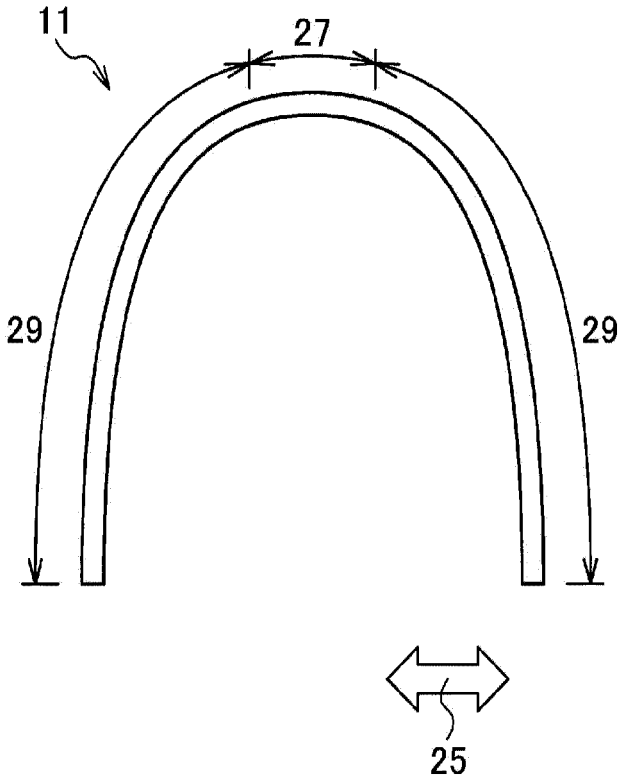


FIG.5

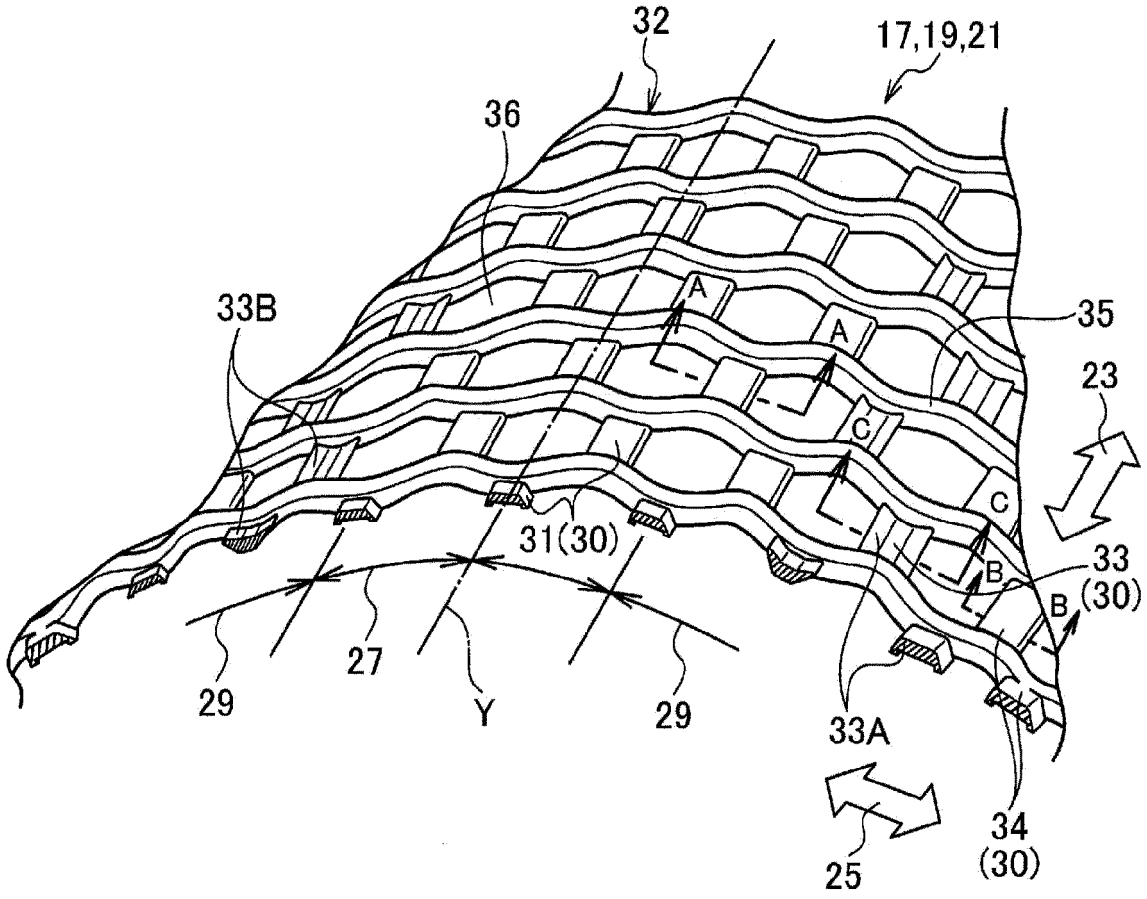


FIG.6

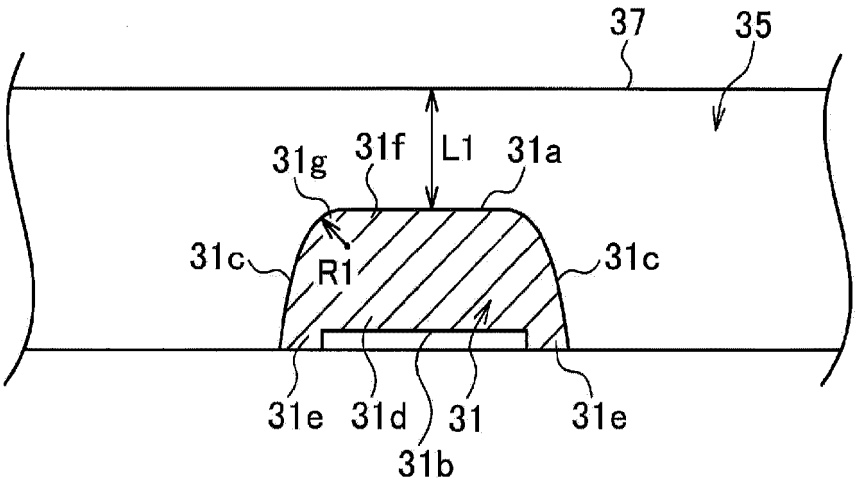

37
35
31g
31f
L1
31a
31c
R1
31c
31e
31d
31
31e
31b

FIG.7

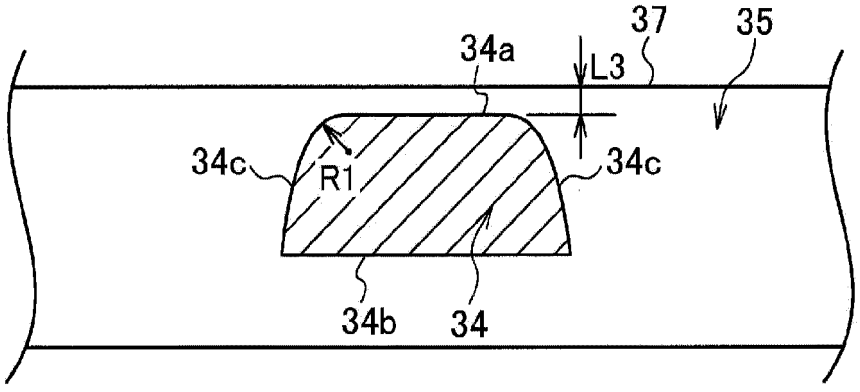
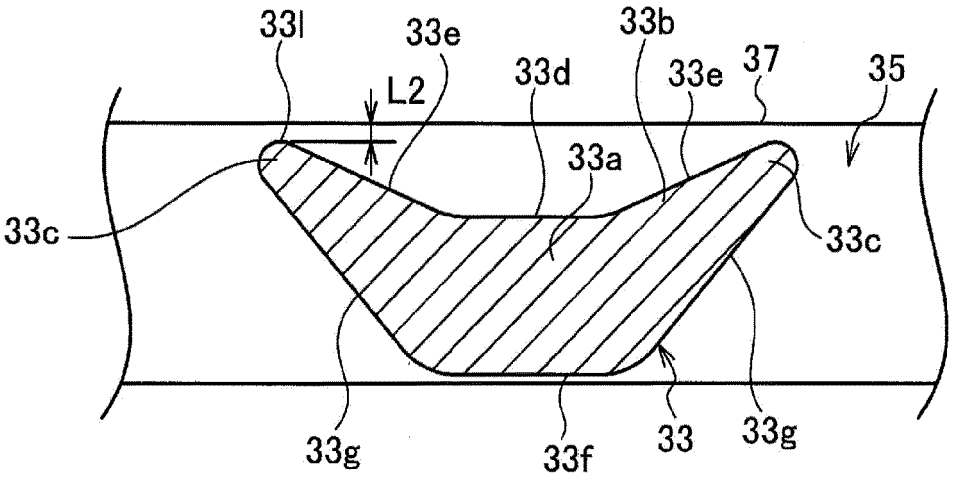

37
35
34a
L3
34c
R1
34c
34b
34

FIG.8

(a)


33l
33e
33b
L2
33d
33e
37
35
33a
33c
33c
33g
33f
33
33g

(b)

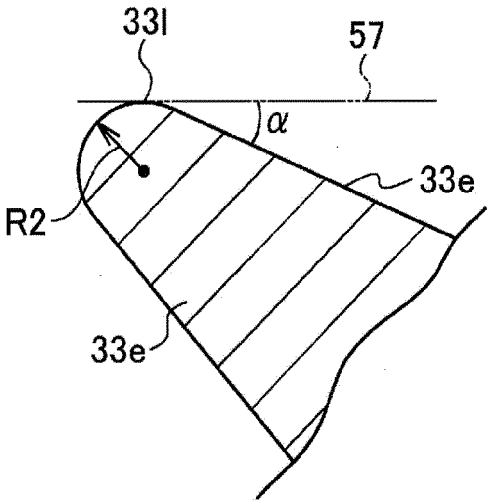

33l
57
α
33e
R2
33e

FIG.9

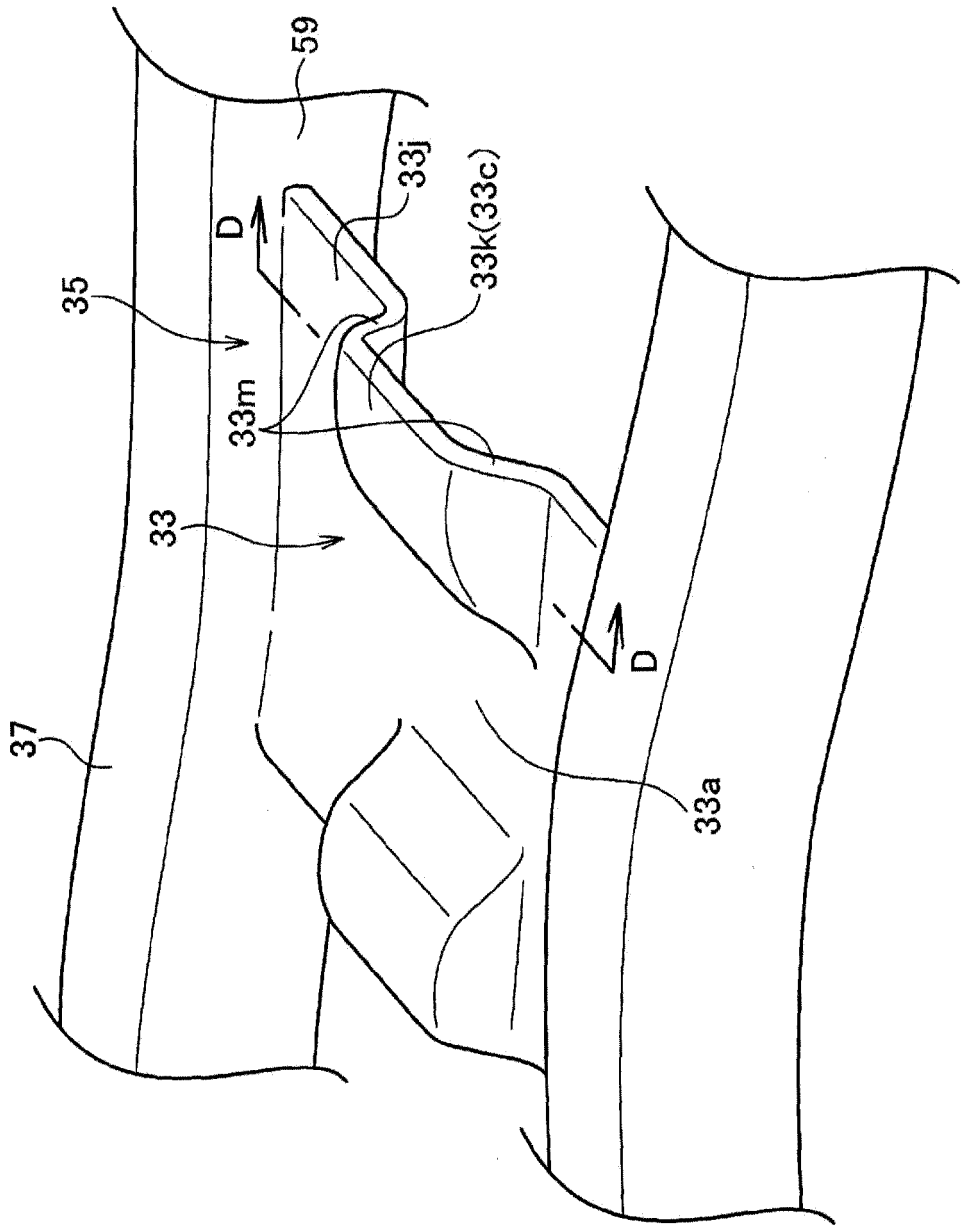


FIG.10

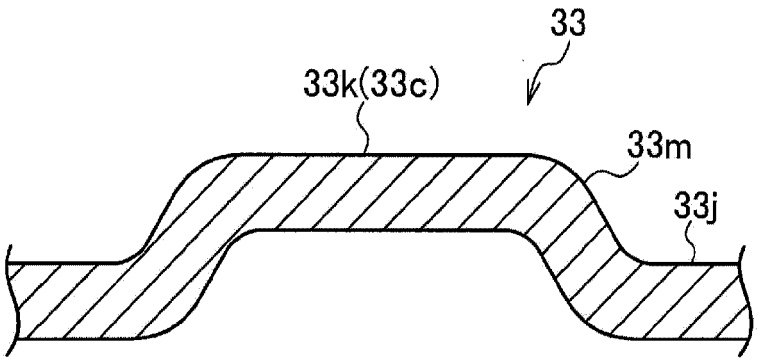
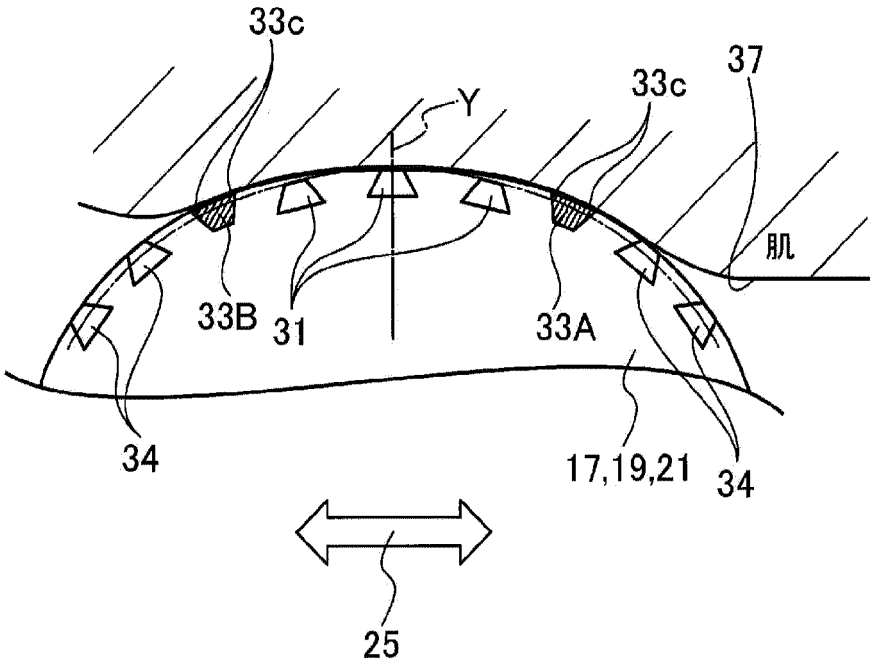


FIG.11



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- JP 57039871 A **[0004]**