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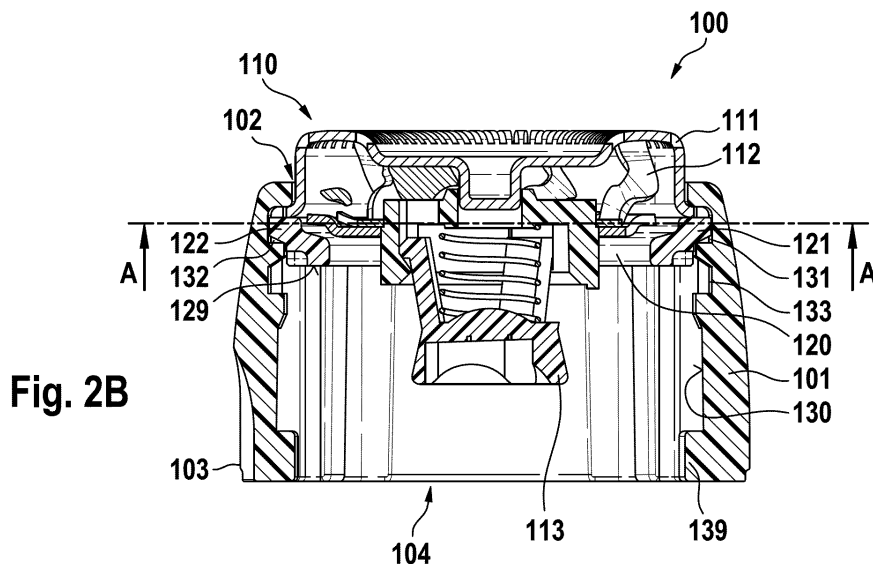
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(54) **HEAD OF A PERSONAL CARE DEVICE AND PERSONAL CARE DEVICE**

(57) The present application is concerned with a head for a personal care device that has a head housing having a top aperture and a bottom portion arranged for attachment to a body of the personal care device, a separate head portion, preferably a treatment assembly, extending through and beyond the top aperture, a first locking element for positionally confining the separate head portion at the head housing, the head housing having at least a first mechanical engagement element and the first locking element having at least a second mechanical en-

gagement element, the first and the second mechanical engagement elements being mechanically engaged for positionally locking the first locking element at the head housing, and the head housing further having at least a third mechanical engagement element positioned underneath the first mechanical engagement element with respect to a direction from the top aperture towards the bottom portion, the third mechanical engagement element being structured for engagement with the second mechanical engagement element.



Description**FIELD OF THE INVENTION**

[0001] The present disclosure is concerned with a head of a personal care device comprising a separate head portion that is positionally confined at a head housing by a first locking element.

BACKGROUND OF THE INVENTION

[0002] It is known that personal care devices may comprise small parts or sharp parts. It is generally advisable to arrange such personal care devices so that these parts do not easily disassemble or detach from the personal care device even in case the device is dropped in use to a stone floor as small parts may be swallowed by children or a user or other person may step onto a sharp part with a bare foot, which is not unusual if the personal care device is used in the bathroom in a regular morning personal care procedure.

[0003] It is thus an object to provide a head for a personal care device and a personal care device comprising such a head, where parts of the head are less prone to detach from the head in an impact event.

SUMMARY OF THE INVENTION

[0004] In accordance with at least one aspect, a head for a personal care device is provided that comprises a head housing having a top aperture and a bottom portion arranged for attachment to a body of the personal care device, a separate head portion, preferably a treatment assembly, extending through and beyond the top aperture, a first locking element for positionally confining the separate head portion at the head housing, the head housing comprising at least a first mechanical engagement element and the first locking element comprising at least a second mechanical engagement element, the first and the second mechanical engagement elements being mechanically engaged for positionally locking the first locking element at the head housing, and the head housing further comprising at least a third mechanical engagement element positioned underneath the first mechanical engagement element with respect to a direction from the top aperture towards the bottom portion, the third mechanical engagement element being structured for engagement with the second mechanical engagement element.

[0005] In accordance with at least one aspect, a personal care device is provided that comprises a head as disclosed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The present disclosure will be further elucidated by a detailed description of example embodiments and with reference to figures. In the figures

Fig. 1A is a depiction of an example personal care device comprising a head and a body;
 Fig. 1B is a depiction of the device of Fig. 1A with the head being detached from the body;
 Fig. 2A is a depiction of the head shown in Figs. 1A and 1B in isolation;
 Fig. 2B is a cross-sectional cut through the head of Fig. 2A;
 Fig. 2C is a cross-section cut through the head of Fig. 2A along a plane as indicated in Fig. 2B;
 Fig. 3 is a depiction of an example first locking element;
 Fig. 4 is a cross-sectional cut through a head as shown in Fig. 2B but after a force has pushed a separate head portion inward;
 Fig. 5 is a cross-sectional cut through a top portion of an example personal care device comprising a first locking element and a second locking element; and
 Fig. 6 is a magnification of a portion of a cross-sectional cut through an example personal care device.

DETAILED DESCRIPTION OF THE INVENTION

[0007] In the context of the present description "personal care" shall mean the nurture (or care) of the skin and of its adnexa (i.e. hairs and nails) and of the teeth and the oral cavity (including the tongue, the gums etc.), where the aim is on the one hand the prevention of illnesses and the maintenance and strengthening of health and on the other hand the cosmetic treatment and improvement of the appearance of the skin and its adnexa. It shall include the maintenance and strengthening of wellbeing. This includes skin care, hair care, and oral care as well as nail care. This further includes grooming activities such as beard care, shaving, and depilation. A "personal care device" thus means any device for performing such nurturing or grooming activity, e.g. (cosmetic) skin treatment devices such as skin massage devices or skin brushes; wet razors; electric shavers or trimmers; electric epilators; and oral care devices such as manual or electric toothbrushes, (electric) flossers, (electric) irrigators, (electric) tongue cleaners, or (electric) gum massagers. This shall not exclude that the proposed personal care device may have a more pronounced benefit in one or several of these nurturing or device areas than in one or several other of these areas. In the present description, an electric rotary shaver was chosen to present details of the proposed personal care device. To the extent in which the details are not specific for an electric rotary shaver, the proposed technology can be used in any other personal care device.

[0008] In accordance with the present disclosure, a head for a personal care device comprises a separate head portion that is positionally confined at a head housing by a first locking element. The separate head portion may be a treatment assembly for providing a personal

care treatment, e.g. a cutter assembly comprising an outer cutter element and an inner cutter element. In the following, the separate head portion is exemplified by a rotary cutter assembly for a rotary shaver that provides facial skin care or body skin care by means of shaving off hairs to improve the appearance of the skin. The basic structure of the head shall be understood as comprising a hollow head housing that defines a top aperture through which the separate head portion extends. The separate head portion may extend beyond the top aperture. The head housing further comprises a bottom portion that is arranged for in particular detachable attachment to a body of the personal care device so that the head and the body together form the personal care device when they are attached to each other. The bottom portion of the head housing and a body housing of the body may comprise mechanical connection elements such as coupling partners of a bayonet mount or partners of a snap connection to establish the connection.

[0009] The head housing and the first locking element are mechanically engaged with each other to secure the first locking element at the head housing under normal operation conditions. To establish the mechanical engagement, the head housing and the first locking element each have at least one mechanical engagement element that together form at least a first engaged pair of mechanical engagement elements. The head housing and the first locking element may each comprise one or several further mechanical engagement elements and some of them may form further engaged pairs of mechanical engagement elements. In accordance with some aspects, the head may comprise a second locking element that has as well one or several mechanical engagement elements of which at least one is mechanically engaged with a mechanical engagement element of the head housing.

[0010] The mechanical engagement elements may be realized as projections and recesses, in particular as snap-fit connection elements such as a protruding edge and a corresponding snap-in area, where at least one of the partners of the snap-fit connection is arranged to elastically deform in an attachment process and optionally also in a detachment process. This shall not exclude that the whole first locking element and/or the second locking element can elastically deform instead of just the mechanical engagement element or that both can elastically deform. In the examples described below, it is the whole first locking element and the whole locking element that can elastically deform. In the following, the head housing is said to comprise a first mechanical engagement element and the first locking element to comprise a second mechanical engagement element and the head housing further comprises a third mechanical engagement element. In examples comprising a second locking element, the second mechanical engagement element comprises a fourth mechanical engagement element. The terms "first", "second", "third" and "fourth" are not to be understood as a numbering having any specific meaning but are used for semantically differentiating the mechanical

engagement elements. The head housing and the first and second locking elements may each comprise one or several further mechanical engagement elements. In the examples shown in the figures, the head housing comprises four mechanical engagement elements and the first locking element comprises two mechanical engagement elements (likewise, the second locking element also comprises two mechanical engagement elements in the respective examples). But this shall not be understood as limiting. Without being limited by theory, the first and third mechanical engagement elements may be provided on an inner side of the head housing.

[0011] While it shall not be excluded that the head housing, the first locking element or the second locking element are made at least partially from metal or any other suitable material, the respective parts shown in the figures shall be understood as consisting of a plastic material allowing the parts to be made by a plastic injection molding process.

[0012] In some examples, the head housing and the first locking element are secured to each other by at least a first engaged pair of mechanical engagement elements and optionally by at least a second engaged pair of mechanical engagement elements. The head housing comprises a first mechanical engagement element that is part of the first engaged pair of mechanical engagement elements and the first locking element comprises a second mechanical engagement element that is as well part of the first engaged pair of mechanical engagement elements. The direction from the top aperture towards the bottom portion (such as a direction along a center axis or longitudinal axis of the head) provides the reference for terms like "above" or "underneath". E.g., if part A is above part B then part A is closer to the top aperture than part B and vice versa for underneath.

[0013] In all examples, the head housing comprises a third mechanical engagement element that is provided underneath the first mechanical engagement element. In accordance with some examples, the third mechanical engagement element is arranged to be able to become engaged with the second mechanical engagement element, e.g. the third mechanical engagement element may essentially be a copy of the first mechanical engagement element. Typically, the third mechanical engagement element is aligned in position with the first mechanical engagement element with respect to the direction from the top aperture to the bottom portion. In an impact event, when a force acts on the separate head portion, which force is then transferred to the first locking element, the first and the second mechanical engagement elements may become disengaged and the first locking element may then be pushed downwards, i.e. towards the bottom portion of the head housing. But the second mechanical engagement element may then become engaged with the third mechanical engagement element. The distance between the first mechanical engagement element and the third mechanical engagement element may be chosen so that the separate head portion is then

flush with the head housing portion defining the top aperture. The force acting on the separate head portion then acts also or only on the head housing and cannot further push the separate head portion downwards. The first locking element would then not disengage from the head housing and would still positionally confine the separate head portion with respect to the head housing. The separate head portion or parts thereof will then not detach from the head, e.g. when the head detaches from the body of the personal care device due to the impact or when a user detaches the head from the body. The risk stemming from small parts and/or sharp parts that detach from the head is thus effectively reduced. The position of the third mechanical engagement element may be chosen so that in an attached state, i.e. when the head is attached to a body of a personal care device, a lower contact surface may essentially be in contact with a stopper surface of a body housing.

[0014] The first mechanical engagement element and/or the second mechanical engagement element may comprise a chamfer that supports that the first and second mechanical engagement elements can disengage from each other in an impact event with a lower risk of destruction, e.g. plastic deformation of one of the mechanical engagement elements or even cutting off of a piece from one of the mechanical engagement elements.

[0015] In accordance with some examples, the third mechanical engagement element is engaged with a fourth mechanical engagement element of a second locking element. The first locking element is thus supported in its locking function by the second locking element. In the attached state, i.e. when the head is attached to the body of the personal care device), the second locking element may abut a stopper surface of the body housing or may at least be arranged close to a portion of the body housing so that the second locking element cannot become detached from the head housing in an impact event but would transfer the impact force to the body housing, which portion of the body may provide the stopper surface. Even if the first locking element would become detached from the head housing or if the first locking element would become destroyed in a manner that it could not perform its locking function, the second locking element would then probably still be in place to positionally confine the separate head portion at the head housing.

[0016] Fig. 1A is a depiction of an example personal care device 1, here realized as a rotary shaver. The personal care device 1 has a head 100 and a body 200. The head 100 comprises a head housing 101 and a separate head portion 110 that is positionally confined at the head housing as will be explained in detail further below. The separate head portion 110 is here realized as a treatment assembly, specifically as a cutter assembly of a rotary shaver. The personal care device extends along a longitudinal axis L.

[0017] Fig. 1B is a depiction of the personal care device 1 shown in Fig. 1A but in a state in which the head 100 is detached from the body 200. The head 100 may be

attachable to the body 200 by means of a bayonet mount, but this is just of many attachment possibilities generally known by a skilled person and should not be understood as limiting. The body comprises a drive shaft 210 for interaction with a drive shaft receiver element so that in operation a motion of the drive shaft 210 can be transmitted to a movable part of the separate head portion 110 (e.g. to a movable inner cutter element).

[0018] Fig. 2A is an isolated depiction of the head 100 shown in Figs. 1A and 1B. As was explained, the head 100 comprises a head housing 101 and a separate head portion 110 here realized as a treatment assembly, namely as a shaver assembly, specifically as a rotary shaver assembly. The shaver assembly here comprises an outer static cutter element 111 and a movable inner cutter element as can be better seen in Fig. 2B. The separate head portion 110 extends through and beyond a top aperture 102. Further, the head 100 comprises a bottom portion 103 that is arranged for coupling with a body of a personal care device as shown in Figs. 1A and 1B. The head 100 has a longitudinal axis L that centrally extends through the top aperture 102 and the bottom portion 103. In the following it will be referred to a direction from the top aperture 102 towards the bottom portion 103. It shall be understood that this direction is coinciding with the longitudinal axis and thereby defines a reference for terms like "above" or "underneath", where above shall mean that something is closer to the top aperture 102 than something else and underneath that something is closer to the bottom portion than something else. E.g. the phrase "part A is arranged underneath part B with respect to the direction from the top aperture towards the bottom portion" means that part A is located closer to the bottom portion than part B.

[0019] Fig. 2B is a cross-sectional cut through the head 100 shown in Fig. 2A. The head 100 comprises a head housing 101 having a top aperture 102, a bottom portion 103, a bottom aperture 104 and an inner side 130, a separate head portion 110 and a first locking element 120. The separate head portion 110 is realized as a treatment assembly, namely as a shaver assembly for providing a hair cutting treatment. The cutter assembly comprises an outer cutter element 111 intended for getting into skin contact, the outer cutter element 111 comprising openings for hairs to extend through to get cut by a movable cutter element 112, namely a movably arranged set of cutting knives that in operation will glide along an inner surface of the outer cutter element 111 in the area of the mentioned slits. The cutter assembly here also comprises a drive shaft receiver 113 for receiving a drive shaft of the body of the personal care device as was discussed in connection with Fig. 1B.

[0020] The separate head portion 110 extends through and beyond the top aperture 102 and the separate head portion 110 is positionally confined at the head 100 by a first locking element 120. The head housing 101 has a first mechanical engagement element 131 formed on the inner side 130 of the head housing 101, which first me-

chanical engagement element 131 is engaged with a second mechanical engagement element 121 of the first locking element 120. The first mechanical engagement element 131 and the second mechanical engagement element 121 together form a first engaged pair of mechanical engagement elements. In the shown example, the head 100 comprises a second engaged pair of mechanical engagement elements 122, 132 provided by the first locking element 120 and the head housing 101, where a mechanical engagement element 122 is formed at the first locking element and another mechanical engagement element 132 is formed at the head housing 101. Without limitation, the first mechanical engagement element 131 is here realized as a depression in the inner side 130 of the head housing 101 and the second mechanical engagement element 121 is realized as a projection of the first locking element 120. In addition, the head housing 101 comprises a third mechanical engagement element 133 that is located underneath the first mechanical engagement element 131. The third mechanical engagement element 133 is essentially a copy of the first mechanical engagement element and thus arranged to engage with the second mechanical engagement element 121. The head housing 101 here also comprises one or several projections 139 disposed on the inner side 130 of the head housing 101 in the bottom portion 103. These projections 139 are suitable for engaging with a bayonet receptor in the body of the personal care device as discussed in connection with Fig. 1B.

[0021] Fig. 2C shows a cross-sectional cut through the head 100 taken along plane A-A as indicated in Fig. 2B, where the view direction is from the bottom up. The head housing 101 comprises the first mechanical engagement element 131 and another mechanical engagement element 132 that are here realized as depressions or recesses in the inner side 130 of the head housing 101. The first locking element 120 is here realized as a ring-like element that has here two projections that realize the second mechanical engagement element 121 and a further mechanical engagement element 122. The first mechanical engagement element 131 and the second mechanical engagement element 121 together form a first engaged pair of mechanical engagement elements 1231 and the further mechanical engagement elements form a second engaged pair of mechanical engagement elements 1232. In the process of assembling the head 100, the ring-like first locking element will deform, e.g. into a more elliptic shape until the projections 121 and 122 snap into the recesses 131 and 132 of the head housing 101. As was already discussed, the first locking element 120 may have any suitable shape and the ring-like shape shown here is just one example that is suited for positionally confining a circular cutter assembly at the head housing 101.

[0022] Fig. 3 is a perspective depiction of the first locking element 120 of Figs. 2B and 2C shown in isolation. The ring-like first locking element 120 has two projections 121 and 122 and a top contact surface 128 and a bottom

contact surface 129.

[0023] Fig. 4 is a cross-sectionally cut through the head 100 shown in Figs. 2A to 2C after an external force F has acted on the separate head portion 110 that is realized as a rotary cutter assembly. Such an external force F may act on the separate head portion 110, specifically at the outer cutter element 111 when the head 100 hits the ground, e.g. after a user has dropped the personal care device. When the head 100 (specifically when attached to the personal care device) hits the ground, a force may act on the separate head portion 110 that is transferred to the first locking element 120 and that may cause that the second locking element 121 becomes disengaged from the first mechanical engagement elements 131. In the shown example, a further pair of engaged mechanical engagement elements 122, 132 became disengaged. The separate head portion 110 that has originally extended beyond the top aperture 102 as is indicated with dotted lines was pushed into the head housing 101 when it hits the ground - it is here assumed that it hits the ground in a straight top-down manner where the force F is evenly distributed over the outer area of the separate head portion 110, namely here the outer cutter element 111. Once the separate head portion 110 is completely pushed into the housing 101, the force F will act on the head housing 101 and the separate head portion 110 can then not be further pushed inside the head housing 101. The head housing 101 may be structured to absorb the energy of the impact on the ground by elastic deformation and the head housing 101 will also transfer impact energy onto the body housing of the personal care device so that the device may not fracture when it is dropped. The distance by which the separate head portion 110 is pushed inwards is indicated by reference numeral d. The third mechanical engagement element 133, which is structured to allow engagement with the second mechanical engagement element 121, is located underneath the first mechanical engagement element 131 at a distance d, i.e. once the pushing inwards of the separate head portion 110 is stopped in the position as shown in Fig. 4 where the outer surface of the separate head portion 110 is flush with the head housing portion defining the top aperture 102, then the first locking element 120 is at a position so that the third mechanical engagement element 133 and the second mechanical engagement element 121 can engage as is shown. In this example, also the further mechanical engagement element 122 of the first locking element became engaged with a further mechanical engagement element 134 of the head housing 101. The first locking element 120 will then still positionally confine the separate head portion 110 at the head housing 101 and even if the head 100 would disengage from the body of the personal care device when it hits the ground, the separate head portion 110 would not detach from the head 100. The latter may be specifically problematic if - as in the shown example - the separate head portion is a cutter assembly that comprises a very sharp inner cutter element 112. While the

described impact event is a highly dynamic process, the elastic deformations of the various parts of the head 100 are here not discussed. As can be better understood from Fig. 5, the position of the third mechanical engagement element 133 may be chosen so that a contact surface 129 of the first locking element 120 may come into contact with a stopper surface of the body housing of the body in the attached state of the head 100.

[0024] Further, the second mechanical engagement element 121 may comprise a chamfer 1221 that supports a non-destructive disengagement of the second mechanical engagement element 121 from the first mechanical engagement element 131. The first and the third mechanical engagement elements and eventually further mechanical engagement elements provided at the head housing 101 may each comprise an outer chamfer 1311, 1321, 1331, 1341 that supports a non-destructive assembling of the first locking element 120. A user may be able to re-insert the first locking element 120 into its upper original position by applying an upwards directed force onto the first locking element 120.

[0025] As can be better understood with reference to Fig. 5, the head housing and the body housing may be designed so that a lower contact surface 129 of the first locking element 120 contacts a stopper surface of the body housing so that a disengagement of the first locking element 120 from the lower engagement position shown in Fig. 4 is effectively prevented.

[0026] When the head 100 hits the ground, the force F acting on the separate head portion 110 and thus on the first locking element 120 may cause a destruction of at least one of the first mechanical engagement element 131 or the second mechanical engagement element 121. In the shown example, the projection forming the second mechanical engagement element 121 may simply be shorn off. In order to reduce the risk of such a destruction, the second mechanical engagement element 121 may comprise a chamfer 1211 as was already discussed and/or the first mechanical engagement element 131 may comprise an inner chamfer so that in the impact event the engaged first and second mechanical engagement elements 131 and 121 can disengage without a relevant destruction or plastic deformation.

[0027] Fig. 5 is a cross-sectional cut through an example head 100A, where a first locking element 120A and a second locking element 140A serve to positionally confine a separate head portion 110A at a head housing 101A. In the shown example, the head housing comprises a first mechanical engagement element 131A, a third mechanical engagement element 133A and two further mechanical engagement elements 132A and 134A; the first locking element 120A comprises a second mechanical engagement element 121A and a further mechanical engagement element 122A; and the second locking element 140A comprises a fourth mechanical engagement element 141A and a further mechanical engagement element 142A. The first mechanical engagement element 131A and the second mechanical engagement element

121A are engaged as are the further mechanical engagement elements 132A and 122A; the third mechanical engagement element 133A and the fourth mechanical engagement element 141A are engaged as are the further mechanical engagement elements 134A and 142A. The first locking element 120A has a lower contact surface 129A and the second locking element 140A has an upper contact surface 148A, which are facing each other, and which may get into contact in an impact event. The second locking element 140A has a lower contact surface 149A that here abuts a stopper surface 202A of the body housing 201A. In an impact event, the separate head portion 110A will be pushed inwards and will act on the first locking element, which may get into contact with the second locking element, which will transfer the acting forces onto the body housing 201A. Even if the first locking element 120A gets destroyed in an impact event, the second locking element 140A may probably survive the impact event and will then still positionally confine the separate head portion 110A at the head housing 101A. As is also shown in Fig. 5, the body comprises a drive unit comprising a drive shaft 211A to which drive adapter 210A is attached, which drive adapter is engaged with a drive shaft receiver 113A so that motion can be transferred from the drive unit to a movable part 112A of the separate head portion 120A.

[0028] Fig. 6 is a cross-sectional cut through a portion of an example head 100B attached to a body housing 201B of a body of a personal care device - Fig. 6 is rather similar to what is shown in and discussed with reference to Fig. 5. The head 100B comprises a separate head portion 110B realized as a cutter assembly. The separate head portion 110B is positionally confined at a head housing 101B by a first locking element 120B. The head housing 101B comprises a first mechanical engagement element 131B that is engaged with a second mechanical engagement element 121B of the first locking element 120B. The second mechanical engagement element 121B comprises a chamfer 1211B arranged on the lower side of the second mechanical engagement element 121B so that it can glide along a lower edge 135B of the first mechanical engagement element 131B when a force acts on the first locking element 120B to push it downwards. The head housing 101B comprises a third mechanical engagement element 133B that is engaged with a fourth mechanical engagement element 141B of a second locking element 140B. The fourth mechanical engagement element 141B comprises a chamfer 1411B arranged on the lower side of the second mechanical engagement element 141B so that it can glide along a lower edge of the third mechanical engagement element 133B when a force acts on the first locking element 120B to push it downwards. In difference to the example shown in Fig. 5, a lower contact surface 149B of the second locking element 140B is arranged at a distance c to a stopper surface 202B of the body housing 201B. The gap, i.e. distance c , may be chosen to be smaller than a thickness of second locking element 140B so that the

latter can elastically deform in an impact event but will not disengage from the head housing 101A as it is stopped by the stopper surface 202B prior to any disengagement.

[0029] The present disclosure is, inter alia, concerned with the following aspects:

Aspect 1: A head of a personal care device, comprising a head housing having a top aperture and a bottom portion arranged for attachment to a body of the personal care device, a separate head portion, preferably a treatment assembly, extending through and beyond the top aperture, a first locking element for positionally confining the treatment assembly at the head housing, a second locking element being disposed underneath the first locking element with respect to a direction from the top aperture towards the bottom portion, the head housing comprising at least a first mechanical engagement element and the first locking element comprising at least a second mechanical engagement element, the first and the second mechanical engagement elements being mechanically engaged for positionally locking the first locking element at the head housing, and the head housing comprising at least a third mechanical engagement element and the second locking element comprising at least a fourth mechanical engagement element, the third and the fourth mechanical engagement elements being mechanically engaged for positionally locking the second locking element at the head housing.

Aspect 2: The head in accordance with aspect 1, wherein the first locking element and the second locking element are separated by a gap, preferably wherein a width of the gap in the direction from the top aperture towards the bottom portion is smaller than a thickness of the first locking element in the direction between the top aperture and the bottom portion.

Aspect 3: The head in accordance with aspect 1 or aspect 2, wherein the first mechanical engagement element and the second mechanical engagement element form a first engaged pair of mechanical engagement elements and where at least a second engaged pair of mechanical engagement elements is provided by the first locking element and the head housing.

Aspect 4: The head in accordance with any one of aspects 1 to 3, wherein the first locking element or a portion of the first locking element comprising the second mechanical engagement element is elastically deformable so that in an assembly process the first mechanical engagement element and the second mechanical engagement element can become engaged by a snapping action.

Aspect 5: The head in accordance with any one of aspects 1 to 4, wherein a chamfer is provided at least at one of the first mechanical engagement element or the second mechanical engagement element to support a non-destructive disengagement of the first mechanical engagement element and the second mechanical engagement element.

Aspect 6: The head in accordance with any one of aspects 1 to 5, wherein the first mechanical engagement element is realized as a recess and the second mechanical engagement element is realized as a projection, preferably a chamfered projection.

Aspect 7: The head in accordance with any one of aspects 1 to 6, wherein the separate head portion is a cutter assembly comprising an outer cutter element and a movable inner cutter element, preferably wherein the cutter assembly is a rotary cutter assembly.

Aspect 8: The head in accordance with any one of aspects 1 to 7, wherein the first locking element is a ring-like locking element.

Aspect 9: A personal care device comprising a head in accordance any one of aspects 1 to 8, further comprising a body of the personal care device, the head and the body being detachably attached to each other.

Aspect 10: The personal care device in accordance with aspect 9, wherein the body has a stopper surface positioned underneath the second locking element with respect to a direction from the top aperture towards the bottom portion, which stopper surface essentially abuts the second locking element.

Aspect 11: The personal care device in accordance with aspect 9, wherein the body has a stopper surface, and the second locking element and the stopper surface are separated by a gap, preferably wherein a width of the gap in the direction from the top aperture towards the bottom portion is smaller than a thickness of the second locking element in the direction from the top aperture towards the bottom portion.

[0030] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm."

Claims

1. A head (100) for a personal care device (1), comprising

a head housing (101) having a top aperture (102) and a bottom portion (103) arranged for attachment to a body (200) of the personal care device (1);
 a separate head portion (110), preferably a treatment assembly, extending through and beyond the top aperture (102);
 a first locking element (120) for positionally confining the separate head portion (110) at the head housing (101);
 the head housing (101) comprising at least a first mechanical engagement element (131) and the first locking element (120) comprising at least a second mechanical engagement element (121), the first and the second mechanical engagement elements (121, 131) being mechanically engaged for positionally locking the first locking element (120) at the head housing (101); and
 the head housing (101) comprising at least a third mechanical engagement element (133) positioned underneath the first mechanical engagement element (131) with respect to a direction (L) from the top aperture (102) towards the bottom portion (103), the third mechanical engagement element (133) being structured for engagement with the second mechanical engagement element (121).

2. The head (100) in accordance with claim 1, wherein the position of the third mechanical engagement element (133) is chosen such that the separate head portion (110) can assume a position in which a portion of the separate head portion (110) that extended beyond the top aperture (102) is flush with the top aperture (102) when the second mechanical engagement element (121) and the third mechanical engagement element (133) are engaged.

3. The head in accordance with claim 1 or 2, wherein the first mechanical engagement element (131) and the second mechanical engagement element (121) form a first engaged pair of mechanical engagement elements and where at least a second engaged pair of mechanical engagement elements is provided by the first locking element (120) and the head housing (101).

4. The head in accordance with any one of claims 1 to 3, wherein the first locking element (120) or a portion of the first locking element comprising the second mechanical engagement element (121) is elastically deformable so that in an assembly process the first

mechanical engagement element (131) and the second mechanical engagement element (121) can become engaged by a snapping action.

5. The head in accordance with any one of claims 1 to 4, wherein a chamfer (1211B) is provided at least at one of the first mechanical engagement element (131B) or the second mechanical engagement element (121B) to support a non-destructive disengagement of the first mechanical engagement element (131B) and the second mechanical engagement element (121B).

6. The head in accordance with any one of claims 1 to 5, wherein the first mechanical engagement element (131) is realized as a recess and the second mechanical engagement element (121) is realized as a projection, preferably a chamfered projection.

7. The head in accordance with any one of claims 1 to 6, wherein the separate head portion (110) is a cutter assembly comprising an outer cutter element (111) and a movable inner cutter element (112), preferably wherein the cutter assembly is a rotary cutter assembly.

8. The head in accordance with any one of claims 1 to 7, wherein the first locking element (120) is a ring-like locking element.

9. A personal care device comprising a head in accordance any one of claims 1 to 8, further comprising a body (200) of the personal care device (1), the head (100) and the body (200) being detachably attached to each other.

10. The personal care device in accordance with the first alternative of the claim 11, wherein the body (200A) has a stopper surface (202A) positioned underneath the first locking element (120) with respect to a direction from the top aperture (102) towards the bottom portion (103), which stopper surface (202A) essentially abuts the first locking element (120) when the second mechanical engagement element (121) and the third mechanical engagement element (133) are engaged.

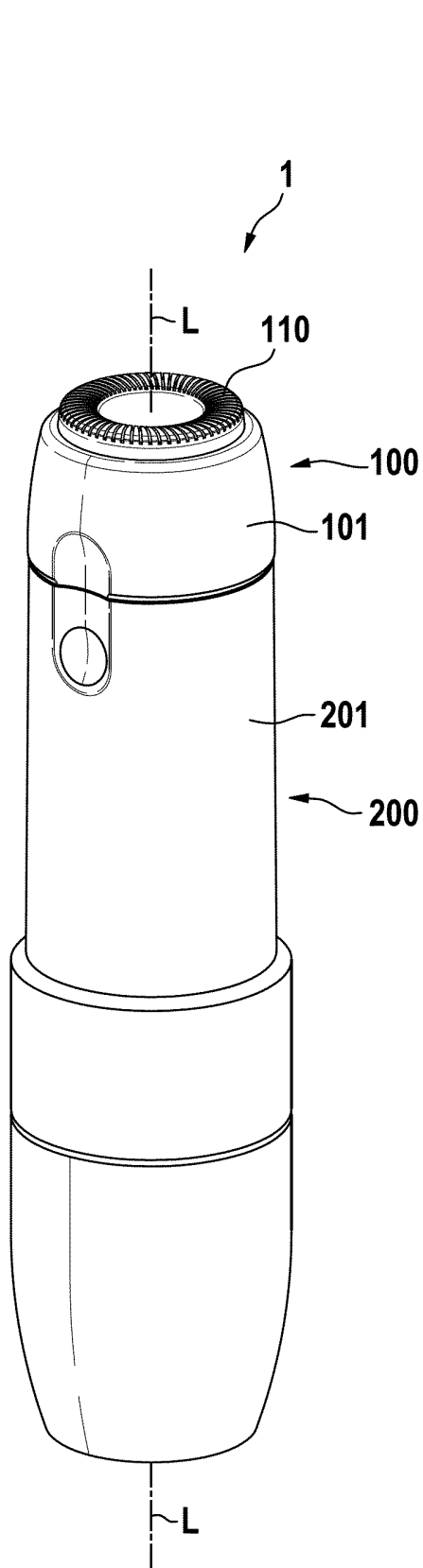


Fig. 1A

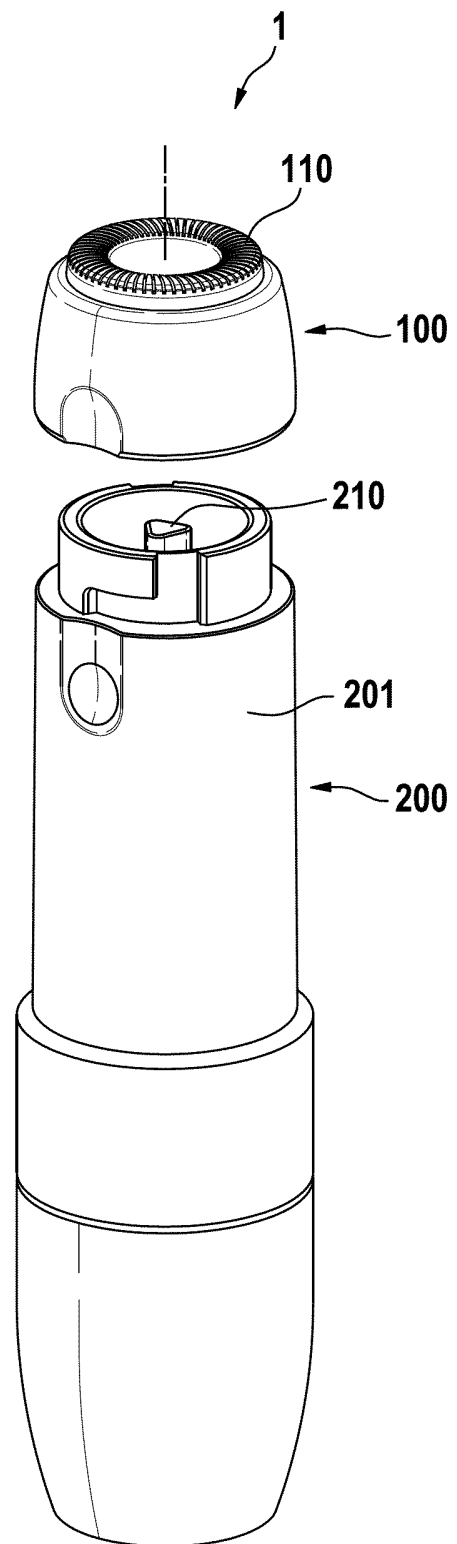


Fig. 1B

Fig. 2A

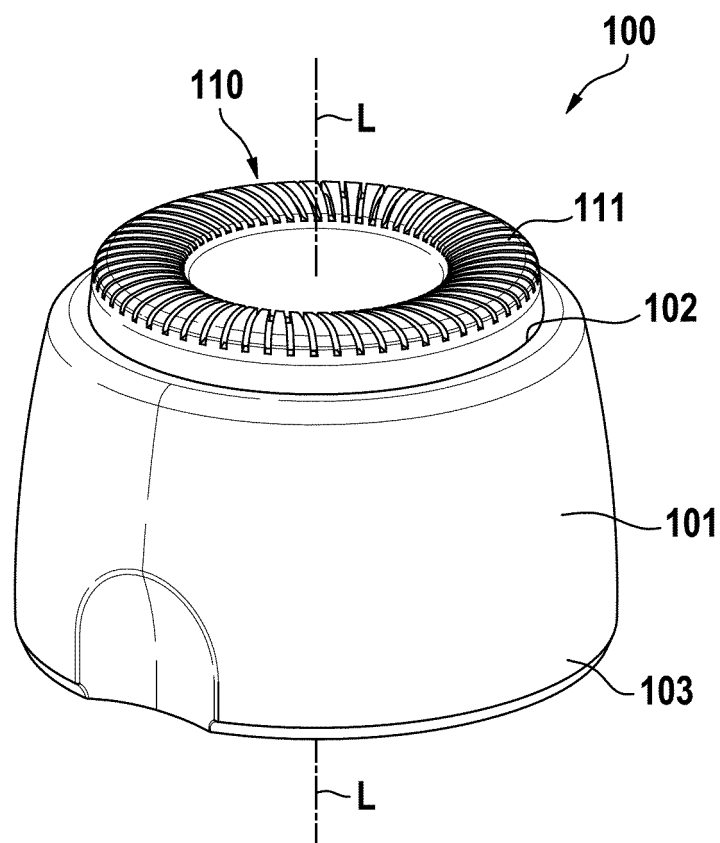
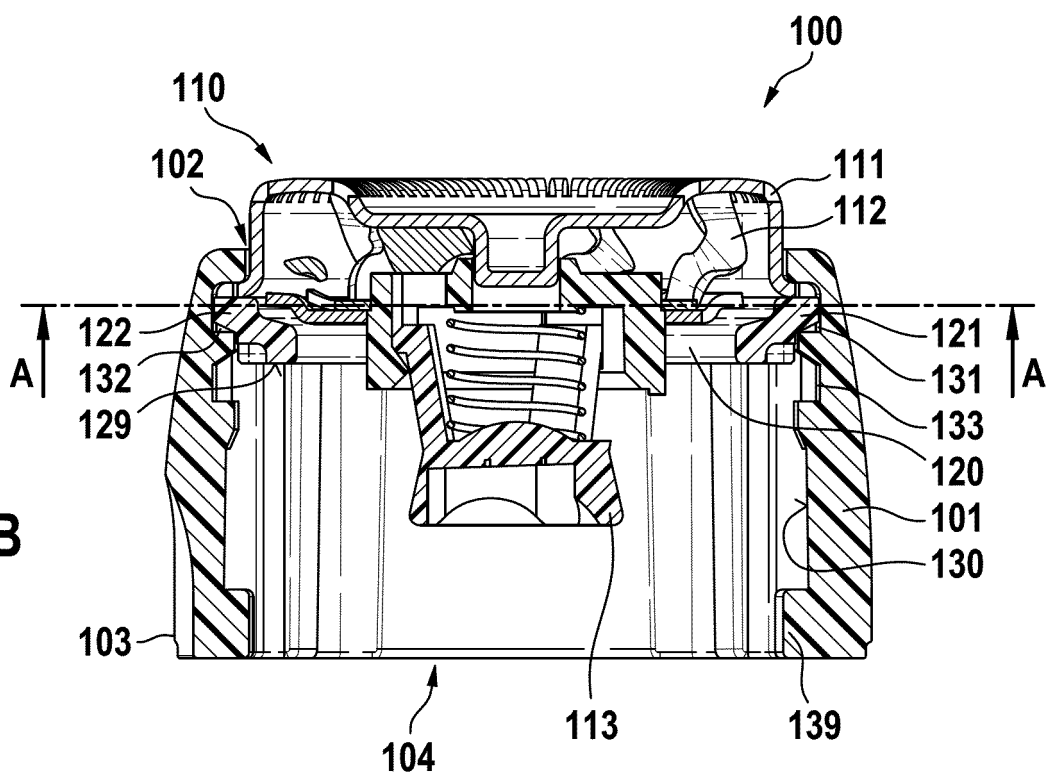


Fig. 2B



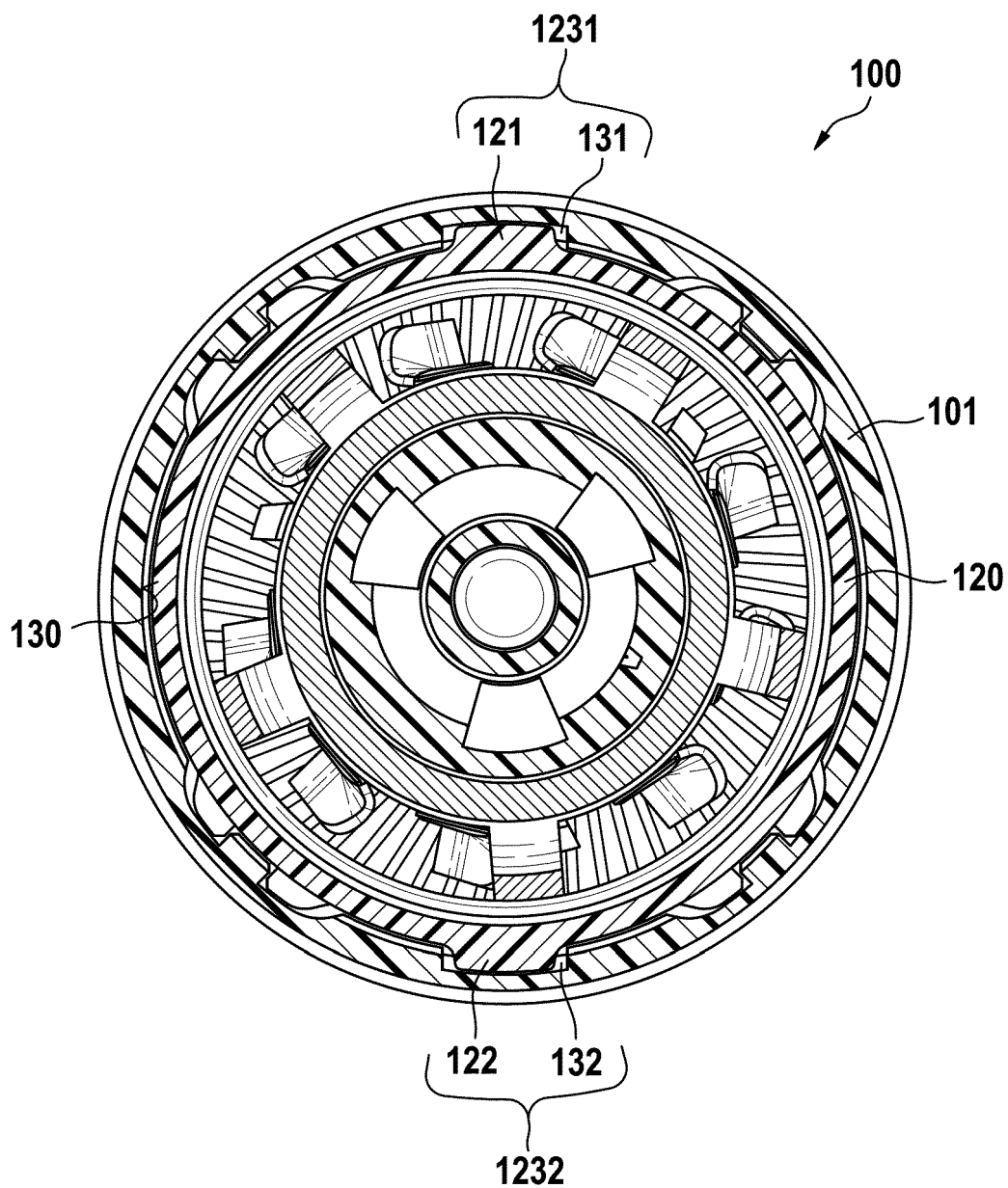


Fig. 2C
(A-A)

Fig. 3

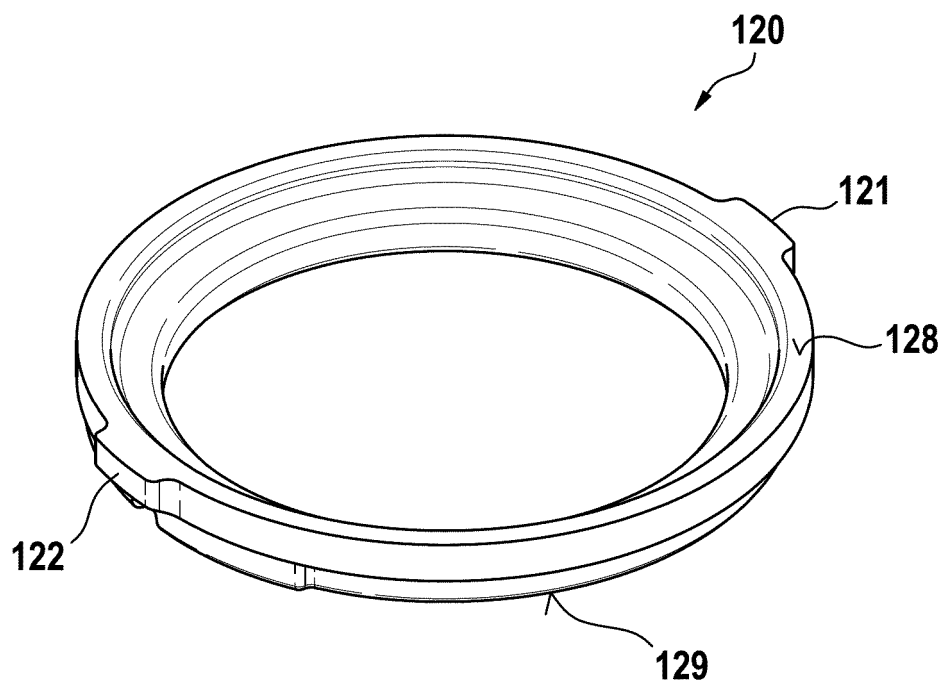


Fig. 4

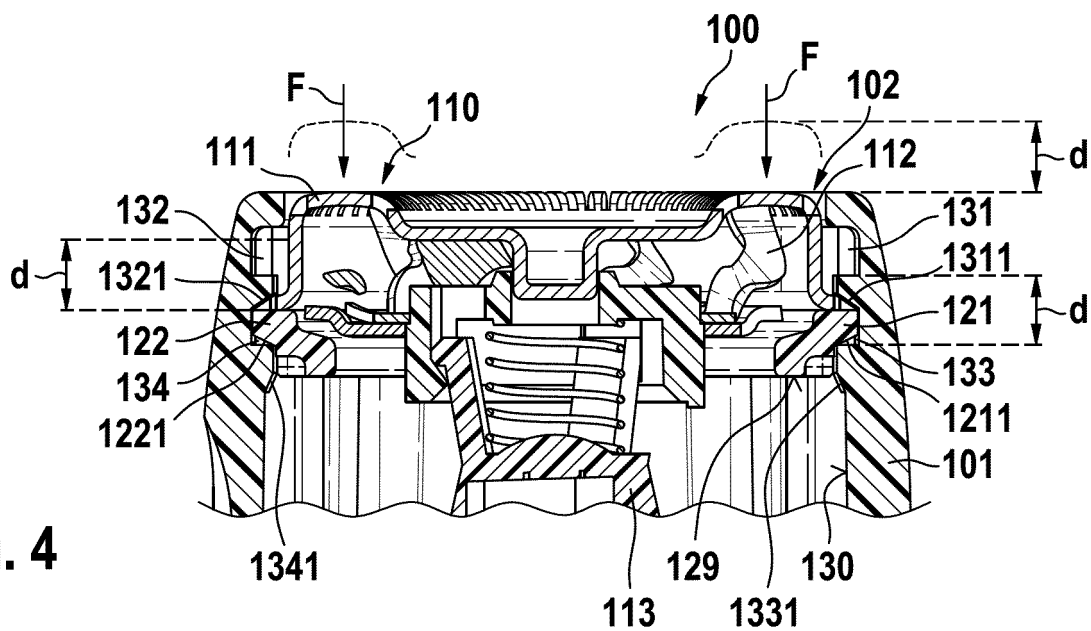


Fig. 5

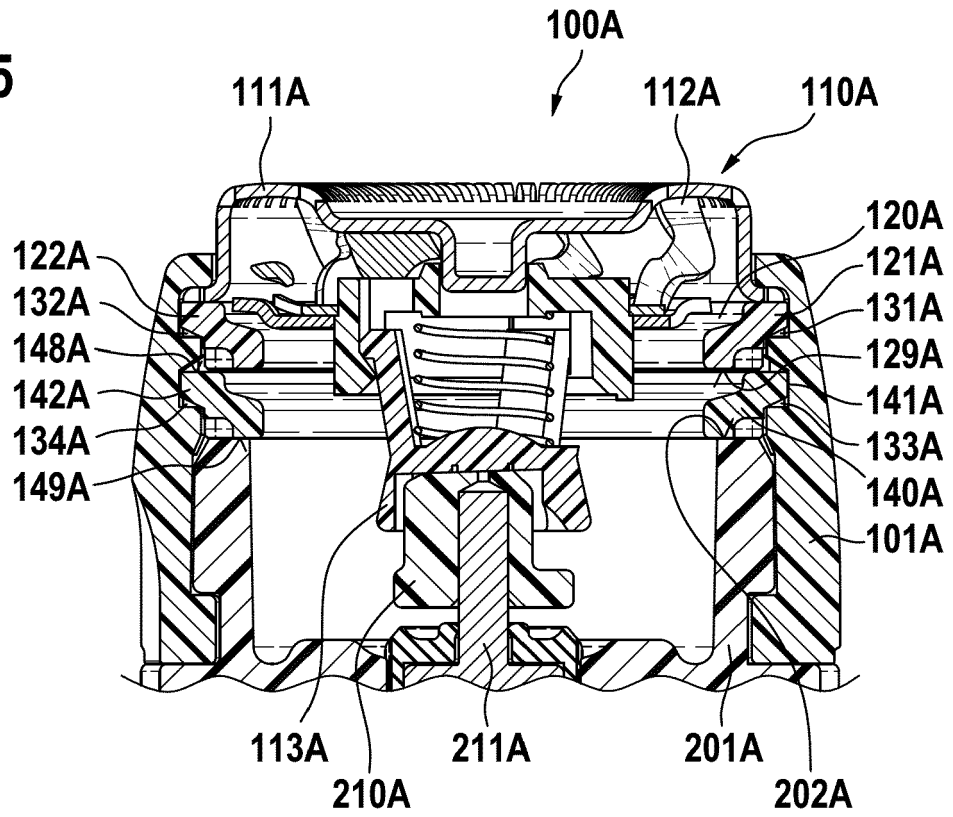


Fig. 6

