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(54) **SHAVER AND INTERCONNECTING COMPONENT THEREOF**

(57) An interconnecting component (40) used in a shaver comprises a component shell (41) and pivot-swing support arms (42) extending upward respectively from the left and right sides of the component shell (41), a receiving cavity (411) being disposed inside the component shell (41), and the receiving cavity (411) penetrating the upper and lower end faces of the component shell (41). The interconnecting component (40) comprises an elastic clamping arm (43) extending upward from the front side of the component shell (41) and an elastic

bias arm (44) extending from the rear side of the shell (41), a free end of the elastic clamping arm (43) bending toward the rear of the component shell (41) and being positioned in the receiving cavity (411). A free end of the elastic bias arm (44) bends towards the front of the component housing (41) at a bias abutting section above the free end of the elastic clamping arm (43). The present interconnecting component simplifies the structure and installation process, and implements single-point buckling with a handle. Also disclosed is a shaver.

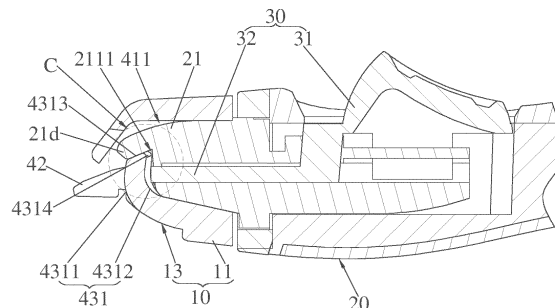


FIG.5

Description

FIELD OF THE INVENTION

[0001] The present invention relates to the technical field of shaving, and more particularly to a razor and an interconnect member for a razor.

BACKGROUND OF THE INVENTION

[0002] With development of the economy and the society, more and more abundant consumables are provided for people to enrich people's material live, and then improve people's living standards. Razors are one of these consumables.

[0003] At present, the existing razor can be mainly divided into an electric razor and a manual razor. For the manual razor, it cuts the beard by a razor head using the power provided by the user, so as to finish shaving. Therefore, compared with the electric razor, the manual razor is more environment-friendly and has an increasing share of the market.

[0004] A razor is disclosed in Chinese Patent No. 201310202899.0. An interconnect structure 30 has an engagement cavity 31 matched with the engagement portion 11 of the handle 10. The engagement cavity 31 has the same inclination as the engagement portion 11,..., and the engagement cavity 31 is provided with an engagement member 112 connected with an operating member 40, one end of the engagement member 112 extends out of the engagement portion 11,..., an inner wall of the engagement cavity 31 is opened with a engagement hole 32 engaged with the engagement member 112 (see the first paragraph on page 3 of the specification, and FIGS. 4 and 6). Thus, left and right ends of the engagement member 112 are engaged with the corresponding engagement hole 32 respectively, thereby engaging the interconnect structure 30 with the handle 10.

[0005] Thus, the left end of the engagement member 112 is engaged with the left engagement hole 32 and the right end of the engagement member 112 is engaged with the right engagement hole 32, so as to realize the connection between the handle 10 and the interconnect structure 30. That is, the connection between the handle 10 and the interconnect structure 30 is realized by a multi-point engagement on the left and right sides, so the connection structure between the handle and the interconnect structure is complicated.

[0006] Moreover, for the razor disclosed in Chinese Patent No. 201310202899.0, the razor head 20 also needs to rely on the pushing structure arranged on the handle 10 and the spring provided on the pushing structure and the handle 20 to make the razor head 20 to reliably pivot around the interconnect structure 30 relative to the handle 20. Therefore, the pushing structure and the spring further cause the existing razor to have the defect of complicated assembly and structure.

[0007] Therefore, there is an urgent need for a razor and an interconnect member thereof that are able to simplify the structure and mounting process and achieve single-point engagement to overcome the aforementioned deficiencies.

SUMMARY OF THE INVENTION

[0008] One objective of the present invention is to provide an interconnect member which simplifies the structure and the mounting process and enables single-point engagement.

[0009] Another objective of the present invention is to provide a razor which simplifies the structure and the mounting process and enables single-point engagement.

[0010] To achieve the mentioned above objective, an interconnect member for a razor includes a housing and pivoted support arms extending upwards from left and right sides of the housing respectively. The housing is provided with a receiving cavity therein, and the receiving cavity penetrates through an upper end surface to a lower end surface of the housing. The interconnect member further includes a resilient engaging arm extending upwards from a front side of the housing and a resilient biasing arm extending upwards from a rear side of the housing. A free end of the resilient engaging arm is bent towards the rear side of the housing and located in the receiving cavity, and a free end of the resilient biasing arm is bent towards the front side of the housing to form an abutment portion located above the free end of the resilient engaging arm.

[0011] Preferably, the free end of the resilient engaging arm is arc-shaped.

[0012] Preferably, the housing is extended upward to from a left surrounding arm and a right surrounding arm, respectively. The left surrounding arm surrounds the receiving cavity on the left side of the housing, and the right surrounding arm surrounds the receiving cavity on the right side of the housing. The resilient engaging arm surrounds the receiving cavity on the front side of the housing and is spaced apart between the left surrounding arm and the right surrounding arm, and the resilient biasing arm surrounds the receiving cavity on the rear side of the housing and is spaced apart between the left surrounding arm and the right surrounding arm.

[0013] Preferably, the pivoted support arm on the left side of the housing is disposed on the left side of the left surrounding arm at intervals, and the pivoted support arm on the right side of the housing is positioned on the right side of the right surrounding arm at intervals.

[0014] Preferably, a left reinforcing rib is connected between the pivoted support arm on the left side of the housing and the left surrounding arm, and a right reinforcing rib is connected between the pivoted support arm on the right side of the housing and the right surrounding arm.

[0015] To achieve the mentioned above objective, a razor is provided, which includes a razor head, a handle, an unlocking operating member mounted on the handle,

and an above-mentioned interconnect member. The handle is provided with an inserting portion that is capable of inserting in the receiving cavity, and the inserting portion is provided with an engaging groove. The free end of the resilient engaging arm is engaged in the engaging groove when the inserting portion is inserted into the receiving cavity. The unlocking operating member is arranged to drive the free end of the resilient engaging arm, and the razor head is mounted on the pivoted support arms and abutted against the resilient biasing arm.

[0016] Preferably, the unlocking operating member includes a press part slidably disposed on the handle and a pushing rod connected to the press part, the pushing rod is inserted into the inserting portion, and the pushing rod further extends into the engaging groove and located at the free end of the resilient engaging arm.

[0017] Preferably, a notch of the engaging groove is formed in a front surface and an upper surface of the inserting portion.

[0018] Preferably, the rear groove wall of the engaging groove obliquely extends forward and upward to form a protruding pushing portion having the same, or increasing, or decreasing thickness, and the protruding pushing portion is clamped between the free end of the resilient engaging arm and the free end of the resilient biasing arm.

[0019] Preferably, the rear groove wall and a lower groove wall of the engaging groove are both planes and the angle between the two is an acute angle, and a left groove wall and a right groove wall of the engaging groove are arranged obliquely from bottom to top of the handle and approach each other.

[0020] In comparison with the prior art, since the interconnect member in the present application also includes a resilient engaging arm extending upwards from the front side of the housing and a resilient biasing arm extending upwards from the rear side of the housing. The free end of the resilient engaging arm is bent toward the rear side of the housing and located in the receiving cavity. The free end of the resilient biasing arm is bent toward the front side of the housing to form an abutment portion located above the free end of the resilient engaging arm correspondingly, so that the interconnect member uses the resilient biasing arm to replace the conventional combined structure formed by the pushing portion and the spring. Furthermore, by means of the resilient engaging arm, during insertion of the inserting portion of the handle into the receiving cavity, the free end of the resilient engaging arm is pushed by the inserting portion to resiliently deform in the direction far away from the resilient biasing arm, and the free end of the resilient engaging arm slides on the inserting portion until the free end of the resilient engaging arm is engaged with the engaging groove. Thus, the single-point engagement between the interconnect member and the handle can be realized by one resilient engaging arm, thereby simplifying the structure. Accordingly, the interconnect member can simplify the structure and mounting process. Thus, the single-point

engagement between the handle and the interconnect member can be realized under the premise of ensuring the reliable engagement of the handle and the interconnect member. So, the razor can also simplify the structure and the mounting process, and the single-point engagement between the handle and the interconnect member can be realized under the premise of ensuring the reliable engagement of the handle and the interconnect member.

10 BRIEF DESCRIPTION OF THE DRAWINGS

[0021] The accompanying drawings facilitate an understanding of the various embodiments of this invention. In such drawings:

FIG. 1 is a perspective view of a razor, in which partial structure of a handle is hidden, according to an embodiment of the present invention;

FIG. 2 is a perspective view of the razor of FIG. 1 after a razor head is hidden;

FIG. 3 is an exploded view of FIG. 2;

FIG. 4 is a plan view viewed along the arrow A in FIG. 2;

FIG. 5 is a cross-sectional view taken along a line B-B in FIG. 4;

FIG. 6 is an enlarged view of section C in FIG. 5;

FIG. 7 is a perspective view of the razor of FIG. 1 where the razor head, an interconnect member and an unlocking operating member are hidden;

FIG. 8 is a perspective view of the razor of FIG. 1 from another angle after concealing the razor head, the interconnect member, and the unlocking operating member;

FIG. 9 is a perspective view of the interconnect member according to an embodiment of the present invention; and

FIGS. 10a-10c are cross-sectional views showing a connecting process of the handle and the interconnect member of the present application.

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

[0022] A distinct and full description of the technical solution of the present invention will follow by combining with the accompanying drawings.

[0023] Referring to FIGS. 1-3, a razor 100 includes a razor head 10, a handle 20, an interconnect member 40, and an unlocking operating member 30 mounted on the handle 20. Specifically, the interconnect member 40 includes a housing 41, pivoted support arms 42, a resilient engaging arm 43 and a resilient biasing arm 44. The pivoted support arms 42 are extended upwards from left and right sides of the housing 41, respectively, the resilient engaging arm 43 is extended upwards from a front side of the housing 41, and the resilient biasing arm 44 are extended upwards from a rear side of the housing 41. The housing 41 is provided with a receiving cavity

411 inside, and the receiving cavity 411 penetrates from an upper end surface 412 to a lower end surface 413 of the housing 41, so that the handle 20 can be inserted into the receiving cavity 411 from the lower end surface 413. A free end 431 of the resilient engaging arm 43 is bent toward the rear side of the housing 41 and located in the receiving cavity 411. Preferably, the free end 431 of the resilient engaging arm 43 is an arc-shaped such that the free end 431 is smoothly engaged with an engaging groove 21a described below, but not limited to this. A free end 441 of the resilient biasing arm 44 is bent toward the front side of the housing 41 to form an abutment portion 442 located above the free end 431 of the resilient engaging arm 43. Preferably, the abutment portion 442 and the free end 441 are each in a straight bar shape, as shown in FIG. 9, thereby effectively avoiding interference between the resilient biasing arm 44 and the resilient engaging arm 43 and ensuring the reliability of their respective operations. The handle 20 is provided with an inserting portion 21 that is capable of inserting into the receiving cavity 411, and the inserting portion 21 is provided with the engaging groove 21a. When the inserting portion 21 is inserted into the receiving cavity 411, the free end 431 of the resilient engaging arm 43 is engaged in the engaging groove 21a. Specifically, during insertion of the inserting portion 21 into the receiving cavity 411, the inserting portion 21 pushes the free end 431 of the resilient engaging arm 43 toward a front side of the interconnect member 40 (i.e., in the direction indicated by the arrow D in FIG. 10b or 10c) to resiliently deform, which will cause the free end 431 of the resilient engaging arm 43 to slide on the inserting portion 21 of the handle 20, so that the free end 431 of the resilient engaging arm 43 is engaged with the engaging groove 21a, as shown in FIGS. 3, 5, 6 and 10c. Furthermore, the unlocking operating member 30 is capable of driving the free end 431 of the resilient engaging arm 43, so that the unlocking operating member 30 drives the free end 431 of the resilient engaging arm 43 to resiliently deform. Specifically, when the unlocking operating member 30 is operated, the free end 431 of the resilient engaging arm 43 is resiliently deformed in the direction indicated by the arrow D in FIG. 10b or 10c. Accordingly, the free end 431 of the resilient engaging arm 43 is disengaged from the engaging groove 21a of the inserting portion 21 when the unlocking operating member 30 is operated, thereby disassembling the interconnect member 40 from the handle 20. The razor head 10 is mounted on and supported by the pivoted support arm 42, and the razor head 10 is pivoted back and forth around the pivoted support arm 42 to meet the requirements of shaving. The resilient biasing arm 44 is abutted against the razor head 10 to provide an elastic force to the razor head 10 while the razor head 10 pivots around the pivoted support arms 42, so as to ensure the stability and reliability of the razor head 10 pivoting back and forth around the pivoted support arm 42. It should be noted that the structures of the razor head 10 and the handle 20 are well-known struc-

tures in the art, which will not be repeated here.

[0024] More specifically, as shown in FIGS. 2-6, and FIG. 9, the free end 431 of the resilient engaging arm 43 is provided with an upper surface 4311, a lower surface 4312, and an inclined surface 4313 arranged to connect the upper surface 4311 and the lower surface 4312 and formed on a rear side of the free end 431. Specifically, the inclined surface 4313 is inclined forward from bottom to top of the free end 431, so that during inserting into the receiving cavity 411, the inserting portion 21 can smoothly pass through an intersection 4314 of the inclined surface 4313 and the lower surface 4312 and then abut against the inclined surface 4313. On the other hand, the inclined surface 4313 abuts against the inserting portion 21 (specifically against a rear groove wall 212 described below), so that the inclined surface 4313 stops the inserting portion 21 from being pulling-out, thereby preventing accidentally disengage the inserting portion 21 from the free end 431 of the resilient engaging arm 43. As shown in FIG. 6, the intersection 4314 between the inclined surface 4313 and the lower surface 4312 and an intersection 4315 between the inclined surface 4313 and the upper surface 4311 are arc-shaped to realize a smooth transition. Thus, while the inserting portion 21 inserts into the receiving cavity 411, the inserting portion 21 smoothly slides on the intersection 4314 between the inclined surface 4313 and the lower surface 4312 and then abuts against the inclined surface 4313. By means of the intersection 4315 between the inclined surface 4313 and the upper surface 4311, the upper surface 4311 does not obstruct the surface contact between the inclined surface 4313 and the inserting portion 21, which further ensures the reliability of the surface contact between the inclined surface 4313 and the inserting portion 21. More specifically, the upper surface 4311 and the lower surface 4312 are arcuate surfaces, the arc diameter of the upper surface 4311 is greater than the arc diameter of the lower surface 4312 so that the free end 431 forms the convex arc structure described above, but it is not limited thereto. Understandably, the intersection 4314 between the inclined surface 4313 and the lower surface 4312 or the intersection 4315 between the inclined surface 4313 and the upper surface 4311 is an arcuate transition as desired, and it is not limited thereto.

[0025] Referring to FIGS. 2-6 and 9 again, the housing 41 is extended upward to from a left surrounding arm 4a and a right surrounding arm 41b, respectively. Specifically, the left surrounding arm 4a surrounds the receiving cavity 311 on the left side of the housing 41, and the right surrounding arm 41b surrounds the receiving cavity 411 on the right side of the housing 41. The resilient engaging arm 43 surrounds the receiving cavity 411 on the front side of the housing 41 and is spaced apart between the left surrounding arm 41a and the right surrounding arm 41b. A resilient biasing arm 44 surrounds the receiving cavity 411 on the rear side of the housing 41 and is spaced apart between the left surrounding arm 41a and the right surrounding arm 41b. Thus, the inserting portion

21 is surrounded by the left surrounding arm 41a, the resilient engaging arm 43, the right surrounding arm 41b and the resilient biasing arm 44 from the circumferential direction. Thus, the free end 431 of the resilient engaging arm 43 can be firmly engaged with the engaging groove 21a by using one resilient engaging arm 43 when the inserting portion 21 is inserted into the receiving cavity 411, thereby simplifying the structure of the interconnect member 40. Specifically, the pivoted support arm 42 on the left side of the housing 41 is arranged on the left side of the left surrounding arm 41a at intervals, and the pivoted support arm 42 on the right side of the housing 41 is arranged on the right side of the right surrounding arm 41b at intervals. Therefore, the razor head 10 assembled on the pivoted support arms 42 will not interfere with the left surrounding arm 41a and the right surrounding arm 41b respectively during pivoting, thereby ensuring the reliability of the razor head 10 pivoting.

[0026] As shown in FIGS. 3, 5, 10a, 10b and 10c, the unlocking operating member 30 includes a press part 31 slidably disposed on the handle 20 and a pushing rod 32 connected to the press part 31. The pushing rod 32 is inserted into the inserting portion 21, and the pushing rod 32 further extends into the engaging groove 21a and is located below the free end 431 of the resilient engaging arm 43, so that when a user presses the press part 31, the pushing rod 32 along with the press part 31 slides relative to the handle 20. Further, the pushing rod 32 pushes the free end 431 of the resilient engaging arm 43 to generate resilient deformation, so as to disengage from the engaging groove 21a of the inserting portion 21, thereby disengaging the free end 431 of the resilient engaging arm 43 from the engaging groove 21a of the inserting portion 21. Preferably, the press part 31 and the pushing rod 32 are slidably arranged along a vertical direction of the handle 20. Thus, when the press part 31 is slid in the direction indicated by the arrow next to the press part 31 in FIG. 10c, the pushing rod 32 slides along with the press part 31, so the free end 431 of the resilient engaging arm 43 is pushed by the pushing rod 32 to resiliently deform in the direction indicated by the arrow D in FIG. 10b or FIG. 10c, thereby disengaging the free end 431 from the engaging groove 21a of the inserting portion 21 so as to remove the interconnect member 40 from the handle 20.

[0027] As shown in FIGS. 7 - 8, a notch 211 of the engaging groove 21a is formed in a front surface 21b and an upper surface 21c of the inserting portion 21, and a rear groove wall 212 of the engaging groove 21a is inclined from bottom to top of the handle 20 toward a front side of the handle 20, such that the rear groove wall 212 matches the inclination of the inclined surface 4313 and abuts against the inclined surface 4313. When the rear groove wall 212 of the engaging groove 21a abuts against the inclined surface 4313, the intersection 4314 between the inclined surface 4313 and the lower surface 4312 is located in a space 2111 between the rear groove wall 212 and a lower groove wall 213 of the engaging groove

21a, as shown in FIG. 6. Specifically, the rear groove wall 212 and the lower groove wall 213 of the engaging groove 21a are both planes and the angle between the two is an acute angle. A left groove wall 214 and a right groove wall 215 of the engaging groove 21a are arranged obliquely from bottom to top of the handle 20 and approach each other, so that the free end 431 of the resilient engaging arm 43 is smoothly inserted into the engaging groove 21a during the insertion of the inserting portion 21 into the receiving cavity 411. Besides, the left groove wall 214 and the right groove wall 215 are combined to effectively prevent the free end 431 of the resilient engaging arm 43 from swinging left and right. In order that the inserting portion 21 can easily and smoothly pass over the intersection 4314 between the inclined surface 4313 and the lower surface 4312, the rear groove wall 212 of the engaging groove 21a obliquely extends forward and upward to form a protruding pushing portion 21d having the same thickness, and the protruding pushing portion 21d is clamped between the free ends 431 and 441 of the resilient engaging arm 43 and the resilient biasing arm 44, as shown in FIG. 6. Of course, according to actual needs, the thickness of the protruding pushing portion 21d may be incrementally or decrementally arranged.

[0028] With reference to FIGS. 10a-10c, the engagement process of the handle 20 with the interconnect member 40 is illustrated. As shown in FIG. 10a, the handle 20 is inserted into the receiving cavity 411 of the interconnect member 40 in a direction indicated by the arrow beside the inserting portion 21 until an end of the protruding pushing portion 21d of the inserting portion 21 abuts against the intersection 4314 between the inclined surface 4313 and the lower surface 4312. When the end of the protruding pushing portion 21d abuts against the intersection 4314, the inserting portion 21 continues to be inserted into the receiving cavity 411 along its original direction, so that the free end 431 of the resilient engaging arm 43 is resiliently deformed in the direction indicated by the arrow D in FIG. 10b by the end of the protruding pushing portion 21d, as shown in FIG. 10b. As a result, the intersection 4314 avoids being blocked by the end of the protruding pushing portion 21d of the inserting portion 21, so as to allow the end of the protruding pushing portion 21d to pass over the intersection 4314. Accordingly, the intersection 4314 enters the engaging groove 21a from the notch 211 of the engaging groove 21a. Further, under the action of the elastic force of the resilient engaging arm 43, the intersection 4314 slides along the rear groove wall 212 of the engaging groove 21a during the insertion of the inserting portion 21 into the receiving cavity 411 until the inclined surface 4313 abuts against the rear groove wall 212, as shown in FIG. 10c.

[0029] In comparison with the prior art, since the interconnect member 40 in the present application also includes a resilient engaging arm 43 extending upwards from the front side of the housing 41 and a resilient biasing arm 44 extending upwards from the rear side of the hous-

ing 41. The free end 431 of the resilient engaging arm 43 is bent toward the rear side of the housing 41 and located in the receiving cavity 411. The free end 441 of the resilient biasing arm 44 is bent toward the front side of the housing 41 to form an abutment portion 442 located above the free end 431 of the resilient engaging arm 43 correspondingly, so that the interconnect member 40 uses the resilient biasing arm 44 to replace the conventional combined structure formed by the pushing portion and the spring. Furthermore, by means of the resilient engaging arm 43, during insertion of the inserting portion 21 of the handle 20 into the receiving cavity 411, the free end 431 of the resilient engaging arm 43 is pushed by the inserting portion 21 to resiliently deform in the direction far away from the resilient biasing arm 44, and the free end 431 of the resilient engaging arm 43 slides on the inserting portion 21 until the free end 431 of the resilient engaging arm 43 is buckled with the engaging groove 21a. Thus, the single-point engagement between the interconnect member 40 and the handle 20 can be realized by one resilient engaging arm 43, thereby simplifying the structure. Accordingly, the interconnect member 40 can simplify the structure and mounting process. Thus, the handle 20 and the interconnect member 40 is ensured, and the single-point engagement between the handle 20 and the interconnect member 40 can be realized. So, the razor 100 can also simplify the structure and the mounting process, and the single-point engagement between the handle 20 and the interconnect member 40 can be realized under the premise of ensuring the reliable engagement of the handle 20 and the interconnect member 40.

[0030] Notably, when the razor 100 shaves beard downward, the side of the interconnect member 40 facing the skin is referred to as the front side, and the side of the interconnect member 40 away from the skin is referred to as the rear side, the side of the interconnect member 40 on the left side is referred to as the left side of the interconnect member 40, and the side of the interconnect member 40 on the right side is referred to as the right side of the interconnect member 40. And, the side of the interconnect member 40 on the upper side is referred to as the upper end of the interconnect member 40, and the side of the interconnect member 40 on the lower side is referred to as the lower end of the interconnect member 40.

[0031] The foregoing description of the present invention has been presented for purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise form disclosed, and obviously many modifications and variations are possible in light of the above teaching. Such modifications and variations that may be apparent to those skilled in the art are intended to be included within the scope of this invention as defined by the accompanying claims.

Claims

1. An interconnect member for a razor, comprising a housing and pivoted support arms extending upwards from left and right sides of the housing respectively, the housing being provided with a receiving cavity therein, the receiving cavity penetrating through an upper end surface to a lower end surface of the housing, wherein the interconnect member further comprises a resilient engaging arm extending upwards from a front side of the housing and a resilient biasing arm extending upwards from a rear side of the housing, a free end of the resilient engaging arm is bent towards the rear side of the housing and located in the receiving cavity, and a free end of the resilient biasing arm is bent towards the front side of the housing to form an abutment portion located above the free end of the resilient engaging arm.
2. The interconnect member according to claim 1, wherein the free end of the resilient engaging arm has an upper surface, a lower surface, and an inclined surface arranged to connect the upper surface and the lower surface, and the inclined surface is inclined forward from bottom to top of the housing.
3. The interconnect member according to claim 1, wherein an intersection between the inclined surface and the lower surface and/or an intersection between the inclined surface and the upper surface is arc-shaped.
4. The interconnect member according to claim 1, wherein each of the upper and lower surfaces is an arcuate surface, and the arc diameter of the upper surface is greater than that of the lower surface.
5. The interconnect member according to claim 1, wherein the housing is extended upward to from a left surrounding arm and a right surrounding arm, respectively, the left surrounding arm surrounds the receiving cavity on the left side of the housing, the right surrounding arm surrounds the receiving cavity on the right side of the housing, the resilient engaging arm surrounds the receiving cavity on the front side of the housing and is spaced apart between the left surrounding arm and the right surrounding arm, and the resilient biasing arm surrounds the receiving cavity on the rear side of the housing and is spaced apart between the left surrounding arm and the right surrounding arm.
6. A razor, comprising a razor head, a handle, an unlocking operating member mounted on the handle, and an interconnect member according to any one of claims 1-5, the handle being provided with an inserting portion that is capable of inserting in the re-

ceiving cavity, the inserting portion being provided with an engaging groove, the free end of the resilient engaging arm being engaged in the engaging groove when the inserting portion being inserted into the receiving cavity, the unlocking operating member is arranged to drive the free end of the resilient engaging arm, and the razor head is mounted on the pivoted support arms and abutted against the resilient biasing arm.

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7. The razor according to claim 6, wherein the unlocking operating member comprises a press part slidably disposed on the handle and a pushing rod connected to the press part, the pushing rod is inserted into the inserting portion, and the pushing rod further extends into the engaging groove and located below the free end of the resilient engaging arm.

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8. The razor according to claim 6, wherein a notch of the engaging groove is formed in a front surface and an upper surface of the inserting portion, and a rear groove wall of the engaging groove is inclined from bottom to top of the handle toward a front side of the handle.

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9. The razor according to claim 8, wherein the rear groove wall of the engaging groove obliquely extends forward and upward to form a protruding pushing portion having the same, or increasing, or decreasing thickness, and the protruding pushing portion is clamped between the free end of the resilient engaging arm and the free end of the resilient biasing arm.

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10. The razor according to claim 8, wherein the rear groove wall and a lower groove wall of the engaging groove are both planes and the angle between the two is an acute angle, and a left groove wall and a right groove wall of the engaging groove are arranged obliquely from bottom to top of the handle and approach each other.

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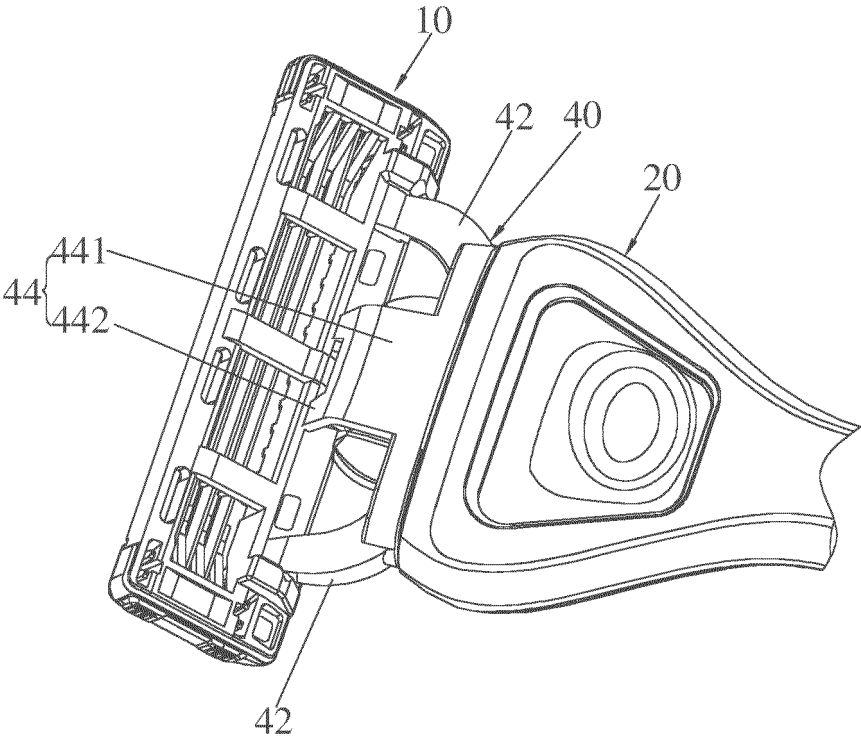


FIG.1

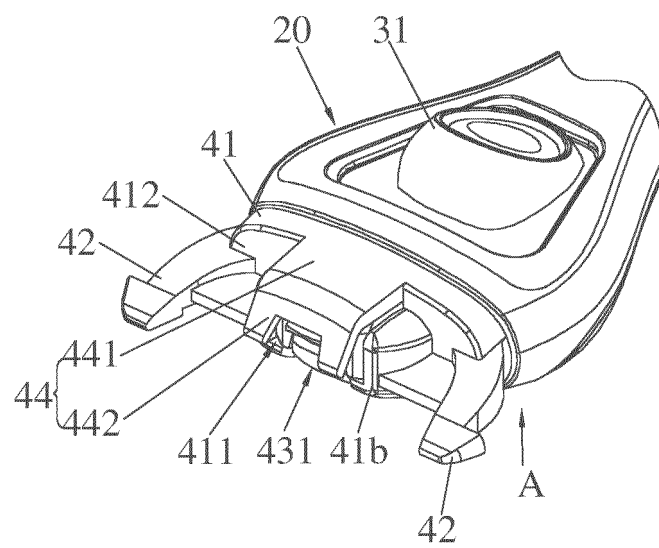


FIG.2

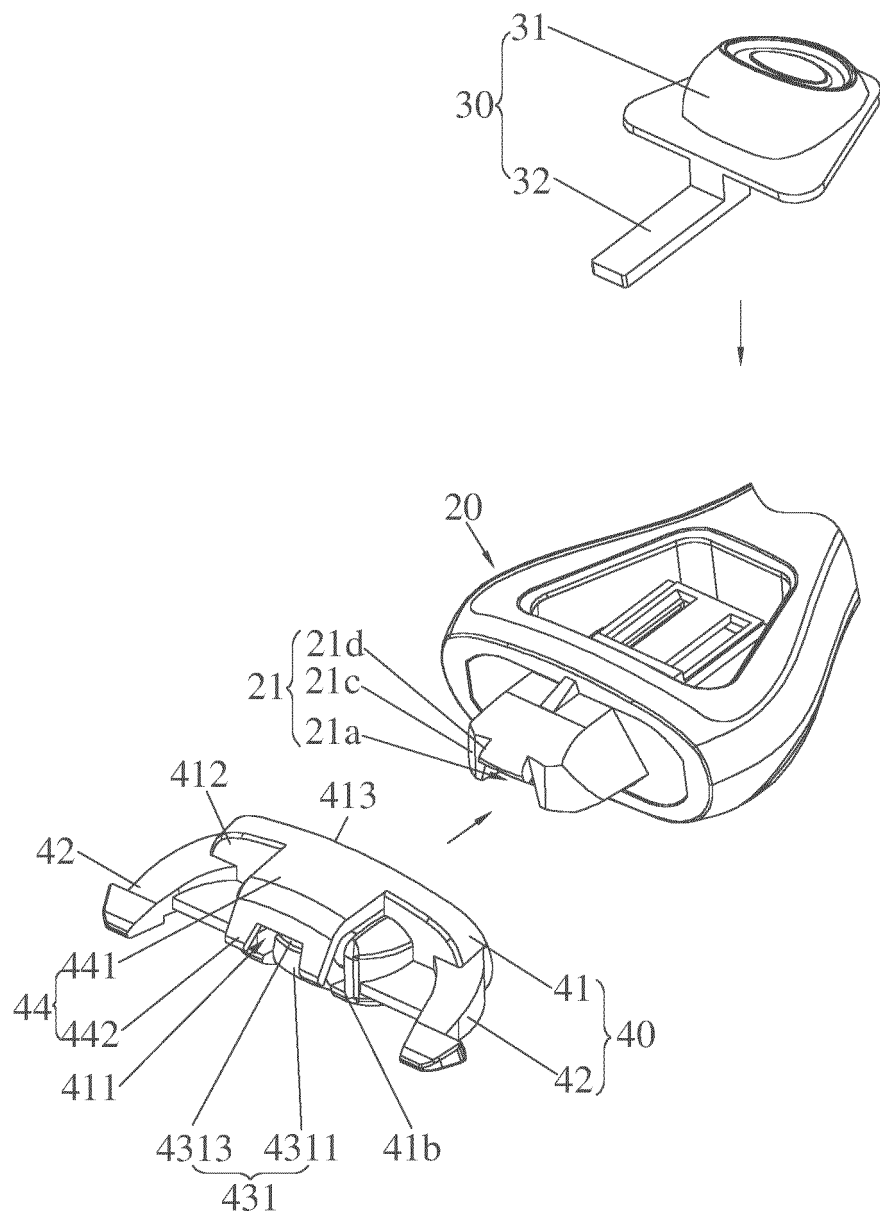


FIG.3

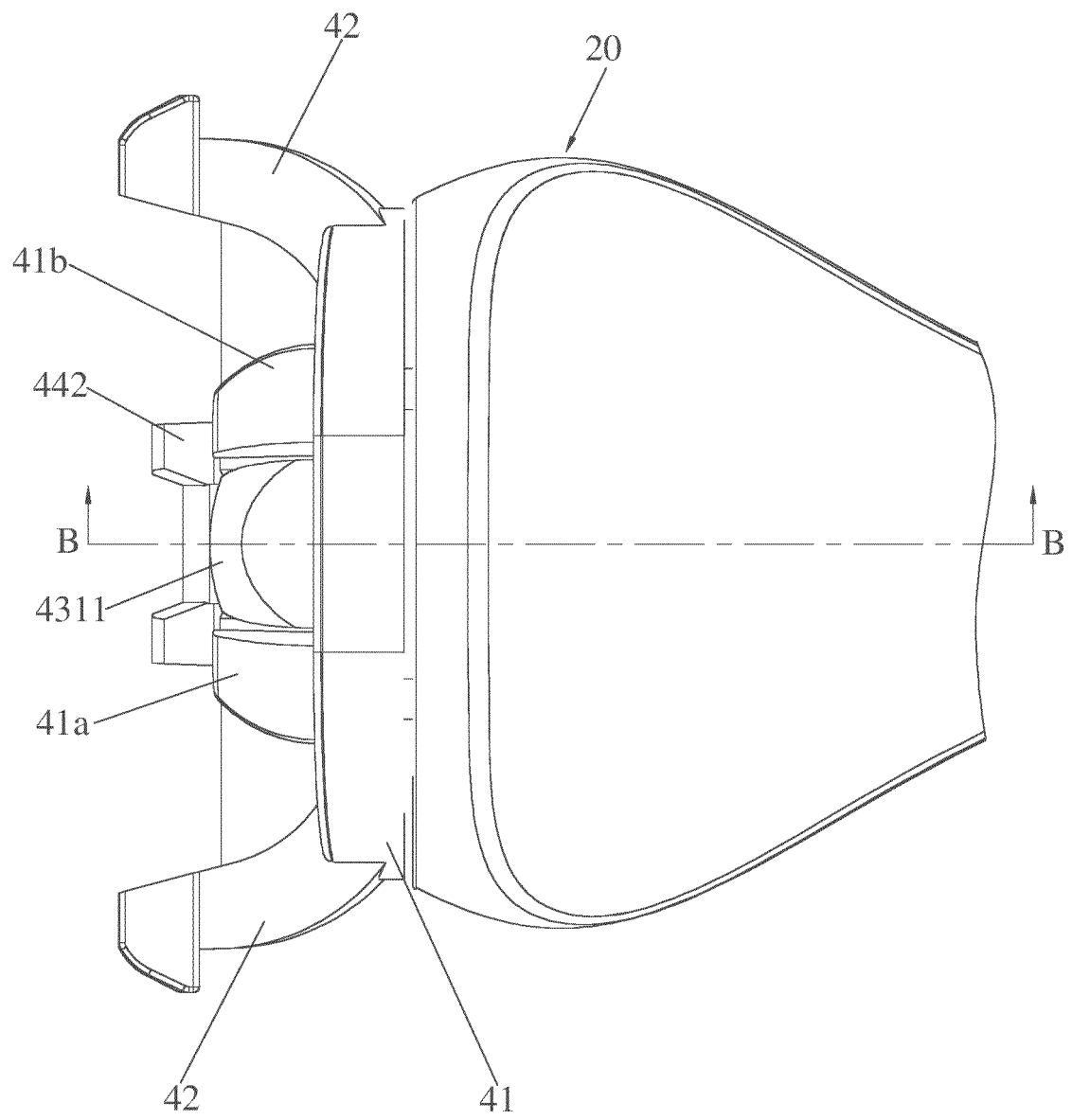


FIG.4

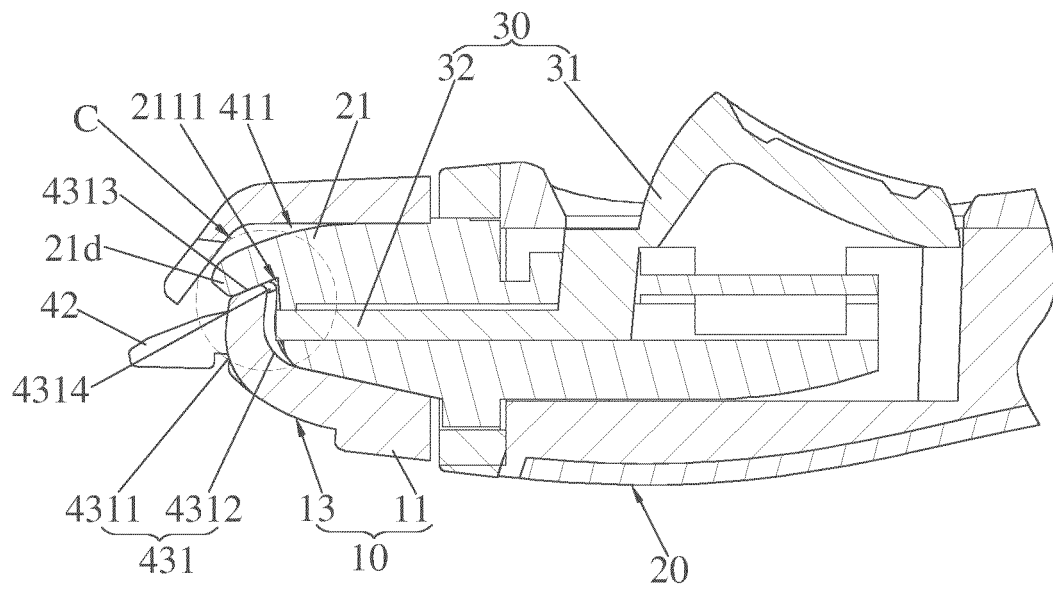


FIG.5

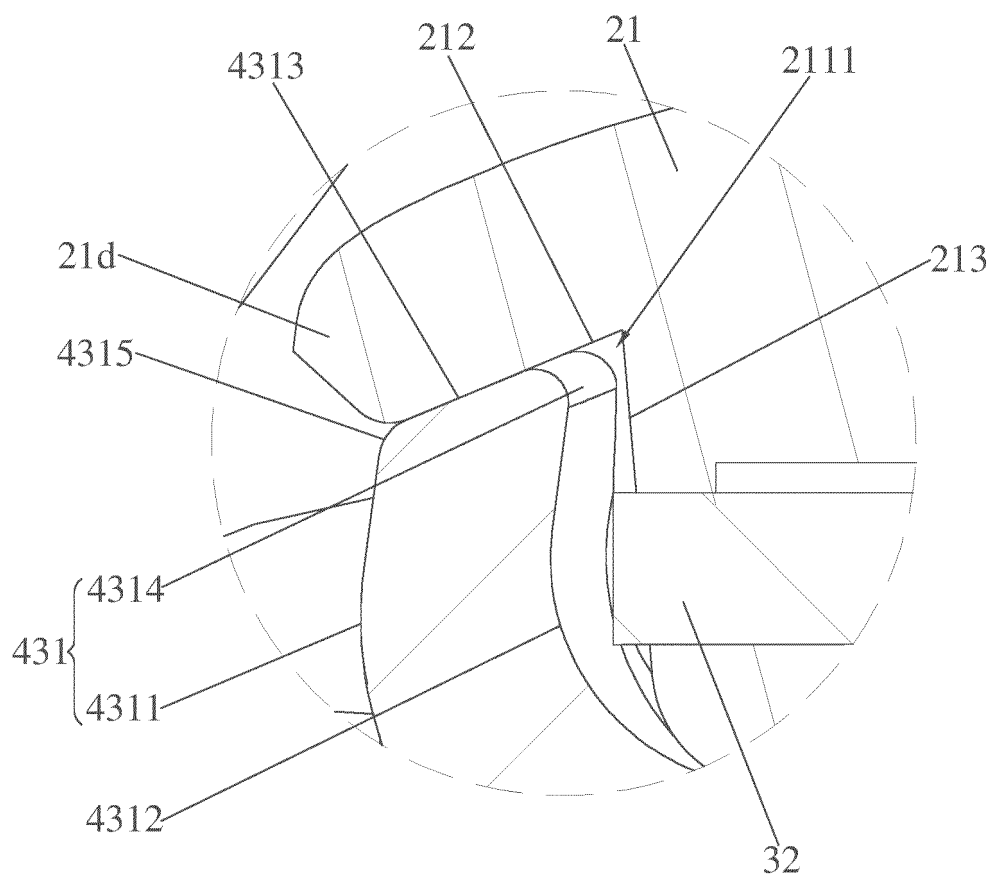


FIG.6

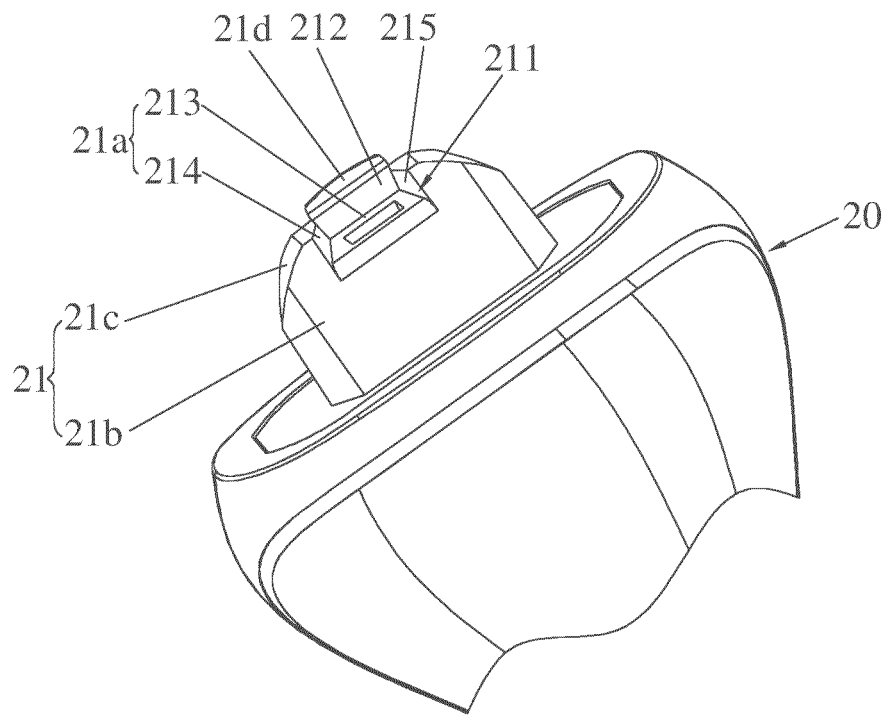


FIG. 7

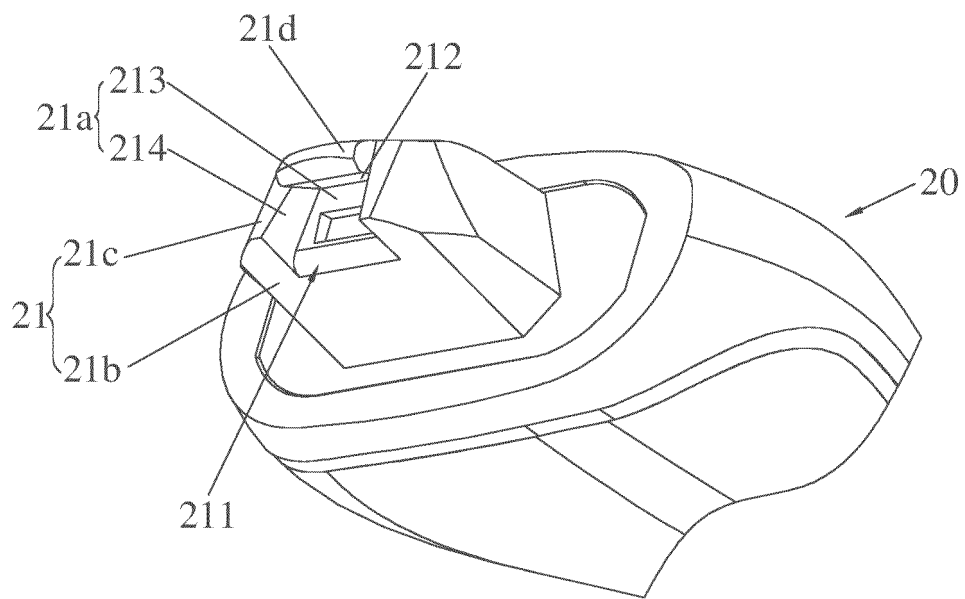


FIG.8

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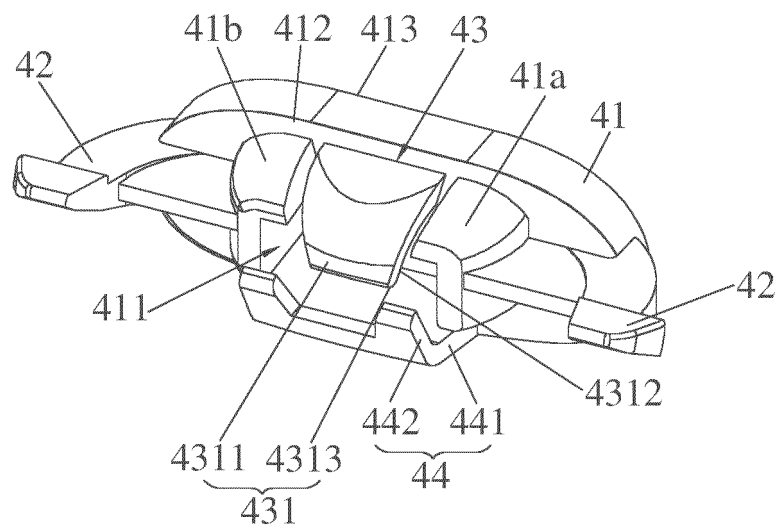


FIG.9

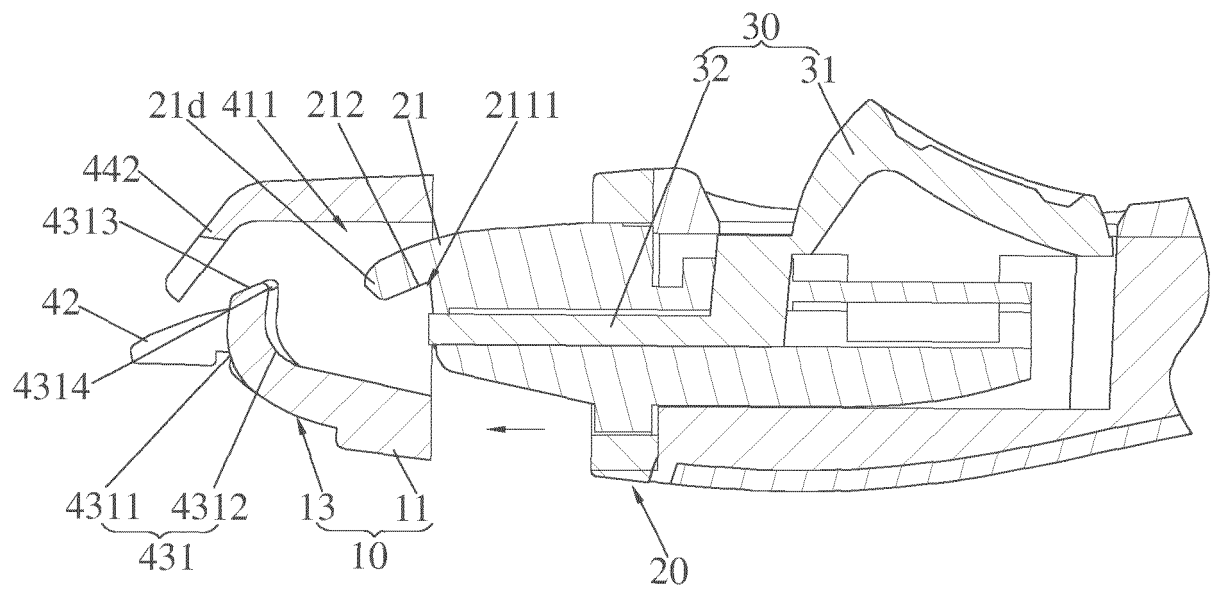


FIG.10a

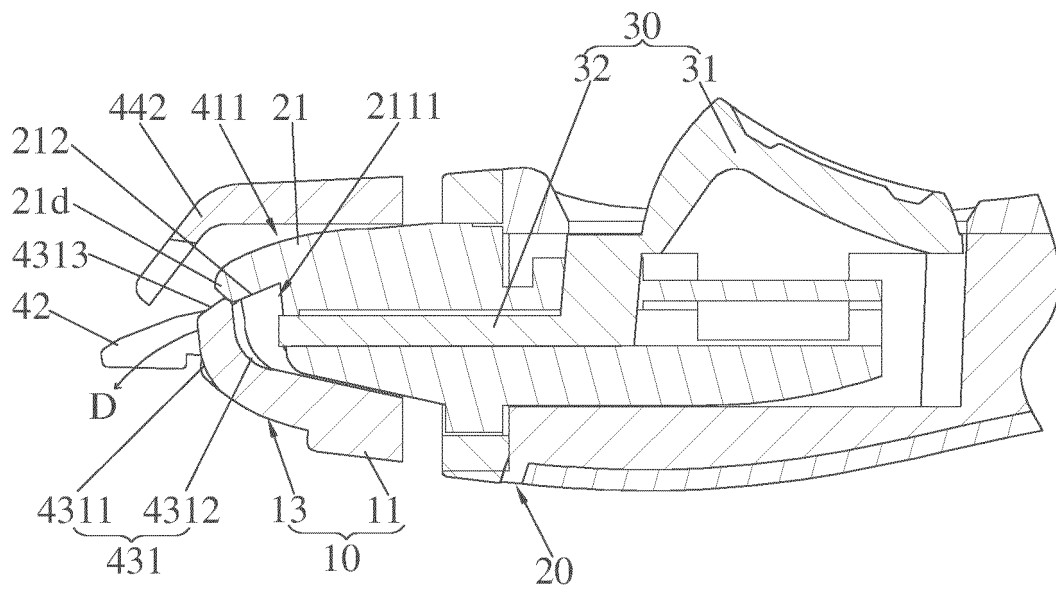


FIG.10b

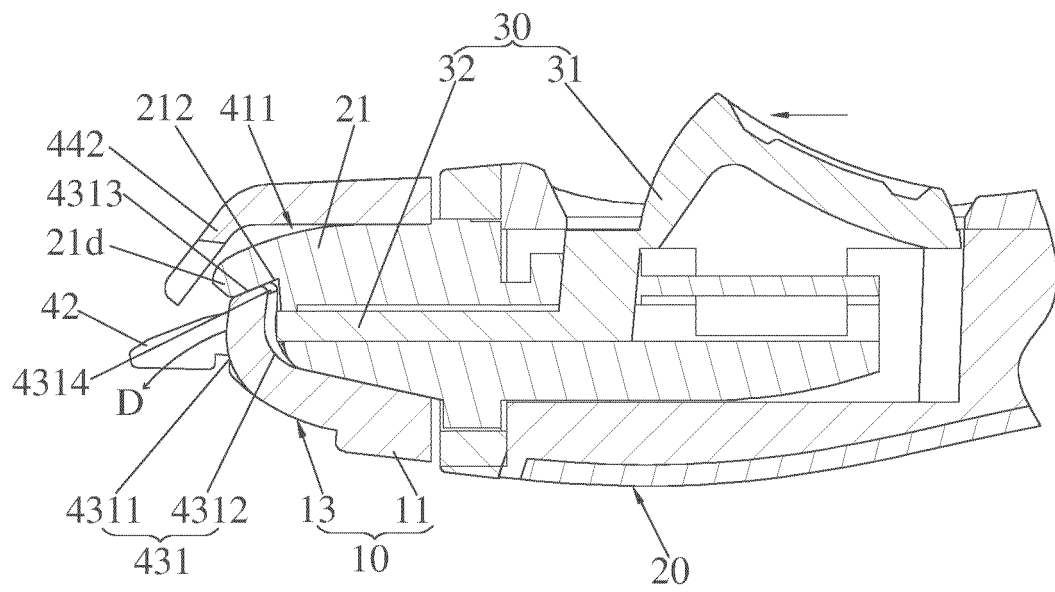


FIG.10c

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/099934

A. CLASSIFICATION OF SUBJECT MATTER B26B 21/52(2006.01)i; B26B 21/14(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) B26B 21 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched															
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNABS, VEN, SIPOABS: 卡, 锁, 合, 拆, lock+/unlock+, releas+, attach+/deattach+, press+															
C. DOCUMENTS CONSIDERED TO BE RELEVANT															
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>CN 201338288 Y (REN, Xiangrong) 04 November 2009 (2009-11-04) description, page 3, line 5- page 4, line 11 and figures 2-10</td> <td>1-5</td> </tr> <tr> <td>A</td> <td>WO 2018039168 A1 (EDGEWELL PERSONAL CARE BRANDS LLC) 01 March 2018 (2018-03-01) entire description</td> <td>1-10</td> </tr> <tr> <td>A</td> <td>CN 104684698 A (REN, Xiangrong) 03 June 2015 (2015-06-03) entire description</td> <td>1-10</td> </tr> <tr> <td>A</td> <td>CN 109571561 A (DORCO CO., LTD.) 05 April 2019 (2019-04-05) entire description</td> <td>1-10</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	CN 201338288 Y (REN, Xiangrong) 04 November 2009 (2009-11-04) description, page 3, line 5- page 4, line 11 and figures 2-10	1-5	A	WO 2018039168 A1 (EDGEWELL PERSONAL CARE BRANDS LLC) 01 March 2018 (2018-03-01) entire description	1-10	A	CN 104684698 A (REN, Xiangrong) 03 June 2015 (2015-06-03) entire description	1-10	A	CN 109571561 A (DORCO CO., LTD.) 05 April 2019 (2019-04-05) entire description	1-10
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☐ 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 03 March 2020	Date of mailing of the international search report 29 May 2020														
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China Facsimile No. (86-10)62019451	Authorized officer Telephone No.														

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2019/099934

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