

(19)



(11)

EP 2 467 267 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
12.03.2014 Bulletin 2014/11

(51) Int Cl.:
B43K 21/08 (2006.01) B43K 24/06 (2006.01)

(21) Application number: **11741430.0**

(86) International application number:
PCT/EP2011/062784

(22) Date of filing: **26.07.2011**

(87) International publication number:
WO 2012/013649 (02.02.2012 Gazette 2012/05)

(54) **SWITCHING MECHANISM FOR A WRITING INSTRUMENT**

SCHALTMECHANISMUS FÜR EIN SCHREIBINSTRUMENT

MECANISME DE COMMUTATION POUR UN INSTRUMENT D'ECRITURE

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **30.07.2010 DE 102010033695**

(43) Date of publication of application:
27.06.2012 Bulletin 2012/26

(73) Proprietor: **Gebr. Schmidt Fabrik für
Feinmechanik GmbH & Co.
KG
78112 St. Georgen (DE)**

(72) Inventors:
• **SCHMIDT, Oliver
78050 Villingen-Schwenningen (DE)**
• **MERKLE, Werner
78112 St. Georgen (DE)**

(74) Representative: **Witte, Weller & Partner
Patentanwälte mbB
Königstrasse 5
70173 Stuttgart (DE)**

(56) References cited:
**BE-A- 362 878 GB-A- 2 059 359
US-A- 5 890 827**

EP 2 467 267 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a switching mechanism for a writing instrument, said switching mechanism having a mechanism sleeve with an upper portion and a lower portion for accommodating a writing insert, and having a guide bushing, which guide bushing has its lower portion arranged in the upper portion of the mechanism sleeve, wherein actuation of the guide bushing results in actuation of the writing insert, the guide bushing is mounted on the mechanism sleeve such that it can be rotated but cannot be displaced in the longitudinal direction, a slide being arranged in the upper portion of the mechanism sleeve, beneath the guide bushing, wherein actuation of the guide bushing results in a movement of the slide relative to the mechanism sleeve, and this relative movement of the slide results in actuation of the writing insert, the guide bushing and the slide, and the slide and the mechanism sleeve, have provided between them in each case a control curve, in which control curve a control element runs, and one of the two control curves has a circumferential component, such that rotation of the guide bushing results in a longitudinal movement of the slide.

[0002] Such switching mechanisms for writing instruments are known to a sufficient extent from the prior art.

[0003] The mechanism sleeve here may itself be provided with a writing-instrument tip, and therefore the mechanism sleeve constitutes, at the same time, the shank of the writing instrument, by which the user grips the writing instrument. Correspondingly, the writing insert is actuated via the guide bushing.

[0004] In the case of high-quality writing instruments, however, the switching mechanism is prefabricated from the mechanism sleeve and guide bushing and then installed in grip tubes which meet the aesthetic requirements to which high-quality writing instruments are subjected. A writing-instrument tip is then screwed onto the lower end of the switching mechanism, and an actuating part is provided at the upper end, this actuating part usually being plugged onto the guide bushing.

[0005] "Writing insert", within the context of the present invention, is understood to mean a unit which either is configured for accommodating lead cores or is itself configured as a writing core and is designed, at its upper end, such that it ends up in abutment against an actuating part of the switching mechanism and is actuated by the actuating part being moved in the longitudinal direction of the mechanism sleeve. The writing cores here are biased into their retracted position by a compression spring, which is accommodated in the front end of the writing instrument, whereas, in the case of a writing insert for lead cores, there is an inner compression spring provided, and this biased the displaceable upper end of the writing insert into its starting position.

[0006] By virtue of the actuating part being moved downwards, in the case of a lead-core writing insert, a lead core is advanced in a stepwise manner, whereupon

the actuating part is pushed back up into its starting position directly by the force of the inner compression spring.

[0007] A writing core is expended counter to the force of the compression spring by virtue of the actuating part being moved downwards, wherein the actuating part latches in its lower position. If the actuating part is moved out of the latching position again, the writing core is retracted again by the force of the compression spring and the actuating part moves upwards into its starting position.

[0008] The switching mechanisms which are necessary for this purpose are known per se from the prior art.

[0009] A "switching mechanism", within the context of the present invention, is a rotary mechanism. Accordingly, the actuating part is a rotary knob which, when rotated in one direction or the other, gives rise to a movement of a slide in the downward or upward direction, this slide, for its part, acting on the lead-core writing insert or on the writing core.

[0010] In the case of such a rotary mechanism, the rotary movement of the rotary knob is converted into a longitudinal movement of the slide via corresponding control curves and control elements which run therein.

[0011] If the writing insert used is a unit for accommodating lead cores, then the rotary knob, once rotated in a first direction in order to advance the lead core, is rotated back into its starting position again directly via the slide, which moves upwards again in the writing insert under the force of the inner compression spring.

[0012] If the writing insert, in contrast, is a spring-loaded writing core, i.e. a cartridge, then at least one control curve has an undercut in which, with the tip of the writing core extended, the control element latches under the force of the compression spring when the rotary knob has been rotated to a corresponding extent in a first direction. If the rotary knob is rotated back in the opposite direction to the extent where the control element is freed from the undercut again, then the rotary knob is rotated back into its starting position, by the interaction of the control curve and control element, under the force of the compression spring.

[0013] Both switching mechanisms which have been described thus far have in common the fact that the rotary knob moves back automatically into its starting position under the force of a compression spring and, in certain applications, also runs automatically into the second end position.

[0014] In the case of high-quality writing instruments, it is desirable for the movement of the rotary knob to be damped, so that the rotary knob runs into its end positions by way of a uniformly decelerated movement. These soft-switching mechanisms give the writing instrument a high-quality appeal.

[0015] In the case of known switching mechanisms, the damped, "smoothed movement" of the rotary knob takes place with the aid of lubricants which damp those parts of the switching mechanism which slide, or are dis-

placed, in relation to one another by the lubricant being displaced out of the gap geometries, the shearing forces of the lubricant being overcome in the process.

[0016] It is desirable here for the damping behaviour to remain unchanged even after a relatively long storage period or following a large number of successive switching operations.

[0017] In the case of known switching mechanisms, however, this is not ensured because the lubricant, on the one hand, can evaporate, and therefore the quantity of lubricant in a switching mechanism decreases over time, which results in the switching behaviour changing.

[0018] Furthermore, the viscosity of the lubricants is usually temperature-dependent, and therefore heat and cold likewise have an adverse effect on the switching behaviour of the known switching mechanisms.

[0019] Furthermore, redistribution of the lubricant over a large number of successive switching operations and corresponding backflow is observed during long storage periods, this resulting in the damping following a large number of switching operations, and/or after long storage periods, in the first instance being poorer and then possibly becoming re-established.

[0020] In this connection, document JP 2002/307892 A discloses a pushing mechanism wherein a rotor is connected to the pushbutton which is damped in its longitudinal movement by means of a superimposed rotational movement. To this end, a damping member is provided that is in communication with the rotor via its shank.

[0021] The space between this shank and the rotor is filled up with a viscous body like fats or oil, such that damping arises from movement of the rotor and/or damping member within the viscous body.

[0022] Thus, the known pushing mechanism has the same disadvantages as mentioned above, which disadvantages also occur in connection with rotary switching mechanisms damped by lubricants.

[0023] Rotary switching mechanisms in general are known from CH 259 469 A, DE 958 992 B, BE 362 878 A, GB 2 059 359 A, and US 5,890,827 A.

[0024] Document US 5,890,827 A discloses a writing instrument having a frictional circular member provided between an inner tube and an outer tube of the instrument for absorbing variations in the dimensions of the associated parts and for providing a frictional resistance when turning the respective parts with respect to each other.

[0025] In view of the above, it is an object of the present invention to improve the switching mechanism mentioned at the outset such that, along with a straightforward design, damping which is as constant as possible is provided irrespective of ageing, switching operations and temperature.

[0026] This object is achieved according to the invention, in the case of the switching mechanism mentioned at the outset, by the provision of an additional mechanical damping member which damps the movement of the slide by friction.

[0027] The inventors have thus gone down a route

which contrasts with the prior art, where the friction between parts of the switching mechanism is always to be avoided, or adjusted in a specific and damped manner, by lubricants.

[0028] However, the inventors have realized that an additional mechanical damping member can be used in a switching mechanism precisely such that it indirectly influences the movement of the guide bushing by friction.

[0029] Indirect influencing of the movement of the guide bushing is understood to mean a damping member which is provided on the slide or acts on the slide, the damping of the movement of the slide therefore being transmitted to the movement of the guide bushing.

[0030] This damping can be used both for lead-core writing inserts and for writing cores or cartridges.

[0031] The guide bushing, slide and mechanism sleeve here may consist of the same material or of different materials, wherein use is possibly made of an antiseize agent, which is intended to prevent sliding surfaces from catching on one another and "seizing up". This antiseize agent, however, is not required for the damping itself.

[0032] The degree of damping can be determined here by the mechanical properties of the damping member, wherein the material of the damping member, the coefficient of friction thereof, the geometrical configuration thereof, the resilient component thereof, etc. all contribute to this.

[0033] The invention thus makes constant damping possible, irrespective of ageing, number of operation cycles and of the respective temperature, for which purpose use is made of a radially acting damping member. This rotary mechanism can be used both for writing instruments with writing cores which are biased via a compression spring plugged onto the tip of the writing core and for lead-core writing inserts provided with an inner compression spring.

[0034] The object underlying the invention is achieved in full in this way.

[0035] Within the context of the present invention, "lower or front end" is understood to mean the region at or around the front tip of the writing instrument, where the core projects out of the grip tube and the writing instrument is gripped by the user.

[0036] Accordingly, "upper or rear end" means that region of the writing instrument which is remote from the lower end, that is to say where the guide bushing is arranged.

[0037] The expressions also apply correspondingly to parts of the switching mechanism.

[0038] Consequently, "from beneath" means the direction going from the lower end to the upper end and "from above" means the direction going from the upper end to the lower end. Correspondingly, "above" and "beneath" respectively mean "in the direction of the upper end" and "in the direction of the lower end".

[0039] It is preferred here if the damping member acts either between the slide and the mechanism sleeve or

between the slide and the guide bushing.

[0040] According to an embodiment, the damping is achieved by a damping member that is biased against a counter-surface by spring or resilient forces, and that preferably exerts a linear frictional action.

[0041] Thus, a short, preferably linear relative movement between the damping member and a respective counter-surface ensures the soft-switching characteristic of the novel switching mechanism.

[0042] It is further preferred here if the damping member has a frictional body which butts, under resilient stressing, against an inner surface of the mechanism sleeve or against an inner surface of the guide bushing.

[0043] These measures are advantageous, in particular, in design terms since they allow a switching mechanism which is constructed from only a small number of components, but in which effective damping of the movement of the slide and/or of the guide bushing is possible.

[0044] This is because the inventors of the present application have realized that a frictional body butting either against the inside of the mechanism sleeve or against the inside of the guide bushing not only ensures effective damping of the switching behaviour, but also provides for a constant damping behaviour over a very large number of switching operations.

[0045] It is preferred here if the frictional body is formed integrally on a resilient arm which, for its part, is formed integrally with the slide, wherein the frictional body is arranged either on a lower portion or on an upper portion of the slide and projects radially outwards beyond the outer contour thereof.

[0046] This measure is also advantageous in design terms, as the slide may be produced in a single piece, for example, from plastics material, wherein the frictional force is defined via the material and the extent to which the frictional body projects beyond the outer contour of the slide. Furthermore, the resilient behaviour of the resilient arm influences the damping.

[0047] It is further preferred here if the frictional body is arranged on a control element which is connected to the slide and runs in a control curve, which control curve is arranged on the inside of the mechanism sleeve.

[0048] It is advantageous here that the control element, which is necessary for converting the rotary movement of the rotary knob into the linear movement of the slide, can also be formed integrally with the damping member.

[0049] Further advantages can be gathered from the description and from the attached drawing.

[0050] Of course, the features which have been mentioned above, and those which are yet to be explained hereinbelow, can be used not only in the given combination, but also in other combinations or on their own, without departing from the scope of the present invention.

[0051] An embodiment of the invention will be explained in more detail in the following description and is illustrated in the drawing, in which:

Fig. 1 shows a longitudinal section through a writing

instrument that has inserted therein the novel switching mechanism;

Fig. 2 shows a perspective illustration and a sectional illustration of the slide of the writing instrument in Fig. 1;

Fig. 3 shows a perspective illustration of the guide bushing of the writing instrument in Fig. 1;

Fig. 4 shows a perspective, sectional illustration of the mechanism sleeve of the writing instrument in Fig. 1;

Fig. 5 shows an illustration like that in Fig. 1, but with the writing core extended;

Fig. 6 shows, in an illustration like that in Fig. 3, a further embodiment of a guide bushing as can be used in the writing instrument from Fig. 1;

Fig. 7 shows, in an illustration like that in Fig. 4, a further embodiment of a mechanism sleeve which can be used, together with the guide bushing from Fig. 6, in the writing instrument from Fig. 1; and

Fig. 8 shows, in an illustration like that in Fig. 2, a further embodiment of a slide which can be used, together with the guide bushing from Fig. 6 and the mechanism sleeve from Fig. 7, in the writing instrument from Fig. 1.

[0052] Fig. 1 schematically shows a side view, in longitudinal section, of a writing instrument 10.

[0053] The writing instrument 10 comprises a switching mechanism 11 with a tubular mechanism sleeve 12, which has a lower portion 14 and an upper portion 15.

[0054] A writing insert 16 is introduced into the lower portion 14, this writing insert, in the present case, being a writing core 17 with a narrow front end 18.

[0055] The narrow front end 18 of the writing core 17 has pushed onto it a compression spring 19, which is supported on the inside of a writing-instrument tip 21, which is screwed to the mechanism sleeve 12 via a thread 22.

[0056] The writing core 17 is thus pushed to the right in Fig. 1, where it has its upper end surface 23 butting against a collar 24, which is formed on a lower portion 25 of a sleeve-like slide 26.

[0057] The slide 26 has a shank 27, located on its tubular upper portion, seated in a lower portion or shank 28 of a guide bushing 29, which has its lower shank 28 inserted into the upper portion 15 of the mechanism sleeve 12.

[0058] The lower shank 28 of the guide bushing 29 has arranged on it an outwardly projecting, encircling latching bead 31, which interacts with a shoulder 32, arranged on

the inside of the mechanism sleeve, such that the guide bushing is retained on the mechanism sleeve in a captive, but rotatable, manner.

[0059] The guide bushing 29 has its head 33 seated on the outside of the mechanism sleeve 12.

[0060] It can also be seen in Fig. 1 that the lower portion of the slide 26 has provided on it a control block 34 which acts as a control element and on which is provided a damping member indicated at 35, which damping member butts against a counter-surface, namely an inner wall 36 in the upper portion 15 of the mechanism sleeve 12 and, there, ensures damping of the movement of the slide 26, and thus of the guide bushing 29, in a manner which is yet to be described.

[0061] Fig. 2 illustrates the slide 26 in a perspective view at the top and in longitudinal section at the bottom.

[0062] The damping member 35 has a frictional body 37 which is connected, via a resilient arm 38, to the control block 34, on which control block are provided a rear control surface 39 and a lateral guide surface 41.

[0063] It can be seen at the bottom of Fig. 2 that the frictional body 37 projects, by an extent of projection 42, beyond the outer contour formed by the collar 24. When the slide 26 is inserted into the mechanism sleeve 12, the frictional body 37 is pushed downwards, by abutment against the inner wall 36, and thus subjects the inner wall 36, under pressure, to a frictional force.

[0064] Fig. 3 shows a perspective illustration of the guide bushing 29, of which the lower shank 28 has a control curve 43 which is arcuate, that is to say runs part of the way in the circumferential direction, and terminates in an undercut 44.

[0065] Such control curves on guide bushings 29 are known per se, and there is therefore no need for any further description thereof here.

[0066] The control surface 39 on the slide 26, then, interacts with the control curve 43 such that, when the guide bushing 29 is rotated, the slide 26 is moved in the axial direction. When the guide bushing 29 is rotated, the control block 34, which acts as control element, runs along the arcuate control curve 43 by way of its control surface 39.

[0067] Fig. 4 shows a perspective, sectional illustration of the mechanism sleeve 12, on the inner wall 36 of which is provided, in the region of the upper portion 15, a thickening 46, in which a linear control curve 47 is introduced.

[0068] In the assembled state of the switching mechanism 11, the control block 34, then, has its opposite guide surfaces 41 located in the control curve 47, and at the same time it has its control surface 39 butting against the control curve 43.

[0069] Rotation of the guide bushing 29 thus gives rise to a movement path of the control block 34 relative to the guide bushing 29, which path is indicated at 45, wherein the linear control curve 47 prevents the slide 26 from rotating therewith.

[0070] In other words, by virtue of the control block 34 interacting with the arcuate guide path 43 and the linear

guide path 47, rotation of the guide bushing 29 is converted into a linear movement of the slide 26, as is known per se from the prior art.

[0071] During this linear movement of the slide 26 in the mechanism sleeve 12, the frictional body 37 slides along the inner wall 36 of the mechanism sleeve 12 and damps the movement of the slide 26 in the process.

[0072] When the control surface 39 passes into the region of the undercut 44, the slide 29 is pushed upwards under the force of the compression spring 19, and therefore the guide bushing 29, even without any help on the part of the user, continues rotating until the control surface 39 has latched in the undercut 44.

[0073] This movement is damped under the action of the friction of the frictional body 37 on the inner wall 36 of the mechanism sleeve 12. If the guide bushing 29 is then rotated in the opposite direction, then the control surface 39 runs along the control curve 43 counter to the direction of the arrow 45, wherein this movement, once the undercut 44 has been passed, takes place automatically under the force of the compression spring 19, but with damping by the friction of the frictional body 37.

[0074] This gives a soft-switching mechanism 11 in which the damping and the extent of damping are provided by the mechanical damping member 35 rather than by lubricants.

[0075] Fig. 5 shows, in an illustration like that in Fig. 1, the novel writing instrument for the case where the guide bushing has been rotated to the extent where the slide has been moved to the left in Fig. 5 and the control block 34 ends up located in the undercut 44.

[0076] In this case, the writing core 17 has had its front tip 51 extended out of the writing-instrument tip 21.

[0077] Figs. 6 to 8 illustrate further embodiments of the guide bushing 29, mechanism sleeve 12 and slide 26, in which embodiments the guide bushing 29 has a linear control curve 52 arranged on it, while an arcuate control curve 54 with undercut 55 is arranged in the inside of the mechanism sleeve 12.

[0078] The control block 34 now projects radially out of the control curve 52, beyond the shank 28 of the guide bushing 29, where the control surface 39 on the control block 34 interacts with the arcuate control curve 54, which is oriented to the left in Fig. 7, and latches in the undercut 55.

[0079] The mechanical damping member 35, in this case, rather than being arranged on the control block 34, is arranged with circumferential offset on the upper shank 27 of the slide 26, such that the frictional body 37 projects once again, by the extent of projection 42, beyond the outer contour, although this is now formed by the shank 27, which has a smaller diameter than the collar 24.

[0080] In this case, the shank 27 is thus seated in the shank 28 of the guide bushing such that the control block 34 runs in the linear control curve 52 and projects radially outwards beyond the same, in order to be able to come into abutment with the control curve 54 by way of the control surface 39. In this way, the circumferentially offset

damping member has its frictional body 37 in abutment with a counter-surface, namely an inner wall 53 of the lower shank 28 of the guide bushing 29, and it ensures damping friction there.

Claims

1. Switching mechanism for a writing instrument (10), said switching mechanism having a mechanism sleeve (12) with an upper portion (15) and a lower portion (14) for accommodating a writing insert (16), and having a guide bushing (29), which guide bushing has its lower portion (28) arranged in the upper portion (15) of the mechanism sleeve (12), wherein actuation of the guide bushing (29) results in actuation of the writing insert (16), the guide bushing (29) is mounted on the mechanism sleeve (12) such that it can be rotated but cannot be displaced in the longitudinal direction, a slide (26) being arranged in the upper portion (15) of the mechanism sleeve (12), beneath the guide bushing (29), wherein actuation of the guide bushing (29) results in a movement of the slide (26) relative to the mechanism sleeve (12), and this relative movement of the slide (26) results in actuation of the writing insert (16), wherein the guide bushing (29) and the slide (26), and the slide (26) and the mechanism sleeve (12), have provided between them in each case a control curve (43, 47; 52, 54), in which control curve a control element (34) runs, and one of the two controls curve (43, 54) has a circumferential component, such that rotation of the guide bushing (29) results in a longitudinal movement of the slide (26),
characterized in that an additional mechanical damping member (35) is provided, which mechanical damping member (35) damps the movement of the slide (26) by friction.
2. Switching mechanism according to Claim 1, **characterized in that** the damping member (35) is biased against a counter-surface (36; 53) by spring or resilient forces and exerts a linear frictional action.
3. Switching mechanism according to Claim 1 or 2, **characterized in that** the damping member (35) acts between the slide (26) and the mechanism sleeve (12).
4. Switching mechanism according to anyone of Claims 1 to 3, **characterized in that** the damping member (35) has a frictional body (37) which abuts, under resilient stressing, against an inner surface (36) of the mechanism sleeve (12).
5. Switching mechanism according to Claim 1 or 2, **characterized in that** the damping member (35) acts between the slide (26) and the guide bushing

(29).

6. Switching mechanism according to Claim 5, **characterized in that** the damping member (35) has a frictional body (37) which abuts under resilient stressing, against an inner surface (53) of the guide bushing (29).
7. Switching mechanism according to anyone of Claims 1 to 6, **characterized in that** the frictional body (37) is formed integrally on a resilient arm (38) which, for its part, is formed integrally with the slide (26).
8. Switching mechanism according to Claim 7, **characterized in that** the frictional body (37) is arranged on the lower portion (25) of the slide (26) and projects radially outwards beyond the outer contour (24) thereof.
9. Switching mechanism according to Claim 7, **characterized in that** the frictional body (37) is arranged on the upper portion (27) of the slide (26) and projects radially outwards beyond the outer contour (27) thereof.
10. Switching mechanism according to Claim 8 or 9, **characterized in that** the frictional body (37) is arranged on a control element (34) which is connected to the slide (26) and runs in a control curve (47; 54), which control curve is arranged on the inside of the mechanism sleeve (12).

Patentansprüche

1. Schaltmechanik für ein Schreibgerät (10), die eine Mechanikhülse (12) mit einem oberen Abschnitt 15 und einem unteren Abschnitt (14) zur Aufnahme eines Schreibeinsatzes (16) sowie eine mit ihrem unteren Abschnitt (28) in dem oberen Abschnitt (15) der Mechanikhülse (12) angeordnete Führungsbuchse (29) aufweist, wobei eine Betätigung der Führungsbuchse (29) zu einer Betätigung des Schreibeinsatzes (16) führt, die Führungsbuchse (29) drehbar und in Längsrichtung unverschieblich an der Mechanikhülse (12) gelagert ist, in dem oberen Abschnitt (15) der Mechanikhülse (12) unterhalb der Führungsbuchse (29) ein Schieber (26) angeordnet ist, wobei eine Betätigung der Führungsbuchse (29) zu einer Bewegung des Schiebers (26) relativ zu der Mechanikhülse (12) und diese relative Bewegung des Schiebers (26) zu einer Betätigung des Schreibeinsatzes (16) führt, und zwischen Führungshülse (29) und Schieber (26) sowie zwischen Schieber (26) und Mechanikhülse (12) je eine Steuerkurve (43, 47; 52, 54) vorgesehen ist, in denen ein Steuerelement (34) läuft, und eine der beiden Steu-

erkrümmen (43, 54) eine Umfangskomponente aufweist, so dass eine Drehung der Führungshülse (29) zu einer Längsbewegung des Schiebers (26) führt, **dadurch gekennzeichnet, dass** ein zusätzliches mechanisches Dämpfungsglied (35) vorgesehen ist, das die Bewegung der Führungsbuchse (29) durch Reibung bedämpft.

2. Schaltmechanik nach Anspruch 1, **dadurch gekennzeichnet, dass** das mechanische Dämpfungsglied (35) durch Federkräfte der elastischen Kräfte gegen eine Gegenfläche (36; 37) vorgespannt ist und eine lineare Reibwirkung ausübt. 10
3. Schaltmechanik nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Dämpfungsglied (35) zwischen dem Schieber (26) und der Mechanikhülse (12) wirkt. 15
4. Schaltmechanik nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** das Dämpfungsglied (35) einen Reibkörper (37) aufweist, der unter Federspannung an einer Innenfläche (36) der Mechanikhülse (12) anliegt. 20
5. Schaltmechanik nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Dämpfungsglied (35) zwischen dem Schieber (26) und der Führungsbuchse (29) wirkt. 25
6. Schaltmechanik nach Anspruch 5, **dadurch gekennzeichnet, dass** das Dämpfungsglied (35) einen Reibkörper (37) aufweist, der unter Federspannung an einer Innenfläche (53) der Führungsbuchse (29) anliegt. 30
7. Schaltmechanik nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** der Reibkörper (37) einstückig an einem Federarm (38) ausgebildet ist, der seinerseits einstückig mit dem Schieber (26) ausgebildet ist. 35
8. Schaltmechanik nach Anspruch 7, **dadurch gekennzeichnet, dass** der Reibkörper (37) an dem unteren Abschnitt (25) des Schiebers (26) angeordnet ist und radial nach außen über dessen Außenkontur (24) vorragt. 40
9. Schaltmechanik nach Anspruch 7, **dadurch gekennzeichnet, dass** der Reibkörper (37) an dem oberen Abschnitt (27) des Schiebers (26) angeordnet ist und radial nach außen über dessen Außenkontur (27) vorragt. 45
10. Schaltmechanik nach Anspruch 8 oder 9, **dadurch gekennzeichnet, dass** der Reibkörper (37) an einem mit dem Schieber (26) verbundenen Steuerelement (34) angeordnet ist, das in einer Steuerkurve 50

(47; 54) läuft, die innen an der Mechanikhülse (12) angeordnet ist.

5 Revendications

1. Mécanisme de commutation pour un instrument d'écriture (10), ledit mécanisme de commutation possédant un manchon de mécanisme (12) avec une partie supérieure (15) et une partie inférieure (14) pour loger un insert d'écriture (16) et possédant une douille de guidage (29) dont la partie inférieure (28) est disposée dans la partie supérieure (15) du manchon de mécanisme (12), dans lequel l'actionnement de la douille de guidage (29) résulte en l'actionnement de l'insert d'écriture (16), la douille de guidage (29) est montée sur le manchon de mécanisme (12) de sorte à pouvoir être tournée mais pas déplacée dans la direction longitudinale, une coulisse (26) étant disposée dans la partie supérieure (15) du manchon de mécanisme (12) sous la douille de guidage (29), dans lequel l'actionnement de la douille de guidage (29) résulte en un mouvement de la coulisse (26) par rapport au manchon de mécanisme (12) et ce mouvement relatif de la coulisse (26) résulte en l'actionnement de l'insert d'écriture (16), dans lequel la douille de guidage (29) et la coulisse (26), et la coulisse (26) et le manchon de mécanisme (12) présentent entre eux dans chaque cas une courbe de commande (43, 47 ; 52, 54), dans laquelle un élément de commande (34) s'étend, et l'une des deux courbes de commande (43, 54) présente un composant circonférentiel de sorte que la rotation de la douille de guidage (29) résulte en un mouvement longitudinal de la coulisse (26), **caractérisé en ce qu'un** élément d'amortissement mécanique (35) supplémentaire est prévu, lequel élément d'amortissement mécanique (35) amortissant le mouvement de la coulisse (26) par friction. 35
2. Mécanisme de commutation selon la revendication 1, **caractérisé en ce que** l'élément d'amortissement (35) est incliné contre une contre-surface (36 ; 53) par des forces de ressort ou résilientes et exerce une action de friction linéaire. 40
3. Mécanisme de commutation selon la revendication 1 ou 2, **caractérisé en ce que** l'élément d'amortissement (35) agit entre la coulisse (26) et le manchon de mécanisme (12). 45
4. Mécanisme de commutation selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** l'élément d'amortissement (35) présente un corps de friction (37) qui bute sous mise en tension résiliente contre une surface intérieure (36) du manchon de mécanisme (12). 50

5. Mécanisme de commutation selon la revendication 1 ou 2, **caractérisé en ce que** l'élément d'amortissement (35) agit entre la coulisse (26) et la douille de guidage (29). 5
6. Mécanisme de commutation selon la revendication 5, **caractérisé en ce que** l'élément d'amortissement (35) présente un corps de friction (37) qui bute sous mise en tension résiliente contre une surface intérieure (53) de la douille de guidage (29). 10
7. Mécanisme de commutation selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** le corps de friction (37) est formé intégralement sur un bras résilient (38) qui, pour sa part, est formé intégralement avec la coulisse (26). 15
8. Mécanisme de commutation selon la revendication 7, **caractérisé en ce que** le corps de friction (37) est disposé sur la partie inférieure (25) de la coulisse (26) et fait saillie radialement vers l'extérieur au-delà du contour extérieur (24) de celle-ci. 20
9. Mécanisme de commutation selon la revendication 7, **caractérisé en ce que** le corps de friction (37) est disposé sur la partie supérieure (27) de la coulisse (26) et fait saillie radialement vers l'extérieur au-delà du contour extérieur (27) de celle-ci. 25
10. Mécanisme de commutation selon la revendication 8 ou 9, **caractérisé en ce que** le corps de friction (37) est disposé sur un élément de commande (34) qui est relié à la coulisse (26) et s'étend dans une courbe de commande (47 ; 54) qui est disposée sur le côté intérieur du manchon de mécanisme (12). 30
35

40

45

50

55

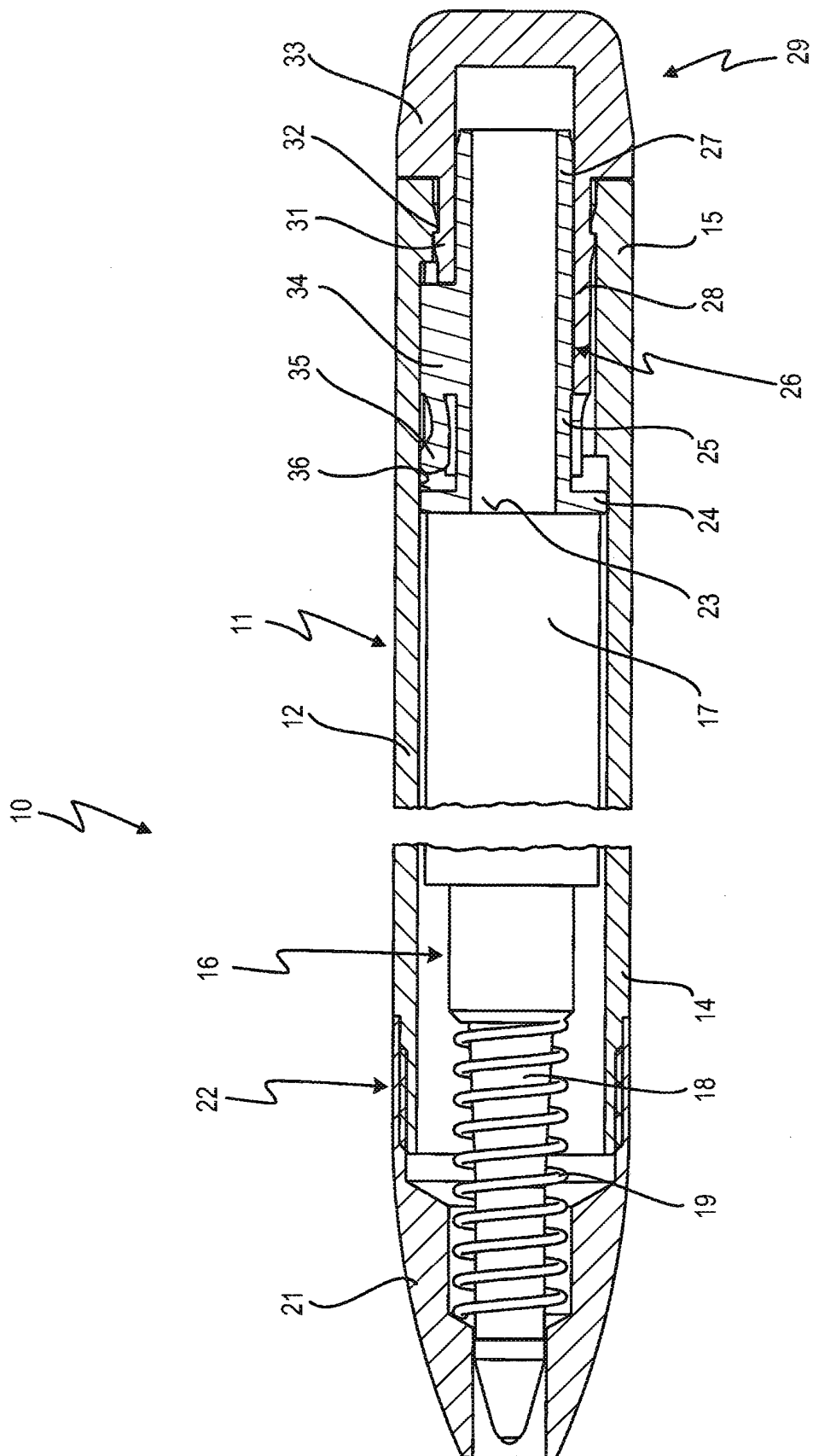


Fig. 1

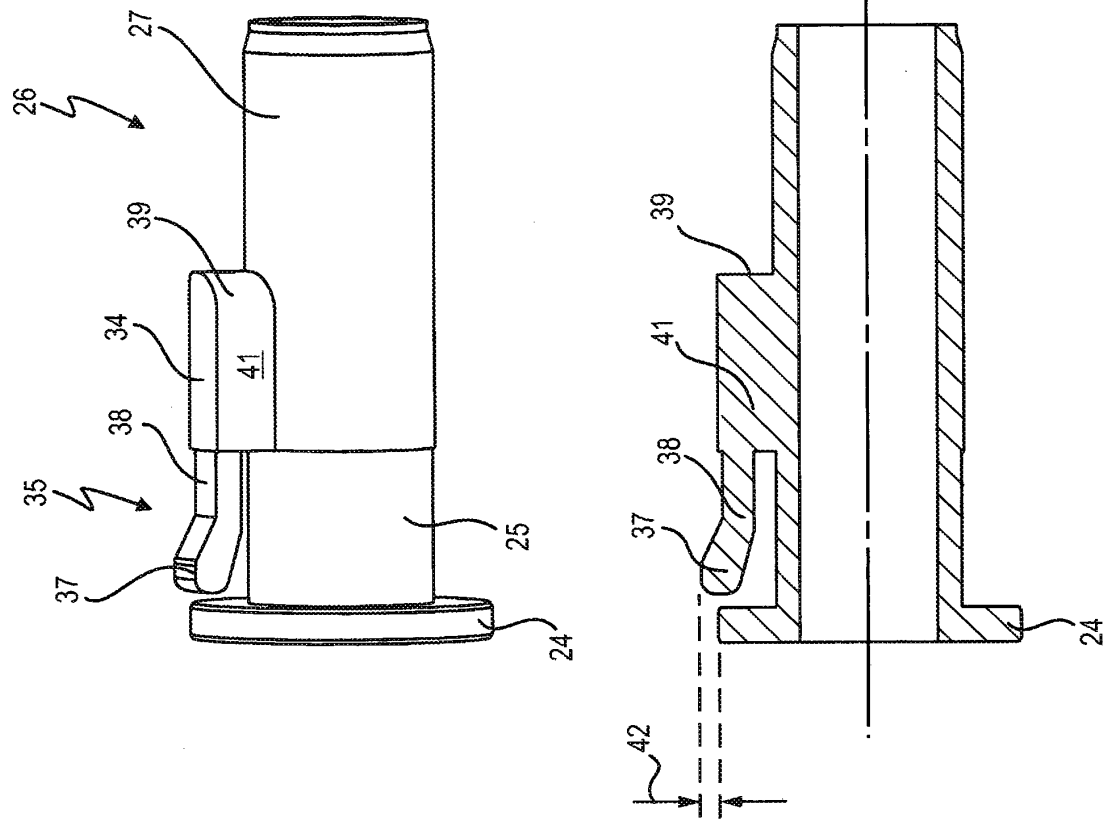
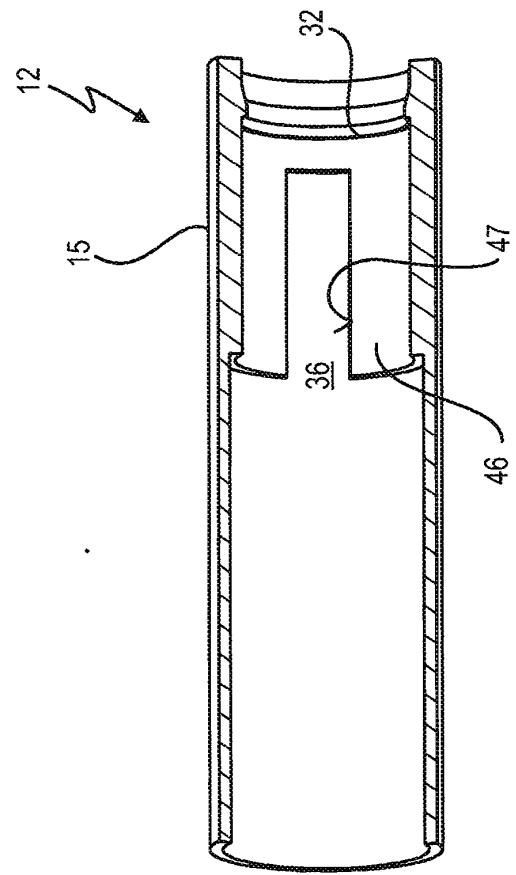
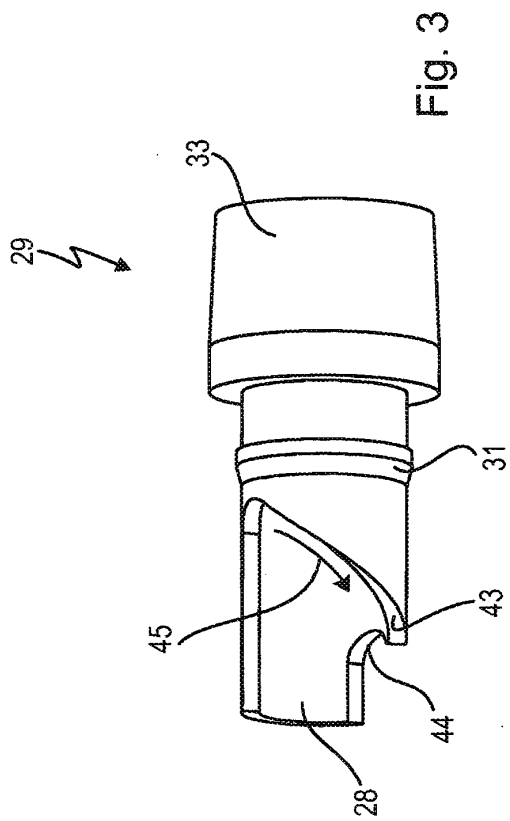


Fig. 2



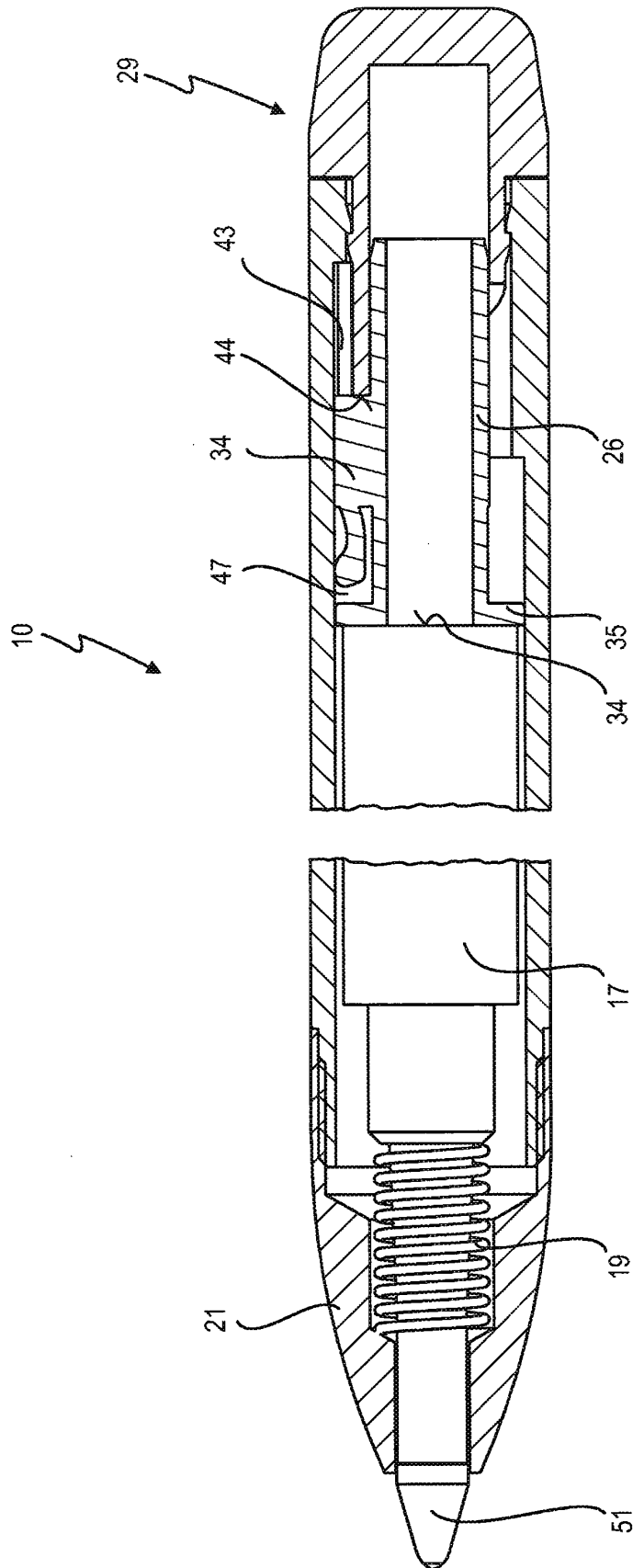
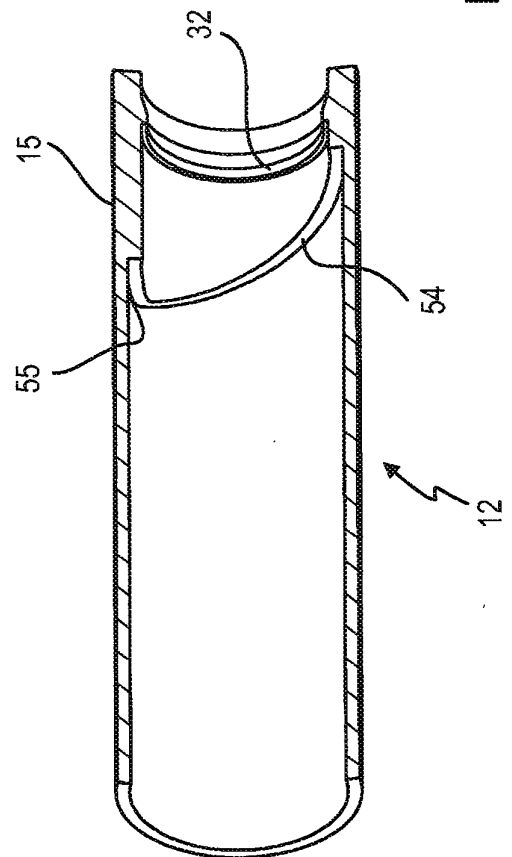
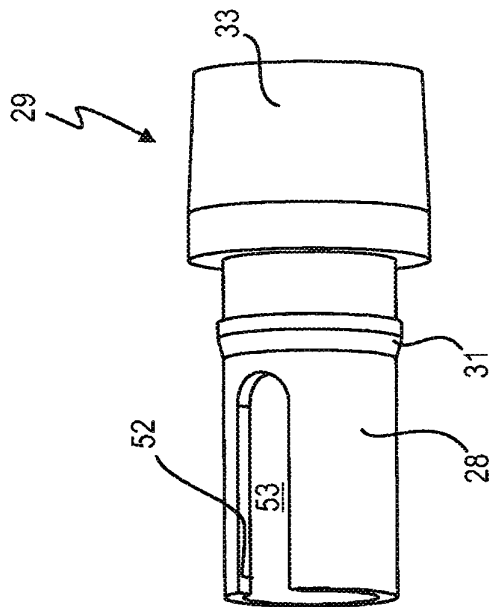


Fig. 5



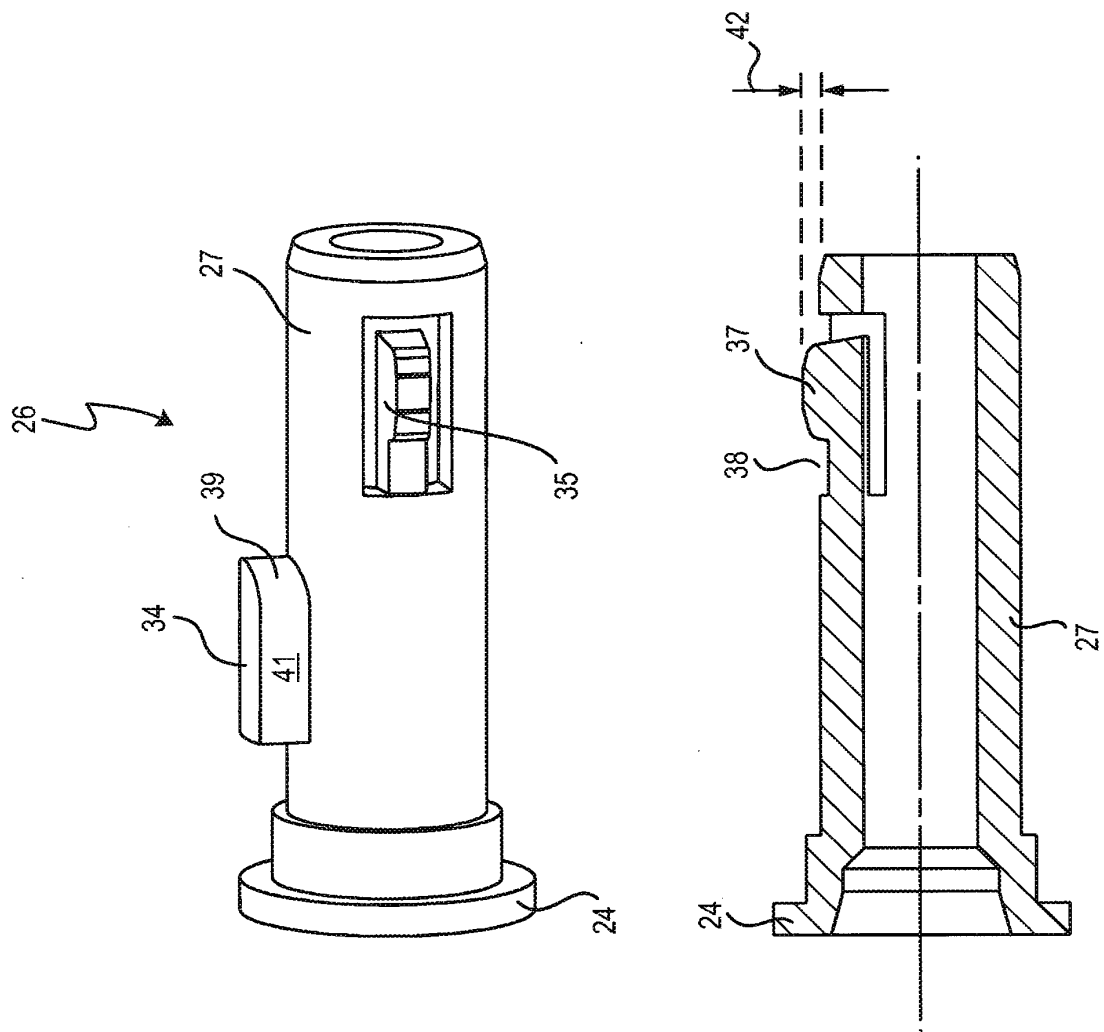


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- JP 2002307892 A [0020]
- CH 259469 A [0023]
- DE 958992 B [0023]
- BE 362878 A [0023]
- GB 2059359 A [0023]
- US 5890827 A [0023] [0024]