



(86) Date de dépôt PCT/PCT Filing Date: 2008/04/11
 (87) Date publication PCT/PCT Publication Date: 2009/10/15
 (85) Entrée phase nationale/National Entry: 2010/10/08
 (86) N° demande PCT/PCT Application No.: EP 2008/054439
 (87) N° publication PCT/PCT Publication No.: 2009/124597

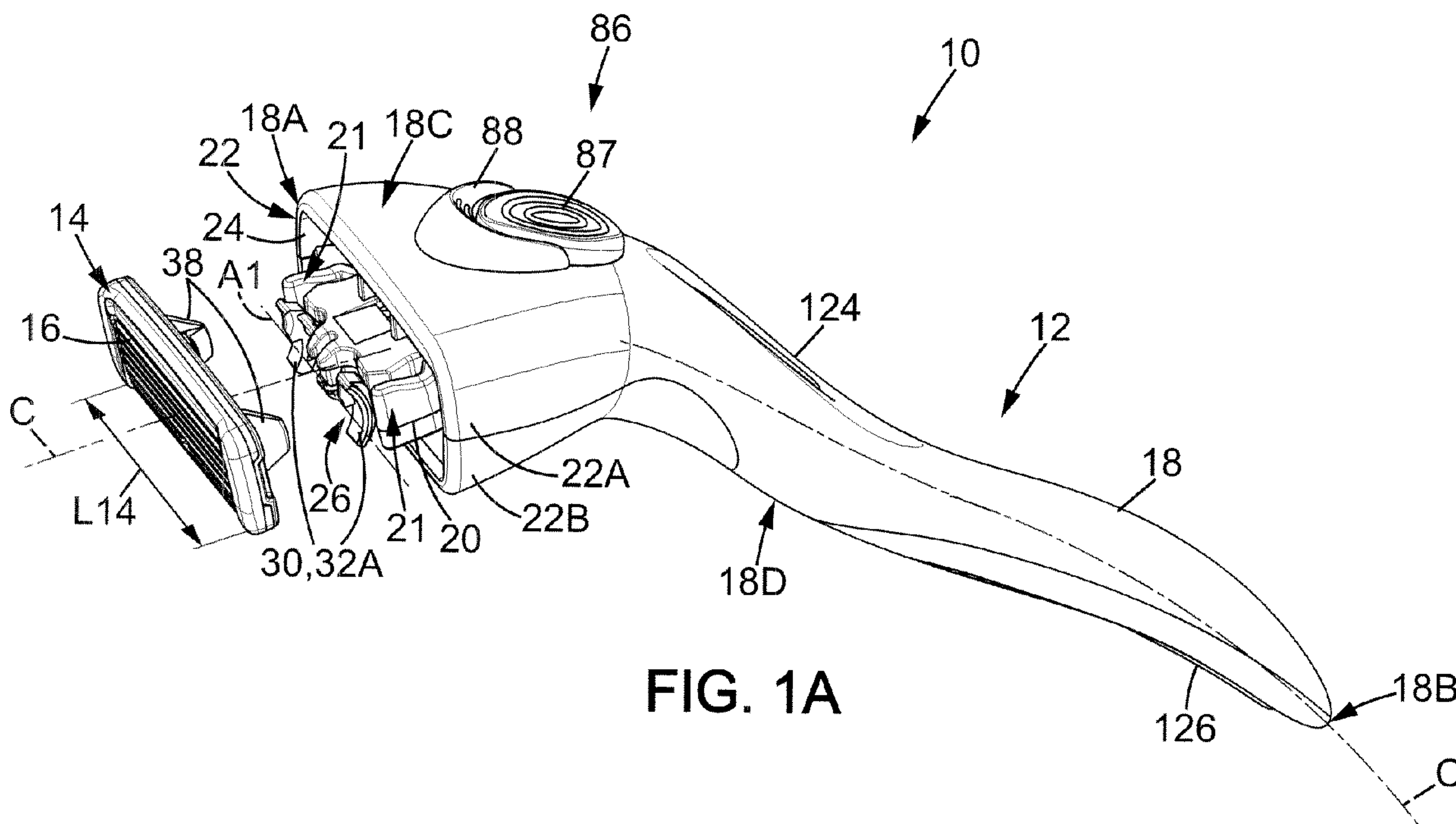
(51) Cl.Int./Int.Cl. *B26B 21/22* (2006.01),
B26B 21/40 (2006.01), *B26B 21/52* (2006.01)

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(54) Titre : POIGNEE DE RASOIR POUR CARTOUCHE DE RASAGE RETRACTABLE ET RASOIR COMPRENANT
CETTE POIGNEE DE RASOIR
 (54) Title: RAZOR HANDLE FOR A RETRACTABLE SHAVING CARTRIDGE AND A RAZOR COMPRISING SUCH A
RAZOR HANDLE



(57) Abrégé/Abstract:

Razor handle for a retractable shaving cartridge (14) comprising an elongate body (18) having a hollow housing (22) provided with an opening at the front end (18A) of the body (18), a shaving cartridge carrier (20) movable between a shaving position and a non-shaving position. A release mechanism (26) including an actuating member is provided to actuate the release mechanism (26) so as to release a shaving cartridge (14). A control mechanism (86) comprises a control member for controlling the actuating member only when the shaving cartridge carrier (20) is in the shaving position. The elongate body (18) further includes a guide adapted for guiding the control member.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
15 October 2009 (15.10.2009)(10) International Publication Number
WO 2009/124597 A1

(51) International Patent Classification:

B26B 21/22 (2006.01) *B26B 21/52* (2006.01)
B26B 21/40 (2006.01)

(21) International Application Number:

PCT/EP2008/054439

(22) International Filing Date:

11 April 2008 (11.04.2008)

(25) Filing Language:

English

(26) Publication Language:

English

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

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

(54) Title: RAZOR HANDLE FOR A RETRACTABLE SHAVING CARTRIDGE AND A RAZOR COMPRISING SUCH A RAZOR HANDLE

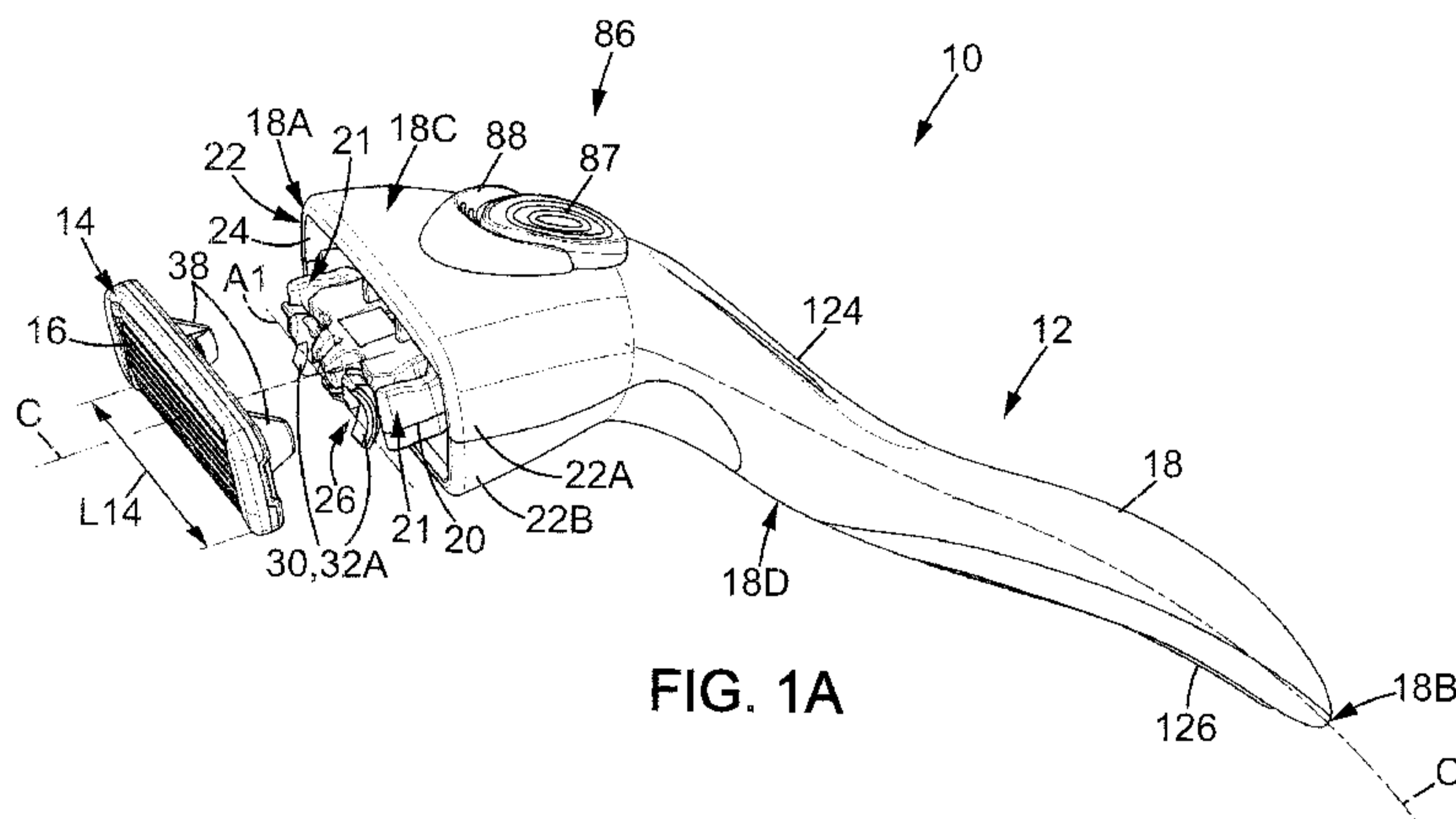


FIG. 1A

(57) Abstract: Razor handle for a retractable shaving cartridge (14) comprising an elongate body (18) having a hollow housing (22) provided with an opening at the front end (18A) of the body (18), a shaving cartridge carrier (20) movable between a shaving position and a non-shaving position. A release mechanism (26) including an actuating member is provided to actuate the release mechanism (26) so as to release a shaving cartridge (14). A control mechanism (86) comprises a control member for controlling the actuating member only when the shaving cartridge carrier (20) is in the shaving position. The elongate body (18) further includes a guide adapted for guiding the control member.

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Razor handle for a retractable shaving cartridge and
a razor comprising such a razor handle

Field of the invention

5 The invention is concerned with razor handles for a retractable shaving cartridge and razors comprising such a razor handle.

 More particularly, the invention relates to a razor handle for a retractable shaving cartridge
10 comprising:

 - an elongate body extending in a longitudinal direction between a front end and a back end and having an upper and a lower face, said body having a hollow housing provided with an opening at the front end of the
15 body,

 - a shaving cartridge carrier movable between a shaving position in which the razor cartridge carrier extends at least partly out of the housing, and a non-shaving position in which the razor cartridge carrier is
20 retracted inside the housing,

 - a release mechanism provided on the shaving cartridge carrier and including an actuating member which is adapted to actuate said release mechanism so as to release a shaving cartridge carried by said shaving
25 cartridge carrier, and

 - a control mechanism which is disposed on the body for controlling the actuating member only when the shaving cartridge carrier is in said shaving position, said control mechanism comprising a release-button
30 movably mounted on the elongate body between a rest position and a release position, said control mechanism further comprising a control member movably mounted between a retracted position in which the control member does not interfere with the actuating member of the

position when the release-button is in the release position.

Consequently, the control member is guided when moved between its retracted and active positions.

5 In various embodiments of the invention, one and/or the other of the following features may be incorporated:

- the release-button is slidably mounted in the longitudinal direction on the elongate body between the
10 rest position and the release position, said release position being closer to the front end of the elongate body than said rest position and said release-button being elastically biased toward said back end, said control member being pivotally mounted relative to said
15 release-button between the retracted position and the active position in which the control member is positioned to push said actuating member toward the front end of the body,

- the release mechanism comprises two arms for
20 connecting a shaving cartridge to the shaving cartridge carrier, said arms extending substantially symmetrically on both sides of a medial axis, said arms being elastically biased opposite to one another toward a cartridge locking position and movable toward one another
25 into a cartridge release position, and the actuating member has two pins slidably engaged in two cam-recesses provided on the arms and formed to allow the biasing of the arms toward the head locking position when the actuating member is pushed toward the front end of the
30 body,

- the razor cartridge carrier further comprises lateral flanges extending forward at the front end of the body, at least as far as said two arms, said two arms being situated between said two lateral flanges,

- the razor handle further comprises a carrier-button which is slidably mounted in the longitudinal direction on the elongate body for controlling the shaving cartridge carrier motion, said carrier-button
5 being movable between a first position in which the shaving cartridge carrier is in said non-shaving position and a second position in which the shaving cartridge carrier is in said shaving position, said second position being closer to the front end of the elongate body than
10 said first position,

- the release-button is provided on the upper face of the body, whereas the carrier-button is provided on the lower face of the body, and a finger rest pad is provided on the upper face of the body near the release-
15 button,

- the razor handle further comprises a locking mechanism adapted to lock the shaving cartridge carrier either in said non-shaving or in said shaving position, said carrier-button being able to actuate the locking
20 mechanism to unlock the shaving cartridge carrier from said non-shaving position or from said shaving position,

- the locking mechanism comprises two recesses provided on the housing and a spring tongue connected to the carrier-button and to the shaving cartridge carrier,
25 said spring tongue having a free end which is retained in one of the two recesses when the shaving cartridge carrier is in said non-shaving, and in the other of the two recesses when the shaving cartridge carrier is in said shaving position,

- the body has a variable width along a length, said body comprising an enlarged part and a slim part connected together by a neck, said neck being located at a distance of the front end which is comprised between
30 10% and 20% of an overall length of said razor handle,

the enlarged part extending from this neck to the front end, whereas the slim part extends from the back end to this neck.

The invention also concerns a razor comprising such a razor handle and a shaving cartridge connected to the shaving cartridge carrier.

The shaving cartridge is preferably connected to shaving cartridge carrier such that the shaving cartridge extends out of the razor handle when the shaving cartridge carrier is in the shaving position and the shaving cartridge is located inside the housing when the shaving cartridge carrier is in the non-shaving position, and the release mechanism is preferably adapted to release the shaving cartridge only when the shaving cartridge carrier is in said shaving position. The shaving cartridge can further be provided with rearwardly protruding ribs connected to the razor handle and partly covered by the two lateral flanges of the razor handle when the shaving cartridge is connected to the shaving cartridge carrier.

The above and other objects and advantages of the invention will become apparent from the detailed description of one embodiment of the invention, considered in conjunction with the accompanying drawings.

Brief description of the drawings

Figure 1A is a perspective view of the shaving razor according to the invention, the shaving cartridge carrier being in the shaving position and the shaving cartridge being released.

Figure 1B is a perspective view of the razor shown in Figure 1A, the shaving cartridge carrier being in the shaving position and the shaving cartridge being connected to the shaving cartridge carrier.

Figure 1C is a perspective view of the razor shown in Figure 1A, the shaving cartridge carrier being in the non-shaving position and the shaving cartridge being connected to the shaving cartridge carrier.

5 Figure 2 is a perspective view partially exploded of the razor shown in Figure 1A (without the shaving cartridge).

Figure 3 is an exploded perspective view of the shaving cartridge carrier shown in Figure 2.

10 Figure 4A is a partial perspective view of the shaving cartridge carrier shown in Figure 2, the shaving cartridge being released from the shaving cartridge carrier.

15 Figure 4B is a partial perspective view of the shaving cartridge carrier shown in Figure 2, the shaving cartridge being connected to the shaving cartridge carrier.

Figure 5 is a partial longitudinal section of the shaving razor carrier of Figure 2 along line V-V.

20 Figure 6A is a partial longitudinal section of the razor of Figure 1A, the release-button being in the rest position.

25 Figure 6B is a partial longitudinal section of the razor of Figure 1A, the release-button being in the release position.

Figure 6C is a partial perspective view of the control mechanism.

30 Figure 7A is a partial longitudinal section of the razor of Figure 1C, the shaving cartridge carrier being in the non-shaving position and the release-button being in the rest position.

Figure 7A' is a partial longitudinal section of the razor of Figure 1C, the shaving cartridge carrier

being in the non-shaving position and the control member being in the active position.

Figure 7B is a partial longitudinal section of the razor of Figure 1C, the shaving cartridge carrier being in the non-shaving position and the release-button being in the release position.

Figure 7C is a partial longitudinal section of the razor of Figure 1B, the shaving cartridge carrier being in the shaving position and the release-button being in the rest position.

Figure 7C' is a partial longitudinal section of the razor of Figure 1B, the shaving cartridge carrier being in the shaving position and the control member being in the active position.

Figure 7D is a partial longitudinal section of the razor of Figure 1A, the shaving cartridge carrier being in the shaving position and the release-button being in the release position.

Figure 8 is a top view of the shaving razor of Figure 1C.

More detailed description

In the various figures, the same references denote identical or similar elements.

Figure 1 illustrates a razor 10 according to the present invention, having a razor handle 12 and a shaving cartridge 14 provided with one or several shaving blades 16.

The razor handle 12 has an elongate body 18 extending in a longitudinal direction L between a front end 18A and a back end 18B. The body 18 has an upper face 18C opposite to a lower face 18D.

The shaving cartridge 14 is preferably a disposable cartridge which can be connected to a shaving cartridge carrier 20 as illustrated on Figure 1B.

This shaving cartridge carrier 20 is movable between a shaving position (depicted on Figure 1A or 1B) in which the razor cartridge carrier 20 and the shaving cartridge 14 extend at least partly out of a housing 22 provided on the body 18, and a non-shaving position (depicted on Figure 1C) in which the razor cartridge carrier 20 and the shaving cartridge 14 are retracted inside the housing 22.

The housing 22 is hollow and preferably formed by an upper shell 22A and a lower shell 22B as illustrated on Figure 2 which are maintained together in a well-known way like for example by snap-fitting or gluing. An opening 24 at the front end 18A of the body 18 allows access to the inside of this hollow housing 22. Especially, the shaving cartridge carrier 20 is movable through this opening 24.

In order to be able to connect or release the shaving cartridge 14 especially in order to exchange it, the handle 12 is further provided with a release mechanism 26 provided on the shaving cartridge carrier 20. As illustrated in details on Figure 3, the release mechanism 26 includes an actuating member 28 which is adapted to actuate said release mechanism 26 so as to release the shaving cartridge 14 (not illustrated) carried on said shaving cartridge carrier 20.

In reference to Figures 3, 4A and 4B, the release mechanism 26 comprises two arms 30 and 30 for connecting a shaving cartridge 14 to the shaving cartridge carrier 20. The arms 30 are elastically biased opposite to one another toward a cartridge locking position (see Figure 4B) and movable toward one another into a cartridge release position (see Figure 4A).

Each arm 30 has a first end 30A including preferably a shell bearings 32 having a cylindrical

concave front face 32A and a lateral edge 32B which protrudes outwardly and which has also a cylindrical shape. The front face 32A and the lateral edge 32B have the same cylindrical axis, corresponding to the axis of rotation A1 of the shaving cartridge 14. The two arms 30 and 30 may be disposed in a V shape, converging from a medial axis X from their first end 30A toward a second end 30B. The medial axis X is substantially parallel to the curved longitudinal axis C of the handle 12. The second ends 30B of the two arms 30 may be connected together by a hinge 34, formed for instance as a thin bridge of plastic material connecting the two arms 30 to each other when said arms are molded as a single piece. The hinge 34 may have a negligible resilient action, or no resilient action, on the two arms 30.

As shown in figure 4A, the rear face 14A of the shaving cartridge 14 may include two inwardly facing arcuate slots 36 shaped in correspondence with the lateral edges 32B of the shell bearings 32 and adapted to receive said lateral edges 32B for pivotally mounting the shaving cartridge 14 onto the handle 12. These arcuate slots 36 may be formed respectively in two protruding ribs 38 and may be limited toward the handle 12, by a first arcuate concave surface 40 facing toward the shaving cartridge 14, and away from the handle 12, by a larger second arcuate convex surface 42 facing toward the handle 12.

When the shaving cartridge 14 is connected to the shaving cartridge carrier 20, these rearwardly protruding ribs 38 are partly covered by two lateral flanges 21 provided on the razor handle 12. More specifically the lateral flanges 21 can be provided on the shaving cartridge carrier 20 and extend forward at the front end 18A of the handle body 18 in the direction of the shaving

cartridge 14, at least as far as the two arms 30, the arms 30 being situated between said two lateral flanges 21. The rearwardly protruding ribs 38 and the lateral flanges 21 are preferably shaped in correspondence to
5 partly cover said protruding ribs 38.

These lateral flanges 21 improve the retention of the shaving head 14 on the razor handle 12 and guide the user during the connection of the shaving cartridge on the razor handle 12. Besides, the movement generated by
10 the shaving in the connection can be at least partly absorbed by the flanges 21. The front faces 32A of the shell bearings 32 bear respectively on the second arcuate convex surfaces 42. Said second arcuate convex surfaces 42 may include respectively two notches 44 for receiving
15 corresponding protrusions 46 of the shell bearings 32, so as to limit the angular range of rotation of the shaving cartridge 14. The rear face 14A of the shaving cartridge 14 may further include a central rib 48 having an edge forming a top cam surface 50 facing away from the shaving
20 cartridge 14 toward the handle 12. The cam surface 50 may have a generally V shape and may include two substantially flat surfaces 52 which are slightly inclined relative to one another and which may be for instance separated from one another by a notch 54
25 hollowed out in the rib 48 in order to adapt the shaving cartridge 14 on a other type of handle having a flexible tongue which is inserted into said notch 54.

In reference to Figures 3 and 5, the release mechanism 26 further includes a plunger 56 which is
30 movably mounted, substantially along the medial axis X between the two arms 30. This plunger 56 has a central body 58 and two lateral wings 60 extending opposite to one another toward the two arms 30. The central body 58 extends longitudinally parallel to the medial axis X,

between a first, substantially flat free end 58A which bears against the cam surface 50 of the shaving cartridge 14 (see Figure 4A), and a second end 58B facing away from the shaving cartridge 14.

5 A recess 62 may be hollowed out in the central body 58, said recess 62 forming a blind hole which opens at the second end 58B of the central body 58, in the direction of the handle 12. Each lateral wing 60 may include a detent 64 protruding parallel to the medial
10 axis X toward the shaving cartridge 14, said detent 64 facing an inwardly extending protrusion 66 belonging to the corresponding arm 30. The protrusion 66 has an opening 68 which is limited inwardly by a rim 70 belonging to said protrusion 66. Besides, the lateral
15 wings 60 of the plunger 56 may each have respectively two ribs 72 which extend in a medial plane of the arms 30, opposite to the central body 58.

The plunger 56 is elastically biased toward the cam surface 50 of the shaving cartridge 14 so as to
20 cooperate therewith by camming action to bias said shaving cartridge 14 in rotation toward a rest position. In the example shown in the figures, the plunger 56 is elastically biased by a helicoidal spring 74, which has a first spring end fitted into the recess 62 and a second
25 spring end fitted into a recess 76, for instance in the form of a blind hole, hollowed out in the actuating member 28.

The actuating member 28 is disposed between the arms 30 in line with the plunger 56 along the medial axis
30 X. Said actuating member 28 is disposed between the plunger 56 and the hinge 34 along the medial axis X. The recess 76 opens parallel to the medial axis X toward the plunger 56.

The actuating member 28 is slidably mounted between the arms 30, substantially parallel to the medial axis X and is elastically biased by said spring 74 toward the handle 12, i.e. away from the shaving cartridge 14.

5 Said actuating member 28 cooperates by camming action with the two arms 30 for biasing said arms 30 outwardly away from each other, toward a cartridge locking position shown in Figure 4B, where lateral edges 32B of the shell bearings 32 penetrate in the corresponding arcuate slots

10 36 of the shaving cartridge 14.

The actuating member 28 has preferably a central body 78 in which the recess 76 is hollowed out, and two lateral extensions 80 extending opposite to one another toward the two arms 30 and cooperating by camming action

15 respectively with said two arms 30 for biasing the arms toward the cartridge locking position. These lateral extensions 80 are provided with a respective pin 82 (see Figures 3 and 5) slidably engaged in two respective cam-recesses 84 provided on the arms 30 and formed to allow

20 the biasing of the arms toward the head locking position when the actuating member is pushed toward the front end of the body. Said cam-recesses 84 may be diverging from the medial axis X in a direction away from the handle 12.

Thanks to these dispositions, the same spring 74

25 is used to bias the plunger 56 elastically toward the cam surface 50 of the shaving cartridge 14 and to bias the actuating member 28 away from the shaving cartridge 14, thus biasing both the shaving cartridge 14 in rotation toward the rest position and the arms 30 toward the

30 cartridge lock position. It should be noted that the plunger 56 is maintained between the two arms 30 both by cooperation with the spring 74 by abutment against the cam surface 50 of the shaving cartridge 14 and eventually by abutment against the protrusions 66 of the arms 30.

Referring back to Figure 1, the razor handle 12 is further provided with a control mechanism 86 which is disposed on the body 18 for controlling the actuating member 28.

5 The control mechanism 86 comprises a release-button 88 movably mounted on the elongate body 18 between a rest position illustrated on Figure 6A and a release position illustrated on Figure 6B.

10 The release-button 88 may be slidably mounted in the longitudinal direction L on the elongate body 18 between the rest position and the release position, said release position being closer to the front end 18A of the elongate body 18 than said rest position. In the example shown in the figures, the release-button 88 is
15 elastically biased by a helicoidal spring 89, which has a first spring end fitted around a lug 92 provided on the body 18 and a second spring end fitted around a lug 94 provided on the release-button 88. The release-button 88 is thus elastically biased by said spring 89 toward the
20 handle 12, i.e. away from the shaving cartridge 14, in its rest position (Figure 6A).

 The control mechanism 86 further comprises a control member 90 movably mounted on the release-button 88 between a retracted position illustrated on Figure 6A
25 and an active position illustrated on Figure 6B. As disclosed in details hereafter and in reference to Figures 7A-7D, this control member 90 is able to push the actuating member 28 according to its position: in its retracted position, the control member 90 does not
30 interfere with the actuating member 28 and in its active position, the control member 90 is positioned to be able to act on said actuating member 28 in pushing it toward the front end 18A of the body 18.

In reference to Figures 6A-6C, the control member 90 is pivotally mounted on the release-button 88 via two opposite pivots 96 provided on the control member 90 and lodged in corresponding swing-holes 98 provided on the
5 release-button 88.

The elongate body 18 further includes a guide 100 adapted for guiding the control member 90 so that it is in the retracted position (Figure 6A) when the release-button 88 is in the rest position and in the active
10 position (Figure 6B) when the release-button 88 is in the release position. To this extent, the guide 100 has a surface 102 along which two opposite hubs 104 provided on the control member 90 are able to slide. The guide 100 has also a groove 106 in which the hubs 104 are located
15 when the control member 90 is in its retracted position (Figure 6A). This groove 106 is located in the rear of the surface 102 (opposite to the front end 18A of the body 18) and tilts the free end 90A of the control member 90 toward the top (toward the release-button 88).

20 When the release-button 88 slides forward (toward the front end 18A) toward its release position, the hubs 104 leave the groove 106 and slide along the surface 102 parallel to the longitudinal direction L, such that the control member 90 pivots about the hubs 104 and its free
25 end 90A tilts toward the bottom (opposite to release-button 88) deviating from the release-button 88 (see Figure 6B) of a tilting angle α comprised between 15° and 30° , preferably of about 17.5° .

The value of this tilting angle α is chosen
30 according to the curvature of the handle, such that the front end 90A of the control member 90 is positioned to act on said actuating member 28 when the shaving cartridge carrier 20 is in the shaving position.

As illustrated in Figures 7A to 7D, according to the position of the shaving cartridge carrier 20, the control member 90 and especially its free end 90A is or not in register with the actuating member 28.

5 When the control member 90 is in its rest position (the release-button 88 being in its rest-position), the shaving cartridge carrier 20 being in its non-shaving position as illustrated on Figure 7A or in its shaving position as illustrated on Figure 7C, the
10 free end of the control member 90 is lifted up and distant from the shaving cartridge carrier 20 and can thus not act on it.

When the release-button 88 slides toward its release-position, the control member 90 pivots in its
15 active position (Figure 7A' or 7C') and the free end 90A of the control member 90 is tilted toward the shaving cartridge carrier 20.

In this case, when the shaving cartridge carrier 20 is in its non-shaving position as illustrated on
20 Figure 7B, the control member 90 can still not act on it. In fact, the free end of the control member 90 is located above the shaving cartridge carrier 20 and the control member 90 slides with it without pushing any member. In the release-position, the free end 90A of the control
25 member 90 is just back the shaving cartridge 14 (without contact).

When the shaving cartridge carrier 20 is in its shaving position as illustrated on Figure 7D, the control member 90 can act on it. In fact, the free end 90A of the
30 control member 90 is located in register with the shaving cartridge carrier 20. Thus, when the release-button 88 continues to slide toward its release-position the control member 90 slides with it and pushes the actuating member 28 forward toward the front end 18A of the body

18. Consequently, the shaving cartridge 14 is released as above-explained.

In fact, coming back to Figure 4A-4C, when a shaving cartridge 14 is mounted on the handle 12, the release mechanism 26 is normally in the cartridge lock position. Starting from this position, when a user wishes to exchange shaving heads, he first pushes the release-button 88 forward, which brings the arm 30 toward each other against the camming action of the actuating member 28. During this movement, the actuating member 28 slides along the medial axis X toward the plunger 56, and said actuating member 28 partially penetrates between the ribs 72 of the plunger. When the arms 30 have sufficiently moved toward each other to reach the cartridge release position shown in figure 4A, the shaving cartridge 14 is released by the shell bearings 32 and is simultaneously ejected by the plunger 56.

The plunger 56 then moves forward to an outwardly protruding position, so that the detents 64 of said plunger penetrate in the recesses 68 of the extensions 66 of the arms. In this position, the arms 30 are maintained in the cartridge release position by abutment of the rims 70 against said detents 64, thus cooperating by hooking action. Afterwards, when a new shaving cartridge 14 is fixed to the handle 12, the shell bearings 32 are inserted between the arcuate slots 36 of the new shaving cartridge 14 and the cam surface 50 of said new shaving cartridge 14 pushes the plunger 56 backward toward the handle 12. The arms 30 are then released and deviate away from each other under the action of the actuating member 28, so that the shell bearings 32 insert themselves in the arcuate slots 36 of the new shaving cartridge 14, and the release mechanism 26 is again in the position shown in Figures 4B, 7A and 7C.

As illustrated on the Figures, the release-button 88 may be provided on the upper face 18C of the body 18 and a finger rest pad 87 can be further provided on the upper face of the body near the release-button 88. Thus, 5 when a user wanted to release the shaving cartridge 14, he has just to put one of his fingers on the finger rest pad 108 and slide his finger forward, toward the front end 18A of the body 18, to push the release-button 88 toward its release position.

10 The razor handle 12 further comprises a carrier-button 108 slidably mounted in the longitudinal direction L for controlling the shaving cartridge carrier 20 motion. This carrier-button 108, preferably provided on the lower face 18D of the body 18, is movable between a 15 first position (see Figures 7A, 7A' and 7B) in which the shaving cartridge carrier 20 is in said non-shaving position and a second position (see Figures 7C, 7C' and 7D) in which the shaving cartridge carrier 20 is in said shaving position. The second position of the carrier- 20 button 108 may be closer to the front end 18A of the elongate body 18 than the first position.

Consequently, when a user wants to shave, he has just to push the carrier-button 108 forward, toward its second position and the shaving cartridge carrier 20 25 slides toward the front end 18A through the opening 24 until it reaches its shaving position (see Figure 1B).

As illustrated on Figures 2 and 3, the release-mechanism 26 may be partly confined inside the shaving cartridge carrier 20 formed by an upper part 20A 30 assembled to a lower part 20B. In this case, the lateral flanges 21 are also formed in two corresponding parts 21A and 21B respectively provided on the upper part 20A and on the lower part 20B.

The shaving cartridge carrier 20 may have guide wings in order to guide its sliding inside the housing 22 along longitudinal direction L. In particular, two upper guide wings 110 can be provided on the upper part 20A and engaged in two corresponding longitudinal rails (not illustrated) provided on the inner surface of the upper shell 22A of the housing 22. Besides, three lower guide wings 112 can also be provided on the lower part 20B of the shaving cartridge carrier 20 and engaged in three corresponding longitudinal rails (not illustrated) provided on the inner surface of the lower shell 22B of the housing 22.

The razor handle 12 further comprises a locking mechanism 114 adapted to lock the shaving cartridge carrier 20 either in its non-shaving or in its shaving position. The carrier-button 108 may be able to actuate the locking mechanism 114 to unlock the shaving cartridge carrier 20 from said non-shaving position or from said shaving position.

The locking mechanism 114 may comprise two recesses 116A and 116B provided on the housing 22, for example in the lower face 18A of the razor handle, and a spring tongue 118 connected to the carrier-button 108 and to the shaving cartridge carrier 20. The spring tongue 118 has a free end 118A which can be retained in one of the two recesses 116A or 116B. The spring tongue 118 has an opposite free end 118B which is engaged in a recess 120 provided on the upper part 20A of the shaving cartridge carrier 20.

The spring tongue 118 has further a middle extension 118C on which the carrier-button 108 is fixed. In fact, the carrier-button 108 has a central blind hole 108A in which the middle extension 118C is engaged. It follows that when the carrier-button 108 is slid

toward its second position, the spring tongue 118 is also moved forward and the shaving cartridge carrier 20 slides toward its shaving position (Figures 7C and 7D). In order to unlock the shaving cartridge carrier 20 from its non-shaving or shaving position, the carrier-button 108 has to be pushed toward the inside of the housing 22 in order to release the free end 118A from the corresponding recess 118A or 118B.

The spring tongue 118 may be preloaded before mounting in the razor handle such that it is elastically brought back against the corresponding recess or the lower face 18A, when the carrier-button 108 is released.

Hence, when the shaving cartridge carrier 20 is in its non-shaving position (see Figure 7A and 7B), the free end 118A is located in the recess 116A, whereas when the shaving cartridge carrier 20 is in its shaving position (see Figure 7C and 7D), the free end 118A is located in the recess 116B, said recess 116B being closer to the front end 18A than said recess 116A.

In order to be able to release a shaving cartridge has disclosed previously with help of the release-button 88, the shaving cartridge carrier 20 has to be in its shaving position.

In fact, when the release-button 88 begun to be slide forward, the control member 90 pivots from its retracted position (Figure 7A) to its active position (Figure 7A'). However, when shaving cartridge carrier 20 is in its non-shaving position (the shaving cartridge 14 is located inside the housing 22) as depicted in details on Figures 7A-7B, even when the release-button 88 continue to be slid forward toward its release position (Figure 7B), the control member 90 is neither able to contact, nor to push forward the actuating member 28 of the shaving cartridge carrier 20. In fact, the actuating

member 28 is located too backward relative to the free end 90A of the control member 90. Consequently, the shaving cartridge can not be released.

On the contrary, when the shaving cartridge carrier 20 is previously put in its shaving position (the shaving cartridge 14 is located outside the housing 22) as depicted in details on Figures 7C-7D and the release-button 88 begun to be slide forward, the control member 90 pivots from its retracted position (Figure 7C) to its active position (Figure 7C') and its free end 90A arrives just behind the actuating member 28. Hence, when the release-button 88 continue to be slid forward toward its release position (Figure 7D), the control member 90 slide forward and push the actuating member 28 of the shaving cartridge carrier 20 toward the front end 18A of the razor body 18. Consequently, as explained in details above, the shaving cartridge 14 is released.

Thus, to release a shaving cartridge 14 connected to the razor handle 12, a user has to push and slide forward the carrier-button 108 (for example with its thumb) in order to bring the shaving cartridge carrier 20 out of the housing 22 and then he has to slide forward the release-button 88 (for example with its index) to release the shaving cartridge.

The elongate body 18 may define a variable width W along the length L thereof. As depicted on Figures 8A and 8B, said body comprising an enlarged part E_p having a width W_1 and a slim part S_p having a width W_2 connected together by a neck 122. The enlarged part E_p extends from this neck 122 to the front end 18A, whereas the slim part S_p extends from the back end 18B to this neck 122.

Due to the geometry of the body, the neck 122 has a widening shape which is broader on the side of the enlarged part E_p , the widen side 122A of the neck being

located at about 15% of the overall length L from the front end 18A. For example, with a length L of the elongate body 18 comprised between 100 mm and 180 mm, preferably about 150 mm, the neck 122 is located between
5 20 mm to 40 mm from the front end 18A, preferably at about 30 mm.

Besides, the length L122 of the neck 122 and its widening are chosen according to the widths W1 and W2 such that the connection between the neck 122, the
10 enlarged part Ep and the slim part Sp has a smooth curvature. The neck 122 has for example a length L122 comprised between 20 mm and 40 mm, preferably about 30 mm.

The width W1 of the enlarged part Ep may be
15 sensitively constant along the length thereof and have a value which is just superior to the length L14 of a shaving cartridge 14. The width W1 may be comprised between 40 mm and 50 mm, preferably 45 mm.

The width W2 of the slim part Sp may be variable
20 along the length thereof. Especially, the slim part can comprise two parts: a first one Sp1 connected to the neck 122 which is slimmer than a second one Sp2 extending from the back end 18B. The first slim part Sp1 can be provided with a finger rest area 124 on the upper face 18C of the
25 body, and the second slim part Sp2 can be provided with a finger rest area 126 on the lower face 18D of the body (see Figure 8B), said finger rest areas 124 and 126 may be flexible gripping areas made of an injected moulded elastomeric material, whereas the rest of the handle can
30 be substantially rigid backbone of an injected moulded thermoplastic, non elastomeric material.

CLAIMS

1. A razor handle for a retractable shaving
5 cartridge (14) comprising:
 an elongate body (18) extending in a longitudinal
direction (C) between a front end (18A) and a back end
(18B) and having an upper (18C) and a lower (18D) face,
said body (18) having a hollow housing (22) provided with
10 an opening at the front end (18A) of the body (18),
 a shaving cartridge carrier (20) movable between
a shaving position in which the razor cartridge carrier
(20) extends at least partly out of the housing (22), and
a non-shaving position in which the razor cartridge
15 carrier (20) is retracted inside the housing (22),
 a release mechanism (26) provided on the shaving
cartridge carrier (20) and including an actuating member
(28) which is adapted to actuate said release mechanism
(26) so as to release a shaving cartridge (14) carried by
20 said shaving cartridge carrier (20), and
 a control mechanism (86) which is disposed on the
body (18) for controlling the actuating member (28) only
when the shaving cartridge carrier (20) is in said
shaving position, said control mechanism (86) comprising
25 a release-button (88) movably mounted on the elongate
body (18) between a rest position and a release position,
said control mechanism (86) further comprising a control
member (90) movably mounted between a retracted position
in which the control member (90) does not interfere with
30 the actuating member (28) of the release mechanism (26)
and an active position in which the control member (90)
is positioned to act on said actuating member (28) upon
actuation of the release-button (88) when the shaving
cartridge carrier (20) is in the shaving position,

characterized in that the control member (90) is movably mounted on the release-button (88), and

in that the elongate body (18) further includes at least a guide (100) adapted for guiding the control member (90) so that said control member (90) be in the retracted position when the release-button (88) is in the rest position and in the active position when the release-button (88) is in the release position.

2. Razor handle according to claim 1, wherein the release-button (88) is slidably mounted in the longitudinal direction (C) on the elongate body (18) between the rest position and the release position, said release position being closer to the front end (18A) of the elongate body (18) than said rest position and said release-button (88) being elastically biased toward said back end (18B), said control member (90) being pivotally mounted relative to said release-button (88) between the retracted position and the active position in which the control member (90) is positioned to push said actuating member (28) toward the front end (18A) of the body (18).

3. Razor handle according to claim 2, wherein the release mechanism (26) comprises two arms (30) for connecting a shaving cartridge (14) to the shaving cartridge carrier (20), said arms (30) extending substantially symmetrically on both sides of a medial axis (X), said arms (30) being elastically biased opposite to one another toward a cartridge locking position and movable toward one another into a cartridge release position, and wherein the actuating member (28) has two pins (82) slidably engaged in two cam-recesses (84) provided on the arms (30) and formed to allow the biasing of the arms (30) toward the head locking position when the actuating member (28) is pushed toward the front end (18A) of the body (18).

4. Razor handle according to the preceding claim, wherein the razor cartridge carrier (20) further comprises lateral flanges (21) extending forward at the front end (18A) of the body (18), at least as far as said
5 two arms (30), said two arms (30) being situated between said two lateral flanges (21).

5. Razor handle according to anyone of the preceding claims, further comprising a carrier-button (108) which is slidably mounted in the longitudinal direction (C) on
10 the elongate body (18) for controlling the shaving cartridge carrier (20) motion, said carrier-button (108) being movable between a first position in which the shaving cartridge carrier (20) is in said non-shaving position and a second position in which the shaving
15 cartridge carrier (20) is in said shaving position, said second position being closer to the front end (18A) of the elongate body (18) than said first position.

6. Razor handle according to the preceding claim, wherein the release-button (88) is provided on the upper
20 face of the body (18), whereas the carrier-button (108) is provided on the lower face of the body (18), and wherein a finger rest pad (87) is provided on the upper face (18C) of the body (18) near the release-button (88).

7. Razor handle according to claim 4 or 5, further
25 comprising a locking mechanism (114) adapted to lock the shaving cartridge carrier (20) either in said non-shaving or in said shaving position, said carrier-button (108) being able to actuate the locking mechanism (114) to unlock the shaving cartridge carrier (20) from said non-
30 shaving position or from said shaving position.

8. Razor handle according to the preceding claim, wherein the locking mechanism (114) comprises two recesses (116A, 116B) provided on the housing (22) and a spring tongue (118) connected to the carrier-button (108)

and to the shaving cartridge carrier (20), said spring tongue (118) having a free end (118A) which is retained in one of the two recesses (116A) when the shaving cartridge carrier (20) is in said non-shaving, and in the
5 other of the two recesses (116B) when the shaving cartridge carrier (20) is in said shaving position.

9. Razor handle according to anyone of the preceding claims, wherein the body (18) has a variable width (W1, W2) along a length (L), said body (18) comprising an
10 enlarged part (Ep) and a slim part (Sp) connected together by a neck (122), said neck (122) being located at a distance of the front end (18A) which is comprised between 10% and 20% of an overall length (L) of said
15 razor handle (12), the enlarged part (Ep) extending from this neck (122) to the front end (18A), whereas the slim part (Sp) extends from the back end (18B) to this neck (122).

10. A razor comprising a razor handle (12) according to any of the preceding claims and a shaving cartridge
20 (14) connected to the shaving cartridge carrier (20).

11. Razor according to the preceding claim, wherein the shaving cartridge (14) is connected to the shaving cartridge carrier (20) such that the shaving cartridge (14) extends out of the razor handle (12) when the
25 shaving cartridge carrier (20) is in the shaving position and the shaving cartridge (14) is located inside the housing (22) when the shaving cartridge carrier (20) is in the non-shaving position, and wherein the release mechanism (26) is adapted to release the shaving
30 cartridge (14) only when the shaving cartridge carrier (20) is in said shaving position.

12. Razor according to the claim 10 or 11, wherein the shaving cartridge (14) is provided with rearwardly protruding ribs (38) connected to the razor handle (12)

and partly covered by the two lateral flanges (21) of the razor handle (12) when the shaving cartridge (14) is connected to the shaving cartridge carrier (20).

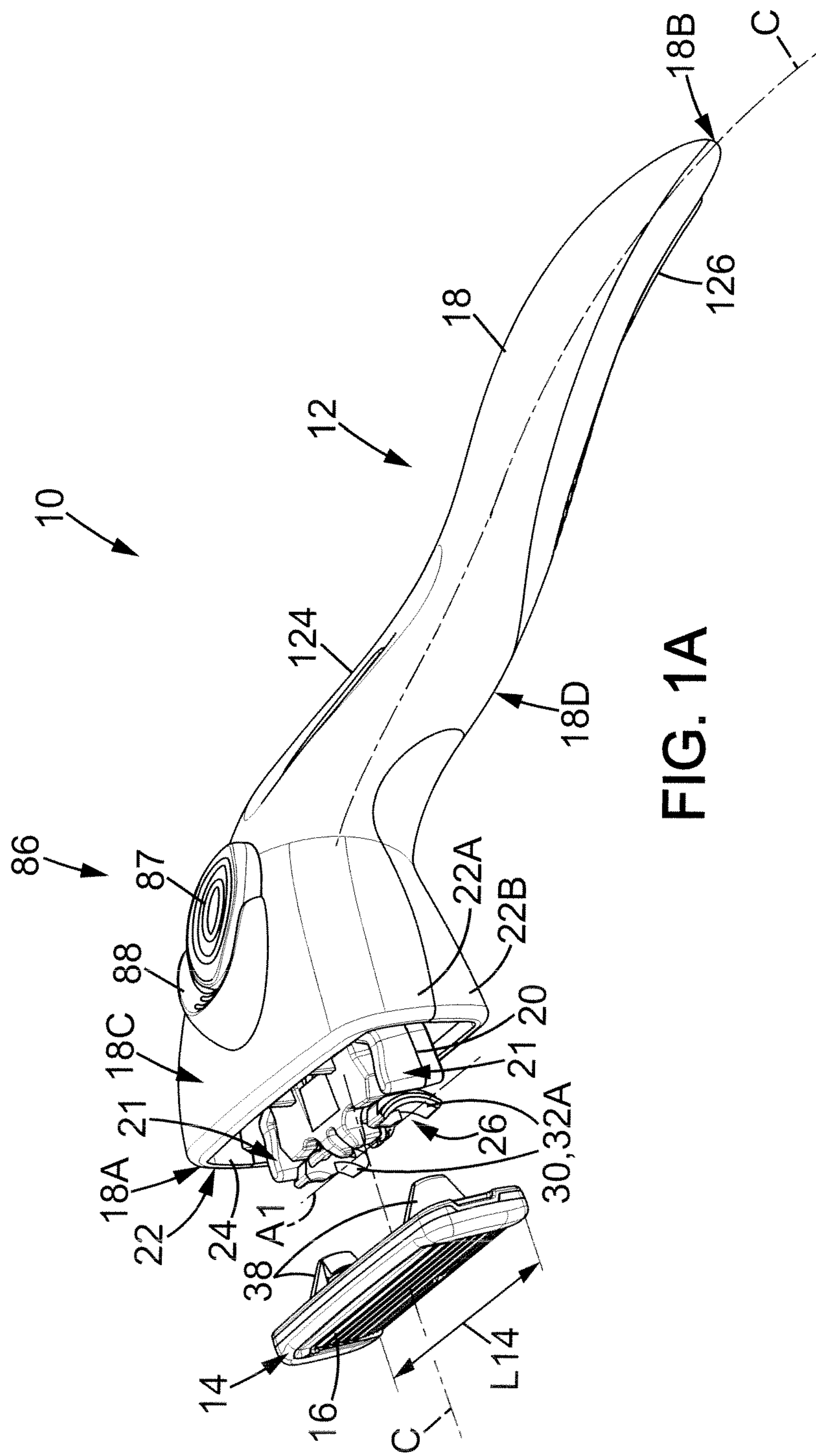
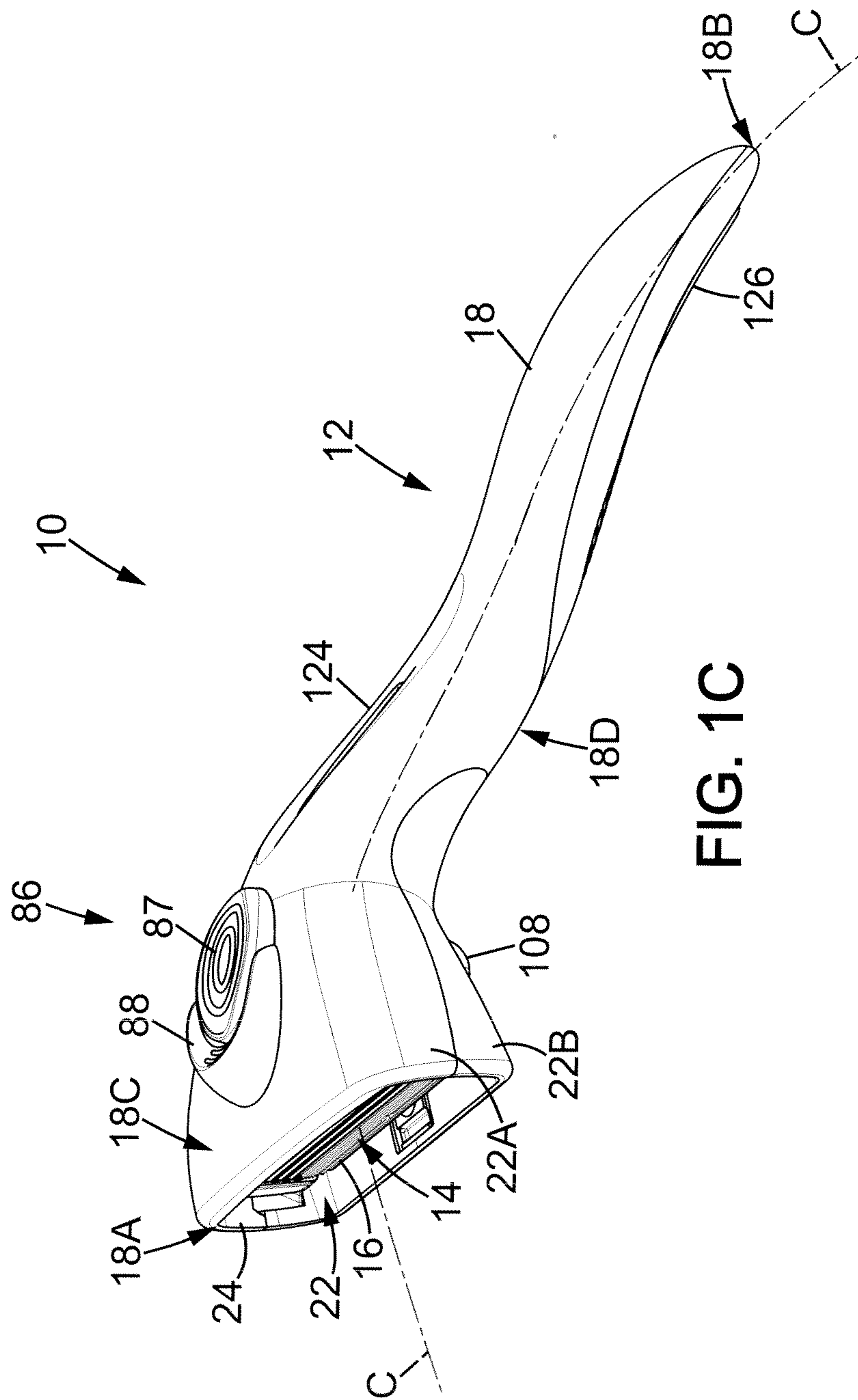
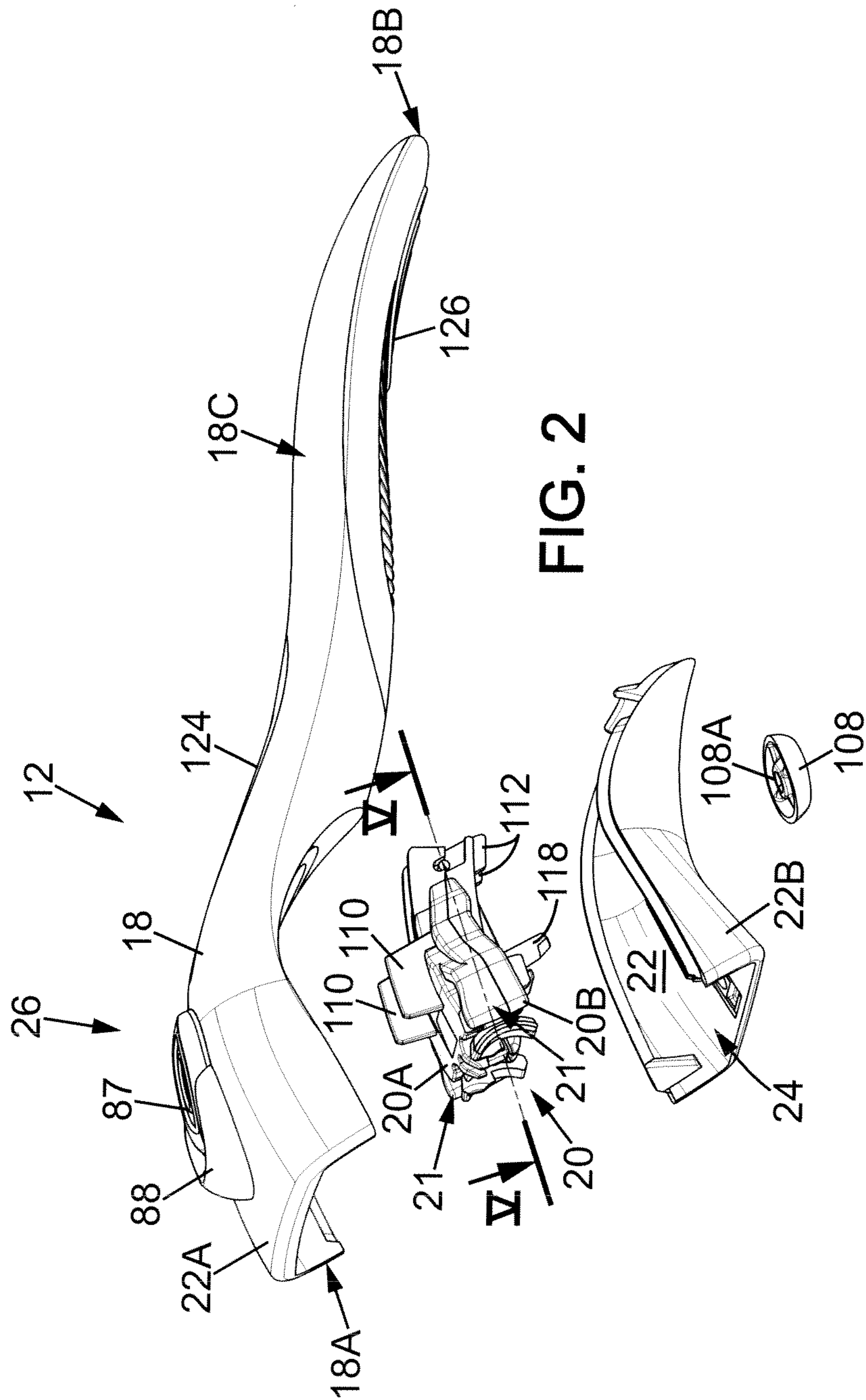


FIG. 1A





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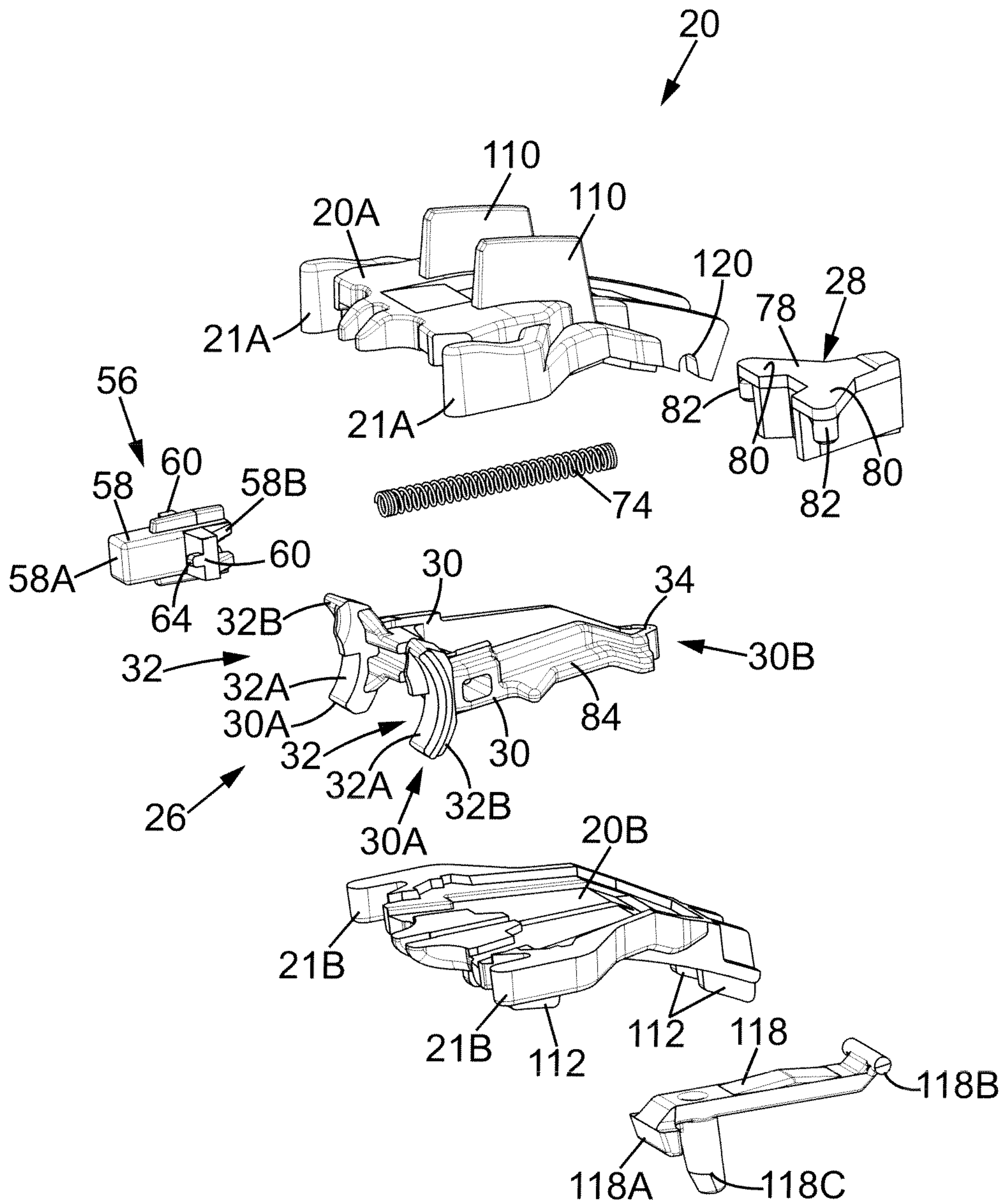


FIG. 3

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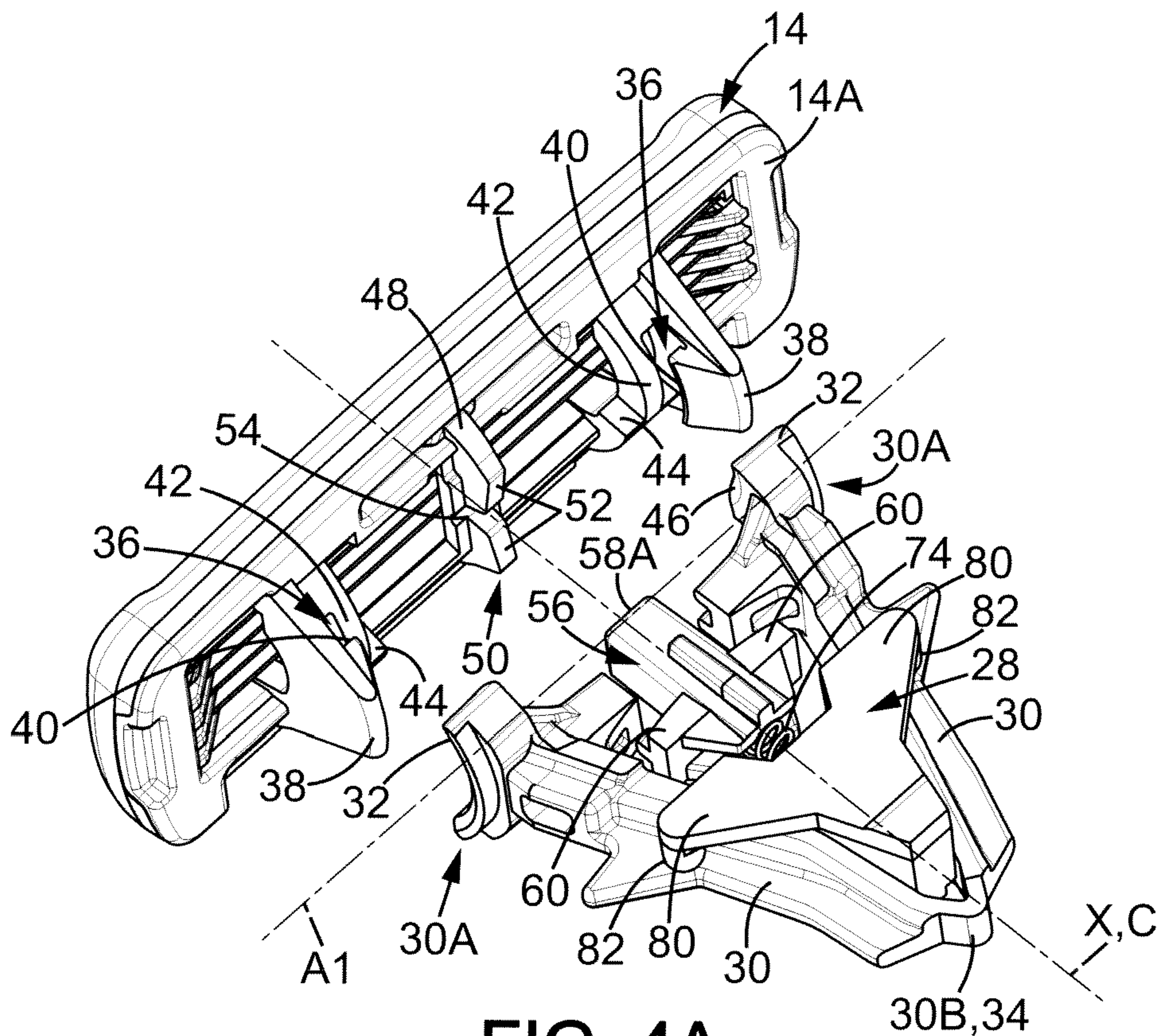


FIG. 4A

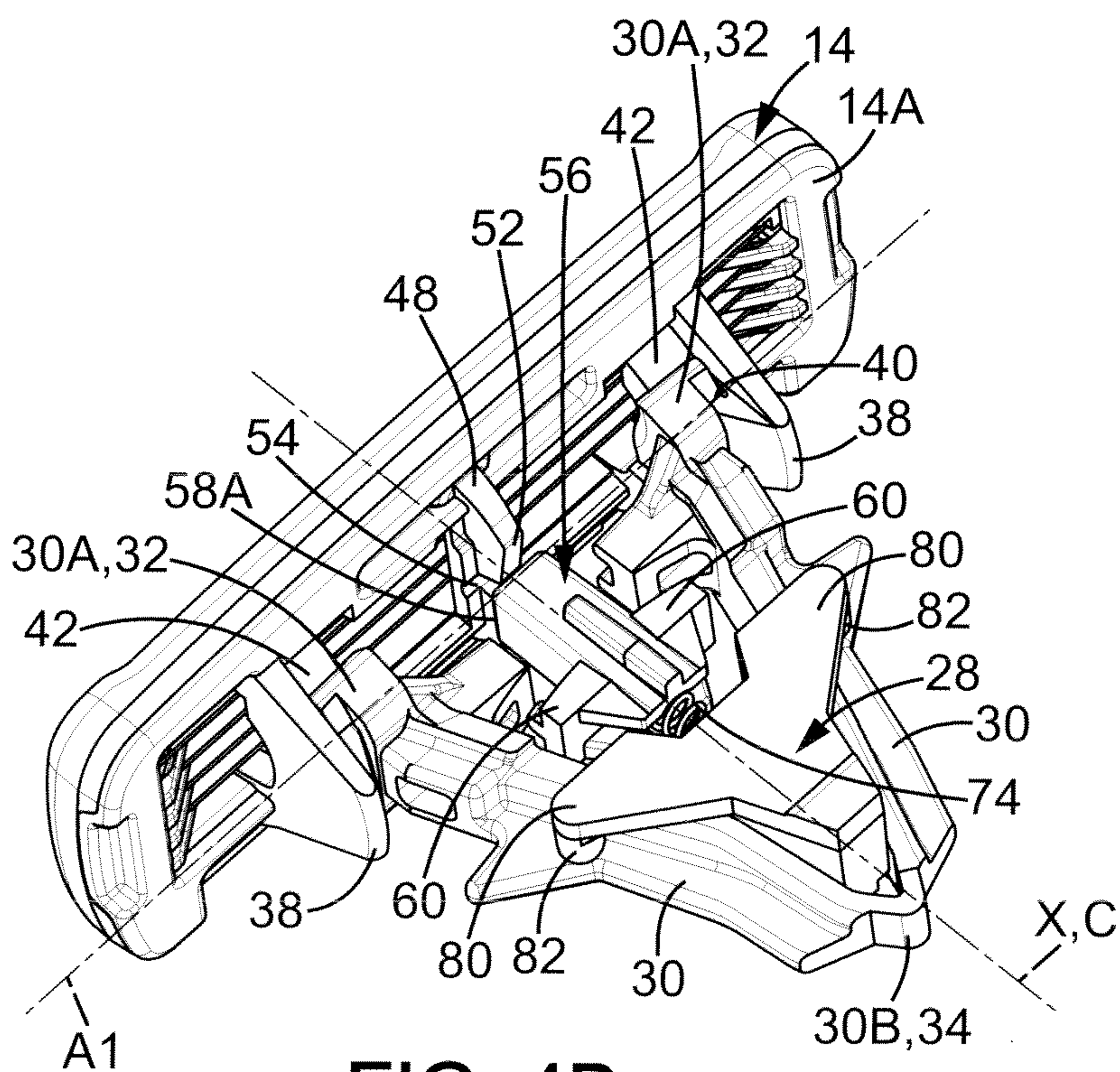


FIG. 4B

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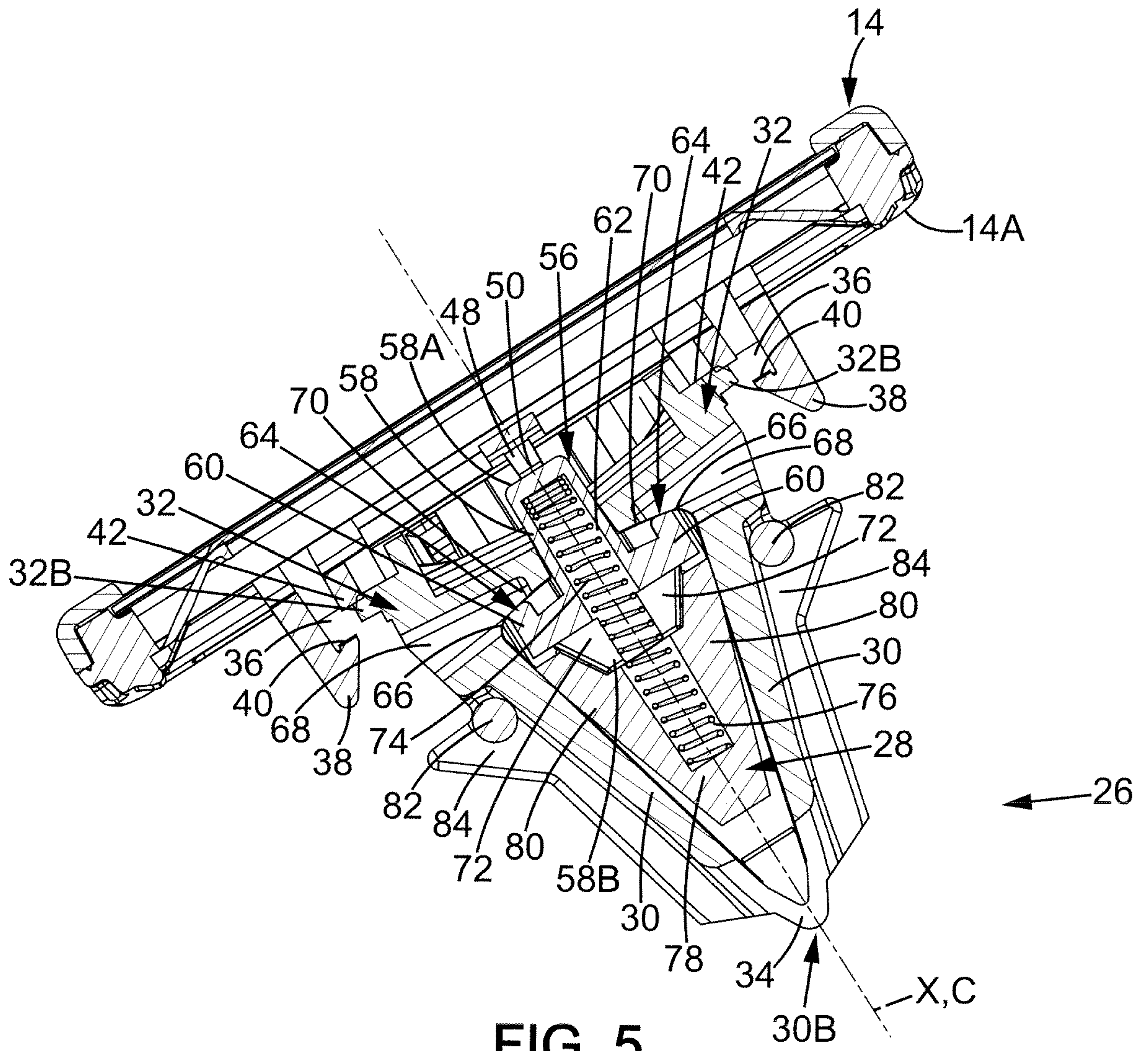


FIG. 5

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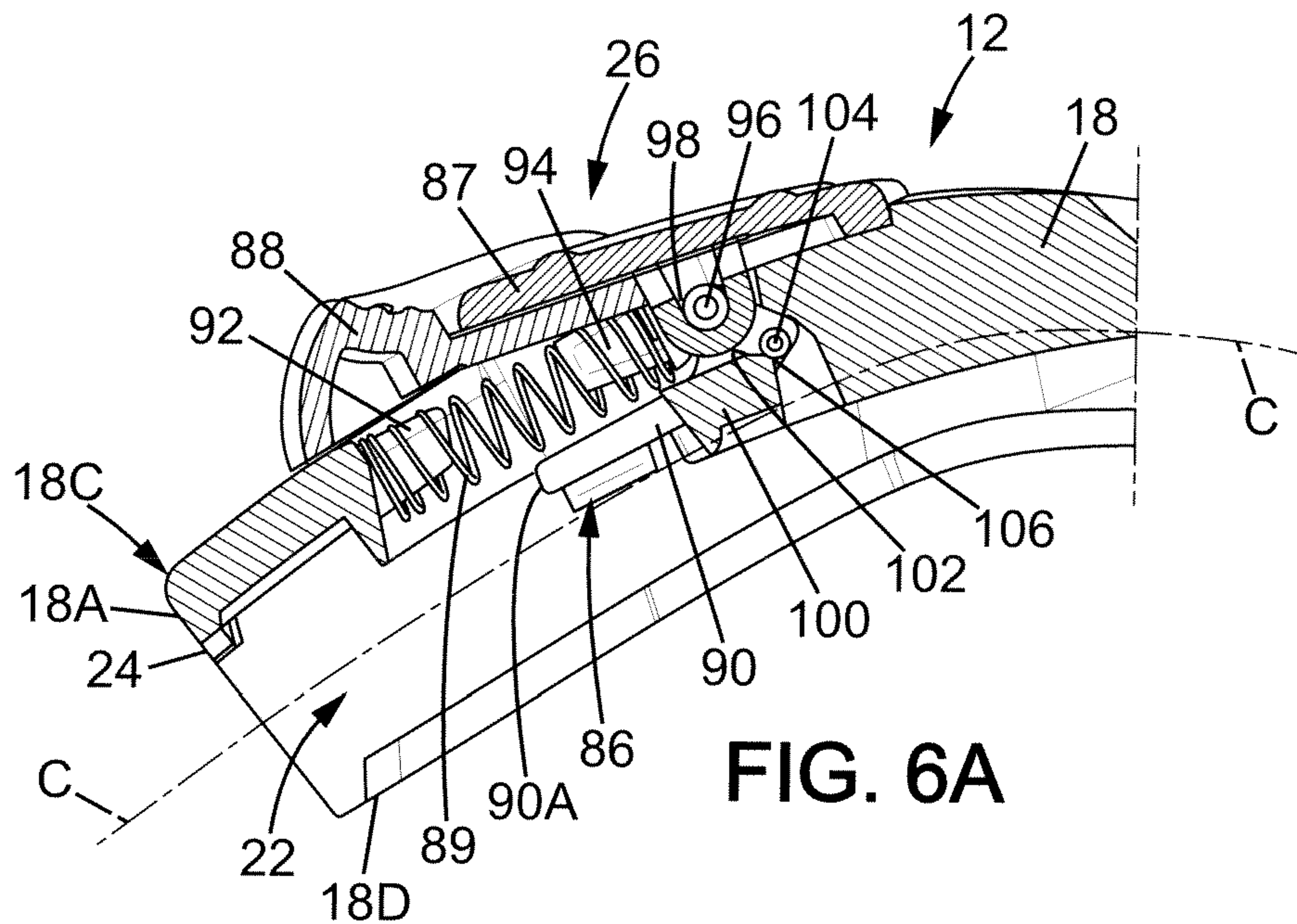


FIG. 6A

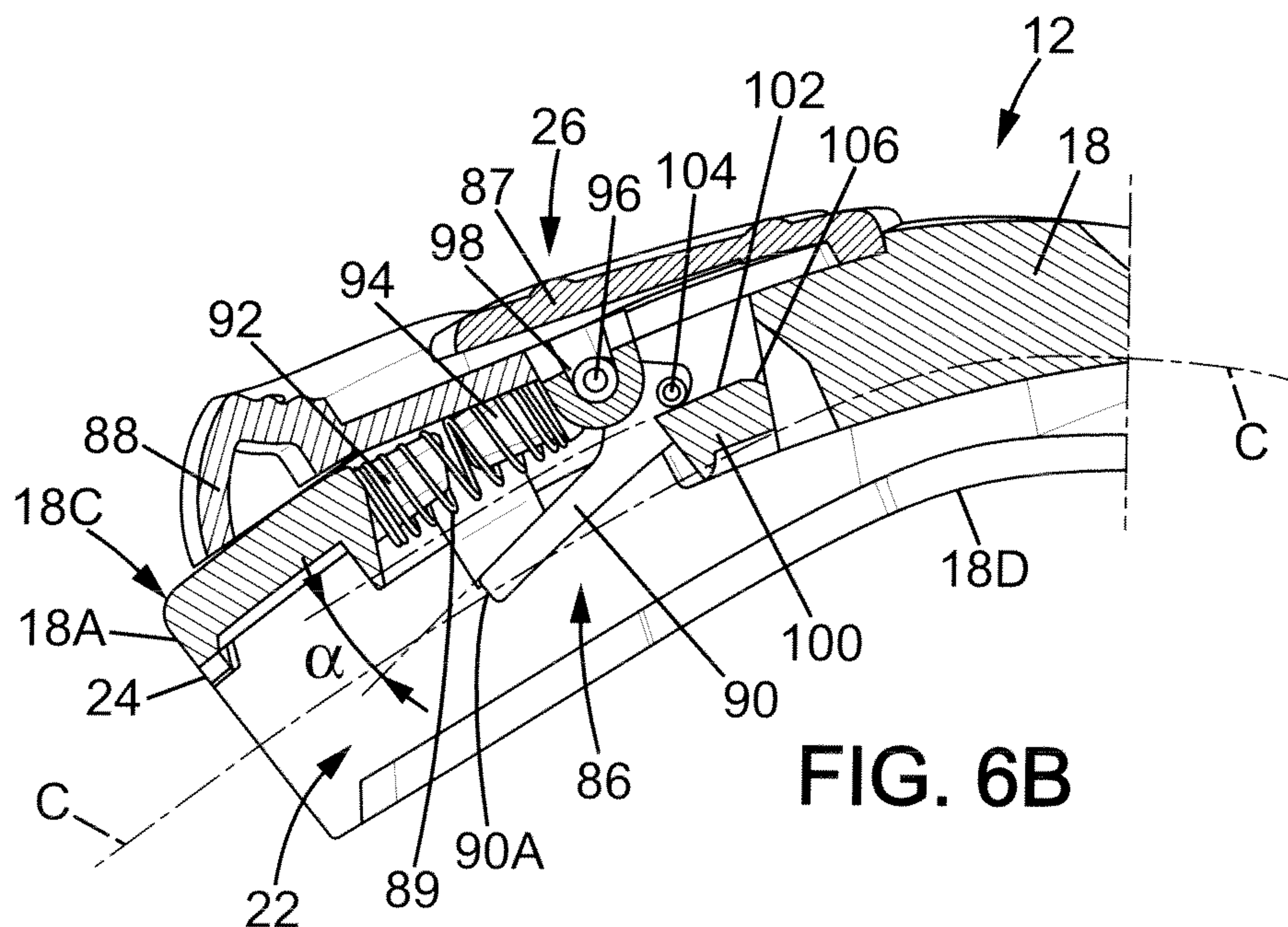


FIG. 6B

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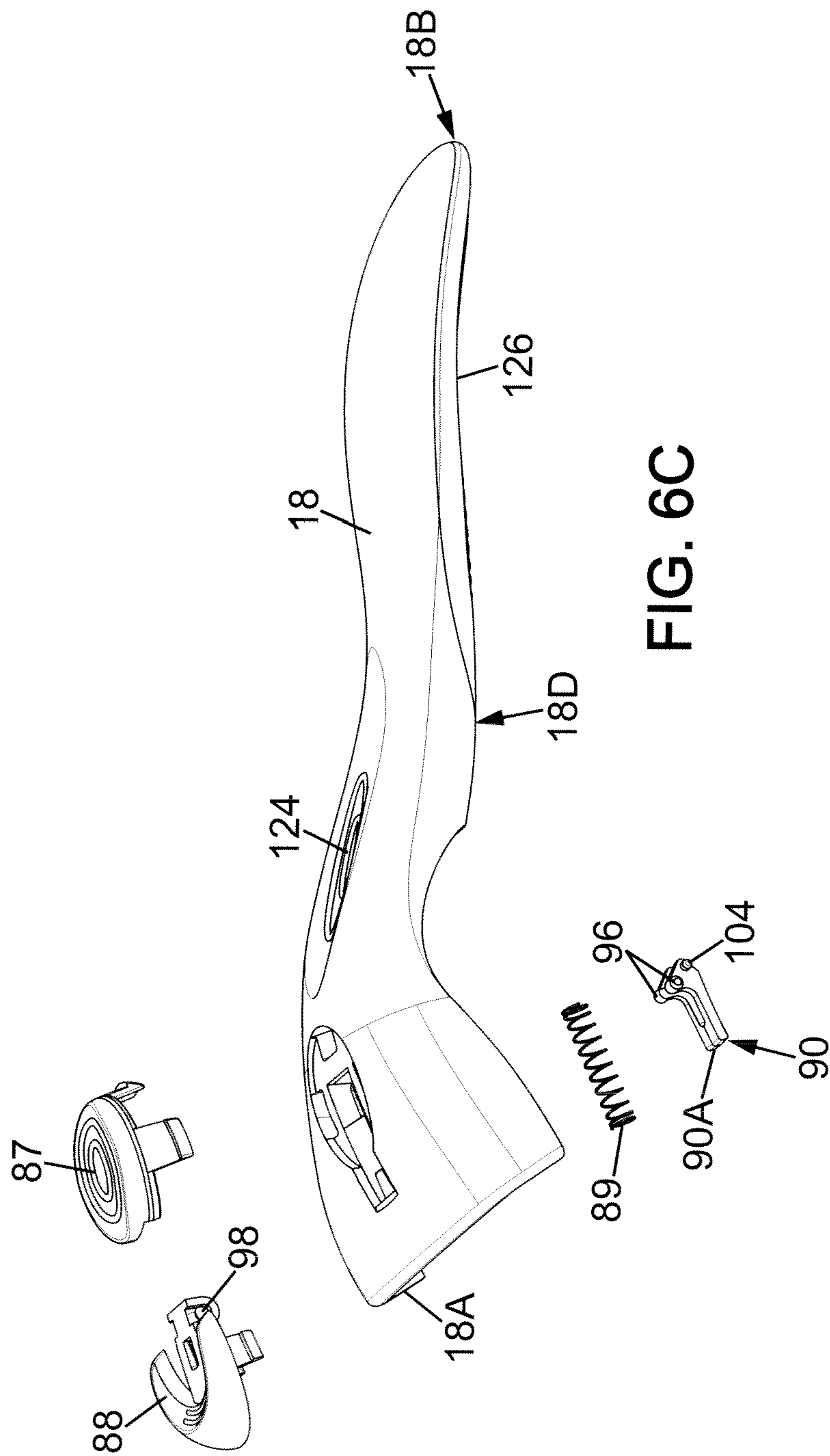
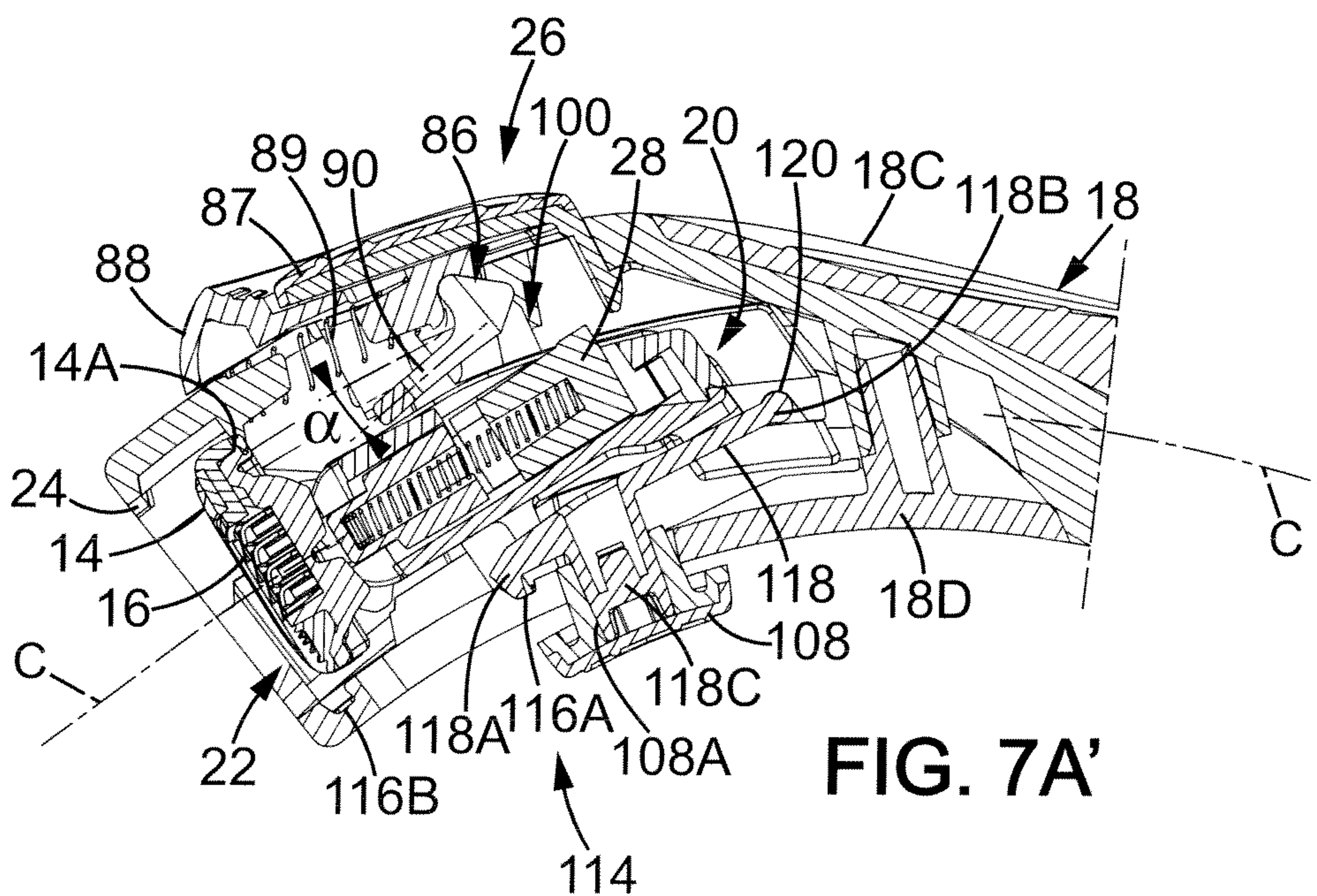
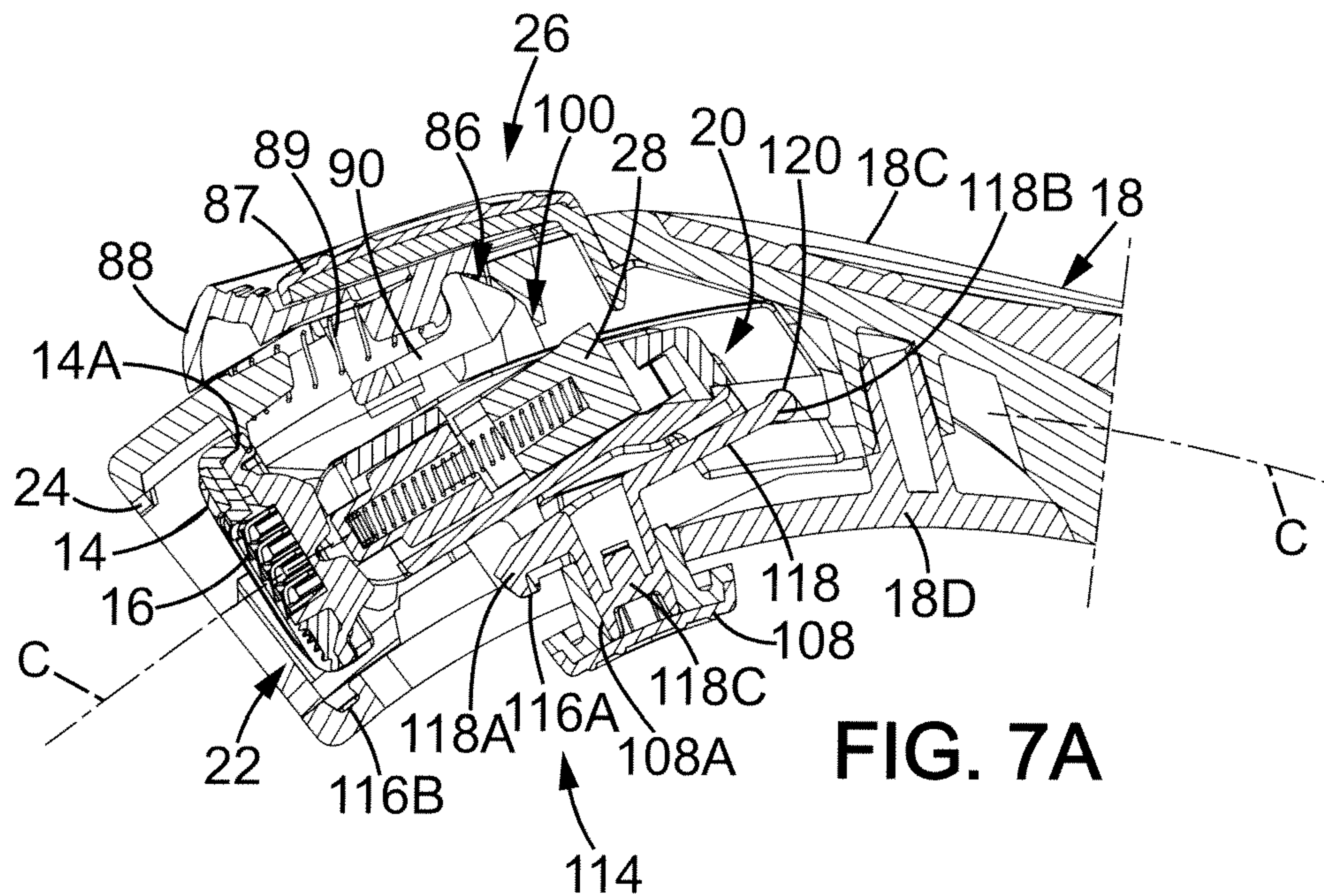


FIG. 6C

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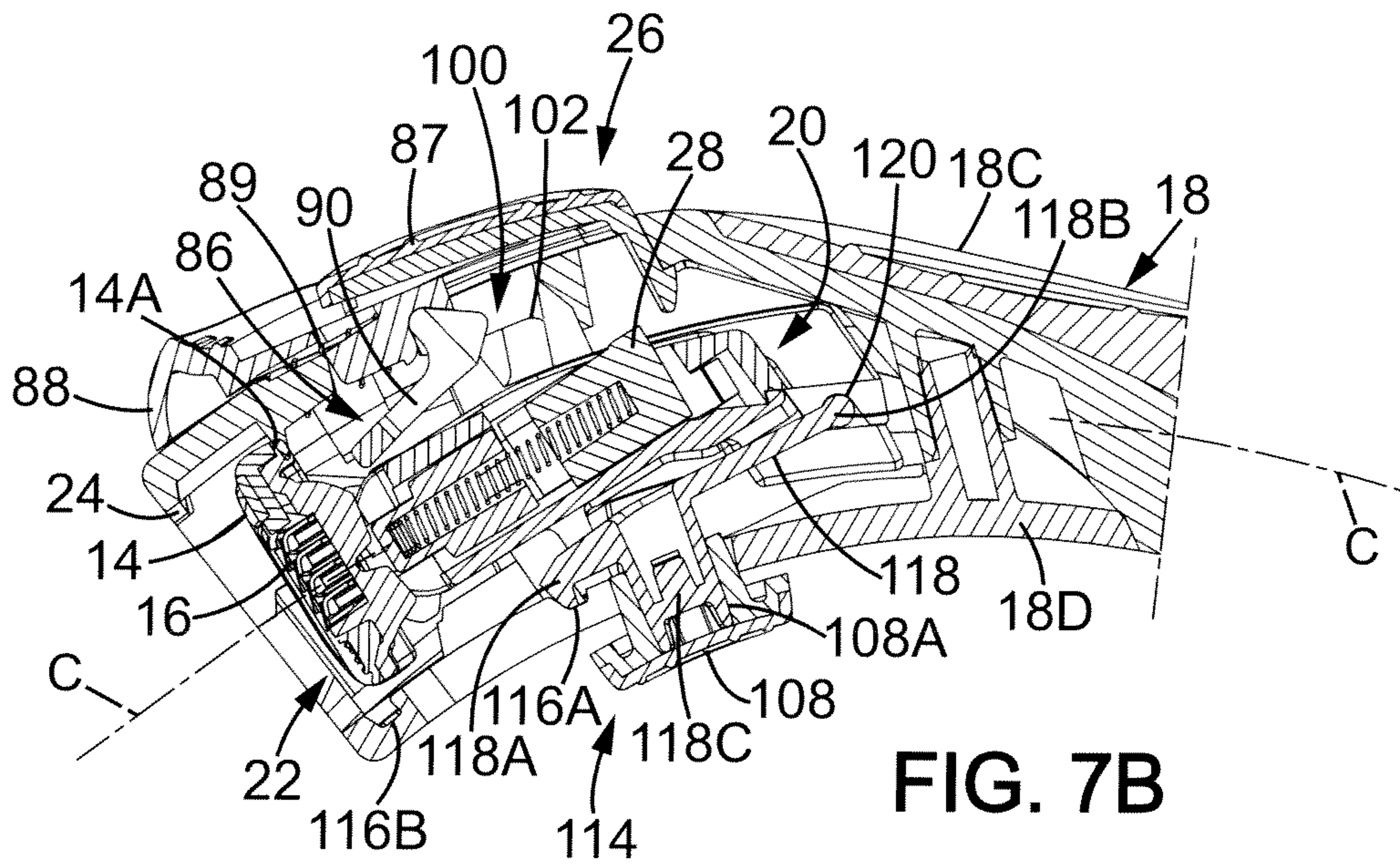


FIG. 7B

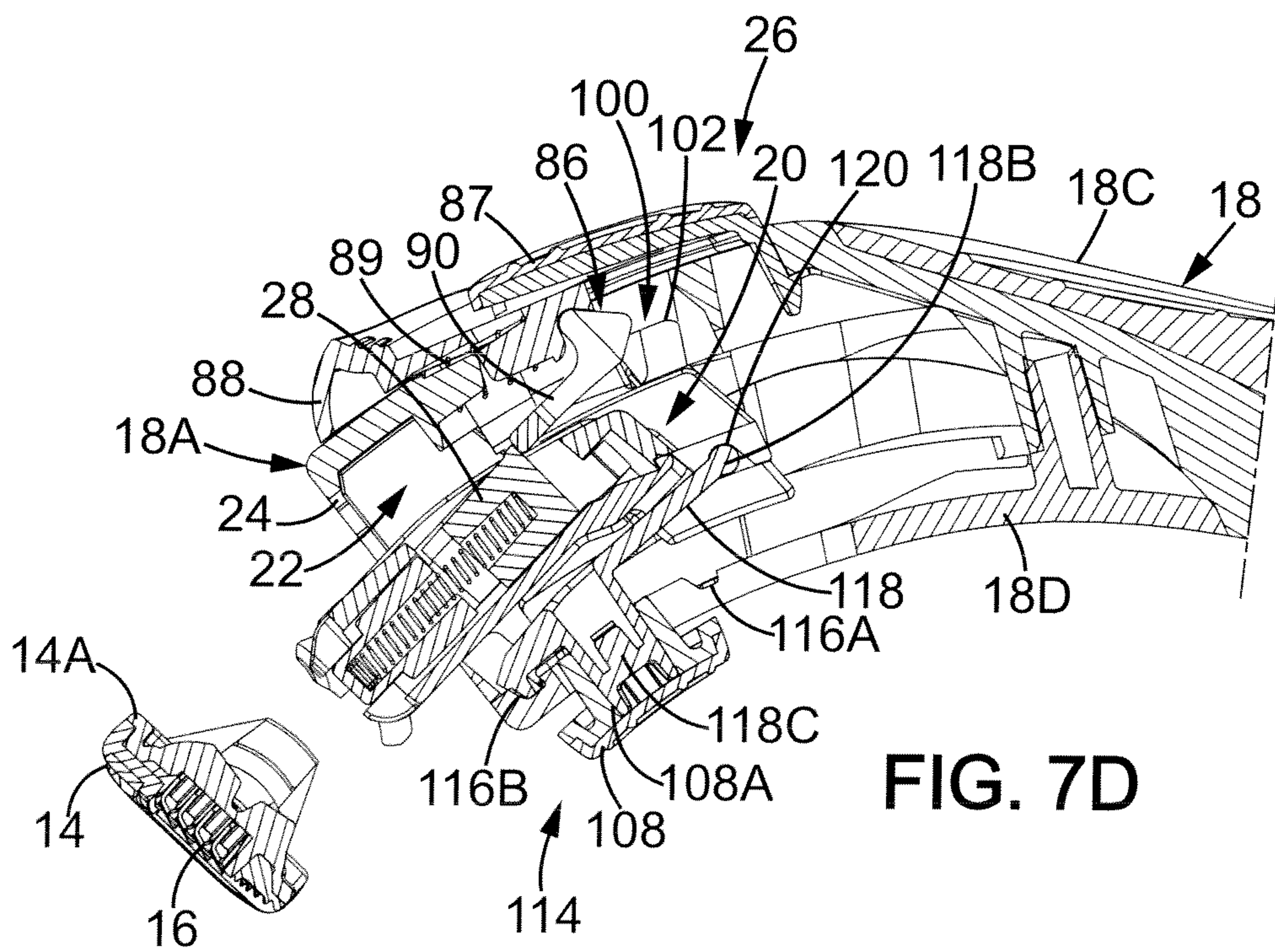


FIG. 7D

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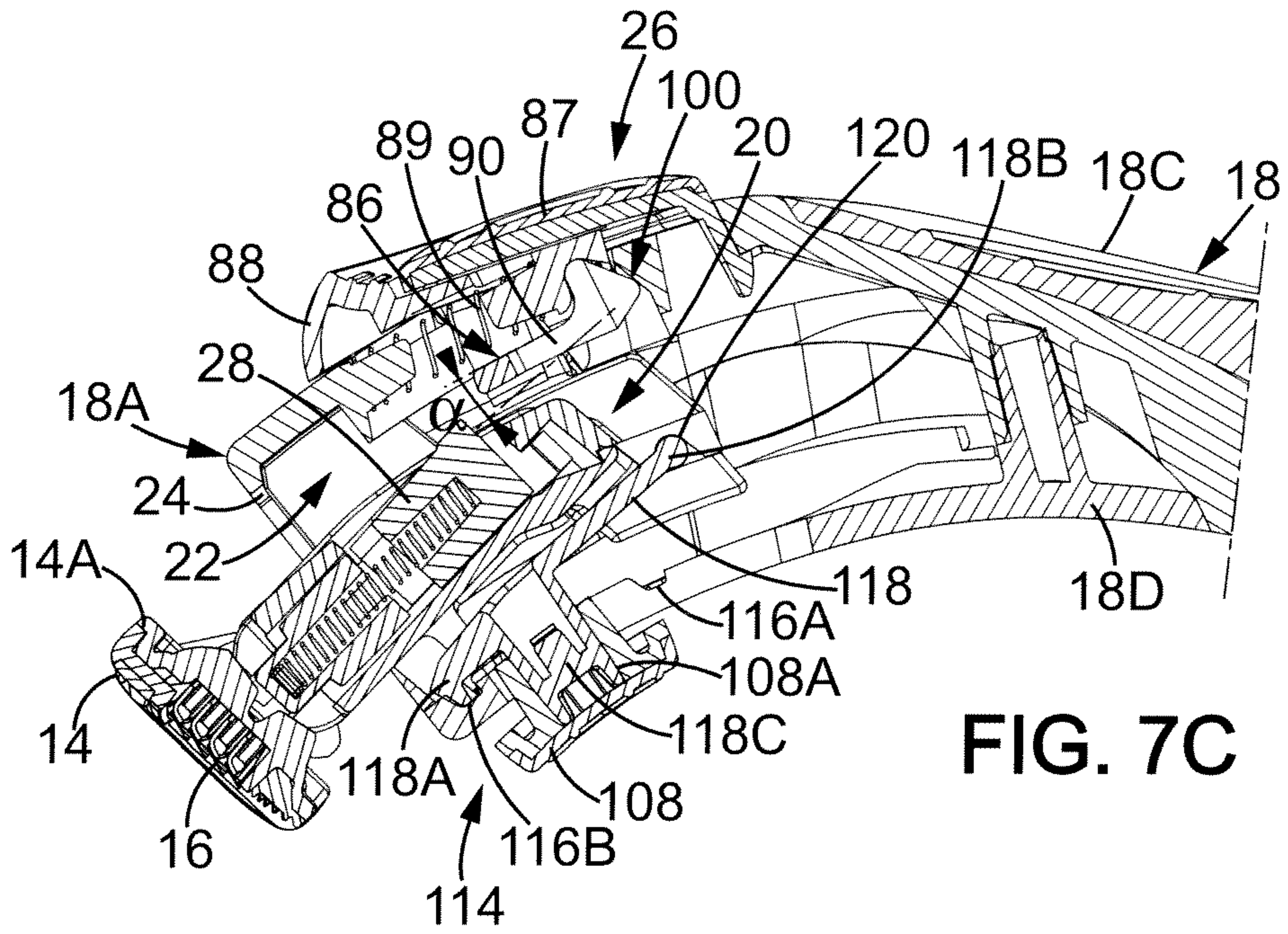


FIG. 7C

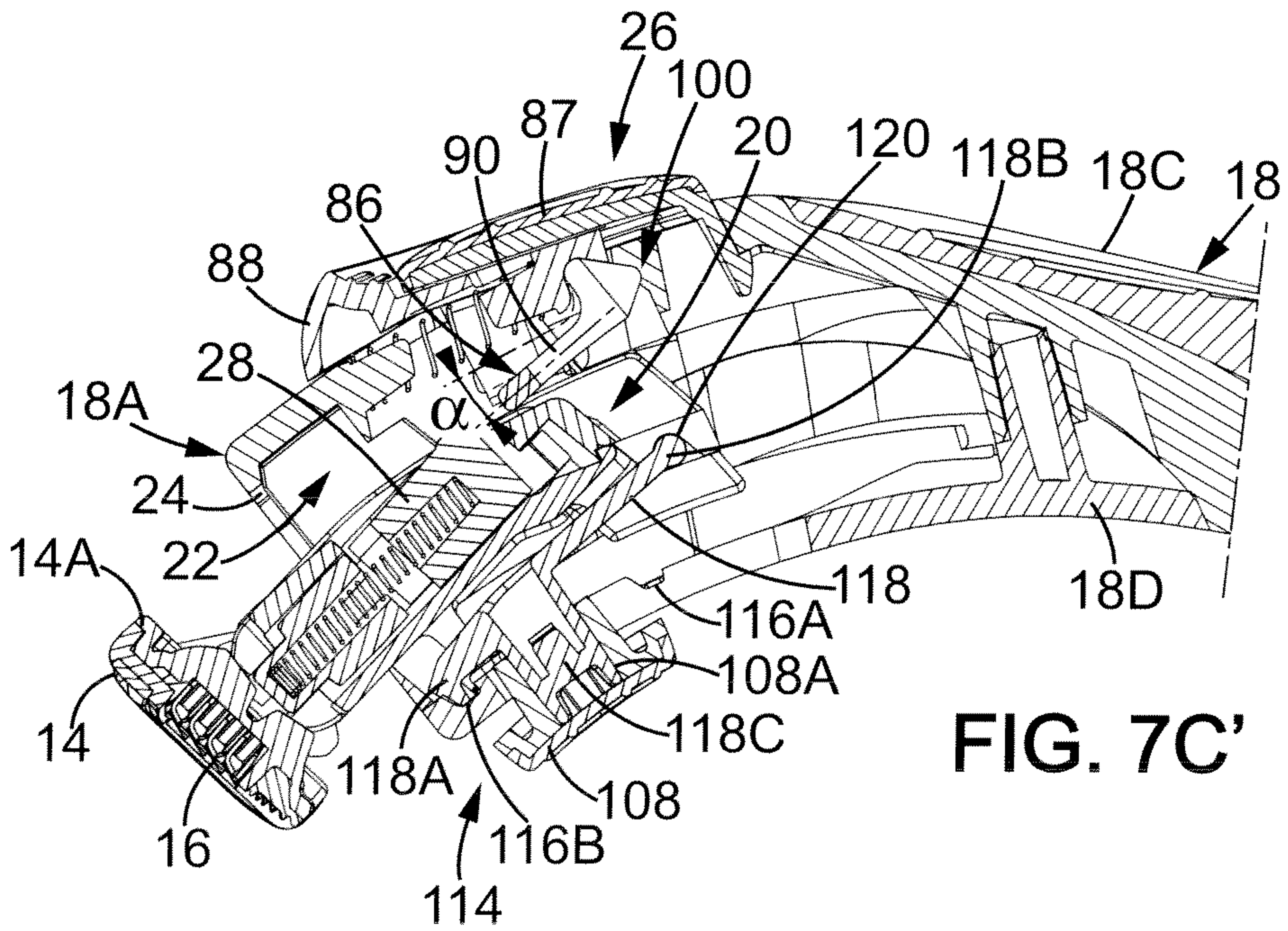
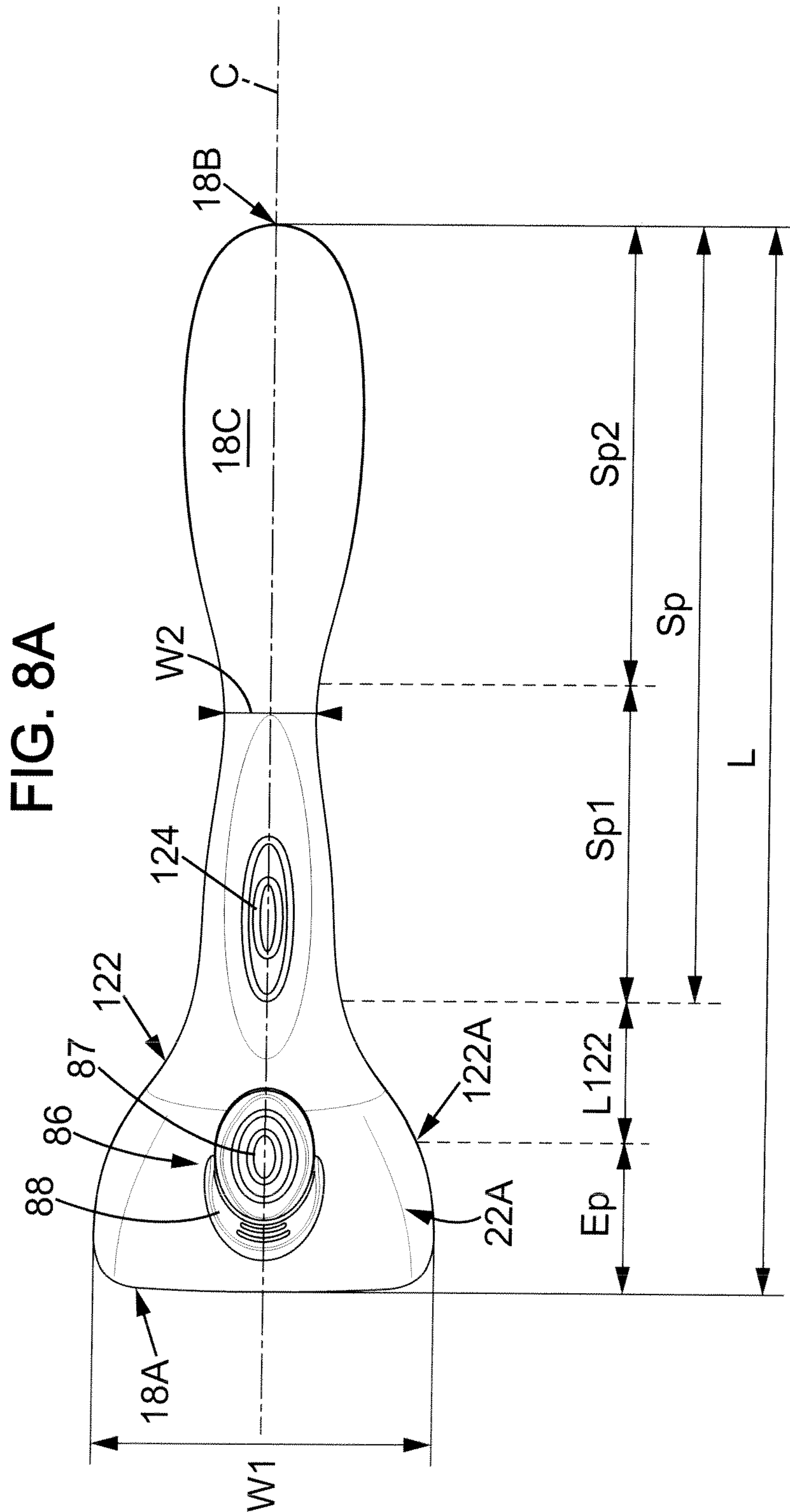
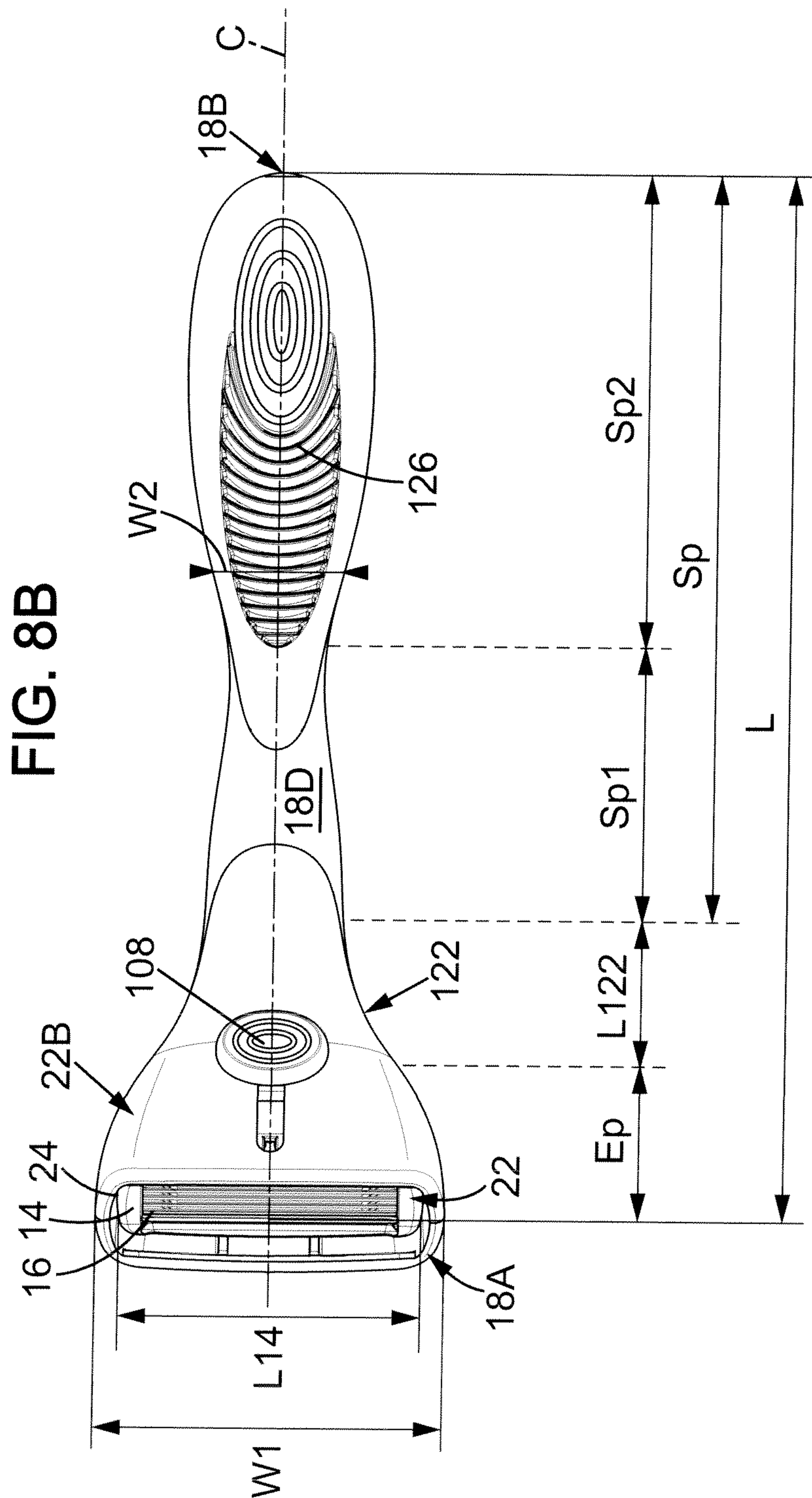


FIG. 7C'





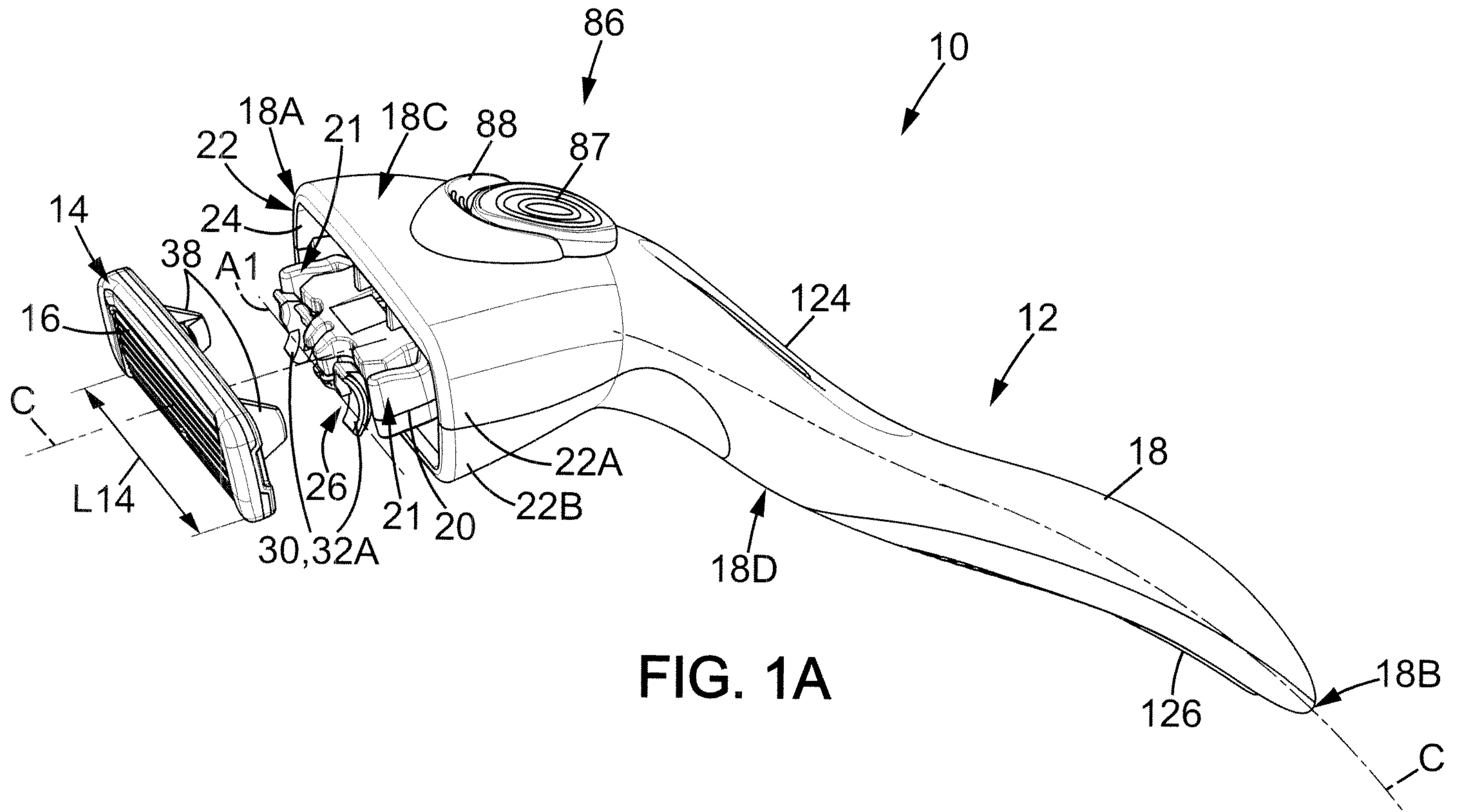


FIG. 1A